CDP 500

The Commonwealth of Dominica Non-SOLAS Vessels Safety Code

(Cargo Vessels less than 500 Gross Tonnage)

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Maritime Administration

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CODE OF PRACTICE FOR SAFETY OF NON-SOLAS VESSELS (N-SVS Code)

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CODE OF PRACTICE FOR SAFETY OF NON-SOLAS VESSELS (SVS Code)

PREAMBLE

The Code has been developed to provide safety standards for Non-SOLAS cargo vessels engaged on coastal and international voyages. The Code principally applies to Cargo vessels of less than 500 Gross tonnage (GT) newly entering the Dominica Maritime Registry. DMRI will, as far as is practicable and reasonable, apply the standards specified in this Code to vessels previously registered prior to the implementation date of this Code.

The provisions specified in this Code take into account, as far as it is reasonable and practicable, the provisions specified in the following Conventions including amendments thereto:

.1 International Convention for Safety of Life at Sea, 1974 and its Protocol of 1988;
.2 International Convention on Load Lines, 1966;
.3 International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto;
.4 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended in 1995;
.5 International Regulations for Preventing Collisions at Sea, 1972.
.6 Merchant Shipping (Minimum Standards) Convention, 1976 (No. 147)

The Code sets required standards of safety and pollution prevention which are appropriate to the size of the vessel. The standards applied are either set by the relevant international conventions or equivalent standards where it is not reasonable or practicable to comply.

Whereas**,** it is necessary for the efficient operation of DMRI to make rules to ensure that all Dominica flag cargo vessels of less than 500 GT which are in service outside the territorial waters of Commonwealth of Dominica are so constructed, equipped, operated and inspected as to attain the highest standards of safety of life and property at sea.

Throughout the development of the Code, it was recognised that it must be based upon the principles laid down in international conventions; furthermore international safety standards are rapidly evolving and that the Code should not remain static. The Code will be reviewed periodically taking into account both experiences and the development on international maritime safety standards.

CHAPTER 1

GENERAL PROVISIONS

PART A - APPLICATION AND DEFINITIONS

1. Application

1.1. Unless otherwise expressly provided, this Code shall apply to all new Dominica flag cargo vessels of less than 500 gross tons engaged on coastal or international voyages.

1.2. This Code shall not apply to:

.1 military and government vessels not used for commercial purposes;

.2 cargo vessels under 150 GT or less than 24m (79 feet) in length, as defined by the 1966 Load Line Convention;

.3 ships not propelled by mechanical means;

.4 pleasure craft not engaged in trade; and

.5 fishing vessels.

1.3. Where the provisions of the 1974 SOLAS Convention, the 1978 STCW Convention, the 1966 Load Line Convention, the 1972 Collision Regulations and MARPOL 73/78 apply to cargo vessels of less than 500 gross tonnage, these provisions should be applicable as if they were part of this Code.

2. Existing vessels

2.1. In the case of an existing vessel which does not comply fully with the Code safety standards but for which the Code standards are reasonable and practicable, the Administration should give consideration to a proposal from the owner(s)/managing agent(s) to phase in requirements within an agreed time scale not exceeding 18 months.

2.1 When an existing vessel does not meet the Code safety standard for a particular feature and it can be demonstrated that compliance is neither reasonable nor practicable, proposals for alternative arrangements should be submitted to the Administration for approval. In considering individual cases, the Administration should take into account the vessel's service history and any other factors which are judged to be relevant to the safety standard which can be achieved.

3. Definitions

3.1 For the purposes of this Code, unless expressly provided otherwise, the terms used therein have the meanings defined in the following paragraphs. Additional definitions are given in the various chapters

.1 *Accommodation spaces* means those spaces used for public spaces, corridors, lavatories, cabins, offices, hospitals, cinemas, games and hobbies rooms, pantries containing no cooking appliances and similar spaces.

.2 *Administration* means the Government of the Commonwealth of Dominica.

.3 *All vessels* mean cargo vessels of any description to which this Code applies.

.4 *Anniversary date* means the day and the month of each year which corresponds to the date of expiry of the relevant certificate.

.5 *Approved* means approved by the Administration.

.6 *Authorized surveyor* means a surveyor who by reason of professional qualifications, practical experience and expertise is authorized by the Administration to carry out the survey required for the vessel;

.7 *Auxiliary means of steering* means the arrangement capable of steering the vessel either manually or by power in the event of failure of the main steering gear but not including its tiller, quadrant or components serving the same purpose.

.8 *Bulkhead deck* is the uppermost deck to which the transverse watertight bulkheads are carried.

.9 *Cargo vessel* means any vessel which carries not more than twelve passengers.

.10 *Coastal Voyage* means an area of harbour, roadstead and coastal service where the area limits and weather restrictions requiring compulsory return to a place of refuge are specified, and/or an area in open seas in which the vessel in the course of navigation is not more than 20 miles from a place of refuge, the permissible distance between places of refuge not exceeding 40 miles.

.11 *1972 COLREG* means the International Regulations for Preventing Collisions at Sea, 1972 as amended

.12 *Control stations* are those spaces in which the vessel's radio or main navigating equipment or the emergency source of power is located or where the fire detection or fire control equipment is centralized.

.13 *Embarkation ladder* is the ladder provided at survival craft embarkation stations

to permit safe access to survival craft after launching.

.14 *Emergency source of electrical power* means a source of electrical power intended to supply the services in the event of failure of the supply from the main source of electrical power.

.15 *Existing vessel* means a vessel which is not a new vessel

.16 *Fishing vessel* means a vessel used for catching fish, or other living resources of the sea.

.17 *Free-fall launching* is that method of launching a survival craft whereby the craft with its complement of persons and equipment on board is released and allowed to fall into the sea without any restraining apparatus

.18 *Gross tonnage* means the measure of the overall size of a vessel determined in accordance with the provisions of the International Convention on Tonnage Measurement of Ships, 1969.

.19 *International voyage* means a voyage between one country and a port outside such country.

.20 *Launching appliance or arrangement* is a means of transferring a survival craft or rescue boat from its position safely to the water.

.21 *Length (L)* in relation to a vessel means 96% of the total length on a waterline at 85% of the least moulded depth measured from the top of the keel, or the length from the foreside of the stem to the axis of the rudder stock on that waterline, if that be the greater. In a vessel designed with a rake of keel, the waterline on which this length is measured shall be parallel to the designed waterline.

.22 *Lifeboat* means a lifeboat complying with the requirements of the LSA Code;

.23 *Lifebuoy* means a lifebuoy complying with the requirements of the LSA Code;

.24 *Lifejacket* means a lifejacket complying with the requirements of the LSA Code;

.25 *Liferaft* means a liferaft complying with the requirements of the LSA Code;

.26 *Line throwing appliance* means an appliance complying with the LSA Code;

.27 *1966 Load Line Convention* means the International Convention on Load Lines, 1966 as amended.

.28 *Low flame spread* means that the surface thus described will adequately restrict the spread of flame, this being determined to the satisfaction of the Administration or recognized organization by an established test procedure.

.29 *LSA Code* means the International Code for Requirements of Life-Saving Appliances adopted by the Maritime Safety Committee of the International Maritime Organization at its sixty sixth session by resolution MSC.48(66), as may be amended by the Organization.

.30 *Machinery space* is to be taken as extending from the moulded base line to the margin line and between the extreme main transverse watertight bulkheads, bounded by the spaces containing the main and auxiliary propulsion machinery, boilers serving the needs of propulsion, and all permanent coal bunkers. In case of unusual arrangements, the Administration may define the limits of the machinery spaces.

.31 *Machinery space of category A* are those spaces and trunks to such spaces which contain

.1 internal combustion machinery used for main propulsion; or

.2 internal combustion machinery used for purposes other than main propulsion where such machinery has in the aggregate a total output of not less than 375 kW; or

.3 any oil-fired boiler or oil fuel unit.

.32 *MARPOL 73/78* means the International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 relating thereto, as amended

.33 *Main source of electrical power* means a source intended to supply electrical power to the main switchboard for distribution to all services necessary for maintaining the vessel in normal operational habitable conditions.

.34 *Main steering gear* means the machinery, rudder actuators, the steering gear power units, if any, and ancillary equipment and the means of applying torque to the rudder stock (e.g. tiller or quadrant) necessary for effecting movement of the rudder for the purpose of steering the vessel under normal service conditions.

.35 *Margin line* is a line drawn at least 76 mm below the upper surface of the bulkhead deck at side.

.36 *Maximum ahead service speed* means the greatest speed which the vessel is designed to maintain service at sea at its deepest seagoing draught.

.37 *Maximum astern speed* means the speed which it is estimated the vessel can attain at the design maximum astern power at its deepest seagoing draught.

.38 *Mile* means a nautical mile of 1852 meters;

.39 *Moulded depth(D):*

.1 is the vertical distance measured from the top of the keel to the top of the freeboard deck beam at side. In wood and composite vessels the distance is measured from the lower edge of the keel rabbet. Where the form at the lower part of the midship section is of a hollow character, or where thick garboards are fitted, the distance is measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel.

.2 in vessels having rounded gunwales, should be measured to the point of intersection of the moulded lines of the deck and side shell plating, the lines extending as though the gunwale were of angular design; and

.3 where the freeboard deck is stepped and the raised part of the deck extends over the point at which the moulded depth is to be determined, should be measured to a line of reference extending from the lower part of the deck along a line parallel with the raised part.

.40 *Near Coastal Voyage* means an area in open seas in which the vessel in the course of navigation is not more than 200 miles from a place of refuge, the permissible distance between places of refuge not exceeding 400 miles.

.41 *New vessel* means a vessel the keel of which is laid or which is at a similar stage of construction on or after *1 July 2006*. In this definition "*similar stage of construction"* means the stage of construction of the vessel at which:

.1 construction identifiable with a specific vessel begins; and

.2 assembly of that vessel has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.

.42 N*on-combustible material* means a material which neither burns nor gives off flammable vapours in sufficient quantity for self-ignition when heated to approximately 750^0 C this being determined to the satisfaction of the Administration or recognized organisation by an established test procedure. Any other material is a combustible material.

.43 *Oil fuel unit* is the equipment used for the preparation of oil fuel for delivery to an oil-fired boiler, or equipment used for the preparation for delivery of heated oil to an internal combustion engine, and includes any oil pressure pumps, filters and heaters dealing with oil at a pressure of more than 0.18 N/mm.

.44 *Offshore supply vessel* means a cargo vessel propelled by mechanical means:

.1 whose primary use is the transport of stores, materials and equipment to offshore installations and which may also be used for the laying of anchors, towage of offshore installations; and

.2 which is designed with accommodation and bridge erections in the forward part of the vessel and an exposed cargo deck in the after part for the handling of cargo at sea.

.45 *Public spaces* means those portions of the accommodation spaces which are used for halls, dining rooms, lounges and similar permanently enclosed spaces.

.46 *Recognised organisation* means any organisation recognised to perform statutory work on behalf of the Administration in terms of certification and survey functions connected with the issuance of international certificates.

.47 *Rescue boat* is a boat designed to rescue persons in distress and to marshal survival craft;

.48 *Service spaces* means those spaces used for galleys, pantries containing cooking appliances, lockers and store-rooms, workshops other than those forming part of the machinery spaces, and similar spaces and trunks to such spaces.

.49 *1974 SOLAS Convention* means the International Convention for the Safety of Life at Sea, 1974 as modified by the Protocol of 1988 relating thereto, as amended.

.50 *1978 STCW Convention* means the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended.

.*51 Steel or other equivalent material* means any non-combustible material which, by itself or due to insulation provided, has structural and integrity properties equivalent to steel at the end of the applicable exposure to the standard fire test (e.g. aluminium alloy with appropriate insulation).

.52 *Superstructure* means the decked structure on the freeboard deck extending from side to side of the vessel or with the side plating not being inboard of the shell plating more than 0.04B, where B is the maximum breadth of the vessel measured amidships to the moulded line of the frame in a vessel with a metal shell and the outer surface of the hull in a vessel with a shell of any other material.

.53 *Survival craft* is a craft capable of sustaining the lives of persons in distress from the time of abandoning the vessel.

.54 *Tanker* means a cargo vessel constructed or adapted for the carriage in bulk of liquid cargoes of a flammable nature.

.55 *Unrestricted international* means an area of the open seas more than 200 miles from a place of refuge, i.e. worldwide trade.

.56 *Watertight* means capable of preventing the passage of water through the structure in any direction under a head of water for which the surrounding structure is designed.

4. Exemptions

4.1. If an owner/managing agent seeks any exemption from the application of specific regulations or requirements, formal application must be made to the Administration, demonstrating an equivalent level of safety. The Administration will issue an exemption, if and when appropriate.

4.2. Where these Regulations require that a particular material, appliance or apparatus, or type thereof, piece of equipment or machinery shall be fitted or carried, or a particular provision is to be made on a vessel, The Administration may permit other appliances or apparatus to be carried or other provisions can be made in that vessel if the Administration is satisfied that the alternatives are as effective as those required by these Regulations.

4.3. A vessel which is not normally engaged on international voyages but which, in exceptional circumstances, is required to undertake a single international voyage may be exempted by the Administration from any of the requirements of this Code, provided that it complies with such other requirements which are, in the opinion of the Administration, adequate for the voyage which is to be undertaken by the vessel.

4.4. The Administration may, where it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of chapters 2, 3, 4, 5, or 6 unreasonable or unnecessary, exempt from those requirements individual vessels or classes of vessels which, in the course of their voyages, do not proceed more than 20 miles from the nearest land. Where the vessel operates primarily in the waters of another State, the exemption should be acceptable to that State.

4.5. The Administration may exempt any vessel which embodies features of a novel kind from any of the provisions of chapters 2, 3, 4, and 5, of this Code the application of which might seriously impede research into the development of such features and their incorporation in vessels engaged on international voyages. Any such vessel should, however, comply with such safety requirements which, in the opinion of the Administration, are adequate for the service for which it is intended and are such as to ensure the overall safety of the vessel.

4.6. The granting of exemptions will be limited by the extent to which international conventions allow and should be regarded as exceptional.

5. Equivalents

5.1. Where this Code requires that a particular fitting, material, appliance or apparatus, or type thereof, should be fitted or carried in a vessel, or that any particular provision should be made, the Administration may allow any other fitting, material, appliance or apparatus, or type thereof, to be fitted or carried, or any other provision to be made in that vessel, where it is satisfied by

trial thereof or otherwise that such fitting, material, appliance or apparatus, or type thereof, or provision, is at least as effective as that required by the present regulation.

5.2. Proposals for the application of alternative standards considered to be at least equivalent to the requirements of the Code should be submitted to the Administration for approval. Equivalence may be achieved by incorporating increased requirements to balance deficiencies and thereby achieve the overall safety standard.

6. Standard

6.1. The construction, installation, structural strength, fittings, material, appliances and apparatus, unless expressly provided by this Code, should be of a standard acceptable to the Administration.

6.2. In addition to the Codes and standards referred to in this Code, the other codes and standards recommended by the International Maritime Organization and accepted by the Administration may be applied whenever such codes and standards are considered to be appropriate.

7. Alterations and modifications of a major character

7.1. Alterations and modifications of a major character and outfitting related thereto should meet the requirements prescribed for a new vessel to such an extent as the Administration deems reasonable and practicable.

7.2. For the purpose of these requirements, the following alterations and modifications should be recognized as being of a *major character*:

.1 any change that substantially alters the dimensions of a vessel; or

.2 any change that substantially increases a vessel's service life; or

.3 any change to enable the vessel to engage on another service than that for which it was originally designed and constructed e.g. fishing or supply vessel to cargo vessel service.

8. Manning

8.1. Every vessel to which this Code applies should be sufficiently and efficiently manned from the point of view of safety of life at sea. When considering matters of manning, no member of the crew should be less than 15 years of age.

8.2. The Administration should provide every such vessel with an appropriate safe manning document as evidence of the minimum safe manning considered necessary to satisfy the Administration.

9. Vessels' plans, signs, instruction manuals, name plates, and language used

9.1. On board all vessels, name plates, signs, notices, plans and documents relating to the safety and operation of the vessel and its machinery and equipment should be drawn up in English and in a language understood by the crew.

9.2. Vessels propelled by mechanical means should carry adequate information including drawings, plans and instruction manuals necessary for their safe operation and safety of life at sea.

9.3. The owner, master or chief engineer of the vessel should be responsible for compliance with the provisions of this regulation.

PART B - SURVEYS AND CERTIFICATION

10. General

10.1. All vessels covered by this code are required to be surveyed and certificated in accordance with the International Load Line Convention; vessels over 400GT under the MARPOL Convention. All vessels ships of over 300GT are also required to be surveyed and certificated under the radio requirements of 1974 SOLAS Convention. Annex I is the list of certificates to be issued.

10.2. A vessel to which the International Conventions apply must be surveyed and, if the necessary standards are met, Convention certificates will be issued. All requests for survey and certification must be made to the Administration, the appropriate Classification Society or appropriate Certifying Authority in relation to radio installations.

10.3. When a Classification Society surveyor is so appointed, actions taken will be under direct instruction of the Administration. The Administration will provide the authorized surveyor with detailed guidance on the scope of survey and report required.

10.4. The inspection and survey of vessels, so far as regards the enforcement of the provisions of this Code and the granting of exemptions there from, should be carried out by surveyors of the Administration. The Administration may, however, entrust the inspections and survey either to authorized surveyors nominated for the purpose or to organizations recognised by it. And, for safety radio, an appropriate Certifying Authority in relation to radio installations

10.5. An authorized Classification Society is aware of the extent to which responsibility has been delegated to issue Load Line Certificates and Non - SOLAS Vessel Safety Certificates. International Conventions give specific discretion to an Administration to either make exemptions or accept equivalent equipment or arrangements. The formal agreement between the Administration and an authorized Classification Society governs the relationship between the two parties.

10.6. An exclusive surveyor from an authorized Classification Society and proposed by the

Society may be appointed from time to time to act on behalf of the Administration in cases when it is impracticable for a surveyor of the Administration to make the visit necessary for the survey.

10.7. Where a authorized surveyor or recognized organization determines that the condition of the vessel or its equipment does not correspond substantially with the particulars of the certificate or is such that the vessel is not fit to proceed to sea without danger to the vessel, or persons on board, such surveyor or organization should immediately ensure that corrective action is taken and should in due course notify the Administration. Where such corrective action is not taken the certificate should be withdrawn and the Administration should be notified immediately.

11. Documents to be on board the vessel

11.Vessels are required to be issued with the following certificates, as appropriate.

.1 International Load Line Certificate (all vessels)

.2 Non-SOLAS Vessel Safety Certificate issued by a recognized organization with a check list of safety items. The validity of the certificate shall be for five years subject to annual and intermediate endorsements.

.3 Radio permit or license (all vessels fitted with a radio station)

.4 valid VHF radio, radio telephony or radio telegraphy certificate (vessels fitted with a VHF radio telephone station or a radio telegraph station, as applicable) For vessels of 300GT and over - International Cargo Ship Safety Radio Certificate;

.5 International Oil Pollution Prevention Certificate (vessels of 400GT and over);

.6 Shipboard Oil Pollution Emergency Plan (SOPEP)

.7 International Tonnage Certificate (all vessels) The tonnage certificate shall be complemented by annexed calculation

.8 Certificate of Class for hull and machinery;

.9 Patent (provisional or permanent), shall be on board. Current receipts for Commonwealth of Dominica annual and inspection taxes shall also be on board.

12. Surveys for the issue and endorsement of a Non- Solas Vessel Safety Certificate

12.1. Inspections and surveys for certification are based on the information, specification, drawings and calculations available to the Administration.

12.2. The structure, machinery, life-saving appliances, radio installations and other equipment should be subject to the surveys specified below:

.1 An initial survey before the vessel is put in service;

.2 a renewal survey at intervals specified by the Administration not exceeding five years, except where regulation 1.15.2, 1.15.5 or 1.15.6 is applicable

.3 a periodical survey within three months before or after the second anniversary date or within three months before or after the third anniversary date of the N-SVS Certificate which should take the place of one of the annual surveys specified in .4;

.4 an annual survey within three months before or after each anniversary date of the N-SVS Certificate;

.5 a minimum of two inspections of the outside of the vessel's bottom should be carried out during any five year period, except where 1.15.5 or 1.15.6 is applicable. Where 1.15.5 or 1.15.6 is applicable, this five year period may be extended to coincide with the extended period of validity of the certificate. In all cases the interval between any two such inspections should not exceed thirty-six months; and

.6 an additional survey, as occasion arises.

These surveys should include surveys required under the provisions of the 1974 SOLAS Convention and the 1966 Load Line Convention, where applicable.

12.3. The survey referred to in 1.12.1 should include the following items:

.1 the structure, machinery and electrical equipment,

.2 the life-saving appliances and arrangements, fire protection equipment, steering systems, the shipborne navigational equipment, means of embarkation for pilots and other equipment and systems;

.3 the radio installations of cargo vessels, including those used in life-saving appliances:

.4 sanitation and operational practices including the competence and composition of the crew.

12.4. A periodical survey should include an inspection of the equipment referred to in 1.12.2 in the manner prescribed in 1.12.3 to ensure that they remain in satisfactory condition and fit for the service for which the vessel is intended.

12.5. An annual survey should include a general inspection of the equipment referred to in 1.12.3 to ensure that they have been maintained in accordance with 1.13.1 and that they remain satisfactory for the service for which the vessel is intended.

12.6. An additional survey either general or partial, according to the circumstances, should be made after a repair resulting from investigations whenever any important repairs or renewal are made.

12.7. The survey should be such as to ensure that the necessary repairs or renewal have been effectively made.

12.8. The periodical and annual surveys and the inspections of the vessel's bottom should be endorsed on the Non-Solas Vessel Safety Certificate.

12.9. The results of the survey should be recorded in the vessel's Record of Equipment and Vessel Information, a copy of which should be kept on board the vessel. A copy of the results of the latest surveys referred to should be kept on board vessel.

13. Maintenance of conditions after survey

13. The owner or master of every vessel to which this Code applies should ensure that:

.1 the condition of the vessel and its equipment is maintained to conform with the provisions of this Code to ensure that the vessel in all respects will remain fit to proceed to sea without danger to the vessel, persons on board or the environment;

.2 after any survey of the vessel under 1.12 has been completed, no significant change should be made in the structural arrangement, machinery, equipment and other items covered by the survey, without the permission of the Administration; and

.3 whenever an accident occurs to a vessel or a defect is discovered, either of which affects the safety of the vessel or the efficiency or completeness of its life-saving appliances or other equipment, a request should be made immediately to the Administration, or recognized organisation acting on behalf of the Administration, responsible for issuing the relevant certificate for a survey, as may be required by 1.12, to be carried out as soon as practicable.

14. Issue or endorsement of certificates

14.1. A certificate called a Non- Solas Vessel Safety Certificate should be issued after an initial or renewal survey of a vessel which complies with the relevant requirements of chapters 2, 3, 4 and 5 and any other relevant requirements of this Code.

14.2. The certificate referred to in 1.14.1 should be supplemented by a Record of Equipment and Vessel Information which should be permanently attached thereto.

14.3. When an exemption is granted by the Administration to a vessel under the provisions of this Code, a certificate called an Exemption Certificate should be issued in addition to the

certificates prescribed in this section. The Exemption Certificate should be attached to the certificate to which it refers.

14.4. The certificates referred to in this section should be issued or endorsed either by the Administration, or recognised organisation acting on its behalf. In every case, the Administration assumes full responsibility for the certificates.

15. Duration and validity of certificates

15.1. A Non-Solas Vessel Safety Certificate should be issued for a period specified by the Administration which should not exceed five years. An Exemption Certificate should not be valid for longer than the period of the Certificate to which it refers.

15.2. Load Line Certificates, Non-Solas Vessel Safety Certificates should be valid for 5 years in general.

15.3. Notwithstanding the requirements of 1.15.1, when the renewal survey is completed within three months before the expiry date of the existing certificate, the new certificate should be valid from the date of completion of renewal survey to a date not exceeding five years from the date of expiry of the existing certificate.

15.4. When the renewal survey is completed after the expiry date of the existing certificate, the new certificate should be valid from the date of completion of the renewal survey to a date not exceeding five years from the date expiry of the existing certificate.

15.5. When the renewal survey is completed more than three months before or after the expiry date of the existing certificate, the new certificate should be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of completion of the renewal survey.

15.6. Where a certificate is issued for a period of less than five years, the Administration may extend the validity of the certificate beyond the expiry date to the maximum period specified in 1.15.1, provided that the surveys referred to in 1.12, which are applicable when a certificate is issued for a period of five years are carried out as appropriate.

15.7. Where a renewal survey has been completed and new certificate cannot be issued or placed on board the ship before the expiry date of the existing certificate, the Administration may endorse the existing certificate and such a certificate should be accepted as valid for a further period which should not exceed one month from the expiry date.

15.8. Where a ship at the time when a certificate expires is not in the country in which it is registered or a port in which it is to be surveyed, the Administration may extend the period of validity of the certificate but this extension should be granted only for the purpose of allowing the ship to complete its voyage to the country in which it is registered or the port in which it is to be surveyed and then only in cases where it appears proper and reasonable to do so. No certificate should be extended for a period longer than one month, and a ship to which such an extension is granted should not on its arrival in the country in which it is registered or the port in

which it is to be surveyed, be entitled by virtue of such extension to leave the country, in which it is registered or that port without having a new certificate. When the renewal survey is completed, the new certificate should be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

15.9. Annual, intermediate and renewal surveys should be carried out to the satisfaction of the Administration or Class Society as appropriate.

15.10. Safety Equipment Certificates and Safety Radio Certificate surveys should be carried out either by the Administration or Parties to the SOLAS Convention at the request of a the Administration; or by a Classification Society surveyor appointed by the Administration to act on its behalf; or by an appropriate Certifying Authority in relation to radio installations for cargo ships.

15.11. An application to the Administration for an extension to the certificate will be agreed only in cases when it appears proper and reasonable to do so.

15.12. At least once during a five year period, a surveyor appointed by the Administration will visit the ship to survey its safety equipment and to conduct a general inspection to ensure that standards are being met.

15.13. Where an annual or periodical survey is completed before the period specified in the relevant regulations, then:

.1 the anniversary date shown on the relevant certificate should be amended by endorsement to a date which should not be more than three months later than the date on which the survey was completed;

.2 the subsequent annual, intermediate or periodical survey required by the relevant regulations should be completed at the intervals prescribed by this Code using the new anniversary date; and

.3 the expiry date may remain unchanged provided one or more annual, or periodical surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by the relevant regulations are not exceeded.

15.14. Safety certificates issued under 1.14. should cease to be valid in any of the following cases:

.1 where the relevant surveys and inspections are not completed within the period specified under 1.12.;

.2 where the certificate is not endorsed in accordance with the requirements of this Code; and

.3 where the vessel is withdrawn from the Dominica Maritime Registry.

16. Forms of certificates

16. The certificates and the record of equipment and vessel information should be drawn up in the form corresponding to the models given in the annexes. The language of the certificates and records shall be English.

17. Availability of certificates

17. All certificates issued under 1.14. should be readily available on board for examination at all times.

CHAPTER 2

PART I
CONSTRUCTION - SUBDIVISION AND STABILITY MACHINERY AND ELECTRICAL INSTALLATIONS

PART A - GENEARAL

1. Application

1.1. In addition to the requirements contained elsewhere in this Code, vessels should be designed, constructed and maintained in compliance with the structural, mechanical and electrical requirements to a consistent standard in respect of strength and watertight integrity which is recognized by the Administration, or with the applicable national standards of the Administration and which provide an equivalent level of safety.

1.2. New Vessels are to be built to the requirements of one of the recognized Classification Societies and issued with a Class Certificate. *Existing Vessels which are not already classed should be taken into Class, however alternative arrangements for Short Range operation may be agreed by the Administration.*

1.3. With respect to such vessels as the Administration considers unable or unnecessary to meet the requirements of this chapter these requirements should apply for the safety of those vessels and persons on board as far as is deemed necessary by the Administration.

PART B - CONSTRUCTION AND EQUIPMENT

2. Construction

2.1. Every ship shall have sufficient structural strength for the draft corresponding to the freeboard assigned to the satisfaction of the Administration. Ships built and maintained in conformity with the requirements of a classification society recognized by Commonwealth of Dominica shall be regarded as meeting this requirement.

2.2. Vessels should be fitted with a collision bulkhead and with watertight bulkheads bounding the machinery spaces. Such bulkheads should be extended up to the freeboard deck. In vessels constructed of wood such bulkheads should also be fitted extending to the freeboard deck and should be watertight as far as practicable.

2.3. Propeller shafts and shaft logs or stern tubes should not be situated in any space other than machinery spaces containing main propulsion unless they are enclosed in watertight spaces or enclosures inside such spaces acceptable to the Administration. The Administration may exempt from the requirements of this paragraph, vessels having constraint of space or engaged on sheltered voyages provided it is demonstrated that any progressive flooding of such space can be easily controlled and that the safety of the vessel is not impaired.

2.4. Stern glands should be located in spaces which can be easily accessible at all times for inspection and maintenance to the satisfaction of the Administration.

3. Collision bulkhead

3.1. A collision bulkhead should be watertight up to the freeboard deck. This bulkhead should, as far as practicable, be located at a distance from the forward perpendicular of not less than 5% and not more than 7% of the length of the vessel. Where it can be shown to the satisfaction of the Administration that it is impractical for the collision bulkhead to be located at a distance from the forward perpendicular of not more than 7% of the length of the vessel, the Administration may allow relaxation there from, subject to the condition that should the space forward of the bulkhead be flooded, the vessel at full load condition will not be submerged to the margin line.

3.2. The collision bulkhead may have steps or recesses in it provided that they are within the limits prescribed in 2.3.1. Pipes piercing the collision bulkhead should be kept to the minimum. Such pipes should be fitted with suitable valves operable from above the freeboard deck and the valve chest should be secured at the collision bulkhead inside the forepeak. The Administration may permit the location of such valves on the after side of the collision bulkhead provided that they are readily accessible under all service conditions and the space in which they are located is not a cargo space. All such valves should be of material acceptable to the Administration.

3.3. Where a long forward superstructure is fitted, the collision bulkhead should be extended watertight to the deck above the freeboard deck. The extension should, subject to the requirements of 2.3.4, be located within the limits prescribed in 2.3.1. The part of the deck, if any, between the collision bulkhead and its extension should be weathertight.

3.4. In every vessel provided with a bow door and a sloping loading ramp that forms part of the extension of the collision bulkhead above the freeboard deck, the part of the ramp which is more than 2.3m above the freeboard deck may extend forward of the limits specified in 2.3.1. The ramp should be weathertight over its entire length.

3.5. The number of openings in the collision bulkhead above the freeboard deck should be reduced to the minimum compatible with the design and normal operation of the vessel. All such openings should be capable of being closed weathertight.

3.6. No doors, manholes, ventilation ducts or access openings should be fitted in the collision bulkhead below the freeboard deck.

4. Chain locker

4.1. In every vessel propelled by mechanical means where the chain locker is located abaft the collision bulkhead or extends into the forepeak tank, it should be watertight and provided with efficient means of drainage.

4.2. A chain locker should not be used for any purpose other than stowage of anchor chain cables.

5. Watertight bulkheads, decks, doors, trunks, etc. .

5.1. This section does not apply to such vessels the hull of which is constructed of wood.

5.2. Each watertight subdivision bulkhead, whether transverse or longitudinal, should be constructed in such a manner that it should be capable of supporting, with a proper margin of resistance, the pressure due to the maximum head of water which it might have to sustain in the event of damage to the vessel but at least the pressure due to a head of water up to the margin line. The construction of these bulkheads should be to the satisfaction of the Administration or recognised organisation.

5.3. Steps and recesses in bulkheads should be watertight and as strong as the bulkhead at the place where each occurs.

5.4. Where frames or beams pass through a watertight deck or bulkhead, such deck or bulkhead should be made structurally watertight to the satisfaction of the Administration.

5.5. The number of openings in watertight bulkheads should be reduced to the minimum compatible with the general arrangements and operational needs of the vessel. Openings should be fitted with watertight closing appliances to the satisfaction of the Administration. Watertight doors should be of equivalent strength to the adjacent unpierced structure.

5.6. Watertight decks, trunks, tunnels, duct keels and ventilators should be of the same strength as watertight bulkheads at corresponding levels. The means used for making them watertight, and the arrangements adopted for closing openings in them, should be to the satisfaction of the Administration. Watertight ventilators and trunks should be carried at least up to the freeboard deck.

5.7. Testing main compartments by filling them with water is not compulsory. When testing by filling with water is not carried out, a hose test is compulsory. In any case, a thorough inspection of watertight bulkheads should be carried out.

5.8. The forepeak, double bottoms, including duct keels, and inner skins should be tested with water to a head corresponding to the requirements of 2.5.2.

5.9. Tanks which are intended to hold liquids, and which form part of the subdivision of the vessel, should be tested for tightness with water to a head corresponding to two-third of the depth

from the top of keel to the margin line in way of the tanks provided that in no case should the test head be less than 0.9m above the top of the tank.

5.10. The tests referred to in 2.5.7 and 2.5.8 are for the purpose of ensuring that the subdivision structural arrangements are watertight and are not to be regarded as a test of the fitness of any compartment for the storage of oil fuel or for other special purposes for which a test of a superior character may be required depending on the height to which the liquid has access in the tank or its connections.

6. Means for sounding .

6.1. In all vessels other than barges with no under deck cargoes, means for sounding, to the satisfaction of the Administration, should be provided:

.1 for the bilges of those compartments which are not readily accessible at all times during the voyage; and

.2 for all tanks and cofferdams.

6.2. Where sounding pipes are fitted, their upper ends should be extended to a readily accessible position and, where practicable, above the freeboard deck. Their openings should be provided with permanently attached means of closing. Sounding pipes which are not extended above the freeboard deck should be fitted with automatic self-closing devices.

7. Watertight, watertight openings and accommodation - General measures for all vessels

7.1. Hinged covers of hatchways, manholes and other similar openings should be protected against accidental closing. In particular, heavy covers on escape hatches should be equipped with counterweights. Escape doors and covers of escape and access hatches should be so constructed as to be capable of being opened from either side of the door or cover.

7.2. The dimensions of access hatches should be such that it will allow a person to have a quick and easy escape to a safe place in the event of an emergency. Where practicable, the dimensions of access hatches of cargo and machinery spaces should be such that they will facilitate expeditious rescue operation.

7.3. Handrails, grabrails and handholds of sufficient size and strength should be provided where necessary in the opinion of the Administration for persons to hold on when the vessel is severely rolling or pitching.

7.4. Skylights of machinery spaces or other similar openings which are normally kept open at sea should be provided with adequately spaced protective bars or other arrangements to the satisfaction of the Administration to prevent a person from falling into the space accidentally. Where the size of such an opening is small, the Administration may waive this requirement where satisfied that due to the small size of the opening no protective arrangement is necessary.

7.5. Surfaces of all decks should be so prepared or treated as to minimize the possibility of persons slipping. In particular, decks and platforms in machinery spaces, floors of galleys, decks at winches and areas at the foot and head of ladders and in front of door and steps of ladders should be provided with anti-slip surfaces.

7.6. Moving parts of machinery which are so exposed as to cause accidents should be properly guarded.

PART C - SUBDIVISION, STABILITY AND BILGE PUMPING ARRANGEMENTS

8. Intact stability and subdivision requirements for cargo vessels other than offshore supply vessels

8.1. Subject to the provisions of 2.8.2, vessels should comply with the intact stability requirements for cargo vessels specified in the Code on Intact Stability for All Types of Vessels Covered by IMO Instruments, adopted by the International Maritime Organization by resolution A.749 (18).

8.2. Existing vessels should, as far as practical and reasonable in the opinion of the Administration, comply with the requirements of this section.

8.3. Intact stability for barges carrying only deck cargoes and having no hatchways in the deck except small manholes closed with gasketed covers, no machinery installations and no accommodation and service spaces should comply with the stability requirements recommended by the Administration. The Administration should determine the intact stability or subdivision and damaged stability requirements as appropriate for barges carrying underdeck cargoes or having machinery installations or service spaces, having regard to the design and arrangements of cargo spaces, machinery, equipment, deck houses or superstructure.

9. Intact stability, subdivision and damaged stability requirements for offshore supply vessels

9.1. The intact stability, subdivision and damaged stability of offshore supply vessels should comply with the applicable requirements of the Guidelines for the Design and Construction of Offshore Supply Vessels, adopted by the International Maritime Organization by resolution A. 469 (XII) and accepted by the Administration. In addition, the Administration may require such vessels to comply with the weather criterion specified in the Code on Intact Stability referred to in 2.8.1.

9.2. Existing offshore supply vessels should comply with the requirements of 2.9.1 as far as practicable and reasonable in the opinion of the Administration.

9.3. Intact stability, subdivision and damage stability requirements for offshore supply vessels to which the provisions of this section does not apply should be to the satisfaction of the Administration.

10. Inclining test

10.1. Every vessel should undergo an inclining test upon its completion and the actual displacement and position of the centre of gravity should be determined for the light vessel condition .

10.2. Where alterations are made to a vessel affecting its light vessel condition and the position of the centre of gravity, the vessel should, where the Administration considers this necessary, be reinclined and the stability information amended.

10.3. The Administration may allow the inclining test of a vessel to be dispensed with provided basic stability data is available from the inclining test of a sister vessel and it is shown to the satisfaction of the Administration that reliable stability information for that vessel can be obtained from such basic data.

11. Stability information

11.1. Stability information approved by the Administration should be supplied to vessels to enable the master to assess with ease and certainty the stability of the vessel under various operating conditions. Such information should include specific advice to the master warning him of those operating conditions which could adversely affect either stability or the trim of the vessel.

11.2. The trim and stability data shall include at least the following:

.1 Full homogeneous load, departure with 100% of all consumables on board.

.2 Full homogeneous load, arrival with 10% of consumables on board.

.3 Ballast departure with 100% of consumables on board,

.4 Ballast arrival with 10% of consumable on board.

11.3. The approved stability information should be kept on board, readily accessible at all times and inspected at the periodical surveys of the vessel to ensure that it has been approved. A copy of the stability information should be submitted to the Administration or recognized organisation.

11.4. Where alternations are made to a vessel affecting its stability, revised stability calculations should be prepared and submitted to the recognised organisation or to the Administration for approval. Where the Administration or recognised organisation decides that the stability information must be revised, the new information should be supplied to the master and the superseded information removed from the vessel.

12. Bilge pumping arrangements

12.1. In every vessel an efficient bilge pumping arrangement should be provided which under all practical conditions should be capable of pumping from and draining any watertight compartment which is neither a permanent oil tank nor a permanent water tank. In the spaces not serviced by installed piping ready access for portable pumps should be demonstrated. Where the Administration is satisfied that the safety of the vessel is not impaired the bilge pumping arrangements may be dispensed with in any particular compartment.

12.2. The arrangement of the bilge and ballast pumping system should be such as to prevent the possibility of water passing from the sea and from water ballast spaces into the cargo and machinery spaces, or from one compartment to another.

12.3. All distribution boxes and manually operated valves in connection with the bilge pumping arrangements should be in positions which are accessible under ordinary circumstances.

12.4.1. Every vessel should be provided with at least two power bilge pumps.

12.4.2. In a vessel propelled by mechanical means fitted with single main propulsion machinery, one of the two required bilge pumps may be driven by that machinery. In every vessel fitted with twin independently operated main propulsion machinery, each such set of machinery may drive one of the required bilge pumps. In every case the propeller shaft should be able to be readily disconnected or a controllable pitch propeller fitted.

12.5. The total capacity of the required bilge pumps should be not less than 125 % of the total capacity of the required main fire pumps referred to in 3.3.

12.6. Sanitary, ballast, fire and general service pumps provided with suitable connections for bilge suction may be accepted as independent power bilge pumps.

12.7. The Administration may permit a bilge ejector in combination with an independently driven high pressure seawater pump to be installed or a portable mechanical pump to be used as substitute for one of the bilge pumps required by 2.12.4.1.

12.8. Bilge pipes should not be led through fuel oil, ballast or double tanks, unless pipes are of heavy gauge steel construction.

12.9. In any unattended propulsion machinery space, an automatic remote bilge level alarm shall be fitted.

PART D - MACHINERY INSTALLATIONS

13. General machinery requirements .

13.1. All boilers and other pressure vessels, all parts of machinery, all systems, hydraulic, pneumatic and other systems and their associated fittings which are under internal pressure should be subjected to an approved pressure test before being put into service for the first time.

13.2. Adequate provisions should be made to facilitate cleaning, inspection and maintenance of machinery installations including boilers and other pressure vessels.

13.3. Where risk from overspeeding of machinery exists, means should be provided to ensure that the safe speed is not exceeded.

13.4. Where main or auxiliary machinery including pressure vessels or any parts of such machinery are subject to internal pressure and may be subject to dangerous overpressure, means should be provided where practicable to protect against such excessive pressure.

13.5. All gearing and every shaft and coupling used for transmission of power to machinery essential for the propulsion and safety of the vessel or for the safety of persons on board should be so designed and constructed that they will withstand the maximum working stresses to which they may be subject in all service conditions, and due consideration should be given to the type of engines by which they are driven or of which they form part.

13.6. Machinery should be provided with, as deemed necessary by the Administration, automatic shut off arrangements or alarms in the case of failures such as lubricating oil supply failure which could lead rapidly to complete breakdown, damage or explosion. The Administration may permit provisions for overriding automatic shut off devices.

14. Controls

14. Main internal combustion propulsion machinery and applicable auxiliary machinery should be provided with automatic shut off arrangement in the case of failures such as lubricating oil supply failure which could lead rapidly to complete breakdown, serious damage or explosion. The Administration may permit provisions for overriding automatic shut off devices.

15. Steam boilers and boilers feed systems.

15.1. Every steam boiler and every oil-fired steam generator should be provided with not less than two safety valves of adequate capacity. However, having regard to the output or any other features of any boiler or oil-fired steam generator, the Administration may permit only one safety valve to be fitted if it is satisfied that adequate protection against overpressure is thereby provided.

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

15.3. Every steam generating system which provides services essential for the safety of the vessel, or which could be rendered dangerous by the failure of its feed water supply, should be provided with not less than two separate feed water systems from and including the feed pumps, noting that a single penetration of the steam drum is acceptable. Unless the pump is designed to prevent overpressure, means should be provided which will prevent overpressure in any part of the systems.

15.4. Boilers should be provided with means to supervise and control the quality of the feed water. Suitable arrangements should be provided to preclude, as far as practicable, the entry of oil or other contaminants which may adversely affect the boiler.

15.5. Every boiler essential for the safety of the vessel and designed to contain water at a specified level should be provided with at least two means for indicating its water level, at least one of which should be direct reading gauge glass.

16. Steam pipe systems

16.1. Every steam pipe and every fitting connected thereto through which steam may pass should be so designed, constructed and installed as to withstand the maximum working stresses to which it may be subjected.

16.2. Means should be provided for draining every steam pipe where otherwise dangerous water hammer action might occur.

16.3. Where a steam pipe or fitting may receive steam from any source at a higher pressure than that for which it is designed a suitable pressure reducing valve, pressure relief valve and pressure gauge should be fitted.

17. Air pressure systems

17.1. In every vessel means should be provided to prevent overpressure in any part of compressed air systems and wherever water jackets or casings of air compressors and coolers might be subjected to dangerous overpressure due to leakage into them from air pressure parts. Suitable pressure relief arrangements should be provided for all systems.

17.2. The main starting air arrangement for main propulsion internal combustion engines should be adequately protected against the effects of backfiring and internal explosion in the starting air pipes.

17.3. All discharges pipes from starting air compressors should lead directly to the starting air receivers, and all starting air pipes from the air receivers to main or auxiliary engines should be entirely separate from the compressor discharge pipe system.

17.4. Provision should be made to reduce, to the minimum, the entry of oil into the air pressure systems and to drain these systems.

18. Ventilating systems in machinery spaces

18.1. Machinery spaces of category A should be adequately ventilated so as to ensure that when machinery or boiler therein are operating at full power in all weather conditions including heavy weather, an adequate supply of air is maintained to the spaces for the safety and comfort of personnel and the operation of the machinery.

18.2. In addition to complying with the requirements of 2.18.1, the ventilation of machinery spaces should be sufficient under all normal conditions to prevent accumulation of oil vapour.

19. Protection against noise

19. Measures should be taken to reduce machinery noise in machinery spaces to acceptable levels as determined by the Administration. Where the noise cannot be sufficiently reduced, the source of excessive noise should be suitably insulated or isolated or a refuge from noise should be provided if the space is required to be manned. Where necessary, ear protectors should be provided for personnel required to enter such spaces

PART E - ELECTRICAL INSTALLATIONS

20. General electrical requirements

20. Electrical installations should be such that:

.1 all electrical services necessary for maintaining the vessel in normal operational and habitable conditions will be assured without recourse to the emergency source of electrical power;

.2 electrical services essential for safety will be assured under emergency conditions; and

.3 the safety of personnel and vessel from electrical hazards will be assured.

Electrical installations should be such that uniformity in the implementation and application of the provisions of this part will be ensured.

21. Precaution against shock, fire and other hazards of electrical origin

21.1. Exposed metal parts of electrical machines or equipment which are not intended to be live but which are liable under fault conditions to become live should be earthed unless the machines or equipment are:

.1 supplied at a voltage not exceeding 50V direct current or 50V, root means square between conductors; auto-transformers should not be used for the purpose of achieving this voltage; or

.2 supplied at a voltage not exceeding 250V by safety isolating transforms supplying only one consuming device; or

.3 constructed in accordance with the principle of double insulation.

21.2. The Administration may require additional precautions for portable electrical equipment for use in confined or exceptionally damp spaces where particular risks due to conductivity may exist.

21.3. All electrical apparatus should be so constructed and so installed as not to cause injury when handled or touched in the normal manner.

21.4. Main and emergency switchboards should be so arranged as to give easy access as may be needed to apparatus and equipment without danger to personnel. The switchboards should be suitably guarded as deemed necessary by the Administration. Exposed live parts having voltages to earth exceeding a voltage to be specified by the Administration should not be installed on the front of such switchboards. Where necessary, non-conducting mats or gratings should be provided at the front and rear of the switchboard.

21.5. The hull return system of distribution should not be used for any purpose in a tanker or a barge carrying liquid cargoes of flammable nature in bulk.

21.6. The requirement of 2.21.5. does not preclude under conditions approved by the Administration the use of:

.1 impressed current cathodic protective systems;

.2 limited and locally earthed system (e.g. engine starting system);

.3 limited and locally earthed welding systems. Where the Administration is satisfied that the equipotential of the structure is assured in a satisfactory manner, welding systems with hull return may be installed without the restriction imposed by 2.21.5; and

.4 insulation level monitoring devices provided the circulation current does not exceed 30 mA under the most unfavorable conditions.

21.7. Where the hull return system is used, all final subcircuits, i.e. all circuits fitted after the last protective device, should be two-wire and special precaution should be taken to the satisfaction of the Administration.

21.8. Earthed distribution system should not be used in a tanker or barge carrying liquid cargoes of flammable nature in bulk.

21.9. When a distribution system, whether primary or secondary, for power, heating of lighting, with no connexion to earth is used, a device capable of continuously monitoring the insulation level to earth and of giving an audible or visual indication of abnormally low insulation values should be provided.

21.10. Except as permitted by the Administration in exceptional circumstances, all metal sheaths and amour of cables should be electrically continuous and should be earthed.

21.11. In every vessel other than vessels propelled by mechanical means constructed before the coming into force of this Code, cables and wiring external to equipment should be at least of a flame retardant type and should be so installed as not to impair their original flame retarding properties. Where necessary for particular applications, the Administration may permit the use of special types of cables such as radio frequency cables, which do not comply with the foregoing.

21.12. Cables and wiring serving essential or emergency power, lighting, internal communications or signals should so far as practicable be routed clear of galleys, laundries, machinery spaces of category A and their casings and other high fire risk areas. Cables connecting fire pumps to the emergency switchboard should be of fire resistant type where they pass through the high fire risk areas. Where practicable all such cables should be run in such a manner as to preclude their being rendered unserviceable by heating of the bulkhead that may be caused by a fire in an adjacent space.

21.13. Where cables which are installed in hazardous areas introduce the risk of fire or explosion in the event of an electrical fault in such areas, special precaution against such risks should be taken to the satisfaction of the Administration.

21.14. Cables and wiring should be installed and supported in such a manner as to avoid chafing or other damage.

21.15. Terminations and joints in all conductors should be so made as to retain the original electrical, mechanical, flame retarding and, where necessary, fire resisting properties of the cables.

21.16.Each separate circuit should be protected against short circuit and against overload, except where the Administration may exceptionally otherwise permit.

21.17. The rating or appropriate setting of the overload protective device for each circuit should be permanently indicated at the location of the protective device.

21.18. Lighting fittings should be so arranged as to prevent temperature rises which could damage the cables and wiring, and to prevent surrounding material from becoming excessively hot.

21.19. All lighting and power circuits terminating in a bunker or cargo space should be provided with a multiple pole switch outside the space for disconnecting such circuits.

21.20. Accumulator batteries should be suitably housed, and compartments used primarily for their accommodation should be properly constructed and efficiently ventilated.

21.20. Electrical or other equipment which may constitute a source of ignition of flammable material should not be permitted in those compartments except as permitted in 2.27.10.

21.21. Accumulator batteries except for batteries used in self-contained battery operated lights should not be located in sleeping quarters. The Administration may permit relaxation from this requirement where hermetically sealed batteries are installed.

21.22. No electrical equipment should be installed in any space where flammable mixtures are liable to collect including those on board tankers or barges carrying liquid cargoes of flammable nature in bulk or in compartments assigned principally to accumulator batteries, in paint lockers, acetylene stores or similar spaces, unless the Administration is satisfied that such equipment is -

.1 essential for operational purposes;

.2 of a type which will not ignite the mixture concerned;

.3 appropriate to the space concerned; and

.4 appropriately certified for safe usage in the dusts, vapours of gases likely to be encountered.

21.23. Lightning conductors should be fitted to all masts or topmasts constructed of non-conducting materials. In vessels constructed of non-conductive materials, the lightning conductors should be connected by suitable conductors to copper plate fixed to the vessel's hull well below the waterline.

22. Main source of electrical power

22.1. A main source of electrical power of sufficient capacity to supply all those should be provided. This main source of electrical power should consist of a generator driven by an internal combustion engine, which may be the main propulsion machinery of the vessel in the case of the vessel propelled by mechanical means.

22.2. A main electrical lighting system which should provide illumination throughout those parts of the vessel normally accessible to, and used by, crew or persons on board should be supplied from the main source of electrical power.

22.3. The arrangement of the main electric lighting system should be such that a fire or other casualty in spaces containing the main source of electrical power associated transforming equipment and main switchboard will not render the emergency electric lighting system required by 2.23.5.1, .2 and .3 inoperative.

22.4. The arrangement of the emergency electric lighting system should be such that a fire or other casualty in spaces containing the emergency source of electrical power associated transforming equipment and emergency switchboard will not render the main electrical lighting system required by this section inoperative.

23. Emergency sources of electrical power

23.1. A self-contained emergency source of electrical power should be provided.

23.2. The emergency source of electric power, associated transforming equipment, if any, and emergency switchboard should be located above the uppermost continuous deck and should be readily accessible from the open deck. They should not be located forward of the collision bulkhead, except where permitted by the Administration in exceptional circumstances.

23.3. The location of the emergency source of electrical power, associated transforming equipment, if any, and emergency switchboard in relation to the main source of power, associated transforming equipment, if any and main switchboard should be such as to ensure to the satisfaction of the Administration that a fire or other casualty in the space containing the main source of electrical power, associated transforming equipment, if any and main switchboard, or in any machinery space of category A will not interfere with the supply, control and distribution of the emergency source of electrical power.

23.4. Provided that suitable measures are taken for safeguarding independent emergency operation under all circumstances, the emergency generator may be used, exceptionally, and for short periods, to supply non-emergency circuits.

23.5. The electrical power available should be sufficient to supply all those services that are essential for safety in an emergency, due regard being paid to such services as may have to be operated simultaneously. The emergency source of electrical power should be capable, having regard to starting currents and the transitory nature of certain loads, of supplying simultaneously at least the following services for a period specified hereinafter, if they depend upon an electrical source for their operation
:

.1 for a period of three hours, means for illumination required by 3.9.1.2.2;

.2 for a period of eighteen hours, emergency lighting:

.1 in all service and accommodation alleys, stairways and exists;

.2 in spaces containing propulsion machinery used for navigation, if any, and main source of electrical power and their control positions;

.3 in all control stations, machinery control rooms, and at each main and emergency switchboard;

.4 at all stowage positions for fireman's outfits;

.5 at the steering gear, if any; and

.6 at the emergency fire pump and its control position;

.3 for a period of eighteen hours:

.1 the navigation lights and other lights required by the 1972 Collision Regulations; and

.2 the VHF, MF and MF/HF radio installations required by chapter 5 of the Code or chapter IV of the 1974 SOLAS Convention; and

.4 for a period of eighteen hours:

.1 all internal communication equipment as required in an emergency;

.2 the fire detection and fire alarm systems; and

.3 operation of emergency fire pumps, if electrically operated.

23.6. In a vessel propelled by mechanical means regularly engaged on voyages of short duration, the Administration where satisfied that an adequate standard of safety would be attained, may accept a lesser period than the eighteen hour period specified in 2.23.5.2 and 2.23.5.3, but in no case less than three hours.

23.7. The emergency source of electrical power may be either:

.1 an accumulator battery capable of carrying the emergency electrical load line without recharging or excessive voltage drop; or

.2 a generator driven by a suitable prime mover with an independent fuel supply and starting to the satisfaction of the Administration.

23.8. Where the emergency source of power is an accumulator battery, it should be automatically connected to the emergency switchboard upon failure of the main source of electrical power. Where automatic connection to the emergency switchboard is not practical, manual connection may be acceptable to the satisfaction of the Administration.

23.9. Where the emergency source of power is a generator, it should be automatically started and connected to the emergency switchboard within 45 s of the loss of the main source of electrical power. It should be driven by a prime mover with an independent fuel supply having a flashpoint not less than 43^0C. Automatic starting of the emergency generator will not be required where a transitional source of power to the satisfaction of the Administration is provided.

PART F - MACHINERY AND ELECTRICAL INSTALLATIONS FOR VESSELS PROPELLED BY MECHANICAL MEANS

24. General

24.1. The requirements of this part are additional to the requirements of parts D and E.

24.2. Means should be provided whereby normal operations of propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative. Special consideration should be given to the malfunctioning of:

.1 an electrical power generator which serves as a main source of electrical power;

.2 the sources of lubricating oil pressure;

.3 the sources of water pressure;

.4 an air compressor and receiver for starting or control purposes; and

.5 the hydraulic, pneumatic or electrical means for controlling main propulsion machinery including controllable pitch propellers.

24.3. However, the Administration, having regard to overall safety considerations, may accept a partial reduction in propulsion capability during normal operations.

24.4. Special consideration should be given to the design, construction and installation of propulsion machinery systems so that any mode of their vibrations should not cause undue stresses in this machinery in the normal operating ranges.

25. Means of going astern

25.1. Sufficient power for going astern should be provided to secure proper control of the vessel in all normal circumstances.

25.2. 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 should be demonstrated by and recorded for every new vessel as far as practicable and reasonable.

25.3. In new vessels, the stopping times, vessel headings and distances recorded on trails, together with the results of trials to determine the ability of vessels having multiple propellers to navigate and manoeuvre with one or more propellers inoperative should be available on board for the use of the master or designated personnel.

25.4. Where the vessel is provided with supplementary means of manoeuvring or stopping, these should be demonstrated and recorded as referred to in 2.25.2 and 2.25.3.

26. Remote control of propulsion machinery

26.1. Where remote control of propulsion machinery from the navigation bridge is provided and the machinery spaces are intended to be manned they should comply with the following:

.1 the speed, direction of thrust and, if applicable, the pitch of the propeller should be fully controllable from the navigation bridge under all sailing conditions, including manoeuvring;

.2 the remote control should be performed, for each independent propeller, by a control device so designed and constructed that its operation does not require particular attention to the operational details of the machinery. Where multiple propellers are designed to operate simultaneously, they may be controlled by one control device;

.3 the main propulsion machinery should be provided with an emergency stopping device on the navigation bridge and should be independent of the navigation bridge control system;

.4 propulsion machinery orders from the navigation bridge should be indicated in the main machinery control room at the manoeuvring platform as appropriate;

.5 remote control of the propulsion machinery should be possible only from one location at a time, at such locations interconnected control positions are permitted. At each location there should be an indicator showing which location is in control of the propulsion machinery. The transfer of control between the navigation bridge and machinery spaces should be possible only in the main machinery space or the main machinery control room. This system should include means to prevent the propelling thrust from altering significantly when transferring control from one location to another;

.6 it should be possible to control the propulsion machinery locally, even in the case of failure in any part of the remote control system;

.7 the design of the remote control system should be such that in case of its failure an alarm will be given. Unless the Administration considers it impracticable the present speed and direction of the thrust of the propeller should be maintained until local control is in operation;

.8 indicators should be fitted on the navigation bridge for:

.1 main engine speed or propeller speed and direction of rotation, as deemed necessary by the Administration, in the case of fixed pitch propellers; or

.2 propeller speed and pitch position in the case of controllable pitch propellers;

.3 an alarm should be provided on the navigation bridge and in the machinery space to indicate low starting air pressure which should be set at a level to permit further main engine starting operation. Where the remote control systems of propulsion machinery is designed for automatic

starting, the number of automatic consecutive attempts which fail to produce a start should be limited in order to safeguard sufficient starting air pressure for starting locally.

26.2. In lieu of complying fully with the requirements of 2.26.1, vessels constructed before the coming into force of this Code may comply at least with 2.26.1.1, .3, .6 and .8.

26.3. In all vessels where the main propulsion and associated machinery, including main electrical supply, are provided with the various degrees of automatic or remote control and under continuous manual supervision from a control room, the arrangements and controls should be so designed, equipped and installed that the machinery operation will be as safe and effective as if it were under direct supervision. Particular consideration should be given to protect such spaces against fire and flooding.

27. Steering gear

27.1. Every vessel should be provided with a main steering gear.

27.2. Every vessel should be provided with an auxiliary means of steering the vessel in the event of failure of the main steering gear.

27.3. The main steering gear should be of adequate strength and sufficient to steer the vessel at maximum ahead service speed. The main steering gear and rudder stock should be so designed that they are not damaged at maximum astern speed.

27.4. The auxiliary means of steering should be of adequate strength and sufficient to steer the vessel at navigable speed and capable of being brought speedily into action in an emergency.

27.5. Where power-operated main steering gear units and connections are fitted in duplicate, no auxiliary steering gear need to be required, provided that the duplicate units and connections operating together comply with the requirements above.

27.6. The main steering power unit should be arranged to re-start either by manual or automatic means when electrical power supply is restored after a failure.

27.7. In the event of failure of electrical power supply to main steering gear control or power unit, an alarm should be given in the navigation bridge.

27.8. The position of the rudder, if power-operated, should be indicated at the navigation bridge. The rudder angle indicator should be independent of the steering gear control system.

27.9. Where a non-conventional rudder is installed, the Administration should give special consideration to the steering system, so as to ensure that an acceptable degree of reliability and effectiveness which is based on the provisions of this section is provided.

28. Communication between navigation bridge and machinery space .

28.1. Vessels should be provided with at least two independent means for communicating orders from the navigation bridge to the position in the machinery space or control room from which the main propulsion engines are normally controlled. One of the means should be an engine room telegraph. The arrangement of these means should be to the satisfaction of the Administration.

28.2. The engine room telegraph may be dispensed with if the main propulsion engine is directly controlled from the navigation bridge under normal operating conditions.

29. Engineer's alarm

29. In every new vessel, an engineers' alarm should be provided to be operated from the engine control room or at the manoeuvring platform as appropriate and clearly audible in the engineers' accommodation. The Administration may dispense with this requirement if satisfied that, due to close proximity of the engine control room or the manoeuvring platform and the engineer's accommodation, no engineers' alarm is necessary.

PART G - ADDITIONAL REQUIREMENTS FOR VESSELS WITH PERIODICALLY UNATTENDED MACHINERY SPACES

30. General

30.1. The requirements of this part are additional to the applicable requirements of this chapter and apply to periodically unattended machinery spaces specified herein.

30.2. The arrangements provided should be such as to ensure that the safety of the vessel in all sailing conditions, including manoeuvring, is equivalent to that of a vessel having manned machinery spaces.

30.3. Measures should be taken to the satisfaction of the Administration to ensure that the equipment is functioning in a reliable manner and that satisfactory arrangements are made for regular inspections and routine tests to ensure continuous reliable operation.

30.4. Such vessels should be provided with documentary evidence to the satisfaction of the Administration of their fitness to operate with periodically unattended machinery spaces.

31. Applicable requirements

31. Vessels having periodically unattended machinery spaces should, as far as practicable and reasonable in the opinion of the Administration, comply with the applicable requirements of chapter II-1, part E of the 1974 SOLAS Convention for such machinery spaces.

Part II
CONSTRUCTION - FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

PART A - GENERAL

1. Application

1.1. Unless provided otherwise, this chapter should apply to new vessels propelled by mechanical means except special purpose vessels.

1.2. Existing vessels should as far as practicable and reasonable in the opinion of the Administration, comply with the provisions of this chapter and an existing vessel which cannot comply with the provisions of this Chapter should not proceed more than 20 miles from the nearest land during the course of a voyage.

2. Fire pumps

2.1. Every vessel should be provided with at least one independent power-operated fire pump capable of delivering a jet of water.

2.2. In vessels propelled by mechanical means such pump should be operated by means other than the main propulsion machinery of the vessel.

2.3. The main fire pump (or pumps operating together) should be capable of delivering for fire fighting purposes, a quantity of water of Cd^2 m^3/h, where:

.1 C = 5 for vessels required to be provided with more than one main fire pump and C = 2.5 for vessels required to be provided with only one main fire pump ; and

.2 d = 1 + 0.066 /(L(B+D)) to the nearest 0.25, where:

L = length of the vessel in metres on the summer load waterline from the foreside of the stem to the afterside of the rudderpost. Where there is no rudderpost, the length is measured from the foreside of the stem to the axis of the rudderstock. For vessels with cruiser sterns, the length on the designed summer load waterline is the length from the foreside of the stem to the axis of the rudderstock if that be greater;

B = greatest moulded breadth of the vessel in metres; and

D = moulded depth of the vessel in metres measured to the bulkhead deck amidvessels,

2.4. Provided that in any such vessel the total capacity of the fire pumps for fire fighting purposes need not exceed $180m^3/h$.

2.5. Where two main fire pumps are required, the capacity of one of the two such pumps should not be less than 40% of their total capacity.

2.6. Sanitary, bilge, ballast or general service pumps may be accepted as the required fire pumps, provided that they are not normally used for pumping oil and that, if they are subject to occasional duty for transfer or pumping of oil fuel, suitable changeover arrangements are fitted.

2.7. Every fire pump should be arranged to draw water directly from sea and discharge into a fixed fire main, if any. However, in vessels with high suction lifts, booster pumps and storage tanks may be installed provided such arrangement satisfies all the requirements of this section.

2.8. Centrifugal pumps or other pumps connected to the fire main through which back flow could occur should be fitted with non-return valves.

2.9. Where the fire pumps are capable of developing a pressure exceeding the design pressure of the fire mains, water service pipes, hydrants and hoses, relief valves should be fitted. Such valves should be so placed and adjusted as to prevent excessive pressure in the fire main system.

2.10. The pumps required for the provision of water for other fire extinguishing systems required by this Chapter, their sources of power and their controls should be installed outside the space or spaces protected by such systems and should be so arranged that a fire in the space or spaces protected will not put any such system out of action.

2.11. Where fire in any one compartment can put all the fire pumps out of action, there should be an alternate means to extinguish the fire. This alternate means may be an emergency power-operated fire pump.

2.12. An emergency power-operated fire pump should be an independently driven self-contained pump either with its own prime mover and fuel supply fitted in an accessible position outside the compartment which may be an emergency generator of sufficient capacity and which is positioned in a safe place outside the engine room and above the freeboard deck.

2.13. The emergency fire pump, sea suction and other valves should be operable from outside the compartment containing the main fire pump and in a position not likely to be cut off by fire in that compartment.

3. Fire main, water service pipes and fire hydrants

3.1. Fire mains

3.1. In every vessel where more than one hydrant is required to provide a jet of water, a fire main should be provided.

3.2. Diameter of, and pressure in, the fire mains and the water service pipes

3.2.1. In a vessel where one or more main fire pumps are provided, the diameter of the fire main and of the water service pipes connecting the hydrants thereto should be sufficient for the effective distribution of the maximum discharge from:

.1 one main fire pump where only one such pump is required; or

.2 two main fire pumps simultaneously where two such pumps are required,

provided that in any vessel, the diameters of the fire main and water service pipes need not be greater than is necessary for the discharge of 140m^3/h of water.

3.2.2. Where only one hydrant is required, the minimum pressure at the hydrant should be 0.21 N/mm^2 (2.1kg/cm^2). Where more than one hydrants are required, the main fire pump should be capable, when discharging the maximum amount through adjacent fire hydrants with nozzles of the sizes specified in 3.5, of maintaining at all hydrants the minimum pressures 0.21 N/mm^2 (2.1kg/cm^2). In any case, the maximum pressure at any hydrant should not exceed that at which the effective control of a fire hose can be demonstrated.

3.3.Number and position of hydrants

3.3. In every vessel, the number and position of hydrants should be such that at least one jet of water from a single length of hose can reach any part of the vessel normally accessible to the crew while the vessel is being navigated and any part of any cargo space when empty, any ro-ro cargo space or any special category space in which later case, at least two jets of water not emanating from the same hydrant should reach any part of such space, each from single length of hose. Furthermore, such hydrants should be positioned near the accesses to the protected spaces.

3.4. Pipes and hydrants

3.4.1. Material readily rendered ineffective by heat should not be used for fire main and hydrants unless adequately protected. The pipes and hydrants should be so placed that the fire hoses may be easily coupled to them.

3.4.2. In vessels where deck cargo may be carried, the position of the hydrants should be such that they are always accessible and the pipes should be arranged as far as practicable to avoid risk of damage by such cargo.

3.4.3. A valve should be fitted to serve each fire hose so that any fire hose may be removed while the fire pumps are at work.

3.4.4. The fire mains should be provided with isolating valves located so as to permit optimum utilization in the event of physical damage to any part of the main.

3.4.5. Fire mains should have no connections other than those required for fire-fighting, except

for the purposes of washing the deck and anchor chains or operating the chain locker bilge ejector.

4. Fire hoses and nozzles

4.1. Every vessel should be provided with a minimum of 2 fire hoses.

4.2. Where hydrants are required in any machinery spaces, each hydrant should be provided with a fire hose. Where practicable fire hoses should be connected to the hydrants in such machinery spaces.

4.3. Administration may increase the required number of fire hoses so as to ensure that hoses in sufficient number are available and accessible at all times, having regard to the type of vessel and the nature of trade in which the vessel is engaged.

4.4. A single length of fire hose should not exceed 18 m.

4.5. Fire hoses should be oil-resistant and of approved material.

4.6. Fire hoses of unlined canvas should have a diameter of not less than 64 mm. Hoses of at least 45 mm internal diameter having a throughput comparable to that of 64 mm internal diameter unlined canvas at corresponding pressure may be used. Fire hoses of an internal diameter not less than 32 mm may be accepted in the accommodation spaces of all vessels.

4.7. Unless one fire hose and nozzle is provided for each hydrant, there should be complete interchange ability of fire hose couplings.

4.8. Fire hoses provided in compliance with these requirements should not be used for any purpose other than fire fighting or testing of the fire appliances.

4.9. Every fire hose should be provided with an approved nozzle and the necessary couplings.

4.10. In tankers and in machinery spaces of category A of all vessels to which this chapter applies, the nozzles provided for fire hoses should be of dual purpose (combined jet and spray) types.

4.11. Nozzles should comply with the following requirements:

.1 For the purposes of this chapter, standard nozzle sizes should be 12 mm, 16 mm, 19 mm or as near thereto as possible. Larger diameter nozzles may be permitted at the discretion of the Administration.

.2 For accommodation and services spaces, a nozzle size greater than 12 mm need not be used.

.3 For machinery spaces and exterior locations, the nozzle size should be such as to obtain the maximum discharge possible from the required jets at the pressure specified
in 3.4.2 from the smallest pump, provided that a nozzle size greater than 19 mm need not be used.

5. Fire extinguishers

5.1.Fire extinguishers should be of approved types and designs.

5.2. The capacity of required portable fluid fire extinguishers should be not more than 13.5 L and not less than 9 l. Other extinguishers should have a fire extinguishing capability at least equivalent to that of a 9 l fluid fire extinguisher.

5.3. The capacity of required portable carbon dioxide fire extinguishers should not be less than 3 kg.

5.4. The capacity of required portable dry powder fire extinguishers should not be less than 4.5 kg.

5.5. All required portable fire extinguishers should not exceed 23 kg. in weight in a fully charged condition and should be at least as portable as 13.5 litre fluid fire extinguisher.

5.6. A spare charge should be provided for every portable fire extinguisher provided in compliance with this Code, except that for each such fire extinguisher which is of a type that cannot readily be recharged while the vessel is at sea an additional fire extinguisher of the same type, or its equivalent, should be provided in lieu of a spare charge.

5.7. Fire extinguishers containing an extinguishing medium which, in the opinion of the Administration, either by itself or under expected conditions of use gives off toxic gases in such quantities as to endanger persons should not be used.

5.8.Fire extinguishers should be periodically examined and subjected to such tests as follows:

.1 The condition of the charges of extinguishers other than carbon dioxide extinguishers, should be checked annually. If on checking there is any indication of deterioration, the charges should be renewed and, in any case, at least every four years. A record of the annual check should be fixed to each fire extinguisher.

.2 Carbon dioxide extinguishers and gas propellant cartridges of other extinguishers should be examined externally for corrosion and for loss of content annually. They should be recharged or renewed if the loss of gas by weight exceeds 10% of the original charge as stamped on the bottles or cartridge, or have corroded excessively externally.

.3 All portable fire extinguishers, other than carbon dioxide extinguishers, should be

tested by hydraulic pressure once every four years and the date of such test legibly marked on the extinguisher.

.4 New carbon dioxide extinguishers which do not require to be recharged, should be tested by hydraulic pressure 10 and 20 years after manufacture and thereafter every five years.

.5 Carbon dioxide extinguishers which require recharging should be pressure tested before being recharged if four years have elapsed since the last hydraulic test was carried out.

5.9.One of the portable fire extinguishers intended for use in any space should be stowed near an entrance to that space.

5.10. Halon fire extinguishers should not be used.

5.11. Each fire extinguisher should as far as is practicable be clearly marked on the front with a label of durable material with at least the following information in English or in the official language of the flag State:

.1 name of manufacturer;

.2 type of fire for which the extinguisher is suitable;

.3 type and quantity of extinguishing medium;

.4 approval details;

.5 operating instruction supplemented by diagrams;

.6 intervals for recharging;

.7 temperature range over which the extinguisher will operate satisfactorily; and

.8 test pressure.

5.12. In addition, the year of manufacture, test pressure and any serial number should be stamped on the outside of the container.

6. Fire buckets

6.1. Fire buckets should be of material which is not readily flammable. They should be painted red, clearly marked with the word **"FIRE"** and provided with lanyards of sufficient length, having regard to the size of the vessel.

6.2. The capacity of each of the fire buckets referred to in this part should be at least 9 L.

6.3.Fire buckets provided in compliance to this part should not be used for any purpose other than extinguishing fires.

7. Fixed fire-extinguishing systems and fixed fire detection and fire alarm systems

7.1. Fixed fire-extinguishing systems and fixed fire detection and fire alarm systems required by this chapter should comply, as far as is practicable and reasonable, with the relevant requirements for these systems specified in the regulations of the 1974 SOLAS Convention.

7.2.Fixed halogenated hydrocarbon fire-extinguishing systems should not be used in vessels.

8. Portable fire extinguishers in accommodation spaces, service spaces and control stations

8.1. In every vessel there should be provided a sufficient number of approved portable fire extinguishers to ensure that at least one extinguisher will be readily available for use in any part of accommodation spaces, service space and control stations. The minimum number of fire extinguishers to be provided in such vessels should be 3. The arrangement of such fire extinguishers should be to the satisfaction of the Administration.

8.2.In every vessel, where in the opinion of the Administration electrical installations fitted in accommodation, service and control stations constitute hazard of fire or explosion, at least one of the required fire extinguishers should be suitable for extinguishing electrical fires.

9. Fire-extinguishing appliances and systems in machinery spaces

9.1. In every vessel, spaces containing main or auxiliary oil-fired boilers or fuel oil units, should be provided with the following fixed fire-extinguishing systems in accordance with chapter II-2 of the 1974 SOLAS Convention in force.

.1 a gas system complying with the provisions of section 3.5, or

.2 a high expansion foam system complying with the provisions of section 3.9, or

.3 a pressure water-spraying system complying with the provisions of section 3.10.

9.2. In each case, where the engine and boiler rooms are not entirely separate, or where fuel oil can drain from the boiler room into the engine room, the combined boiler and engine rooms should be considered as one compartment.

9.3. In addition to the requirements of this Chapter, every vessel with spaces referred to in 3.10.1 should be provided with the following numbers of portable fire extinguishers:

9.4. There should be at least one portable extinguisher suitable for extinguishing oil fires for each burner. However, the total capacity of such extinguishers should not be less than 18 L or

equivalent and need not exceed 45 L or equivalent in each boiler room.

9.5. There should be at least two portable extinguishers suitable for extinguishing oil fires in each space in which part of oil fuel units is situated.

9.6. In each firing space there should be a receptacle containing not less than 0.15 m^2 of sand, sawdust impregnated with soda or other approved dry material to the satisfaction of the Administration. Alternatively, an approved portable extinguisher may be substituted.

9.7. In every vessel, there should be provided for the protection of any space containing internal combustion type machinery having a total power output of 750 kW and above:

.1 one of the fixed fire-extinguishing systems referred to in 3.10.1; and

.2 at least one portable extinguisher suitable for extinguishing oil fires for each 750 kW of engine power output or part thereof, but the total number of such fire extinguishers so supplied should be not less than two and not exceed six.

9.8. In every vessel to which this chapter applies which does not comply with the requirements of there should be provided in any space containing internal combustion type machinery having the aggregate a total power output of less than 750 kW either:

.1 at least one portable fire extinguisher suitable for extinguishing oil fires for each 75kW or part thereof of such machinery, but the total number of such extinguishers so supplied should not be less than two and need not exceed seven; or

.2 at least two portable fire extinguishers suitable for extinguishing oil fires together with one non-portable foam fire extinguisher of at least 45 liters capacity or at least 15 kg capacity or equivalent.

9.9. In every vessel, there should be provided in machinery spaces containing electrical installations, one or more fire extinguishers suitable for extinguishing electrical fire as deemed necessary by the Administration having regard to the fire hazards of electrical origin. One or more of the fire extinguishers required by this section may be used as the fire extinguishers required by this paragraph.

9.10.Where, in the opinion of the Administration a fire hazard exists in any machinery space for which no specific provision for fire-extinguishing appliances are prescribed in 3.10.1 to 3.10.4, there should be provided in, or adjacent to, that space a number of approved portable fire extinguishers or other means of fire extinction to the satisfaction of the Administration.

9.11. In each firing space of every such vessel, fitted with auxiliary oil-fired boilers, a receptacle should be provided which should contain at least 0.28 m^3 of sand or other dry material suitable for quenching oil fires. Scoops should be provided for distributing the contents of the receptacle.

10. Fireman's outfit

10.1. Every vessel of 150 gross tonnage and above should be provided with at least one fireman's outfit.

10.2. A fireman's outfit should consist of:

.1 personnel equipment comprising:

.1 protective clothing of material to protect the skin from the heat radiating from the fire and from burns and scalding by steam. The outer surface of protective clothing should be water-resistant;

.2 boots and gloves of rubber or other electrically no conducting material;

.3 a rigid helmet providing effective protection against impact;

.4 an electric safety lamp (hand lantern) of an approved type with a minimum burning period of three hours; and

.5 an axe to the satisfaction of the Administration; and

.2 breathing apparatus of an approved type which may be either:

.1 a smoke helmet or smoke mask which should be provided with a suitable air pump and a length of air hose sufficient to reach from the open deck, well clear of hatch or doorway, to any part of the holds or machinery spaces. Where in order to comply with this paragraph, an air hose exceeding 36 m in length would be necessary, a self-contained breathing apparatus should be substituted or provided, in addition, as determined by the Administration; or

.2 a self-contained compressed-air operated breathing apparatus, the volume of air contained in the cylinders of which should be at least 1,200 L, or other self-contained breathing apparatus which should be capable of functioning for at least 30 minutes. A number of spare charges, suitable for use with the apparatus provided, should be available on board to the satisfaction of the Administration.

10.3. For each breathing apparatus a fireproof lifeline of sufficient length and strength should be provided capable of being attached by means of a snap hook to the harness of the apparatus or to a separate belt in order to prevent the breathing apparatus becoming detached when the lifeline is operated.

10.4. The Administration may require additional sets of personal equipment and breathing

apparatus, having due regard to the size and type of the vessel.

10.5. The fireman's outfits or sets of personal equipment should be so stored as to be easily accessible and ready for use and where more than one fireman's outfit or more than one set of personnel equipment is carried, they should be stored in widely separated positions.

11. Fireman's axe

11. Every vessel should be provided with at least one fireman's axe in an easily accessible location outside the machinery, accommodation and service spaces.

12. Fire control plan

12.1. In vessels having machinery spaces of category A, there should be provided a permanently exhibited fire control plan or equivalent to the satisfaction of the Administration.

12.2. In all such vessels, fire control plans should be kept up to date. Description in such plans should be in the official language of the flag State and in the English language.

12.3. In addition, instructions concerning the maintenance and operation of all the equipment and installations on board for fighting and containment of fire should be kept under one cover and readily available in an accessible position.

13. Acceptance of substitutes

13. Where in this chapter a special type of appliance, apparatus, extinguishing medium or arrangement is specified, any other type of appliance, etc., may be allowed provided the Administration is satisfied that it is not less effective.

PART B - FIRE SAFETY MEASURES

14. Structure

14.1.The hull, superstructure, structural bulkheads, decks and deckhouses of vessels propelled by mechanical means should be constructed of steel or other equivalent material. Material other than steel should be insulated to the same fire retardant properties as steel.

14.2.In lieu of complying with the above requirements, the hull, superstructure, structural bulkheads, deck and deckhouses of vessels propelled by mechanical means (other than tankers) or as specified by the Administration may be constructed of materials other than steel.

15. Constructional fire safety measures

15.1.Bulkheads, decks, doors and stairways

15.1. 1. Fire safety requirements of bulkheads, decks, doors and stairways should, as far as

practicable and reasonable in the opinion of the Administration, comply with the applicable requirements of the 1974 SOLAS Convention for such bulkheads, doors and stairways.

15.1.2. The bulkheads and decks separating the machinery spaces of category A from control stations, corridors, accommodation spaces, stairways, service spaces and cargo spaces should be so constructed as to be capable of preventing the spread of fire to the unexposed side.
Interior stairways below the weather deck should be of steel or other material having acceptable fire resisting properties.

15.2. Insulation materials.

15.2. Insulation materials in accommodation spaces, service spaces (except domestic refrigeration compartments), control stations and machinery spaces should be non-combustible. Vapour barriers and adhesive used in conjunction with insulation, as well as insulation of pipes fittings, for cold service systems, need not be non-combustible materials, but they should be kept to the minimum quantity practicable and their exposed surfaces should have qualities of resistance to the propagation of flame to the satisfaction of Administration.

15.3. Restricted use of combustible material

15.3. 1. All exposed surfaces in corridors and stairway enclosures and surfaces including decks in concealed or inaccessible spaces in accommodation spaces, service spaces and control stations should have low flame-spread characteristics. Exposed surfaces of ceilings in accommodation spaces, service spaces and control stations should have low flame-spread characteristics.

15.3.2. Paints, varnishes and other finishes used on exposed interior surfaces should not offer an undue fire hazard in the judgement of the Administration and should not be capable of producing excessive quantities of smoke.

15.3.3. Primary deck coverings, where applied within accommodation spaces, service spaces and control stations, should be of approved materials which will not readily ignite or give rise to toxic or explosive hazards at elevated temperature. In existing vessels, the Administration may, in lieu of applying the requirements fully, apply such requirements only to deck coverings within accommodation spaces on decks forming the crown of machinery spaces and cargo spaces.

15.4. Means of escape

15.4.1. Stairways and ladders should be so arranged as to provide, from accommodation spaces, service spaces, control stations, machinery spaces and other spaces in which the crew is normally employed, ready means of escape to the open deck and thence to the survival craft.

15.4.2. Two means of escape should be provided from every machinery space of category A which should be as widely separated as possible. Vertical escapes should be by means of steel

ladders or other means acceptable to the Administration as suitable alternatives. Where the size of such machinery space makes it impracticable, one of these means of escape may be dispensed with provided that the means provided is to the satisfaction of the Administration.

15.4.3. From machinery spaces other than those of category A, escape routes should be provided to the satisfaction of the Administration having regard to the nature and location of the space and whether persons are normally employed in the space.

15.4.4. No dead-end corridors having a length of more than 7 m should be accepted. A dead-end corridor is a corridor or part of a corridor from which there is only one escape route.

15.4.5. The width and continuity of the means of escape should be to the satisfaction of the Administration.

15.5. Special arrangements in machinery spaces

15.5. The following provisions should apply to machinery spaces of category A and, where the Administration considers it desirable, to the other machinery spaces:

.1 Means should be provided for opening and closure of skylights, opening and closure of windows in machinery space boundaries, closure of openings in funnels which normally allow exhaust ventilation, and closure of ventilator dampers.

.2 Means should be provided for permitting the release of smoke.

.3 Means should be provided for stopping forced and induced draught fans, fuel oil transfer pumps, fuel oil unit pumps and similar fuel pumps.

.4 The means required in .1, .2, and .3 should be located outside the space concerned where they will not be cut off in the event of fire in the space they serve.

.5 The number of skylights, doors, ventilators for natural ventilation, opening in funnels to permit exhaust ventilation and other openings to machinery spaces should be reduced to a minimum consistent with the needs of ventilation and the proper and safe working of the vessel.

.6 Skylights should not contain glass panels. However, skylights containing wire-reinforced glass or toughened safety glass panels may be permitted provided that they are fitted with external shutters of steel or other equivalent material permanently attached. Suitable control arrangements should be made to permit the release of smoke from the space to be protected in the event of fire.

.7 Windows should not be fitted in machinery space boundaries. This does not preclude the use of glass in control rooms within the machinery space.

.8 Doors fitted in machinery space boundaries should as far as practicable be equivalent in resisting fire to the divisions forming such boundaries. Where such doors are not watertight doors, they should be self-closing.

15.6. Ventilation systems

15.6.1. Ventilation systems of each of the following groups of spaces should be entirely separated from each other:

.1 machinery spaces;

.2 galleys;

.3 cargo spaces; and

.4 accommodation spaces and control station.

15.6.2. The arrangement of each ventilation system should be such that fire in one space should not readily spread to the other spaces.

15.6.3. Power ventilation of accommodation spaces, service spaces, cargo spaces, control stations and machinery spaces should be capable of being stopped from an easily accessible position located outside the space being served. This position should not be readily cut off in the event of a fire in the space served. The means provided for stopping the power ventilation of machinery spaces should be entirely separated from the means provided for stopping ventilation of other spaces.

15.6.4. The main inlets and outlets of all ventilation systems should be capable of being closed from outside the spaces being ventilated.

15.7. Fixed fire detection and fire alarm systems for periodically unattended machinery spaces

15.7. Fixed fire detection and fire alarm systems of an approved type should be installed in periodically unattended machinery spaces.

16. Ventilation of tanks, cofferdams, etc.

16.1 All tanks carrying cargo, cofferdams and other enclosed spaces in all vessels should be provided with effective means for ventilation and access to the satisfaction of the Administration, having regard to the intended services.

16.2. In tankers and barges carrying flammable liquid cargo in bulk, other than crude oil or petroleum products of low flashpoint, there should be provided for ventilation of cargo tanks a venting system consisting of one or more pressure vacuum valves at the outlets to the atmosphere or air pipes the open ends of which are fitted with removable wire mesh diaphragms of incorrodible material. Such venting systems should be to the satisfaction of the

Administration.

17. Miscellaneous items

17.1. Where bulkheads, decks, ceiling or linings are penetrated for the passage of electric cables, pipes, trunk, etc., or for the fitting of ventilation terminals, lighting fixtures and similar devices, or for girders, beams or other structural members, arrangements should be made to ensure that the fire integrity is not impaired.

17.2. Where the Administration may permit the conveying of oil and combustible liquid through accommodation and service spaces, the pipes conveying oil or combustible liquids should -

.1 be of a material approved by the Administration, having regard to the fire risk;

.2 not be concealed; and

.3 carry only low-pressure liquids and not normally be used at sea.

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

17.4. In spaces where penetration of oil products is possible, the surface of insulation should be impervious to oil or oil vapour.

18. Arrangement for oil fuel, lubricating oil and other flammable oils

18.1. Limitations in the use of oil as fuel

18.1.1. The following limitations should apply to the use of oil as fuel:

.1 Except as otherwise permitted by this paragraph, no oil fuel with a flashpoint of less than 60^0C should be used.

.2 In emergency generators oil fuel with a flashpoint of not less than 43^0C should be used.

.3 Subject to such additional precautions as it may consider necessary and on condition that the ambient temperature of the space in which such oil fuel is stored or used should not be allowed to rise to within 10^0C below the flashpoint of the oil fuel, the Administration may permit the general use of oil fuel having a flashpoint of less than 60^0C but not less than 43^0 C.

.4 In cargo vessels, the use of fuel having a lower flashpoint than otherwise specified in this paragraph, for example, crude oil, may be permitted provided that such fuel

is not stored in any machinery space and subject to the approval of the complete installation by the Administration.

18.1.2. The flashpoint of oils should be determined by an approved closed cup method.

18.2. Oil fuel arrangements

18.2. In a vessel in which oil fuel is used, the arrangements for the storage distribution and utilization of the oil fuel should be such as to ensure the safety of the vessel and persons on board and should at least comply with the following provisions:

.1 As far as practicable, parts of the oil fuel systems containing heated oil under pressure exceeding 0.18 N/mm^2 should not be placed in a concealed position such that defects and leakage cannot readily be observed. The machinery spaces in way of such parts of the oil fuel systems should be adequately illuminated.

.2 As far as practicable, oil fuel tanks should be part of the vessel's structure and should be located outside machinery spaces of category A. Where oil fuel tanks, other than double bottom tanks, are necessarily located adjacent to, or with in, machinery spaces of category A, at least one of their vertical sides should be contiguous to the machinery space boundaries, and should preferably have a common boundary with the double bottom tanks, where fitted, and the area of the tank boundary common with the machinery spaces should be kept to the minimum. Where such tanks are situated within

the boundaries of machinery spaces of category A, they should not contain oil fuel having a flashpoint of less than 60^0C. In general, the use of free-standing oil fuel tanks should be avoided. Where permitted, they should be provided with an oiltight spill tray of suitable size having a drain pipe leading to a safe place to the satisfaction of the Administration.

.3 Every oil fuel pipe, which, if damaged, would allow oil to escape from the storage, settling or daily service tank situated above the double bottom should be fitted with a cock or valve constructed of similar material to that of the tank, directly on the tank capable of being closed from a safe position outside the space concerned in the event of a fire occurring in the space in which such tanks are situated. Such tanks of not more than 250 L capacity need not comply with this paragraph.

.4 Safe and efficient means of ascertaining the amount of oil fuel contained in any oil fuel tank should be provided. Sounding pipes should not terminate in any space where the risk of ignition of spillage from the sounding pipe might arise. In particular, they should not terminate in accommodation spaces. Other means of ascertaining the amount of oil contained in any oil fuel tank should be provided. Sounding pipes should not terminate in any space where the risk of ignition of spillage from the sounding pipe might arise. In particular, they should not

terminate in accommodation spaces. Other means of ascertaining the amount of oil fuel contained in any fuel tank may be permitted, provided that the failure of such means or overfilling of the tanks will not permit release of fuel. The Administration may permit the use of oil level gauges with flat glasses and self-closing valves between the gauge glasses and the oil tanks. Cylindrical gauge glasses may also be permitted in free standing oil fuel tanks provided that they are suitably protected and fitted with self-closing valves to the satisfaction of the Administration.

.5 Provision should be made to prevent overpressure in any oil tank or in any part of the oil fuel system including the filling pipes. Relief valves and air or over-flow pipes should discharge to a position which in the opinion of the Administration is safe. The open ends of air pipes should be fitted with wire mesh.

.6 The ventilation of machinery spaces should be sufficient under all normal conditions to prevent accumulation of oil vapour.

18.3. Lubricating oil arrangements

18.3. The arrangements for storage, distribution and utilization of oil used in pressure lubricating systems should be such as to ensure the safety of the vessel and persons on board, and such arrangements in machinery spaces of category A and whenever practicable in other machinery spaces should at least comply with the provisions of 3.19.2.1, .3, .4 and .5 except that this does not preclude the use of sight flow glasses in lubricating systems provided that they are shown by test to have a suitable degree of fire resistance.

18.4. Arrangements for other flammable oils

18.4.1. The arrangements for storage, distribution and utilization of other flammable oils employed under pressure in power transmission systems, control and activation systems and heating systems should be such as to ensure the safety of the vessel and persons on board

18.4.2. No oil fuel tank or lubricating oil tank or any other flammable oil tank should be situated where spillage or leakage there from can constitute a hazard by falling on heating surfaces. Precautions should be taken to prevent any oil that may escape under pressure or oil leakage from any pump, filter, piping system or heat exchanger from coming into contact with heated surfaces or enter into machinery air intakes. Where necessary, a suitable spill tray or gutter screen or other suitable arrangement should be provided to allow oil to drain to a safe place in the event of spillage or leakage of oil from such an oil tank, machinery, equipment or system. The number of joints in piping systems should be kept to a minimum practicable.

18.4.3. Pipes, fittings and valves handling fuel oil, lubricating oil and other flammable oils should be of the steel or other approved material, except that restricted use of flexible pipes should be permissible in positions where the Administration is satisfied that they are necessary. Such flexible pipes and end attachments should be of approved fire-resisting materials of adequate strength and should be constructed to the satisfaction of the Administration.

18.4.4. Oil fuel, lubricating oil or other liquid substances flammable or harmful to the marine environment should not be carried in forepeak tanks.

18.4.5. Any oil or other substances flammable or harmful to the marine environment should not be carried in other tanks or spaces which are not specially approved by the Administration for such purposes.

19. Carriage of oxygen and acetylene cylinders

19.1. Where more than one cylinder of oxygen and more than one cylinder of acetylene are carried simultaneously, such cylinders should be arranged in accordance with the following:

.1 Permanent piping systems for oxygen and acetylene are acceptable provided that they are designed having due regard to standards and codes of practice to the satisfaction of the Administration.

.2 Where two or more cylinders of each gas are intended to be carried in enclosed spaces, separate dedicated storage rooms should be provided for each gas.

.3 Storage rooms should be constructed of steel, and be well ventilated and accessible from the open deck.

.4 Provision should be made for the expeditious removal of cylinders from the storage rooms in the event of fire.

.5 'NO SMOKING' signs should be displayed at the gas cylinder storage rooms.

.6 Where cylinders are stowed in open locations, means should be provided to:

.1 protect cylinders and associated piping from physical damage;

.2 minimize exposure to hydrocarbon; and

.3 ensure suitable drainage.

.7 In all cases, cylinders and associated pipings should be located at a safe distance away from the vessel's sides to avoid leakage of gases due to damage to the cylinders in the case of an accident to the vessel's side.

19.2. Fire-extinguishing arrangements for the protection of areas or spaces where such cylinders are stored should be to the satisfaction of the Administration

20. Carriage of dangerous stores for vessel's use

20.1. Stowage of explosives associated with every vessel should be in accordance with the requirements for explosives storage specified in chapter 7 of the Code of Safety for Special

Purpose Vessels, adopted by the International Maritime Organization by resolution A.534 (13) as amended.

20.2.Propane gas systems should meet the standards required by the Administration and should be initially installed, then subsequently inspected and serviced annually, by a person that is properly qualified in accordance with the requirements of the Administration

21. Cooking areas

21.1. In the case of a small cooking area that is common with the accommodation, the structural fire protection required will be dependent on the fire hazard of the appliances fitted and should be to the satisfaction of the Administration.

21.2.There should be suitable fire retardant barriers built around the cooking and heating appliances where they are adjacent to combustible materials and structures.

21.3.Where a cooking range requires an exhaust hood and duct, this should be fitted with a grease trap.

22. Fire protection arrangements in cargo spaces

22.Any vessel engaged in the carriage of dangerous goods should be provided in any cargo space with a fixed gas fire-extinguishing system complying with the relevant regulations of the 1974 SOLAS Convention or with a fire-extinguishing system which in the opinion of the Administration gives equivalent protection for the cargoes carried.

23. Special requirements for vessels carrying dangerous goods

23.1.Vessels intended for the carriage of dangerous goods should comply with the special requirements specified in regulation 54 of chapter II-2 of the 1974 SOLAS Convention, except when carrying dangerous goods in limited quantities..

23.2. The Administration should provide the vessel with an appropriate document as evidence of compliance of construction and equipment with the requirements of this section.

CHAPTER 3

LIFE-SAVING APPLIANCES

1. Application

1.1. Unless expressly provided otherwise, this chapter should apply to new vessels.

1.2. Existing vessels should, as far as is reasonable and practicable in the opinion of the Administration, comply with the provisions of this chapter and an existing vessel that cannot comply with the provisions of this Chapter should not proceed more than 20 miles from the nearest land during the course of a voyage.

1.3. The Administration may exempt a vessel from the provisions where such exemption is acceptable to the States to be visited by the vessel.

2. General requirements for life-saving appliances.

2.1. Life-saving appliances required by this chapter should be of a type which has been accepted by the Administration as complying with IMO Lifesaving Appliances Code and IMO Resolution MSC.81(70). Where detailed specifications are not included in the LSA Code then the life-saving appliances should be to the satisfaction of the Administration.

2.2. In the case of vessels engaged on voyages of such a nature and durations that in the opinion of the Administration, the application of the technical specifications paragraph above are unreasonable or impractical, the Administration may approve alternative specifications that are considered equally effective under the circumstances.

2.3 All life-saving equipment carried should be fitted with retro-reflective material in accordance with the recommendations of IMO Resolution A.658(16) as amended.

2.4. The stowage and installation of all life-saving appliances is to be to the satisfaction of the Administration.

2.5.All life-saving appliances should be in working order and be ready for immediate use at the commencement of, and at all times during, the voyage.

3. Numbers and capacity of survival craft

3.1.All vessels shall be provided with sufficient lifeboats of adequate construction on each side, to accommodate all persons on board, plus liferaft capacity to accommodate 50% of the personnel on board, or, alternatively, the following arrangements may apply:

.1 On each side of the ship one or more inflatable liferaft of sufficient aggregate capacity to accommodate the total number of persons on board, each liferaft

being of approximately the same capacity.

.2 A liferaft, which can readily be placed in the water on either side of the ship, of sufficient capacity to accommodate at least one-half of the total number of persons on board, except that when the liferafts required at (a) above can be readily placed in the water on either side of the ship, consideration may be given to a relaxation form this requirement.

.3 In new ship, where the distance from the embarkation deck of the water in the lightest seagoing condition exceeds 4.5 meters, the rafts required at (a) above shall be of the davit-launched type and at least one launching appliance shall be provided on each side of the ship for every two (2) rafts.

.4 An accepted lifeboat (with oars only), a rigid motorized boat, a semi-rigid motorized boat, an inflatable motorized boat, a rigid rescue boat, a semi-rigid rescue boat, an inflatable rescue boat, in each case fitted with an accepted engine and capable of being launched on one side of the ship.

3.2. For vessels engaged in international coast voyages, only throw-overboard inflatable liferafts sufficient for all persons on board need to be provided on each side of the ship.

3.3.Lifeboats shall generally not be less than 7.3m (24 ft.) in length except where, owing to the vessel's size this is impracticable, and then a minimum of 4.9 m (16ft.) length could be accepted. Lifeboats shall be attached to davits of approved type.

3.4. Liferafts and launching gear shall be of an approved design and construction meeting SOLAS requirements applicable according to the date of construction of the vessel. Lifeboats, rigid motorized boats, semi-rigid motorized boats, inflatable motorized boats, rigid rescue boats, semi-rigid rescue boats and inflatable rescue boats shall be of an approved design and construction meeting marine industrial requirements and shall be approved by the Administration. Skates or other suitable means shall be provided to facilitate launching.

3.5. Minimum equipment required for lifeboats is specified in Annex I of Code.

3.6. All liferafts shall be stowed in float-free positions. Where they are secured to prevent movement in inclement weather, they shall be fitted in their securing arrangements of a hydrostatic release to allow the rafts to rise to the surface if carried down by a sinking ship.

3.7. Detailed instructions for operating and survival in liferafts shall be conspicuously displayed in the crew accommodations and on the bridge.

3.8. All lifeboats and rescue boats shall be preferably of a highly visible colour (eg. Orange), and have the name of the ship, port of registry, principal dimensions and carrying capacity clearly marked on both bows.

3.9. Every lifeboat or rescue boat shall be attached to a set of davits.

3.10. All gravity davits shall be so designed that there is a positive turning out moment during the whole of the davit travel from the inboard stowed position under the conditions of list and trim specified above. For this purpose the turning out load of the boat shall be taken as the weight of the boat with the addition of the equipment by excluding the launching crew.

3.11. When luffing-type davits are installed the operating gear shall be such as to enable the lifeboats to be turned out quickly and in full control under the above specified conditions of list and trim, fully equipped and manned by the launching crew only, from the inboard to the outboard position. The force needed on the crank handle should not exceed 20 kg. (44 lbs.) and the radius of the crank handle should not exceed 40 cm. (16 in.)

3.12. Mechanically-controlled single arm davits may be used for rescue boats and liferafts only. The turning-out gear shall enable the boat to be turned out quickly and under full control from inboard to outboard position under the above specified conditions of list and trim. Steps to locate the arm at the inboard and outboard positions shall be provided.

3.13. The force needed on the crank handle shall not exceed 20 kg (44 lbs.) and the radius of the crank handle shall not exceed 30 cm (12 in.). The direction of rotation of the crank handle to turn out the arm shall be clearly marked. Acceptable means of releasing the boat or raft shall be provided.

3.14. Davits, falls, blocks and associated lowering gear shall be of sufficient strength so that a boat with its full equipment and manned by a launching crew of not less than two persons or a liferaft with its full equipment and complement can be turned out and then safely lowered to the water from the embarkation deck when the ship has the conditions of list and trim as specified above.

3.15. Winches shall have efficient hand-gear for the recovery of lifeboats and where davits are recovered by the action of the falls by power, an automatic stop shall be installed in order to prevent the gear from being overstressed when the davits meet with the stops.

3.16.Wire rope fall shall be proof load of 2.5 times the working load on the drum.

3.17.A rope ladder shall be provided in way of each set of davits secured to boat deck and capable of reaching light water line.

3.18.Boat and raft preparation and overboard lights shall be provided with supplies form emergency sources.

3.19.All vessels shall carry approved-type lifejackets for all personnel on board plus 10% extra. They shall be of a highly visible color and not be adversely affected by oil or oil products. All lifejackets shall be fitted with a non-corrosive whistle attached firmly to a cord and be equipped with a light.

3.20. All lifejackets shall be stowed in readily accessible places on board the ship, and if stowed on weather decks they shall be in racks and/or lableled lockers in suitably protected locations.

3.21. All vessels shall be provided with six lifebuoys as follows:

.1 One on each side of the bridge in quick-release chutes fitted with self-activating light-and-smoke signals.

.2 One on each side about amidships provided with a 27.5 m (15 fathom) buoyant line and fitted in clips/ brackets.

.3 One on each side about at aft end of open deck nearest to the waterline in clips or brackets.

.4 One on each side with self-igniting lights.

.5 Lifebuoys shall be of an approved-type and of circular shape with an inside diameter of 46 cm (18 in.), fitted with a grab line securely sized, and shall be marked in block letters with the name and port of registry of the ship.

3.22. All vessels shall carry 6 parachute distress rocket signals capable of producing a single bright red star at a high altitude; and in addition, at least 6 hand-held flares.

3.23. All distress signals shall be of robust construction, be contained in a water-resistant casing and have instructions or diagrams illustrating the use of the rocket parachute flare printed on its casing.

3.24. All pyrotechnic distress signals shall be renewed within the period required by the approved documents.

3.25. Where rocket signals are provided that are not of the hand-held type it shall be necessary for two firing brackets to be fitted, one on each side of the ship, to provide a means of launching.

3.26. No hand-flares shall be allowed on oil tankers or other ships carrying oil products. Instead, these vessels shall be provided with 12 parachute distress rockets.

3.27. All ships operating on unrestricted trade shall have a line-throwing appliance with two lines and two projectiles capable of throwing a line over a minimum distance of 230 meters (250 yards).

3.28. The line-throwing appliances shall be of an accepted type and manufacture. The rockets and cartridges shall be renewed as required by the approved document.

3.29. Life-saving appliances shall be clearly labelled in the predominant language of a ship's personnel and in the English language or by means of self-explanatory graphic designs.

3.30. Every vessel to which this chapter applies should, in addition, carry at least one rescue boat unless at least one of the required survival craft is a lifeboat complying with the requirements for a rescue boat.

3.31. Each lifeboat and rescue boat should be served by its own launching appliance.

3.32. In the event of any one survival craft being lost or rendered unserviceable, there should be sufficient survival craft available for use to accommodate the total number of persons on board.

4. Marking of survival Craft and rescue boats.

4. Each Survival Craft and rescue boat should be marked in accordance with the requirements of paragraphs 4.2.6.3, 4.2.7, 4.3.6 and 4.4.9 of the LSA Code as applicable.

5. Security of lifeboat and rescue boat equipment

5. All items of lifeboat or rescue boat equipment, with the exception of boat-hooks which should be kept free for fending off purposes, should be secured within the lifeboat or rescue boat by lashings, storage in lockers or compartments, storage in brackets or similar mounting arrangements or other suitable means. The equipment should be secured in such a manner as not to interfere with any abandonment procedures or with any launching or recovery procedures (in the case of rescue boat). All items of lifeboat or rescue boat equipment should be as small and of as little mass as possible and should be packed in a suitable and compact form.

6. Servicing of inflatable liferaft, inflatable lifejackets and inflatable rescue boats

6.1. Lifeboat equipment and provisions shall be inspected or renewed as required annually.

6.2. Every inflatable or rigid inflatable rescue boat, inflatable boat, inflatable liferaft and hydrostatic release unit should be serviced, at intervals not exceeding 12 months, at a service station approved by the manufacturer. Hydrostatic release units which have been approved for a service life of 2 years and which should be replaced at the end of their life need not be serviced after 1 year. The Administration may extend this period up to a maximum of seventeen months;

6.3. All repairs and maintenance of inflated rescue boats should be carried out in accordance with the manufacturer's instructions. Emergency repairs may be carried out on board the vessel; however, permanent repairs should be effected at an approved servicing station.

7. Servicing of hydrostatic release units

7. Hydrostatic release units should be serviced:

.1 at intervals not exceeding twelve months; however, in cases where it appears proper and reasonable, the Administration may extend this period up to a maximum of seventeen months;

.2 at an approved service station which is competent to service them, maintains proper servicing facilities and uses only properly trained personnel;

8. Survival craft launching stations and stowage of survival craft and rescue boats

8.1. Launching stations

8.1. Launching stations should be in such positions as to ensure safe launching having particular regard to clearance from the propeller and steeply overhanging portion of the hull so that, as far as possible, survival craft can be launched down the straight side of the vessel. Where positioned forward, they should be located abaft the collision bulkhead in a sheltered position and, in this respect the Administration should give special consideration to the strength of the launching appliance.

8.2. Stowage of survival craft

8.2.1. Each survival craft should be stowed:

.1 so that neither the survival craft nor its stowage arrangements will interfere with the operation of any other survival craft or rescue boat at any other launching station;

.2 as near the water surface as is safe and practicable and, in the case of a survival craft other than a liferaft intended for throw overboard launching, in such a position that the survival craft in the embarkation position is not less than 2 m above the waterline with the vessel in fully loaded condition under unfavourable conditions of trim and listed up to 20^0 either way, or to the angle at which the vessel's weatherdeck edge becomes submerged, whichever is less;

.3 in a state of continuous readiness so that two persons can carry out preparations for embarkation and launching in less than five minutes;

.4 fully equipped as required by this chapter; and

.5 as far as practicable, in secure and sheltered positions close to accommodation and service spaces and protected from damage by fire or explosion.

8.2.2. Lifeboats for lowering down the vessel's side should be stowed as far forward of the propeller as practicable.

8.2.3. Lifeboats should be stowed attached to launching appliances.

8.2.4. Every liferaft should be stowed with its painter permanently attached to the vessel and with a float-free arrangement so that the liferaft floats free and, if inflatable, inflates automatically when the vessel sinks. In addition liferafts should be so stowed as to permit manual release from their securing arrangements.

8.2.5. Davit-launched liferafts should be stowed within reach of the lifting hooks, unless some means of transfer is provided which is not rendered inoperable within the limits of trim and list

prescribed in 4.9.2.2.

8.3. Stowage of rescue boats

8.3. Rescue boats should be stowed:

.1 in a state of continuous readiness for launching in not more than 5 min.

.2 in a position suitable for launching and recovery;

.3 so that neither the rescue boat nor its stowage arrangements will interfere with the operation of any survival craft at any other launching station; and

.4 if it is also a lifeboat, in compliance with the requirements of 4.9.2, 4.9.3 and 4.9.4.

9. Embarkation and launching arrangements

9.1. Survival craft

9.1. 1. Survival craft embarkation arrangements should be so designed that lifeboats can be boarded and launched directly from the stowed position and davit-launched liferafts can be boarded and launched from a position immediately adjacent to the stowed position or from a position to which the liferaft is transferred prior to launching in compliance with the requirements of 4.9.7.

9.1.2. Suitable arrangements should be made to the satisfaction of the Administration for embarkation into survival craft which should include:

.1 one or more embarkation ladders or other approved means to afford access to the survival craft when it is waterborne;

.2 means for illuminating the stowage position of survival craft and their launching appliances during preparation for and the process of launching, and also for illuminating the water into which the survival craft are launched until the process of launching is completed, the power for which is to be supplied from the emergency source required by 2.34;

.3 arrangements for warning all persons on board that the vessel is about to be abandoned; and

.4 means for preventing the discharge of water into the survival craft.

9.2. Rescue boats

9.2.1. Rescue boat embarkation and launching arrangements should be such that the rescue boat

can be boarded and launched in the shortest possible time.

9.2.2. Where the rescue boat is one of the vessel's survival craft, the embarkation arrangements and launching station should comply with the relevant requirements for survival craft of this section.

9.2.3. Rescue boats should be of sufficient strength and rigidity to enable it to be lowered and recovered with its full compliment of persons and equipment.

10. Lifejackets

10.1. In every vessel to which this chapter applies lifejackets should be provided for every person on board the vessel and, in addition, lifejackets should be carried for persons on watch or duty and for use at remotely located survival craft stations in unlocked and clearly marked dry stowage positions in accordance with the following table:

The number of persons that the vessel is certified to carry	Minimum number of additional Lifejackets
More than 16 persons	Not less than 25% of the total number of persons the vessel is certified to carry
4 persons and above but not more than 16 persons	Not less than 4
Less than 4 persons	2

10.2. Lifejackets should be so placed as to be readily accessible and their position should be plainly indicated. Where, due to the particular arrangements of the vessel, the lifejackets may become inaccessible alternative provisions should be made to the satisfaction of the Administration which may include an increase in the number of lifejackets to be carried.

10.3. Each lifejacket should be fitted with a whistle firmly secured by a cord and a light and fitted with retro-reflective material.

10.4. Included in the above number of lifejackets, there should be at least two SOLAS approved inflatable lifejackets for use of the crew of any rescue boat or inflatable boat carried onboard.

10.5. In addition to the adult lifejackets, a sufficient number of children's lifejackets should be provided for children carried on the vessel.

11. Immersion Suits

11.1.One approved immersion suit should be provided for each person onboard.

11.2.However, these need not be provided if

.1 totally enclosed or partially enclosed lifeboats are fitted; or
.2 davit launched liferafts are provided; or
.3 the vessel is operating in water of surface temperatures of 20°C or more.

11.3. In the case of a vessel which is provided with means for dry-shod emergency evacuation covered by (a) or (b), sufficient suits should be provided for use by the crew of the rescue boat.

12. Lifebuoys

12.1. Vessels to which this chapter applies should carry not less than the number of lifebuoys determined according to the following table:

Length of vessel in metres	Minimum number of lifebuoys
under 50	6
50 and over	8

12.2. At least half of the number of lifebuoys should be fitted with self-igniting lights which in tankers should be of an electric battery type.

12.3.In vessels of 50 m in length and over at least two of the lifebuoys provided with self-igniting lights should also be provided with self-activating smoke signals. Each of these lifebuoys should be capable of quick release from the place at which the vessel is normally navigated where practicable or be of the throw over type.

12.4.At least one lifebuoy on each side of the vessel should be fitted with a buoyant lifeline of at least 30 m in length.

12.5.Lifebuoys should be:

.1 so distributed as to be readily available on both side of the vessel and as far as practicable on all open decks extending to the vessel's sides; at least one lifebuoy should be placed in the vicinity of the stern;

.2 so stowed as to be capable of being rapidly cast loose, and not permanently secured in any way; and

.3 marked in block capitals of the Roman alphabet with the name and port of registry of the vessel on which it is carried.

13. Distress signals

13. Every vessel to which this chapter applies should be provided, with not less than 6 rocket parachute flares. They should be stowed on or near the place at which the vessel is normally navigated. They should be so placed as to be readily accessible and their position should be plainly indicated.

14. Radio life-saving appliances

14.1.Every vessel of 300 gross tonnage and upwards but less than 500 gross tonnage and vessels of less than 300 gross tonnage operating on unrestricted service or within Restricted area I, should comply with the requirements of regulation 6 of chapter III of the 1974 SOLAS Convention for vessels of 300 tons gross tonnage and upwards but less than 500 tons gross tonnage.

14.2. Vessels of less than 300 gross tonnage not engaged in international voyages should carry at least one two-way VHF telephone apparatus to be used in survival craft.

15. Radar Transponders (SART)

15. The SART is to be stowed in an easily accessible position so that it can rapidly be placed in any survival craft. Means should be provided in order that it can be mounted in the survival craft at a height of at least 1 meter above sea level.

16. General emergency alarm system

16. Every vessel should be provided with a general emergency alarm system capable of sounding the general emergency alarm signal consisting of seven or more short blasts followed by one long blast on the vessel's whistle or siren. The system should be capable of operation from the navigation bridge or control station as appropriate and should be audible throughout all accommodation and normal working spaces.

17. Emergency instructions

17.1. Clear instructions to be followed in the event of an emergency should be provided and exhibited in conspicuous places throughout the vessel including the navigation bridge, machinery spaces and accommodation spaces.

17.2. .The emergency instructions should specify details of the general emergency alarm and action to be taken by crew or other persons on board when the alarm is sounded. Instructions on the signal for fire on board and the order to abandon vessel should be specified.

17.3. The attention of the passengers or industrial personnel should be drawn to the emergency instructions before the vessel departs on a voyage.

18. Emergency training and drills

18.1. A muster of the crew for one abandon ship and one fire drill shall take place at intervals of not more than once a month. In addition, these musters shall take place within 24 hours of leaving port whenever 25 percent of the crew has been replaced since the last muster. On board training in the use of the vessel's lifesaving appliances, including survival craft equipment should be given as soon as possible but not later than two weeks after a crew member or person joins the vessel.

18.2. The Administration may accept other equivalent procedures or training arrangements for specific vessels.

18.3. Training drills should as far as practicable be conducted as if there were an actual emergency.

18.4. When holding musters, the life-saving, fire-fighting and other Safety Equipment shall be examined to ensure that they are complete and in satisfactory working order.

18.5. The dates on which musters are held shall be recorded in the official log book and if no muster is held within the prescribed interval or a part muster only is held, an entry shall be made stating the circumstance and extent of the muster held. A report of the examination of the life-saving equipment shall be entered in the log book, together with a record of boat used.

18.6.The lifeboats shall, where practicable, be lowered into the water at least once every three months at which time checks shall be carried out for the condition of all apparatus and system and the watertight integrity of the boats, as well as operation of the releasing devices.

18.7. Instructions in the form of a training manual covering the topics presented in SOLAS, Chapter II, Regulations 52, shall be available on board. This presentation may include audio visual aids as part of or in lieu of the manual.

18.8.Each lifeboat should be launched with its assigned operating crew aboard and manoeuvred in the water at least once every three months during an abandon vessel drill.

18.9.As far as reasonable and practicable, rescue boats other than lifeboats which are also rescue boats, should be launched each month with their assigned crew aboard and manoeuvred in the water. In all cases this requirement should be complied with at least once every three months.

CHAPTER 4

RADIOCOMMUNICATIONS

1. Application

1.1. This chapter applies to all cargo vessels of less than 300 gross tonnage. All cargo vessels of 300 gross tonnage and over to which this code applies should comply with the provisions of chapter IV of the 1974 SOLAS Convention.

1.2. Any shipboard radio station, whether fitter on a compulsory or on a voluntary basis, shall conform to the relevant SOLAS 74 regulations and to the International Telecommunications Union regulations.

2. Requirements

2.1. Every ship of 100 GT or more shall be provided with a radiotelephone station according to Chapter IV of SOLAS 74 Convention.

2.2.Every vessel not fitted with a radiotelephone shall have a VHF radiotelephone station according to Chapter IV of SOLAS 74 Convention.

2.3.Every ship of 300 GT or more shall carry a portable radio apparatus suitable for survival craft which shall meet the specification laid down in Chapter IV, SOLAS convention.

2.4.No provision in this chapter should prevent the use by a vessel or survival craft in distress of any means at its disposal to attract attention to make known its position and to obtain help.

2.5.Vessels to which this chapter applies should comply with the applicable requirements of chapter IV of the 1974 SOLAS Convention as appropriate for vessels operating in sea areas A1, A2 and A3 to the extent required by the Administration.

2.6. In determining the extent to which vessels will comply as, the Administration should take into account the following functional requirements of which the vessel, while at sea, should be capable of:

.1 transmitting distress alerts by at least two separate and independent means, each using a different radio communication service;

.2 receiving shore to vessel distress alerts;

.3 transmitting and receiving vessel to vessel distress alerts;

.4 transmitting and receiving search and rescue coordinating communications;

.5 transmitting and receiving on scene communications;

.6 transmitting and receiving maritime safety information;

.7 transmitting and receiving general radio communications to and from shore-based radio systems; and

.8 transmitting and receiving bridge to bridge communications.

3. EPIRB's

3.1. Every vessel of less than 300 GT should carry at least one satellite emergency position indicating radio beacon (satellite EPIRB) which should be capable of transmitting a distress alert through the polar orbiting satellite service operating on the 406 MHz band or, through the geostationary satellite service operating in the 1.6 GHz band.

3.2. An approved EPIRB should be installed in an easily accessible position ready to be manually released, capable of being placed in a survival craft and floating free if the vessel sinks. All EPIRBs should be registered with the Administration.

3.3.Vessels engaged on voyages solely within sea area A1 as defined in chapter IV of the SOLAS Convention may carry at least one VHF emergency position indicating radio beacon (VHF EPIRB) which should be capable of transmitting a distress alert using digital selective calling (DSC) on VHF channel 70 and providing for locating by means of a radar transponder operating in the 9 GHz band.

4. Periodic inspection and testing of emergency position-indicating radio beacons

4. Satellite EPIRBs shall be tested at intervals not exceeding 12 months and, where necessary, have their source of energy replaced. However, in cases where it appears proper and reasonable, the Administration or recognized organisation may extend this period up to a maximum of seventeen months.

5. Radio Personnel

5. A vessel should carry at least one person qualified for distress and safety radiocommunication purposes, who should hold a certificate of competence acceptable to the relevant authority.

CHAPTER 5

SAFETY OF NAVIGATION

1. Application

1.1. This chapter applies to all vessels to which this Code applies.

1.2. The regulations of chapter V of the 1974 SOLAS Convention apply, as appropriate, to all vessels to which this Code applies, except that regulation 23 (Pilot transfer arrangements) does not apply to vessels of less than 150 gross tonnage, or vessels not engaged on international voyages.

2. NAVIGATION LIGHTS, SHAPES AND SOUND SIGNALS

2.1. Every vessel should comply with the requirements of the 1972 COLREG, as amended.

2.2. All ships of over 100 GT shall have on board an efficient daylight signaling lamp which shall not be solely dependent upon the ship's main source of electrical power. All navigation lights should be provided with main and emergency power supply.

2.3. With due regard to accessibility, the requirement for duplication for navigation lights required to be shown whilst underway may be satisfied by having a spare lamp that can be easily fitted within three minutes.

2.4. Every vessel should carry an efficient fixed or portable searchlight suitable for man-overboard search and rescue operations.

2.5. For vessels where compliance is impracticable, alternatives may be considered by application to the Administration.

3. NAVIGATIONAL EQUIPMENT AND VISIBILITY FROM WHEELHOUSE

3.1. Navigational Equipment

3.1.1. Every vessel shall be provided with a magnetic compass for steering purposes and a good second magnetic compass outside the bridge for use in taking bearing or azimuths. Alternatively single magnetic compass may be proved outside the bridge steering position with a reflector inside for steering purposes.

3.1.2. A spare magnetic compass shall be carried unless there is a gyro compass on board. Means must be provided to relay heading information to the emergency steering position.

3.1.3. Every vessel shall be provided with a means of obtaining the depth of water at the ship. This may be an echo sounder or hand lead lead line properly marked and

graduated up to 45 meters, (25 fathoms).

3.1.4. A vessel should be fitted with, the following additional equipment:

.1 a receiver for a global navigation satellite system or a terrestrial radio-navigation system, or other means suitable for use at all times throughout the intended voyage, to establish and update the ship's position by automatic means;

.2 a distance measuring log;

.3 a rudder angle indicator; and

.4 a 9 GHz radar.

3.1.5. For vessels of less than 300GT the equipment specified above need not be of an approved type.

3.1.6. Attention should be paid to magnetic effects on magnetic compasses, including fluxgate compasses, when operating in Polar Regions. (i.e. north of 70° N, or south of 70° S).

3.1.7. All cargo vessels of 300 GT and over engaged on international voyages shall be fitted with an approved automatic identification system (AIS), as follows:

.1 ships constructed on or after 1 July 2002;
.2 ships engaged on international voyages constructed before 1 July 2002:
- in the case of tankers, not later than the first survey for safety equipment on or after 1 July 2003;
- in the case of ships, other than passenger ships and tankers of 300 GT and upwards but less than 3,000 GT, not later than 1 July 2007

.3 ships not engaged on international voyages constructed before 1 July 2002, not later than 1 July 2008.

3.1.8. The AIS shall:

.1 provide automatically to appropriately equipped shore stations, other ships and aircraft, information including the ships identity, type, position, course, speed, navigational status and other safety related information;

.2 receive automatically such information from similarly fitted ships

.3 monitor and track ships; and

.4 exchange data with shore- based facilities.

3.2. Bridge Visibility

3.2.1. Navigation bridge visibility should comply with SOLAS Chapter V. Vessels under 45m in

length should comply as far as reasonable and practicable.

3.2.2. Windows may be inclined from the vertical plane provided that, where necessary, appropriate measures are taken to avoid adverse reflections from within.

3.2.3. Windows to the navigating position should not be of either polarized or tinted glass. Portable tinted screens may be provided for selected windows.

4. MISCELLANEOUS EQUIPMENT

4.1. Nautical Publications

4.1.1. Every vessel should carry nautical charts and nautical publications to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage.

4.1.2. An approved electronic chart display and information system (ECDIS) may be accepted as meeting these chart carriage requirements.

4.1.3. Back-up arrangements to meet these functional requirements should be provided where this function is partly or fully filled by electronic means.

4.2. Log books

4.2. Every vessel shall keep on board a log-book for the bridge, the engine room and the radio station, respectively as follows:

.1 a bridge log-book for entering the daily routine of navigation and ship's operation,
.2 an engine room log-book for entering the daily routine of engine and auxiliary machinery operation, and
.3 a radio log-book, if fitted with a radio station.

4.3. Code Flags

4.3. All vessels to which this Code applies should carry code flags B, C, G, H, N and Q.

4.4. Measuring Instruments

4.4. Every vessel should carry a barometer.

4.5. Pilot for Vessel

4.5. Boarding arrangements provided for pilots should have due regard for SOLAS Chapter V, Regulation 23 and IMO Resolution A.889 (21) "Pilot transfer arrangements", International Maritime Pilots' Association (IMPA) recommendations, or any documents replacing them.

5. ANCHORS AND CABLES

5.1. Anchoring and mooring equipment for vessels propelled by mechanical means

5.1.1. Every vessel should be provided with at least two anchors of sufficient weight one of which is provided with a chain cable of adequate strength and size and windlass, capstan or winch of suitable size for the cable and other anchor handling equipment to the satisfaction of the Administration.

5.1.2. Windlass, capstan, winches, fairleads, bollards, mooring bits and other anchoring, mooring, towing and hauling equipment should be:

.1 properly designed to meet all foreseeable operational loads and conditions;

.2 correctly seated; and

.3 effectively secured to a part of the vessel's structure which is suitably strengthened.

5.2. Special requirements of towing and pushing arrangement for tugs

5.2.1. The design of the towing gear should be such as to minimize the overturning moment due to the lead of the towline. It should have a positive means of quick release which can be relied upon to function correctly under all operating conditions.

5.2.2. Where a towing hook is provided, the release mechanism should be controlled as far as practicable from the navigation bridge, the after control position (where fitted) and at the hook itself.

5.2.3. When a pushing tug and a barge pushed ahead are rigidly connected in a composite unit, the tug-barge coupling system should be capable of being controlled and powered from the tug. Disassembly should be capable of being made without causing damage to the tug or the barge.

5.2.4. Every tug should be provided with at least one axe of sufficient size on each side which should be readily available for cutting the towline free in an event of an emergency.

CHAPTER 6

CREW AND ACCOMMODATION

1. General requirements

1.1. Every vessel shall conform as far as practicable to the requirements of the International Labour Organization (ILO/OIT) Conventions concerning Crew Accommodation on Board Ships ratified by the Government of Commonwealth of Dominica. Additionally, electric heaters, if fitted, shall be of a fixed type and located away from readily ignitable materials. Open-flame heaters shall not be permitted. Gas or kerosene stoves and water heaters, if fitted, shall be installed in well-ventilated rooms with low-level air exhaust. Gas bottles or reservoirs shall be located in the open air. Gas-piping shall be of copper or steel. Special care shall be taken to avoid the danger of fire or explosion.

1.2. An adequate standard of accommodation should be provided to ensure the comfort, recreation, health and safety of all persons on board.

1.3. Attention is drawn to the achievement of appropriate standards for means of access and escape, lighting, heating, food preparation and storage, messing, safety of movement about the vessel, ventilation and water services.

1.4. Crew accommodation should not be sited within hazardous spaces.

2. Lighting and Heating

2. An electric lighting system should be installed which is capable of supplying adequate light to all enclosed accommodation and working spaces. As considered appropriate, an adequate heating installation should be provided.

3. Gangways, Passerelles, and Accommodation Ladders

3.1. A safe means of access is to be provided at all times when in port, either deployed or available for deployment. If the safe means of access is not deployed, there shall be a means provided for communication between those on the quay and those on board.

3.2. When provided, gangways, passerelles, and accommodation ladders should be manufactured to a recognized national or international standard, and be clearly marked with the manufacturer's name, the model number, the maximum design angle of use and the maximum safe loading (by number of persons and by total weight). Side screens orhandrail(s) should be provided.

3.3. Where gangways, passerelles or ladders do not comply with national or international standards, a manufacturer’s test load certificate should be provided. Alternatively practical tests may be carried out to the satisfaction of the Administration.

3.4. Accommodation ladders should be provided on a vessel of 120 meters in length and over.

4. Food Preparation, Storage and Messing

4.1. The galley floor should be provided with a non-slip surface and provide a good foothold.

4.2. All furniture and fittings in the galley shall be made of a material which is impervious to dirt and moisture. All metal parts of furniture and fittings shall be rust resistant.

4.3. Secure and hygienic storage for food and garbage should be provided.

4.4. A messing area(s) should be provided; each messing area shall be large enough to accommodate the greatest number of persons likely to use it at any one time.

5. Ventilation

5.1. Effective means of ventilation should be provided to all enclosed spaces which are entered by personnel.

5.2. Mechanical ventilation should be provided to all accommodation spaces on vessels which are intended to make long international voyages or operate in tropical waters.

5.3. Air conditioning systems are to provide a minimum of $25m^3$ of air per hour, per person accommodated in the ventilated space during normal operating conditions.

6. Water Services

6. An adequate supply of fresh drinking water should be provided and piped to convenient positions throughout the accommodation spaces.

7. Sleeping Accommodation

7.1. An appropriately sized bed (bunk or cot) should be provided for every person on board, with due regard for the guidance produced by the International Labour Organization (ILO).

7.2. There shall be no direct access into sleeping rooms from spaces for machinery, galleys, paint rooms or from engine, deck, and other bulk storerooms, drying rooms, communal wash places or water closets.

8. Toilet Facilities

8. Adequate sanitary toilet facilities should be provided on board.

9. Personal Clothing

9.1. It should be the responsibility of an owner/managing agent/skipper to advise that the following requirements for items of personal clothing should be met:

9.2. Each person on board a vessel should have protective clothing appropriate to the prevailing air and sea temperatures.

9.3. Each person on board a vessel should have footwear having non-slip soles, to be worn on board.

10. Noise

10.1. Attention is drawn to the IMO Code on Noise Levels on Board Ships, Resolution A.468(XII), published 1982. Vessels covered by this Code should meet the recommendations so far as is reasonable and practicable.

10.2. For safe navigation, it is important that sound signals and VHF communications can be heard, at the navigating position in normal operating conditions.

10.3. For machinery spaces, workshops and stores which are manned either continuously or for lengthy periods, the recommended limits are 90dB(A) for machinery spaces and85dB(A) for workshops and stores.

10.4. For machinery spaces which are not intended to be continuously manned or are attended for short periods only, the recommended limits are 110dB(A).

10.5. To indicate the need to wear ear protectors, safety signs, signs with symbols and supplementary warning notices should be displayed at all entrances to spaces in which the noise level exceeds 85dB(A).

11. MEDICAL STORES

11.1. Every ship shall be provided with first-aid equipment on a scale to be determined by the Administration taking into account the length and intended service of the ship.

11.2. A stretcher shall be included in the equipment and shall be capable of enfolding the patient and being transferred from the lowest cargo hold to the deck or from the ship to the shore or a boat.

11.3. Instructions in the form of a medical guide shall be available on board.

CHAPTER 7

CLEAN SEAS

1. Vessels should comply with all the requirements of MARPOL as prescribed by the regulations of the Administration. Every tanker of 150 GT and above shall carry on board an official Oil Record Book board and the proper entries shall be made.

2. For vessels under 400 GT it is the owner's responsibility to comply with local administration/port state requirements and for dealing with oily bilge water retention etc.

3. All cargo ships of 400 GT and above, and every ship which is certified to carry 15 persons or more, should carry garbage management plan which should include the written procedures agreed for collection, storage, processing and disposal of garbage; and a garbage record book recording disposal and incineration, as outlined in regulation 9 of Annex V of MARPOL.

4. Special local requirements may exist in national sea areas, ports and harbors. The attention of owners/operators is drawn to the need to comply with local requirements as appropriate.

ANNEX

Minimum equipment required for lifeboats fitted to vessels engaged in international voyages or near coastal voyages shall be as follows:

- a single-banked complement of buoyant oars, two spare buoyant oars, and buoyant-steering oar; one set and a half of thole pins or crutches, attached to the lifeboat by lanyard or chain; a boat hook,
- Two plugs for each plug hole (except where proper automatic valves are fitted attached to the lifeboat by lanyards or chains); a bailer and two buckets,
- A rudder attached to the lifeboat and a tiller,
- A lifeboat which is not self righting. A lifeline becketed round the outside of the lifeboat; means to enable persons to cling to the lifeboat if upturned, in the form of bilge keels or keel rails, together with grab lines secured from gunwhale to gunwale under the keel.,
- A locker conspiciously marked as such, suitable for the stowage of small items of equipment,
- Two hatchets, one at each end of the lifeboat,
- On an enclosed lifeboat, a lamp (not oil burning) shall be fitted to provide illumination for not less than 122 hours,
- NO engine required,
- A searchlight capable of 3 hours of continuos working,
- A compass in a binnacle,
- A sea anchor,
- Two painters of sufficient length and size. One shall be secured to the forward end of the lifeboat with strap and toggle so that it can be released, and the other shall be firmly secured to the stem of the lifeboat and be ready for use,
- A portable fire extinguisher for extinguishing oil fires,
- Four parachute distress rocket signals,
- Two buoyant smoke signals,
- A first-aid outfit,
- A waterproof electric flashlight suitable for signaling in the Morse Code together with one spare set of batteries and one spare set of bulb in a water proof container,
- A daylight-signaling mirror,
- A jack-knife attached to the boat by a lanyard,
- Two light buoyant-heaving lines,
- A manual pump.
- A whistle.
- A set of fishing tackle.
- A cover of highly-visible colour capable of protecting the occupants against injury by exposure.
- A copy of the lifesaving signal table.
- Means to enable persons in the water to climb into the lifeboat (short ladder)

Vessels engaged in coastal or near coastal voyages may omit a searchlight capable of 3 hours of continuous working.

"(aa) six hand flares.
(bb) six doses of antiseasickness medicine and one seasickness bag for each person.
(cc) An efficient radar reflector.
(dd) Thermal protection aids for 10% of the persons, but not less than 2 (may be omitted if vessel operates in tropical waters only.)
(ee) Three tin openers".

Equipment for motorized boat and rescue boat fitted to vessels engaged in international voyages shall be as follows:

- one Automatic draining valve with cap or plug attached with lanyard
- one Rudder and tiller
- one Buoyant lifeline around the rescue boat
- two Handholds underside the hull
- one Release mechanism for hooks
- one Release device for forward painter
- one Watertight lockers for storage of small items
- one Arrangement for towing liferafts sufficient
- sufficient Buoyant oars or paddles to make headway in calm seas
- Thole pins and crutches attached with lanyard or equivalent arrangements for each oar
- one Buoyant bailer
- one Efficient compass in binnacle provided with means of illumination
- one Sea-anchor and tripping line with hawser of adequate strength
    - m length)
- one Painter of sufficient length and strength attached to the release device
- one Buoyant line for towing liferafts (50 m length)
- one Waterproof Morse electric torch with spare batteries and bulb
- one Whistle
- one First-aid outfit in waterproof case
- two Buoyant rescue quoits with 30 m buoyant line
- one Searchlight
- one Efficient radar reflector
- Thermal protective aids 10% persons / two (the greater)
- one Boat-hook (rigid rescue boats)
- one Bucket (rigid rescue boats)
- one Knife or hatchet (rigid rescue boats)
- one Buoyant safety knife (inflated rescue boats)
- two Sponges (inflated rescue boats)
- one Efficient manually operated bellows or pump (inflated rescue boats)
- one Punctures repair kit in suitable container (inflated rescue boats)
- one Safety boat-hook (inflated rescue boats)

All liferafts shall have the following equipment:

- One buoyant rescue quoit, attached to at least 30 meters (100ft.) of
    - buoyant line.
- For liferafts which are fit to accommodate not more than 12 persons, one
    - Safety knife and one bailer; for liferafts which are fit to accommodate 13 persons or more, two safety knifes and two bailer.
- Two sponges.
- Two sea anchors, one permanently attached to the liferaft and one spare.
- Two paddles.
- One repair outfit capable of repairing punctures in buoyancy compartments.
- One topping-up pump or bellows.
- Three safety tin openers.
- A first-aid outfit.
- One waterproof electric flashlight suitable for signaling in the Morse Code together with one spare set of batteries and one spare bulb in a water-proof container.
- One daylight signaling mirror and one signaling whistle.
- Four parachute distress rocket signals.
- Six hand-held distress flare signals.
- One set of fishing tackle.
- Six anti-seasickness tablets for each person which the liferaft is permitted to accommodate.
- Instructions (printed in the crew's native language and in the English language) on how to survive in the liferaft.
- One copy of the lifesaving signal table.
- Thermal protective aids for 10% of the number of persons the liferaft is permitted to accommodate or two, whichever is the greater.

Each lifeboats and liferaft shall be provided with ½ kg (1 lb.) of approved rations for each person it is certified to carry. Rations are to be packed in airtight containers stowed in a watertight box. Rustproof dippers and drinking vessels shall be provided. The above requirements do not apply to lifeboats of ships engaged in coastal voyages.

Each lifeboat shall carry watertight receptacles containing 3 litres (6 pints) of fresh water for each person the lifeboat is certified to carry. The quantity of water may be reduced by one half in ships engaging in international coastal or international coastwise trade.

Each liferaft shall carry watertight receptacles containing 1 ½ litres (3 pints) of fresh water for each person the liferafts is certified to carry.

The quantities of water indicated in (b) and (c) may be reduced by ½ liter per person if they are replaced by a suitable de-salting apparatus capable of producing an equal amount of fresh water.
All items of lifesaving equipment shall be readily available for use in an Emergency.

All boats and rafts shall be stowed so that they can be put in the water quickly and safely even if the ship is listed 20 degrees and with a 10 degrees trim. They shall be stowed clear of the vessel's propeller where practicable.