

# DEPARTMENT OF TRANSPORT

No. R. 651

Gazette 2049

19 April 1968

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

## SAFETY OF NAVIGATION REGULATIONS, 1968\*

The Minister of Transport has, under the provisions of section 356 of the Merchant Shipping Act, 1951 (Act No. 57 of 1951), as amended, repealed the Safety of Navigation Regulations, 1961, promulgated by Government Notice No. R. 1172 dated 8 December 1961, as amended, and has, in terms of the said section, made the regulations contained in the Schedule hereto, with effect in each case from the date of promulgation hereof.

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## PRELIMINARY

### Title of these regulations

1. These regulations are called the Safety of Navigation Regulations, 1968.

### Interpretation\*

2. In these regulations the expression "**the Act**" means the Merchant Shipping Act, 1951 (Act No. 57 of 1951), and unless the context otherwise indicates, any expression used in these regulations to which a meaning has been assigned in the Act, bears the meaning so assigned, and—

"**breadth of the ship**" has the meaning assigned to it in the Construction Regulations, 1968;

"**bulkhead deck**" has the meaning assigned to it in the Construction Regulations, 1968;

"**coast station**" means a station on land intended to provide communication with vessels by means of radio;

"**freeboard deck**" has the meaning assigned to it in the Load Line Regulations, 1960;

"**margin line**" has the meaning assigned to it in the Construction Regulations, 1968;

"**muster**" means a boat drill and a fire drill;

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\* For the purpose of these regulations the Minister has designated the following officers as "proper officers" in the Republic:

At Cape Town, Durban, Port Elizabeth, Walvis Bay and Saldanha Bay: The Principal Officer of the Marine Division.

At East London, Mossel Bay, Port Nolloth and Lüderitz: The Shipping Master.

**"pilot ladder"** means any ladder, and gear or equipment used in conjunction therewith, used for the purpose of embarking and disembarking pilots and other officials while a ship is arriving at or leaving a port but does not include the ship's accommodation ladder, gang-plank or gangway;

**"signal station"** means a station on land for the purpose of providing communication with ships by means other than radio;

**"standard compass"** means the main magnetic compass, or only magnetic compass if only one is carried, if such compass is situated in the vicinity of the wheelhouse or navigating bridge structure in such position as to ensure that the compass is as free of the magnetic influence of the ship's structure as possible, and if it is fitted with means for taking accurate bearings;

**"steering compass"** means a magnetic compass situated at a steering position, if such steering position is situated in any place other than where the standard compass is situated;

**"superstructure deck"** has the meaning assigned to it in the Load Line Regulations, 1960;

**"timber deck cargo"** has the meaning assigned to it in the Load Line Regulations, 1960;

**"timber load line"** means a special load line to be used only when a ship carrying a timber deck cargo complies with Chapter VIII of these regulations and with the Load Line Regulations, 1960;

**"tons"** means gross register tons.

### **Classification of ships**

3. (1) The vessels to which these regulations apply are divided into the following classes:

(a) *Passenger ships*

*Class I*—A passenger ship engaged on voyages any of which are international voyages other than short international voyages.

*Class II*—A passenger ship, other than a ship of Class I, engaged on voyages any of which are short international voyages.

*Class IIA*—A passenger ship of 70 feet in length or over, other than a ship of Class V or VI, engaged on voyages of any kind other than international voyages.

*Class III*—Not yet allocated.

*Class IV*—Not yet allocated.

*Class V*—A passenger ship of 50 feet in length or over engaged only on voyages to sea in fine weather with not more than 40 persons on board, in the course of which voyages the ship is at no time more than 40 miles from the point of departure nor more than 15 miles from land.

*Class VI*—A passenger ship which operates at a port or is engaged on voyages to sea in fine weather with not more than 250 persons on board, in the course of which voyages the ship is at no time more than 15 miles from the point of departure nor more than 5 miles from land.

(b) *Vessels other than passenger ships*

*Class VII*—A ship (other than a ship of Class VIIA, X, XI or XII) engaged on voyages any of which are international voyages other than short international voyages.

*Class VIIA*—A ship employed as a whale factory ship or as a fish processing or canning factory ship, or a ship engaged in the carriage of persons employed in the whaling industry or the fish processing or canning industry.

*Class VIII*—A ship (other than a ship of Class X, XI or XII) engaged on voyages in the Republic or on short international voyages.

[Item Class VIII amended by GNR1024/10252/39,30May1986]

*Class IX*—A tug, tender, lighter, dredger, barge or hopper which is employed at a port in the Republic and proceeds to sea for not more than 10 miles from the entrance to such port.

[Item Class IX amended by GNR1024/10252/39,30May1986]

*Class IXA*—A tug, tender, lighter, dredger, barge or hopper which is employed at a port in the Republic and does not proceed at sea.

[Item Class IXA amended by GNR1024/10252/39,30May1986]

*Class X*—A fishing boat, sealing boat or whaling boat; or a vessel which is employed or owned for the purpose of fishing for financial gain or reward to which section 68(1)(a) of the Act applies.

*Class XI*—A sailing ship (other than a ship of Class X or XII) which proceeds to sea.

*Class XII*—A pleasure yacht which proceeds to sea.

(2) For the purposes of this regulation, a "voyage" includes an excursion.

## CHAPTER I

### SHIP'S COMPLEMENT

#### Application of Chapter I

4. This Chapter shall apply to—

- (a) every South African ship; and
- (b) every foreign ship of 25 or more gross tons.

[Reg 4 substituted by GNR1024/10252/39,30May1986]

## **Manning**

5. (1) The owner and master of every Chapter I vessel to which section 73 of the Act applies shall, in addition to the officers and other persons prescribed in that section or in other sections of the Act or regulations promulgated thereunder, employ as crew of the vessel an adequate number and description of persons to ensure that the vessel is sufficiently and efficiently manned.

(2) The owner of every Chapter I vessel to which section 73 of the Act does not apply, shall employ on the vessel—

- (a) a person in charge thereof, who has had experience at sea and who is capable of handling the vessel in a seamanlike manner;
- (b) if it is fitted with an engine, a person who is experienced in engine-work and capable of taking charge of the engine; and
- (c) such additional number and description of persons as may be necessary to ensure that the vessel is sufficiently and efficiently manned:

Provided that the requirements of paragraph (b) may be dispensed with if the person in charge of the vessel possesses the experience set forth in that paragraph.

(3) For the purpose of this regulation, a vessel shall, subject to the provisions of subregulation (5) be considered to be sufficiently and efficiently manned if in the opinion of the proper officer, she has as crew suitably qualified persons to enable her to proceed to sea with due regard to the requirements of the Collision and Distress Signals Regulations, 1961, the Life-Saving Equipment Regulations, 1968, the Merchant Shipping Radio Regulations, 1968, and any other safety provisions which may be applicable to the vessel.

(4) The proper officer shall, when determining the adequacy of the crew in accordance with the provisions of this regulation, take the following into consideration:

- (a) The complement normally carried by similar vessels employed on similar voyages;
- (b) the complement which the vessel under consideration has recently carried on previous voyages; and
- (c) the nature of the service for which the vessel is intended.

(5) The Secretary shall, as and when necessary, issue a notice setting forth the number of persons to constitute the crew of a vessel and the capacities in which those persons are to serve other than persons prescribed in the Act or regulations promulgated thereunder.

## **CHAPTER II**

### **INFORMATION CONCERNING THE STABILITY OF A SHIP**

#### **Application of Chapter II**

6. Subject to the provisions of regulation 8A, this Chapter applies to every South African ship built after 1 January 1960, other than a ship of Class X, XI or XII of less than 100 tons. A "Chapter II ship" means a ship to which this Chapter applies.

[Reg 6 substituted by GNR2483/6242/31,15Dec1978]

#### **Provision of stability information**

7. (1) The owner of every Chapter II ship shall cause to be kept on board the ship such information in writing about the stability of the ship as is necessary for the guidance of the master in loading and ballasting the ship.

(2) The owner of the ship shall send a copy of the stability information to the Secretary through the office of the proper officer.

(3) The stability information shall be based upon the determination of the stability of the ship by means of an inclining test: Provided that the Secretary may allow the information to be based on a similar determination of the stability of a sister ship.

(4) The stability information shall be deemed to be documents relating to the navigation of the ship under section 187 of the Act, and as such shall be handed to the successor on change of master.

#### **Form of stability information**

8. (1) Stability information drawn up by any qualified person may be accepted if the Secretary is satisfied that the method of presentation is clear and comprehensive.

(2) The information shall be in the form of plans, statements and diagrams drawn up separately or appropriately grouped, and shall include—

- (a) a profile plan of the ship drawn to a suitable scale showing thereon or in tables alongside—
  - (i) the capacity and the height (above the keel) of the centre of gravity of each space available for the carriage of cargo, fuel, stores, feed water, domestic water and water ballast;
  - (ii) the estimated total weights of the passengers and of the crew and their effects and the heights (above the keel) of the corresponding centres of gravity. For this purpose the passengers and crew shall be assumed to be distributed about the ship in the spaces which they would normally occupy, including the highest decks to which they have access. In the case of passenger ships of Classes II to VI inclusive, the assumed distributions shall be suitably indicated on or alongside the plan;



- (iii) the estimated weight, disposition and height (above the keel) of the centre of gravity of any homogeneous deck cargo which the ship is designed to carry or which it is expected will be carried;
- (b) a statement showing the light weight of the ship fully equipped but with no permanent ballast, fuel or stores on board, and the position of the centre of gravity of the light weight as determined by the inclining test. The weight, disposition and height (above the keel) of the centre of gravity of any permanent ballast shall be shown separately on the statement;
- (c) a diagram or tabular statement showing the displacement, tons per inch immersion and deadweight corresponding to a scale of mean draughts between the light and deep load water lines of the ship;
- (d) a diagram or tabular statement showing the hydrostatic particulars of the ship including the heights (above the keel) of the transverse metacentres and the moment to change trim 1 inch at various mean draughts;
- (e) a statement showing the effect on stability of free surface in each tank in which liquid may be carried;
- (f) a diagram showing cross-curves of stability and the assumed height (above the keel) of the centre of gravity on which they are based. These curves shall take into account only those superstructures above the freeboard deck which are so constructed and closed as to be fully effective as far as stability is concerned. The diagram shall indicate what superstructures have been included for this purpose;
- (g) diagrams drawn to a suitable small scale, and statements showing the low-mass, the disposition and mass of the permanent ballast, if any, the disposition and total mass of all components of the dead-mass, the displacement, the corresponding draughts forward and aft, trim data, the corresponding heights of the centre of gravity and the metacentre, the correction for free surface and the tanks concerned, the corrected metacentric height and a curve of statical stability derived from the cross curves of stability. In the case of a Chapter II ship other than a fishing boat, this information shall be given separately for—
  - (i) light ship;
  - (ii) ballast condition at departure and arrival;
  - (iii) condition when loaded with a homogeneous cargo at departure and arrival;
  - (iv) service loaded conditions at departure and arrival; and
 in the case of a fishing boat for—
  - (v) light ship;
  - (vi) departure from port, the fishing boat being assumed to be loaded with the necessary equipment, materials and supplies, including ice, fuel, stores, water and nets;
  - (vii) arrival at the fishing grounds—the same as for light ship, but account being taken of consumption of fuel, water and stores;
  - (viii) departure from the fishing grounds, the fishing boat being assumed to be loaded with its maximum catch, but account being taken of the consumption of fuel, water and stores;

- (ix) arrival at port with the maximum catch, account being taken of the consumption of fuel, water and stores.

Suitable instructions shall be given in the case of a ship in which any cargo or bunker space must be only partly filled in order to ensure adequate stability. Any diagram or statement provided under this paragraph which shows a condition where the ship's stability is inadequate shall contain a prominent note of warning;

[Para (g) substituted by GNR2483/6242/31,15Dec1978]

- (h) in any ship where any special procedure is needed to maintain adequate stability throughout her voyages, the information referred to in paragraphs (a) to (g) shall be supplemented by written instructions for the master's guidance in safely working the ship.

### **Stability criteria for a fishing boat**

**8A.** Every Chapter II ship being a fishing boat which is registered for the first time or registered anew on or after 1 January 1979, or being a fishing boat which has, since 1 January 1979, been so altered as to affect the accuracy or adequacy of the stability information shall in all operating conditions for a fishing boat set out in regulation 8(2), satisfy the following stability criteria after due correction for the free surface effects of liquids in tanks:

- (a) The area under the curve of the righting levers (GZ curve) shall not be less than—
  - (i) 0,055 metre-radians up to an angle of 30 degrees;
  - (ii) 0,090 metre-radians up to an angle of 40 degrees or such lesser angle of heel at which the lower edges of any openings in the hull, superstructures, deckhouses or companionways, being openings which cannot be closed weathertight, are immersed;
- (b) the righting lever (GZ) shall be at least 0,20 metres at an angle of heel equal to or greater than 30 degrees;
- (c) the maximum righting lever (GZ) shall occur at an angle of heel of not less than 25 degrees; and
- (d) in the upright position, the transverse metacentric height (GM) shall not be less than 0,35 metres.

[Reg 8A inserted by GNR2483/6242/31,15Dec1978]

### **Special cases**

**9.** If an owner considers that the constancy of a ship's voyage conditions, her stability characteristics or other circumstances make it unnecessary to provide all the information set forth in regulation 8, he shall send to the Secretary (through the office of the proper officer) a copy of the information he proposes to provide together with sufficient particulars about the ship's service and stability to enable the Secretary to decide whether the proposed form of information will be adequate, and the Secretary may, if he is satisfied, allow the ship to be provided with the lesser information.

## **Information to be reliable**

**10.** A ship's stability information shall at all times be reliable and up-to-date. If there is any change, for example in the construction, ballasting or service of the ship, which affects the accuracy or adequacy of the stability information, this information shall be properly revised and amended and copies of the amendments shall be sent to the Secretary (through the office of the proper officer). If the change is such as to make the amended information unreliable, the ship shall be re-inclined, and new information based on the new test shall be placed on board the ship and a copy sent to the Secretary.

## **CHAPTER III**

### **SHIP'S MAGNETIC COMPASSES, CHARTS, TIME-KEEPING APPARATUS AND SEXTANT**

[Heading substituted by GNR659/3478/32,28Apr1972]

#### **Application of Chapter III**

**11.** This Chapter applies to every South African ship, and a "Chapter III ship" means a ship to which this Chapter applies.

#### **Number and type of compasses**

**12.** (1) Every Chapter III ship of Class I shall be provided with 3 efficient magnetic compasses which shall be sited on the ship's centre line. One of such compasses shall be provided for use as a steering compass and shall be sited at the normal steering position, and another shall be provided for use as a standard compass and shall be sited near to the normal steering position and in a position from which the view of the horizon is least obstructed. A third such compass shall be provided at the after steering position, and shall, together with its gimbals, be interchangeable with the steering compass: Provided that a magnetic steering compass shall not be required if—

- (a) the standard compass is of the reflector or projector type and is equipped with a device by which it may be read from the normal steering position;
- (b) the standard compass is interchangeable with the after steering compass; and
- (c) a card of a gyroscopic compass or of a repeater thereof can be read from the normal steering position.

Every magnetic compass provided in such a ship shall be mounted in a binnacle: Provided that the after steering compass may be mounted on a pedestal.

In a ship built after 1 January 1960, either the standard compass or the after steering compass, with its gimbals shall be interchangeable with the steering compass. The same arrangement shall be adopted in a ship built before the aforesaid date as and when the compasses are renewed.

(2) (a) Every Chapter III ship of Class II, IIA, VII, VIIA or VIII shall be provided with 2 efficient magnetic compasses mounted in binnacles sited on the ship's centre line, of

which may be of the projector, reflector or transmitting type if it is capable of being used as a normal magnetic compass on failure of the electrical power.

(b) One magnetic compass shall be provided for use as a standard compass and shall be sited near to the normal steering position and in a position from which the view of the horizon is least obstructed.

(c) The second magnetic compass shall be provided for use as a steering compass and shall be sited at the normal steering position: Provided that the projected or reflected image of a magnetic compass, a gyro-compass, or a repeater from a gyro-compass or transmitting magnetic compass may be provided for this purpose, in which case the second magnetic compass may be sited in a binnacle or on a pedestal at the after steering position. At the same time, unless the projected or reflected image of a magnetic compass is available at the normal steering position, the second magnetic compass shall be sited therein in order that it will be available for steering purposes in the event of a failure of the gyro-compass or transmitting magnetic compass.

(3) Every Chapter III ship of Class V, VI, IX, IXA, X, XI or XII shall be provided with 1 efficient magnetic compass which shall be readily available at the normal steering position.

(4) (a) In every Chapter III ship of Class I, II, IIA, VII, VIIA, VIII, IX or IXA (other than a launch, lighter or barge) built after 1 January 1960 and fitted with a magnetic compass and binnacle in compliance with this regulation, the magnetic compass and binnacle shall conform to the minimum specification set forth in Annex 1.

(b) In every Chapter III ship of Class V, VI, IX, IXA (other than a tug, tender, dredger or hopper), X, XI or XII fitted with a magnetic compass in compliance with this regulation, the compass shall be of proved commercial marine standard, design and quality suitable for the nature of the service for which the ship is intended and the size of the ship. In ships of over 100 gross register tons the compass shall be provided with efficient means for the taking of celestial and terrestrial bearings.

[Para (b) amended by GNR1024/10252/39,30May1986]

### **Adjustment of compasses**

**13.** (1) The master or owner of a Chapter III ship shall be responsible for ensuring that a ship's compass is always maintained in good working order.

(2) The compass of every Chapter III ship shall be properly adjusted by a person approved by the Secretary as competent to adjust the compasses of ships. The certificate of such a person to the effect that the compass of a ship is properly adjusted, together with a declaration that the compass is not affected to any appreciable extent by any disturbing effects from electric circuits which may pass near the compass, or by the near presence of electronic instruments or electrical instruments or equipment when switched on and off, shall be retained by the master.

(3) In every case, whether on the first or subsequent adjustment of the compass, the master shall be provided with a table showing any residual deviations of the compass. Such table shall be signed by the person making the adjustment.

## **Deviation book**

**14.** (1) Every Chapter III ship, other than a launch, lighter or barge shall carry a compass deviation book which shall be kept up to date. The date of adjustment or re-adjustment of a compass shall be noted in the book, and the details including the position of correctors shown on the deviation card.

(2) The deviation book and table of deviations shall be deemed to be documents relating to the navigation of the ship under section 187 of the Act, and as such shall be handed to the successor on change of master.

## **Charts**

**15.** ...

[Reg 15 substituted by GNR44/16222/8,20Jan1995 and repealed by GNR503/23345/214,26Apr2002]

## **Time-keeping apparatus and sextant**

**15A.** (1) The owner and master of every Chapter III ship of Class I, II, IIA, VII, VIII, X, XI or XII of 100 tons or over shall ensure that there are on board the ship at least one efficient time-keeping apparatus and at least one efficient sextant to assist in making accurate celestial observations.

(2) For the purpose of subregulation (1), a time-keeping apparatus means a chronometer, deck watch or similar instrument, the daily rate of which can be checked and recorded by means of time signals.

[Reg 15A added by GNR659/3478/32,28Apr1972]

## **CHAPTER IV**

### **SIGNALLING LAMPS**

#### **Application of Chapter IV**

**16.** This Chapter applies to—

- (a) every South African ship of 100 tons or over; and
  - (b) every ship, which is not a South African ship, of 150 tons or over,
- and a "Chapter IV ship" means a ship to which this Chapter applies.

#### **Provision of signalling lamp**

**17.** The master or owner of every Chapter IV ship shall ensure that on each occasion on which the ship proceeds to sea, there is on board an efficient signalling lamp.

## **Requirements for signalling lamp**

**18.** The signalling lamp shall be an efficient portable lamp of a type suitable for use both by day and by night, which shall not be solely dependent upon the ship's main source of electrical power.

## **Batteries**

**19.** If the signalling lamp is of the battery operated type, means shall be provided whereby the batteries may be recharged when necessary. Any such batteries shall be for the operation of the signalling lamp alone and shall be independent of the batteries supplied for the radio equipment of the ship.

# **CHAPTER V**

## **BOAT AND FIRE DRILLS AND INSPECTION OF LIFE-SAVING EQUIPMENT**

### **Application of Chapter V**

**20.** This Chapter applies to every South African ship as set forth in this Chapter, and a "Chapter V ship" means a ship to which this Chapter applies.

### **Muster list and emergency signals**

**21.** (1) The master of every Chapter V ship of Class I, II, IIA, VII, VIIA or VIII shall prepare a muster list showing in respect of each member of the crew the special duties which are allotted to him and the station or stations to which he shall go in the event of an emergency, including duties and stations applicable for extinguishing fire.

(2) The muster list shall specify the following definite signals for calling all persons on board to their boat and fire stations in an emergency, and for indicating when the ship is to be abandoned:

- (a) The emergency signal for calling all persons on board to muster stations shall be a succession of 7 or more short blasts followed by 1 long blast on the whistle or siren;
- (b) the emergency signal shall be supplemented in a ship of Class I and in a ship of 150 feet in length or over of Class VII, VIIA or VIII by other means of warning which shall be electrically operated and which shall be capable of being operated from the bridge.

The muster list shall also specify the means of indicating when the ship is to be abandoned.

(3) The muster list shall assign duties to the different members of the crew in connection with—

- (a) the closing of the watertight doors, fire doors, sidescuttles, valves and closing mechanism of scuppers, ash-shoots, or other similar openings in the ship's side;
- (b) the equipment of the boats and liferafts and other life-saving appliances;

- (c) the launching of the boats and liferafts attached to davits or to other launching appliances;
- (d) general preparations of any other boats and other life-saving appliances;
- (e) the muster of passengers (if any); and
- (f) the extinction of fire.

(4) The duty of seeing that the boats and other life-saving appliances are at all time ready for use shall be specified in the muster list as the duty of 1 or more officers.

(5) The muster list shall assign to members of the stewards' department their several duties in relation to the passengers at the time of the emergency. These duties shall include—

- (a) warning to passengers;
- (b) seeing that they are suitably clad and have put on their lifejackets in a proper manner;
- (c) assembling the passengers at muster stations;
- (d) keeping order in the passages and on the stairways, and generally controlling the movements of the passengers;
- (e) seeing that a supply of blankets is taken to the lifeboats.

(6) The muster list shall be prepared, or, if a new list is not necessary, revised after the agreement with the crew has been signed and before the ship proceeds to sea, and shall be dated and signed by the master.

(7) If, after the muster list has been prepared, any change takes place in the crew which necessitates an alteration in the muster list, the master shall either revise the list or prepare a new list.

(8) Copies of the muster list shall be posted in several parts of the ship, and in particular in the crew's quarters, before the ship proceeds to sea and shall be kept so posted while the ship is at sea.

(9) The preparation of the muster list shall, if necessary in the opinion of the proper officer, be supplemented by the issue, to each of the crew of a card showing his boat station, his emergency station or stations and duties, and any signals connected therewith. In some ships the proper officer may, if he considers it necessary, permit the muster list to show the bunk or berth numbers (instead of names) of the individual members of the crew with the emergency duties assigned to them.

### **Assembly stations for passengers**

**22.** In every Chapter V ship, assembly stations for all passengers shall be appointed for use in an emergency. The meaning of all signals affecting passengers, with precise instructions as to what they are to do in an emergency shall be clearly stated in Afrikaans and English and in any other language which may be appropriate on cards posted in their cabins and in conspicuous places in other passenger quarters.

## **Training and inspection**

23. (1) The master of every Chapter V ship of Class I shall cause a muster of the crew to be held before the ship leaves her final port of departure in the Republic and shall cause a muster of the passengers embarked at any port to be held within 24 hours after leaving such port.

(2) The master of every Chapter V ship of Class I, II or IIA shall cause a muster of the crew to be held at intervals of not more than 7 days, when practicable, to ensure that the crew understand and are drilled in the duties assigned to them for the event of an emergency.

(3) The master of every Chapter V ship of Class VII, VIIA, VIII, IX, X of 100 tons or over, or XI which proceeds on an international voyage, shall cause a muster of the crew to be held at intervals of not more than 14 days, and if more than 25 per cent of the crew have been replaced at any port, the master shall cause a muster to be held within 24 hours of leaving such port. The master of every ship of Class X of less than 100 tons and the master of every ship of Class XI which does not proceed on an international voyage, shall take steps to ensure that the crew understand the use of lifesaving equipment and fire appliances on board and know where they are kept.

(4) Different groups of boats shall be used in turn at successive boat drills and every lifeboat shall be swung out at least once a month and, if practicable and reasonable, lowered at least once every 4 months. The musters and inspections shall be so arranged that the crew thoroughly understand and are practised in the duties they have to perform, and that all lifesaving equipment and fire appliances with the gear appertaining to them are always ready for immediate use.

(5) The master shall at every fire drill, cause each member of the crew to demonstrate his familiarity with the arrangements and facilities of the ship, his duties, and any equipment he may be called upon to use. The master shall familiarize and instruct the crew in this regard.

(6) The master shall take steps to ensure that the crew are properly instructed in the handling and operation of the liferafts on board.

(7) The master of every Chapter V ship of Class I, II, IIA, VII, VIIA, VIII, IX, X of 100 tons or over, or XI which proceeds on an international voyage, shall cause an entry to be made in the official log-book (or if there is no official log-book, cause some other record to be kept) of every occasion on which boat drill and fire drill are practised, or the lifesaving equipment and fire appliances inspected. If for any reason the said drills are not held or the said equipment or appliances are not inspected at the prescribed intervals, the master shall cause a statement to be entered in the official log-book (or other record kept) of the reasons why the drills were not practised or the appliances not inspected.

## **Lifeboat portable radio apparatus, when carried**

24. The master shall assign to at least 2 members of the crew (who may be radio officers) the duty of seeing that the lifeboat radio gear (which shall be kept together in the chartroom or other suitable place ready to be moved to one or other of the lifeboats in the event of an emergency) is placed in a lifeboat or otherwise made available for use in an emergency. On any occasion when boat drill is practised, the lifeboat radio shall be placed in a lifeboat or other place detailed for use in an emergency, as an exercise, if it is practicable to do so. Sufficient members of the crew in addition to radio officers shall be



given instruction in the use of the lifeboat radio gear so as to ensure its full and proper use in an emergency.

## **CHAPTER VI CARRIAGE OF DANGEROUS GOODS**

[Chapter VI (regulations 25 to 37) repealed by the Merchant Shipping (Dangerous Goods) Regulations, 1997]

## **CHAPTER VII CARRIAGE OF GRAIN**

[Chapter VII (regulations 38 to 41) repealed by the Merchant Shipping (Carriage of Grain in Bulk) Regulations, 1995]

## **CHAPTER VIII TIMBER CARGO REGULATIONS**

### **Application of Chapter VIII**

**42.** This Chapter applies to every load line ship of 25 or more gross tons loading a deck cargo of timber referred to in section 237 of the Act, and a "Chapter VIII ship" means a ship to which this Chapter applies.

[Reg 42 amended by GNR1024/10252/39,30May1986]

### **Deck openings covered by timber deck cargo**

**43.** Openings to spaces below the freeboard deck, shall be securely closed and battened down. All fittings, such as hatchway beams, fore-and-afters and covers, shall be in place. Where hold ventilation is needed, the ventilators shall be efficiently protected.

### **Stowage**

**44.** (1) Timber deck cargo shall be compactly stowed, lashed and secured. It shall not interfere in any way with the navigation and necessary work of the ship, or with the provision of a safe margin of stability at all stages of the voyage, regard being given to additions of weight such as those due to absorption of water by the timber, and to losses of weight such as those due to consumption of fuel and stores.

(2) Fire hydrants, valves for the deck water service and steam valves provided for the working of the ship and for fire fighting purposes, sounding pipes to tanks or bilges, shall be kept clear and accessible at all times.

(3) In the case of a ship within any of the areas set out in the second column of the Second Part of the Third Schedule to the Load Line Regulations, 1960, during the periods set out respectively opposite to such areas in the fourth column (winter period) of the said

Second Part, the height of the timber deck cargo above the freeboard deck shall not exceed one-third of the extreme breadth of the ship.

**Access to crew accommodation and machinery spaces, protection of crew, etc.**

45. (1) Timber deck cargo shall be so stowed as to leave available at all times safe and satisfactory access to crew accommodation, to machinery spaces and to all other parts used in the necessary work of the ship.

(2) Timber deck cargo in way of openings which give access to such parts, shall be so stowed that the openings can be properly closed and secured against the admission of water.

(3) Efficient protection for the crew in the form of guard rails or life lines, spaced not more than 12 inches apart vertically, shall be provided on each side of the timber deck cargo to a height of at least 4 feet above the cargo. The timber deck cargo shall be so stowed as to be sufficiently level for gangway purposes.

**Deck steering gear**

46. Deck steering arrangements shall be effectively protected from damage by timber deck cargo, and, as far as is practicable, shall be accessible. Efficient provision shall be made for steering in the event of a breakdown in the main steering arrangements.

**Lashings**

47. A complete system of overall lashings of ample strength and in good condition, shall be provided so as to give effective security throughout the length of the timber deck cargo. The lashings shall be fitted with releasing arrangements accessible at all times. All fittings and appliances used in connection with the lashings shall be of strength corresponding to the strength of the lashings. Such fittings and appliances shall be of a satisfactory type.

**Uprights**

48. When uprights are required by the nature of the timber—

- (a) the uprights shall be of adequate strength and may be of wood or metal;
- (b) the spacing shall be suitable for the length and character of timber carried, but shall not exceed 10 feet; and
- (c) efficient means shall be provided for securing the uprights.

### **Additional precautions applying to ships using timber load lines**

49. Regulations 50, 51 and 52 shall apply to a Chapter VIII ship marked with timber load lines when loaded beyond the maximum depth to which she would, for the time being, be entitled under the Load Line Regulations, 1960, to be loaded if she were not marked with timber load lines.

### **Stowage (see regulation 49)**

50. The wells on the freeboard deck shall be filled with timber stowed as solidly as possible, to a height of at least (i) 6 feet for a ship up to and including 250 feet in length, (ii) 7 feet 6 in for a ship 400 feet in length or over, and (iii) a proportionate intermediate height for a ship over 250 feet but under 400 feet in length.

### **Lashings (see regulation 49)**

51. (1) The timber deck cargo shall be efficiently secured throughout its length by independent overall lashings spaced not more than 10 feet apart. Overall lashings shall be in good condition and shall consist of close link chain of not less than ¾-inch diameter, or flexible wire rope of equivalent strength, fitted with slip hooks and stretching screws, which shall be accessible at all times. Wire rope lashings shall have a short length of long link chain to permit the length of lashings to be regulated.

(2) When the timber is in lengths of less than 12 feet, the spacing of the lashings shall be reduced to suit the length of timber, or other suitable provision made.

(3) When the spacing of the lashings is 5 feet or less, the size of the lashings may be reduced, but not less than ½-inch diameter chain or equivalent wire rope shall be used.

### **Means for securing uprights (see regulation 49)**

52. (1) For the purpose of securing uprights when these are required by the nature of the cargo, strong angles or metal sockets efficiently secured to the stringer plate, or equally efficient means, shall be provided.

(2) On superstructure decks, uprights, where fitted, shall be secured by athwartship lashings of ample strength.

## **CHAPTER IX**

### **DANGERS TO NAVIGATION**

#### **Application of Chapter IX**

53. This Chapter applies to every South African ship and a "Chapter IX ship" means a ship to which this Chapter applies.

### **Dangers to be reported**

**54.** (1) The master of every Chapter IX ship shall, on meeting with any of the dangers to navigation mentioned in Annex 4, send by all means of communication at his disposal information relating thereto as set forth in that Annex.

(2) Such information shall be sent to ships in the vicinity and to the nearest coast station or signal station with which it is possible for the ship to communicate. If such station is a signal station, the information shall be accompanied by a request that it be sent forthwith to the nearest coast station. If the ship is not equipped with a radio apparatus and it is not possible to communicate with a signal station, the master shall as soon as the ship returns to port, furnish a report to the appropriate authority.

(3) Such information shall be sent by the master of the ship in English or by means of the International Code of Signals.

(4) Such information, when sent by the master of the ship by means of radio, shall commence with an indication of the nature of the danger to which it relates and shall be preceded by the safety signal consisting, if the information is sent by radio telegraphy, of the group TTT in the Morse Code, repeated 3 times, with the letters of each group and the successive groups clearly separated from each other, or if the information is sent by radiotelephony of the spoken word "SECURITE" (pronounced "SAY CURE-E-TAY") repeated 3 times.

## **CHAPTER X**

### **WRECKS, CASUALTIES, COLLISIONS OR DAMAGE TO BE REPORTED**

#### **Application of Chapter X**

**55.** This Chapter applies to every ship set forth in section 259 of the Act, and a "Chapter X ship" means a ship to which this Chapter applies.

#### **Reports to be made**

**56.** The report required by section 259(1) of the Act shall be in the form set forth in Annex 5.

**CHAPTER XI**  
**DEPTH-SOUNDING DEVICES**

**Application of Chapter XI**

57. This Chapter applies to every decked ship of 25 or more gross tons registered or licensed in the Republic or, which is in terms of the Act, required to be so registered or licensed, and a "Chapter XI ship" means a ship to which this Chapter applies.

[Reg 57 amended by GNR1024/10252/39,30May1986]

**Ships of Class I, II or IIA**

58. (1) Every Chapter XI ship of Class I, II or IIA shall be provided with an efficient mechanical depth-sounding device, and with such spare parts as are sufficient, having regard to the type of the device and to the intended service of the ship, to enable the device to be maintained in working order while the ship is at sea: Provided that an efficient echo sounder together with a deep-sea leadline of at least 120 fathoms in length with a lead weighing at least 28 lb. and an efficient reel, may be substituted for a mechanical depth-sounding device.

(2) Every Chapter XI ship of Class I, II or IIA shall be provided with 2 hand lead-lines, each at least 25 fathoms long, and each with a lead weighing at least 7 lb.

**Ships of Class VII, VIIA, etc.**

59. (1) Every Chapter XI ship of Class VII, VIIA, VIII, or X of 100 tons or over, shall be provided with an efficient mechanical depth-sounding device. The device shall include such parts as are sufficient, having regard to the type of the device and to the intended service of the ship: Provided that an efficient echo sounder together with a deep-sea lead-line of at least 120 fathoms in length with a lead weighing at least 28 lb and an efficient reel, may be substituted for a mechanical depth-sounding device.

(2) Subject to the provisions of subregulation(3), every Chapter XI ship of Class VII, VIIA or VIII shall be provided with 2 hand lead-lines, and every ship of Class X (other than a line fishing boat) with 1 hand lead-line. Each such line shall be at least 25 fathoms in length with a lead weighing at least 7 lb.

(3) Where a Chapter XI ship of Class VII, VIIA, VIII or X is equipped with a mechanical depth-sounding device, only 1 hand lead-line shall be required: Provided that in no case shall a ship of less than 100 tons be required to be provided with more than 1 such line.

**Lead-lines**

60. (1) The hand lead-line and deep-sea lead-line shall be suitably marked to enable the depth of water to be ascertained.

(2) The lead shall be capable of being armed to enable the nature of the bottom of the sea to be ascertained.

## **CHAPTER XII**

### **ANCHORS, CHAIN CABLES, HAWSERS AND WARPS**

#### **Application of Chapter XII**

**61.** This Chapter applies to every ship of 25 tons or over registered or licensed in the Republic or which is in terms of the Act required to be so registered or licensed, and a "Chapter XII ship" means a ship to which this Chapter applies.

#### **Provision of anchors and cables**

**62.** Every Chapter XII ship shall be provided with such anchors and chain cables as are sufficient in number, weight and strength, having regard to the size and intended service of the ship.

#### **Provision of hawsers and warps**

**63.** Every Chapter XII ship shall be provided with such hawsers and warps as are sufficient in number and strength, having regard to the size and intended service of the ship.

## **CHAPTER XIII**

### **PILOT LADDERS**

#### **Application of Chapter XIII**

**64.** (1) Subject to the provisions of subregulation (2), this Chapter applies to—

- (a) every ship of 25 tons or over registered or licensed in the Republic or which is in terms of the Act required to be so registered or licensed; and
- (b) every ship belonging to a country other than the Republic,

requiring to embark or disembark a pilot, being a ship of Class I, II, IIA, VII, VIIA or VIII, and a "Chapter XIII ship" means a ship to which this Chapter applies.

[Subreg (1) substituted by GNR35/2603/55,9Jan1970]

(2) This Chapter shall not apply to a ship belonging to a country other than the Republic, if she would not have been within a port in the Republic but for stress of weather or any other circumstances that neither the master nor the owner nor the charterer (if any) of the ship could have prevented or forestalled.

### **Provision of pilot ladders**

**65.** (1) Every Chapter XIII ship shall be provided with a pilot ladder which shall comply with the requirements of this Chapter.

(2) Each pilot ladder shall be efficient for the purpose of enabling a pilot to embark and disembark safely and such ladder shall be used only by officials and other persons while a ship is arriving at or leaving a port and for the embarkation and disembarkation of pilots. The pilot ladder shall be in a clean condition.

(3) Every such pilot ladder shall be secured in a position clear of any possible discharges from the ship and so that each step rests firmly against the ship's side and so that the pilot can gain convenient access to the ship after climbing not less than 5 feet and not more than 30 feet.

(4) A single length of ladder shall be used capable of reaching the water from the point of access to the ship when the ship is in an unloaded condition and in normal trim with no list.

(5) Whenever the distance from the water to the point of access to the ship exceeds 30 feet, access from the pilot ladder to the ship shall be by means of an accommodation ladder or other equally safe and convenient means.

(6) The treads of the pilot ladder shall be of hard wood not less than 19 inches long, 4½ inches wide and 1 inch in depth, spaced not less than 12 inches nor more than 15 inches apart and secured in such a manner that they will remain horizontal.

(7) The side ropes of the pilot ladder shall consist of 2 manilla ropes 2¼ inches in circumference on each side.

(8) 2 man-ropes of not less than 2½ inches in circumference, properly secured to the ship, and a safety line of sufficient length attached to a lifebuoy, shall be kept ready for use if required. The man-ropes shall be made of manilla or sisal or other non-slip material and shall be in a clean condition.

(9) Hard wood battens about 6 feet long shall be provided at such intervals as will prevent the pilot ladder from twisting.

(10) Means shall be provided to enable the pilot ladder to be used on either side of the ship and to enable the pilot to pass safely and conveniently from the head of the ladder into the ship or on to the ship's deck.

(11) A light shall be provided at night so that the pilot ladder overside and also the position where the pilot boards the ship shall be adequately lit.

### **Supervision of pilot ladder**

**66.** The rigging of pilot ladders and the embarkation and disembarkation of pilots thereby shall be supervised by a responsible officer of the ship.

## **Liability for contravention of this Chapter**

67. The owner and master of any Chapter XIII ship, and any member of the crew, who contravenes or fails to comply with the provisions of this Chapter and thereby causes any pilot or other official who is not a member of the crew to suffer hurt, injury or death through the improper use, or defect, other than latent defect not discoverable by due diligence, of any pilot ladder while embarking or disembarking such pilot or other official shall, notwithstanding any other liability resting upon the ship, on conviction, each be liable to a fine not exceeding R100.

Provided that in any proceedings against an owner or master or any member of the crew in respect of a contravention of or failure to comply with the provisions of this Chapter, it shall be a good defence to prove that the hurt, injury or death of such pilot or other official was caused by negligence or fault of such pilot or other official while using the pilot ladder for embarking onto or disembarking from the ship, or by negligence or fault of any person in a pilot vessel, or other circumstances that neither the owner, master nor member of the crew could have prevented.

## **CHAPTER XIV**

### **NAVIGATION LIGHTS AND SHAPES, AND SOUND SIGNALS**

[Chapter XIV (regulations 68 to 71) repealed by the Merchant Shipping (Collision and Distress Signals) Regulations, 2005]

## **CHAPTER XV**

### **CLOSING OF OPENINGS IN HULLS AND WATERTIGHT BULKHEADS**

#### **Application of Chapter XV**

72. (1) This Chapter applies to every South African ship being a passenger ship, and a "Chapter XV ship" means a ship to which this Chapter applies.

(2) In the application of this Chapter, a ship shall be deemed to proceed to sea when she leaves a mooring or anchorage at a port for the purpose, and to be at sea until she has been secured at a mooring or anchorage at a port.

#### **Contrivances to be closed**

73. In every Chapter XV ship, the contrivances to which this regulation relates, shall, immediately before the ship proceeds to sea, be securely closed, and shall be kept so closed while the ship is at sea. The contrivances to which this regulation relates are the following:

- (a) Watertight doors below the margin line which are fitted in bulkheads required by the Construction Regulations, 1968, to be watertight and which divide cargo between deck spaces.
- (b) All sidescuttles which can be opened and which are situated in any between decks and below the margin line, if any of such sidescuttles have their sills below a line drawn parallel to the bulkhead deck at the side of the ship and having its lowest point 4½ feet



in addition to 2½ per cent of the breadth of the ship above the water when the ship is first afloat in sea water after proceeding to sea: Provided that in fair weather in tropical zones within the meaning of the Load Line Regulations, 1960, (including seasonal tropical zones in the appropriate seasons) this paragraph shall have effect as if "3½ feet" were substituted for "4½ feet".

- (c) Sidescuttles below the margin line which will not be accessible while the ship is at sea, together with their deadlights.
- (d) Sidescuttles below the margin line situated in spaces appropriated alternatively to the carriage of cargo or passengers, together with their deadlights, when the space in which they are situated is used for the carriage of cargo.
- (e) Gangway, cargo and coaling ports below the margin line.

For the purpose of this regulation, a contrivance shall be deemed to be below the margin line, if the sill of the contrivance is below that line, and a sidescuttle shall not be deemed to be closed unless it is locked.

#### **Watertight doors to be closed**

74. In every Chapter XV ship every watertight door, not being a door referred to in regulation 73(a), shall be kept closed while the ship is at sea except when it is required to be open for the working of the ship. When open, every such door shall be kept free from obstructions which might prevent its rapid closer.

#### **Portable plates to be in place**

75. In every Chapter XV ship, every portable plate closing an opening in any portion of the internal structure of the ship which is required by the Construction Regulations, 1968, to be watertight, being an opening which is wholly or partly below the margin line, shall be in place when the ship proceeds to sea and shall be kept in place while the ship is at sea, except in case of urgent necessity. In replacing any such plate, all reasonable precautions shall be taken to ensure that the joints are watertight.

#### **Valves of ash-shoots and rubbish-shoots to be closed**

76. In every Chapter XV ship, the cover and valve of any ash-shoot, rubbish-shoot or other similar contrivance having its inboard opening below the margin line, shall be kept securely closed when the device is not in use.

#### **Practise drills to be held**

77. (1) In every Chapter XV ship, all watertight doors and other contrivances referred to in regulations 73, 74 and 76 shall be opened and closed for purposes of drill—

- (a) at intervals of not more than 7 days; and

- (b) immediately before the ship proceeds to sea, if the ship is intended to remain at sea for a period of more than 7 days:

Provided that nothing in this subregulation shall be taken to authorise the opening, while the ship is at sea, of any watertight door or other contrivance which is required by regulation 73 to be kept closed.

(2) In every Chapter XV ship, all watertight doors, fitted in transverse bulkheads required by the Construction Regulations, 1968, to be watertight (not being doors required by this Chapter to be kept closed when the ship is at sea) shall be opened and closed for the purposes of drill once in every period of 24 hours when the ship is at sea, if such doors are both—

- (a) hinged, or operated by power; and
- (b) required to be open for the working of the ship at any time while the ship is at sea:

Provided that nothing in this subregulation shall require any bunker door to be opened and closed during any voyage before it has been opened for the working of the ship during that voyage.

#### **Inspections to be made at intervals**

**78.** In every Chapter XV ship—

- (a) all watertight doors;
- (b) all mechanisms, indicators and warning devices connected with such doors;
- (c) all valves the closing of which is necessary to make watertight any compartment below the margin line; and
- (d) all valves the operation of which is necessary for the efficient operation of damage-control cross-connections,

shall be inspected at intervals of not more than 7 days by a person appointed for that purpose by the master of the ship.

#### **Entries to be made in the official log-book**

**79.** In every Chapter XV ship, entries shall be made in the official log-book recording the following:

- (a) The times of the last closing, before the ship proceeds to sea, of the watertight doors and other contrivances referred to in regulation 73 and of the next subsequent opening of such doors and contrivances;
- (b) the times of the closing and opening, while the ship is at sea, of any watertight door which is fitted between bunkers in the between decks below the bulkhead deck;
- (c) whether the portable plates referred to in regulation 75 are in place when the ship proceeds to sea, and the times, if any, of the removal and replacement of such plates when the ship is at sea; and

- (d) the occasions on which drills are kept and inspections made in compliance with the foregoing provisions of this Chapter, and whether the contrivances to which such drills and inspections relate are in good working order.

## **CHAPTER XVI**

### **EXEMPTIONS, EQUIVALENTS, *etc.***

#### **Exemptions in respect of a ship engaged on an international voyage**

**80.** The Minister may, on such conditions as he may impose, exempt any ship which is intended to be engaged on an international voyage from any of the requirements of these regulations, if he is satisfied that compliance therewith is unreasonable or unnecessary in the circumstances.

#### **Exemption in respect of a vessel which is not engaged on an international voyage**

**81.** The Secretary may, on such conditions as he may impose, exempt any vessel which is not intended to be engaged on an international voyage from any of the requirements of these regulations, if he is satisfied that compliance therewith is unreasonable or unnecessary in the circumstances.

#### **Equivalents**

**82.** Where these regulations require that a particular fitting, material, appliance or apparatus, or type thereof, shall be fitted or carried in a vessel, or that any particular provision shall be made, the Secretary may allow any other fitting, material, appliances or apparatus, or type thereof, to be fitted or carried, or any other provision to be made in that vessel if he is satisfied that such other fitting, material, appliance or apparatus, or type thereof, or provision is at least as effective as that required by these regulations.

#### **Improvements in the safety of vessels**

**83.** To assist owners and masters in the improvement of the safety of their vessels and persons on board, the Secretary shall as and when necessary, publish a notice containing such information and recommendations as he considers desirable.

## ANNEX 1

(Regulation 12(4))

### QUALITY AND PERFORMANCE OF DRY CARD AND LIQUID COMPASSES FOR USE IN THE NAVIGATION OF MERCHANT SHIPS

#### *I. Compass*

1. All parts used in the construction, other than the magnets of the directional system, shall be of non-magnetic material except in the case of transmitting magnetic compasses. In the latter case it will be necessary to use magnetic material for certain items, but any disturbing effect on the compass system shall be as to conform to the requirements of paragraph 18.

2. The magnets used in the directional system shall be made of suitable magnet material of high remanence and high coercive force.

3. The moment of inertia of the directional system shall be the same about all horizontal axes through the bearing surface of the jewel.

4. The directional system shall be retained *in situ* by a suitable arrangement. The directional system shall remain free when the bowl is tilted 10 degrees in any direction. The bowl shall remain horizontal when the binnacle is tilted 40 degrees in any direction.

5. (i) The weight of the complete directional system in any liquid used in the compass bowl shall not be less than 4 grams and not greater than 8 grams, unless the diameter of the compass exceeds 6½ inches, in which event the weight of the directional system shall not more than 12 grams.

(ii) In a dry card compass, the weight in air of the complete directional system including the jewelled cap, shall be not less than 10 grams and not more than 20 grams, the range covered being from 6 needle, 8 inch diameter to 10 needle, 10 inch diameter.

6. The period of the directional system from an initial deflection of 40 degrees from the meridian shall be not less than 23 seconds and not more than 35 seconds at a temperature of 15 degrees Centigrade in a horizontal field of 0.18 gauss. Alternatively, it may be aperiodic.

7. The plane of the card of the directional system shall be not more than 30 minutes of arc from the horizontal when the directional system is assembled in the compass bowl in a vertical field of 0.43 gauss in the Northern Hemisphere.

8. The change in tilt of the directional system when subjected to a change in vertical field of 1 c.g.s. unit shall be not more than 3 degrees.

9. The distance between the lubber mark and the outer edge of the card shall be not more than 3/32 inch.

10. The gimbal axis, the graduated edge of the card and the lubber mark and pivot points, shall lie in the same horizontal plane when the top glass and seating for the azimuth mirror or azimuth circle are horizontal. The graduated edge of a dry card may be below the horizontal plane through the pivot point, provided that its vertical distance from the plane does not exceed 0.6 inch and provided that the bowl is gimballed.

11. Graduations on the compass card shall be marked either in degrees or in points, half-points and quarter-points, or alternatively in both systems. In the case of the steering compass which shall be supplied with a magnifier, the ship's heading shall be readable by the helmsman at a distance of 4 feet 6 inches in daylight or artificial lighting, and not less than 15 degrees of card sector shall be visible through the magnifier on each side of the lubber mark. In the case of a projected or reflected image of the standard compass in the wheelhouse, the field of vision should be at least 15 degrees at either side of the lubber mark and the magnification shall be such as to enable a person with normal sight to read the ship's head 3 feet from the periscope tube.

12. A azimuth taking device shall be provided for the standard compass; this shall embrace a field of vision of 10 degrees and be capable of taking azimuth bearings of objects or celestial bodies whose position in the vertical plane lies between 5 degrees below the horizontal plane and 60 degrees above the horizontal plane.

13. In a standard compass, the rim of the bowl shall be marked in degrees.

14. Any liquid damping employed in a compass bowl shall remain free from bubbles over a temperature range of - 30° to + 60 degrees Centigrade and shall not emulsify or freeze at - 30 degrees Centigrade; also there shall be no inward leak of air or outward leak of liquid through this temperature range.

15. When rotated 180 degrees in 30 seconds, the swirl error shall not exceed 6 degrees at a temperature of 15 degrees Centigrade in a horizontal field of 0.18 gauss.

16. The directional system of the compass shall be designed in such a manner that, when working in conjunction with suitable quadrantal correcting arrangements, the induction error will not exceed 3 degrees in azimuth in a horizontal field of 0.18 gauss.

17. Means shall be provided to prevent dislodgement of the compass bowl under all seaway and weather conditions.

18. Requirements of accuracy:

(i) *Error*—The total directional error (excluding lubber error) on any heading shall not be greater than 20 minutes of arc. In the case of a transmitting magnetic compass the direction error at the compass card with the transmitting system energised shall not be greater than 35 minutes of arc and the directional error at any repeating instrument shall not exceed 1 degree.

(ii) *Friction*—When the card is deflected by 2 degrees and released, first on one side of the meridian and then on the other, any residual error shall not exceed 6 minutes of arc in a horizontal field of 0.18 gauss.

(iii) *Lubber mark*—The vertical plane passing through the lubber mark and the centre of the card, shall be parallel to the fore and aft gimbals axis and perpendicular to the athwartship gimbals axis with a limit of 20 minutes of arc.

(iv) *Azimuth taking device*—With the instrument correctly aimed, the error on any reading shall not exceed 20 minutes of arc between altitudes of 5 degrees below and 45 degrees above the horizontal plane, and shall not exceed 30 minutes of arc at altitudes above 45 degrees. Throughout the former altitude range, the ill-aiming error shall not exceed 1 degree for 5 degrees of ill-aiming on either side and throughout the latter altitude range this error shall not exceed 1½ degrees. The ill-aiming error shall not exceed 30 minutes of arc at 27 degrees of altitude at any eye position.

19. *Identification*—The maker's or supplier's name shall be marked on the card, the verge ring and the azimuth taking device. The serial number shall be shown on the card, the bowl, the gimbal ring and the azimuth taking device.

## II. Binnacle

20. The compass shall be mounted in a suitable form of binnacle stand, so that the centre line of the magnets of the directional system is not less than 42 inches and not more than 49 inches from the under surface of the binnacle deck fittings.

21. The binnacle shall be soundly constructed from high quality wood or non-magnetic material. Any sheet metal work, such as rim or helmet, shall be not less than 20 s.w.g. thickness and shall be non-magnetic; any brackets, bolts, *etc.*, shall also be made of non-magnetic material. The binnacle shall be capable of being slewed through a total angle of at least 6 degrees when sited on its deck bolts.

22. Provision shall be made for illuminating the compass card by electric light and by an emergency oil lamp. A suitable dimming device for the electric light shall be provided, and the emergency oil lamp shall be fitted with a burner of the "Barton" type.

23. The binnacle shall contain a device suitable for correcting azimuth deviations of the compass arising from the sub-permanent magnetism of the ship. No magnetic part of this device shall be nearer to the directional system of the compass than twice the length of the magnets composing the correcting device. The correcting device shall be capable of neutralising a coefficient B of 40 degrees and a coefficient C of 40 degrees. When corrector magnets are used for this purpose, they shall be 8 inches in length and either 3/8 inch or 3/16 inch in diameter.

24. The binnacle shall contain a device capable of neutralising the vertical magnetism of the ship at the position of the compass card. The centre of the magnets composing this device, shall not be nearer to the directional system of the compass than twice the length of the magnets. The device shall be adjustable so as to provide vertical fields of at least  $\pm 0.75$  gauss. When heeling error magnets are used for this purpose, they shall be 9 inches in length and 3/8 inch in diameter.

25. Corrector magnets as provided for in paragraphs 23 and 24 shall be made of a suitable magnet material of high remanence and high coercive force.

26. The binnacle shall be provided with a device for compensating compass deviations arising from the horizontal components of fields induced in the soft iron of the ship by the earth's field. This device shall be capable of neutralising a coefficient D up to + 14 degrees. When soft iron spheres are used for this purpose, they shall be fitted with 3/8 inch diameter bolts and so fixed that the centre of the spheres lie 5 inches above the securing brackets.

27. The binnacle shall be provided with a device for compensating deviations arising from the vertical components of fields induced in the soft iron of the ship by the earth's field, forward or aft of the compass position. When a Flinders bar is used for this purpose, it shall be of solid soft iron 3 inches in diameter and supplied in lengths of 1½, 3, 6 and 12 inches.

28. Any material used in the devices for correcting induced fields shall have a uniform and high permeability, low coercive force and a negligible remanence.

29. Provision shall be made for recording the position of the correcting devices referred to in paragraphs 23, 24 and 26 and for them to be satisfactorily secured after

adjustment. When numbers are used to indicate the positions of the correcting devices referred to in paragraphs 23 and 24, they shall read from the bottom upwards.

30. An inclinometer having a range of 40 degrees of heel shall be fitted on the standard and steering binnacles. This inclinometer shall be capable of withstanding a temperature of - 30 degrees and + 60 degrees Centigrade.

31. In the case of the standard binnacle, a suitable sight shall be fixed to the helmet.

32. A set of four deck bolts, sockets, and all necessary securing screws shall be provided for fixing the binnacle to the deck. The deck bolts shall be of  $\frac{3}{4}$ -inch diameter and the base securing holes the binnacle shall have a pitch circle diameter of 16 inches or  $17\frac{3}{4}$  inches or 23 inches, and be located at the corners of a square the sides of which lie in the fore and aft and athwartship directions.

33. *Requirements of accuracy*

(i) The fore and aft marks on the binnacle, and the axis of the fore and aft journals of the gimbals, shall be in the same vertical plane within 30 minutes or arc.

(ii) The fields produced by the devices compensating the horizontal and vertical components of the ship's sub-permanent magnetism, shall be uniform in the area swept by the directional system of the compass.

(iii) The centre of the quadrantal deviation correcting device shall lie in the same horizontal plane as that containing the centres of the magnets of the directional system within a tolerance of 2 per cent of the effective diameter of the device itself when the binnacle is vertical.

(iv) The "magnetic pole" of the device compensating deviations arising from induced vertical field of the ship, shall lie in the same horizontal plane as that containing the centres of the magnets of the directional system when the binnacle is vertical.

(v) When the binnacle is on a horizontal surface, the inclinometer shall read zero within  $\pm 1$  degree.

**ANNEX 2**

(Regulation 31(1))

**CONDITIONS OF PACKING OF DANGEROUS GOODS**

[Regulation 31 and Annex 2 repealed]



**ANNEX 3**  
(Regulation 39)

**PRECAUTIONS TO PREVENT GRAIN FROM SHIFTING**

[Regulation 39 and Annex 3 repealed]

## ANNEX 4

(Regulation 54(1))

### NATURE OF INFORMATION RELATING TO DANGERS TO NAVIGATION

1. On meeting with dangerous ice, a dangerous derelict or any other direct danger to navigation, except the dangers mentioned in paragraphs 2, 3 and 4, the master of the ship shall send the following information:

- (a) The kind of ice, derelict or other danger observed;
- (b) the position of the ice, derelict or other danger when last observed;
- (c) the Greenwich Mean Time and date when the danger was last observed.

2. On meeting with a dangerous storm, the master of the ship shall send—

- (a) the following information:
  - (i) The position of the storm so far as it can be ascertained, together with the Greenwich Mean Time, ascertained, together with the Greenwich Mean Time, and date when the storm was encountered;
  - (ii) the position, true course and speed of the ship when the observation was made;
- (b) as much of the following information as lies within his power:
  - (i) The barometric pressure, corrected if possible, indicating whether such pressure is given in millibars, inches or millimetres and whether the reading is corrected or uncorrected;
  - (ii) the change in barometric pressure during the previous 3 hours;
  - (iii) true direction of the wind;
  - (iv) the wind force according to the Beaufort Scale;
  - (v) the state of the sea (smooth, moderate, rough or high);
  - (vi) the swell (slight, moderate or heavy) and the true direction from which it comes; and
  - (vii) the period or length of the swell (short, average or long).

3. On encountering winds of force 10 or above on the Beaufort Scale (not being a tropical storm) for which no storm warning has been received, the master of the ship shall send the same information as that listed in paragraph 2 but excluding the details concerning sea and swell.

4. On encountering air temperatures below freezing point associated with gale force winds causing severe ice accretion on the superstructure of the ship, the master of the ship shall send the following information:

- (a) The Greenwich Mean Time and date when the encounter was made;
- (b) the air temperature and, if practicable, the sea temperature at such time; and

(c) the force of the wind encountered (Beaufort Scale) and the true direction thereof.

**ANNEX 5**

(Regulation 56)

(Coat of Arms)

**REPUBLIC OF SOUTH AFRICA**

**DEPARTMENT OF TRANSPORT**

**MARINE DIVISION**

[Merchant Shipping Act, 1951 (Act No. 57 of 1951), as amended]

**CASUALTY REPORT**

(Section 259 of Act 57/1951)

A. Particulars of ship and cargo

Name of ship (state whether steam, motor, or sail)	Official number and nationality	Port of registry
Gross tonnage	Net tonnage	Number of crew
Number of passengers	Description of cargo	

B. Particulars regarding master and owner of ship

*Master:*

Name in full	Nationality	No. of certificate	Date of issue of certificate	Place of issue of certificate

*Owner:*

Name and address: .....

C. Particulars of voyage

Foreign-going, coasting, fishing, etc.	Original port of departure	Date of departure from original port

Port last sailed from	Port of final destination

D. Particulars of casualty (state whether Greenwich mean time or local time).

Exact locality OR (name or place, country or sea)	Where ship was last heard of	Latitude and longitude	True bearing and distance from land, <i>etc.</i>

Date and hour	State of weather and atmosphere	Direction and force of wind

Number of lives lost

Number of lives lost	
Crew	Passengers

E. Account of casualty, with remarks as to causes and whether it could have been avoided. Extent of damage to ship and cargo must be given.

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Dated at ..... this ..... day of .....

(Signed).....

Master/Owner/Owner's representative

Address.....

### AMENDING NOTICES

<i>No. R.</i>	<i>Gazette</i>	<i>Day</i>	<i>Month</i>	<i>Year</i>
35	2603	9	Jan	1970
659	3478	28	Apr	1972
2204	4905	21	Nov	1975
2483	6242	15	Dec	1978
1024	10252	30	May	1986
44	16222	20	Jan	1995
1443*	16673	22	Sep	1995
574	17921	18	Apr	1997
503**	23345	16	Apr	2002
566***	27675	17	Jun	2005

\* Regulations 38-41 and Annex 3 repealed.

\*\* Regulation 15 repealed.

\*\*\* Regulations 68-71 repealed.