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GOVERNMENT NOTICE GOEWERMENSKENNISGEWING

DEPARTMENT OF TRANSPORT DEPARTEMENT VAN VERVOER

No. R. 81

6 February 2012

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

PUBLICATION FOR COMMENTS OF THE MERCHANT SHIPPING (SAFE MANNING AMENDMENT) REGULATIONS, 2012

The above- mentioned draft Regulations in the Schedule are hereby published for public comments. Interested persons are invited to submit written comments on the draft Regulations within 30 days from the date of publication in the *Gazette*.

Submission should be posted to the Director – General Department of Transport for the attention of Mr. Trevor Mphahlele or Adv. A. Masombuka

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Schedule

1 Title and commencement

These regulations are called the *Merchant Shipping (Safe Manning) Amendment Regulations, xxx* and come into operation on a date set by the Minister.

2 Definitions

In these regulations "the Regulations" means the *Merchant Shipping (Safe Manning) Regulations, 1999 as amended*, published by Government Notice Government Notice No. 1548 of 30 December 1999, as amended by Government Notices Nos. R. 501 of 26 April 2002 (as corrected by Government Notice No. R. 893 of 28 June 2002) and R. 545 of 30 April 2004.

3 Amendment of regulation 1 of the Regulations

Regulation 1 of the Regulations is amended—

- (a) By the insertion in subregulation (1) after the definition of "accredited institutions" of the following definition:

"appropriate certificate" means a certificate issued and endorsed in accordance with the provisions of these regulations and entitling the lawful holder thereof to serve in the capacity and perform the functions involved at the level of responsibility specified therein on a ship of the type, tonnage, power and means of propulsion concerned while engaged on the particular voyage concerned;"

- (b) by the insertion in subregulation (1) after the definition of "certificated" of the following definition:

"chief engineer" means the senior engineer officer responsible for the mechanical propulsion and the operation and maintenance of the mechanical and electrical installations of a ship;"

- (c) by the insertion in subregulation (1) after the definition of "deck officer" of the following definition:

"dynamic positioning" means a system whereby a self propelled vessel's position and heading is automatically controlled by using its own propulsion unit;"

- (d) by the insertion in subregulation (1) after the definition of "engineer officer" of the following definition:

"electro-technical officer" means a person who is qualified in

terms of the Code for service as a ship's officer in the engine room department on a ship;";

- (e) by the insertion in subregulation (1) after the definition of "electro-technical officer" of the following definition:

"electro-technical rating' means a person who is qualified in terms of the Code for service in the engine room department on a ship;";

- (f) by the insertion in subregulation (1) after the definition of "fast rescue boat" of the following definition:

"fishing vessel' means a vessel that is used wholly or principally for the taking, catching, or capturing of fish or other living resources of the sea or sea-bed for financial gain or reward;";

- (g) by the deletion of the definition in subregulation (1) of "length of ship";

- (h) by the insertion in subregulation (1) after the definition of "length" of the following definitions:

"limited waters', in relation to a fishing vessel, has the same meaning as in regulation 2(1) of the *Merchant Shipping (Training and Certification) (Fishing and Marine Motorman Qualifications) Regulations, xxx*;

"mate' means the deck officer next in rank to the master and upon whom the command of the ship falls in the event of the incapacity of the master;";

- (i) by the substitution in subregulation (1) for the definition of "near coastal voyage" of the following definition:

"near-coastal voyage' means a voyage made by a ship of less than 1600 GT, exclusively within waters under South African jurisdiction or within adjoining waters under the jurisdiction of another State Party with which a near coastal voyage limit agreement has been entered into;";

- (j) by the insertion in subregulation (1) after the definition of "near coastal voyage" of the following definition:

"near coastal voyage limit agreement' means an agreement in writing made by and entered into between the Authority and an Administration of another Party specifying the details of involved trading areas and other relevant conditions thereof;";

- (k) by the insertion in subregulation (1), after the definition of "owner" of the

following definition:

“**passenger ship**’ means a ship which carries more than 12 passengers;”;

- (l) by substitution in subregulation (1) after the definition of "propulsion power" of the following definition:

“**radio operator**’ means a person-holding an appropriate certificate issued or recognized by the Authority under the provisions of the *Merchant Shipping (Radio Installations) Regulations, 2002*;”;

- (m) by the deletion in subregulation (1) of the definition of “ro-ro passenger ship”;

- (n) by the insertion in subregulation (1) after the definition of "seagoing ship" of the following definition:

“**second engineer**’ means the engineer officer next in rank to the chief engineer and upon whom responsibility for the mechanical propulsion and the operation and maintenance of the mechanical and electrical installations of the ship falls in the event of the incapacity of the chief engineer;”;

- (o) by the substitution in subregulation (1) for the definition of "tanker" of the following definition:

“(i) **Oil Tanker**’ means a ship constructed or used for the carriage in bulk of petroleum and petroleum products in bulk;

(ii) **Chemical Tanker**’ means a ship constructed or adapted and used for the carriage in bulk of any liquid product listed in Chapter 17 of the International Bulk Chemical Code; or

(iii) **Liquefied Gas Tanker**’ means a ship constructed or adapted and used for the carriage of any liquid product listed in Chapter 19 of the International Gas Carrier Code;”;

- (p) by the insertion in subregulation (1) after the definition of "the Code" of the following definition:

“**the Regulations**’ means the *Merchant Shipping (Safe Manning) Regulations, XXX, published by Government Notice No. XX of XXXXXX, as amended*;”;

- (q) by the substitution in subregulation (1) for the definition of "the Training and Certification Regulations" of the following definition:

"the Training and Certification Regulations' means the Merchant Shipping (Training and Certification) Regulations xxx;

- (r) by the insertion in subregulation (1) after the definition of "unlimited voyage" of the following definitions:

"unlimited waters', in relation to a fishing vessel, has the same meaning as in regulation 2(1) of the *Merchant Shipping (Training and Certification) (Fishing and Marine Motorman Qualifications) Regulations, xxx;"*

'watchkeeping officer' means a ship's officer whose duties include –

- (a) If serving in the deck department, taking charge of a navigational watch on the ship; and
- (b) If serving in the engineering department, taking charge of an engineering watch on a ship; and

'watchkeeping personnel' means everyone forming part of a navigational or engineering watch on a ship;"

4 Amendment of regulation 6, 6A, 6B and 6C of the Regulations

The following regulations are substituted for regulations 6 and 6A and regulations 6B and 6C of the Regulations are deleted

"Watchkeeping

- 6 (1) Owners, masters, and watchkeeping personnel shall observe the requirements and principles set out in Annexes 1 and 2, to ensure that a safe continuous watch, appropriate to the prevailing circumstances and conditions, is maintained in all ships at all times.
- (2) Without limiting subregulation (1), the master of every ship shall ensure that watchkeeping arrangements are adequate for maintaining a safe watch, taking into account the prevailing circumstances and conditions, and that, under the master's general direction—
- (a) officers in charge of the navigational watch are responsible for navigating the ship safely

during their periods of duty, when they shall be physically present on the navigating bridge or in a directly associated location such as the chartroom or bridge control room at all times;

- (b) radio operators are responsible for maintaining a continuous radio watch on appropriate frequencies during their periods of duty;
 - (c) officers in charge of the engineering watch, under the direction of the chief engineer officer, are immediately available and on call to attend the machinery spaces and, when required, are physically present in the machinery space during periods of duty; and
 - (d) an appropriate and effective watch is maintained for the purpose of safety at all times, while the ship is at anchor or moored and, if the ship is carrying hazardous cargo, the organisation of the watch takes full account of the nature, quantity, packing and stowage of the hazardous cargo and of any special conditions prevailing on board, afloat or ashore.
- (6A) (1) The master and owner shall take account of the danger posed by fatigue of seafarers, especially those whose duties involve the safe and secure operation of that ship.
- (2) All persons who are assigned duty as officer in charge of a watch or as a rating forming part of a watch and those whose duties involve designated safety, prevention of pollution and security duties shall be provided with a rest period of not less than:
- (i) a minimum of 10 hours of rest in any 24-hour period; and
 - (ii) 77 hours in any 7-day period.
- (3) The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length, and the intervals between consecutive periods of rest shall not exceed 14 hours.
- (4) The requirements for rest periods laid down in subregulation 2 need not be maintained in the case of an emergency or in other overriding operational conditions. Musters, fire-fighting and lifeboat drills, and drills prescribed by national laws and regulations and by

international instruments, shall be conducted in a manner that minimizes the disturbance of rest periods and does not induce fatigue.

- (5) The master and owner shall require that watch schedules be posted where they are easily accessible. The schedules shall be established in a standardized format in the working language or languages of the ship and in English.
- (6) If a seafarer is on call, such as when a machinery space is unattended, the seafarer shall have an adequate compensatory rest period if the normal period of rest is disturbed.
- (7) The master and owner shall require that records of daily hours of rest of seafarers be maintained in a format recommended by the International Maritime Organization, in the working language or languages of the ship and in English, to allow monitoring and verification of compliance with the provisions of this regulation. The seafarers shall receive a copy of the records pertaining to them, which shall be endorsed by the master or by a person authorized by the master.
- (8) Nothing in this regulation shall be deemed to impair the right of the master of a ship to require a seafarer to perform any hours of work necessary for the immediate safety of the ship, persons on board or cargo, or for the purpose of giving assistance to other ships or persons in distress at sea. Accordingly, the master may suspend the schedule of hours of rest and require a seafarer to perform any hours of work necessary until the normal situation has been restored. As soon as practicable after the normal situation has been restored, the master shall ensure that any seafarers who have performed work in a scheduled rest period are provided with an adequate period of rest.
- (9) Parties may allow exceptions from the required hours of rest in subregulation 2 provided that the rest period is not less than 70 hours in any 7-day period. Exceptions from the weekly rest period provided for in subregulation 2 shall not be allowed for more than two consecutive weeks. The intervals between two periods of exceptions on board shall not be less than twice the duration of the exception. The hours of rest provided for in subregulation 2 may be divided into no more than three periods, one of which shall be at least 6 hours in length and neither of the other two periods shall be less than one hour in length. The intervals between consecutive periods of rest shall not exceed 14 hours. Exceptions shall not extend beyond two 24-hour periods in any 7-day period.
- (10) The master and owner of the ship shall establish, for the purpose of preventing alcohol abuse, a limit of not greater than 0.05% blood alcohol level or 0.25 mg/l alcohol in the breath or a quantity of alcohol leading to such alcohol

concentration for masters, officers and other seafarers while performing designated safety, security and marine environmental duties.”.

5 Amendment of regulation 9 of Regulations

The following regulation is inserted in the Regulations after subregulation (4):

- "(5) For the purposes of this regulation, the Authority shall—
- (a) not recognise by endorsement the certificate issued by or under the authority of another State Party to the STCW Convention to a master, officer or radio officer unless the Authority—
 - (i) has confirmed, through an evaluation of that State Party, which may include inspection of facilities and procedures that the requirements of the STCW Convention are fully complied with; and
 - (ii) has agreed an undertaking with the State Party concerned that prompt notification will be given of any significant change in the arrangements for training and certification provided in compliance with the STCW Convention;
 - (b) not recognise certificates issued by or under the authority of a non-State Party to the STCW Convention;
 - (c) not use as the basis for recognition by the Authority the certificates and endorsements issued under the authority of another State Party to the STCW Convention; and
 - (d) ensure that information provided and measures agreed upon under this regulation will be communicated to the Secretary-General of the International Maritime Organization in conformity with the requirements of regulation I/7 of the STCW Convention.
- (6) For section 74(1)(b) of the Act, the following is recognised certification as a rating:

(a) for ships to which the STCW Convention applies, valid appropriate certification issued in accordance with the STCW Convention by or on behalf of another State Party to the Convention; and

(b) for other ships, valid appropriate certification that the Authority is satisfied qualifies the holder to serve in the capacity stated in the certification."

6 Amendment of regulation 10 of the Regulations

Regulation 10 of the Regulations is amended by the insertion of the word "colour" before "photographs" in regulation (10)(2)(e).

7 Amendment of regulation 11 of the Regulations

Regulation 11 of the Regulations is amended—

(a) by the substitution of the table in subregulation (1) by the following table:

Item	Voyage / Operation	Tonnage of ship (GT)	Capacity of employment	Appropriate minimum certification and number of	
				Certification	Number
1	Port operations	< 200	Master	Skipper (Port operations)	1
2		200 but < 1600	Master	Master (Port operations)	1
3		≥1600	Master	Master (Port operations) ≥ 1600GT	1
	Master (Port operations) < 1600GT			1	
4	Near-coastal	< 200	Master	Skipper (Coastal)	1
Mate			Skipper (Coastal)	1	
5		≥200 but < 1600	Master	Master (Coastal)	1
			Mate	Mate (Coastal)	1
6	Unlimited	< 1600	Master	Chief Mate (A)	1
Mate			Deck Officer	1	
7		≥1600 but < 3000	Master	Chief Mate (A)	1
			Mate	Deck Officer (B)	1
8		≥ 3000	Watchkeeping officer	Deck Officer	1
				Master	Master
	Mate			Chief Mate	1
			Deck Officer	2	

Notes:

(A) Certification to include the endorsement: "Master of a ship of less than 3000 GT on unlimited voyages".

(B) Certification to include the endorsement: "Chief mate of a ship of less than 3000 GT on unlimited voyages".

- (b) by the substitution for the words preceding paragraph (a) of subregulation (2) of the following words:

"The owner and the master of every ship of 200 GT or more that—"; and

- (c) by the substitution for item 1 and 2 of the table in subregulation (2) of the following item:

Item	Tonnage of ship (GT)	Capacity of employment	Appropriate minimum certification and number of persons to be employed	
			Certification	Number
1	≥ 200 but < 1600	Master	Master (Coastal)	1
		Mate	Mate (Coastal)	1
2	≥1600 but < 3 000	Master	Chief Mate (A)	1
		Mate	Deck Officer (B)	1",

8 Amendment of regulation 12 of the Regulations

by the substitution of the table in regulation (12) by the following:

“Employment of certificated deck officers on fishing vessels

12 The owner and the master of every fishing vessel shall ensure that there is employed on the vessel in their appropriate capacities the number and description of appropriately certificated deck officers specified in the applicable item of the following table:

Item	Type of voyage	Length of vessel (metres)	Capacity of employment	Appropriate minimum certification and number of persons to be employed	
				Certification	Number
1	Limited waters	< 24	Master	Skipper (Fishing < 24 metres)	1
			Mate	Deck Officer (Fishing < 24 metres)(B)	1(A)
≥ 24		Master	Skipper (Fishing ≥ 24 metres)	1	
		Mate	Deck Officer (Fishing ≥ 24 metres)(C)	1	
2	Unlimited waters	≥ 24	Watchkeeping officer	Deck Officer (Fishing ≥ 24 metres)(C)	1
			Master	Skipper (Fishing < 24 metres) with Unlimited Waters Command Endorsement	1
			Mate	Deck Officer (Fishing < 24 metres)	1
3		Unlimited waters	≥ 24	Watchkeeping officer	Deck Officer (Fishing < 24 metres)(B)
	Master			Skipper (Fishing ≥ 24 metres) with Unlimited Waters Command Endorsement	1
	Mate			Deck Officer (Fishing ≥ 24 metres)(C)	1
4	Unlimited waters	≥ 24	Watchkeeping officer	Deck Officer (Fishing ≥ 24 metres)(C)	1
			Master	Skipper (Fishing < 24 metres) with Unlimited Waters Command Endorsement	1
			Mate	Deck Officer (Fishing < 24 metres)	1

Notes:
(A) Not required for vessels < 50 GT going to sea for periods not exceeding 12 consecutive hours.
(B) Or Coastal Skipper (> 9 metres).
(C) Or Skipper (Fishing < 24 metres).”

9 Repeal of regulation 13 of the Regulations

Regulation 13 of the Regulations is repealed.

10 Amendment of regulation 14 of the Regulations

Regulation 14 of the Regulations is amended—

- (a) by the substitution in subregulation (1) for the words preceding the table of the following words:

"(1) The owner and the master of every ship, other than a fishing vessel, shall ensure that there is employed on the ship in their appropriate capacities the number and description of appropriately certificated engineer officers specified in the applicable item of the following tables:" and

(b) by the deletion of subregulation (2).".

11 Amendment of regulation 15 of the Regulations

By the substitution for regulation 15 of the following regulation:

“Employment of certificated engineer officers on fishing vessels

15 The owner and the master of every fishing vessel shall ensure that there is employed on the vessel in their appropriate capacities the number and description of appropriately certificated engineer officers specified in the applicable item of the following table:

Item	Propulsion power of vessel (kW)	Capacity of employment	Appropriate minimum certification and number of persons to be employed	
			Certification	Number
1	< 350	Chief engineer	Marine Motorman Grade 2	1
2	≥ 350 but < 750	Chief engineer	Marine Motorman Grade 1	1
		Second engineer	Marine Motorman Grade 2	1
3	≥ 750 but < 2000	Chief engineer	Marine Motorman Higher Grade	1
		Second engineer	Marine Motorman Grade 1	1
		Watchkeeping officer	Marine Motorman Grade 2	1(A)
4	≥ 2000	Chief engineer	Chief Engineer Officer (Fishing)	1
		Second engineer	Marine Motorman Higher Grade	1
		Watchkeeping officer	Marine Motorman Grade 1	1

Notes:
(A) Not required on fishing vessels operating in limited waters.”

13 Amendment of regulation 16 of the Regulations

(a) by the substitution for subregulation (a) of the following subregulation:

"(a) if the ship is of 300 GT or more, is engaged on a near-coastal voyage and is not fully equipped in accordance with GMDSS requirements of the radio regulations, but complies with Part 3, Non-GMDSS requirements of the Merchant Shipping Radio Installations Regulations 2002, there shall be employed on the ship at least two radio operators who are appropriately certificated for the type of radio installation on the ship;"

(b) by the insertion of the following table after (d):

Item	Voyage/ Operation	Tonnage/length of ship	Appropriate certification and number of persons to be employed	
1	Port Operations	≥25 GT	SHORT RANGE CERTIFICATE	1
2	Near-Coastal.	≥25 but <300 GT	LONG RANGE CERTIFICATE	2
3		≥300 GT	GMDSS GENERAL OPERATOR'S CERTIFICATE	2
4	Fishing Operations within 40 nautical miles offshore.	≥25 GT	SHORT RANGE CERTIFICATE	2
5	Fishing operations beyond 40 but within 200 nautical miles offshore.	≥25 GT	LONG RANGE CERTIFICATE	2
6	Fishing operations beyond 200 nautical miles offshore.	≥25 GT but <45 metres	LONG RANGE CERTIFICATE	2
7		≥45 metres	GMDSS GENERAL OPERATOR'S CERTIFICATE	2
8	Unlimited, all sea areas.	≥100 GT but <300 GT	LONG RANGE CERTIFICATE	2
9		≥300 GT	GMDSS GENERAL OPERATOR'S CERTIFICATE	2

14 Amendment to regulation 17 of the Regulations

By the substitution for the titles of the following titles:

“ordinary seafarer deck for ordinary seaman;
able seafarer deck for able seaman;
ordinary seafarer engine for wiper; and
able seafarer engine for oiler.”

15 Amendment to regulation 18 of the Regulations

Regulation 18 of the Regulations is amended—

(a) by the substitution for regulation 18 of the following regulation:

“Employment of certificated ratings on fishing vessels of 24m or more in length

18 The owner and the master of every fishing vessel of 24m or more shall ensure that there is employed on the vessel in their appropriate capacities the number and description of appropriately certificated ratings specified in the applicable item of the following table:

Item	size of vessel	Minimum certification and number of persons to be employed		
		Able seafarer deck	Proficient in survival craft and	Efficient cook
1	>25GT but <24 m in length	2	1	
2	= 24 m in length	3	2	1
<i>Notes:</i>				
(1) The number of ratings required to be qualified as proficient in survival craft shall be in addition to the number required to be qualified as able seafarer deck.				
(2) The certification as able seafarer may be the local certification (including the able seafarer deck (fishing) certification) or the certification issued in accordance with the STCW Convention.				
(3) The certification as proficient in survival craft or rescue boats may be the local certification or the certification issued in accordance with the STCW Convention."."				

16 Insertion of regulation 18B in the Regulations

The following regulation is inserted in the Regulations after regulation 18:

“Employment of qualified Electro-technical officers and ratings

18B (1) The owner and the master of every ship proceeding to sea shall ensure that—

(a) Ships with installations in excess of 1 000 Volts shall have a suitably qualified electro-technical officer;

(b) Ships with installations in excess of 1 000 Volts shall have a suitably qualified electro-technical rating in addition to the electro-technical officer provided that this requirement may be exempted by the Authority;

(c) Every electro-technical officer serving on a seagoing ship powered by main propulsion machinery of 750 kW or more shall hold a certificate of competency;

(d) Every electro-technical rating serving on a seagoing ship powered by main propulsion machinery of 750 kW or more shall hold a certificate of proficiency; and

(e) The Authority may approve a suitably qualified person other than an electro-technical officer or rating to perform certain functions of an electro-technical officer or rating.”.

8 Amendment of regulation 19 of the Regulations

Regulation 19 of the Regulations is amended—

- (a) by the substitution for subregulation (2) of the following subregulation:

"(2) The owner and the master of every sea-going ship shall ensure that—

(a) every person designated to take charge of medical care on the ship, in the absence of a qualified medical practitioner, holds—

(i) a valid Medical Care Certificate issued in accordance with the *Merchant Shipping (Medical Training) Regulations, 1992 as amended*; or

(ii) a valid certificate in medical care issued in accordance with the STCW Convention by or on behalf of another party to the convention which has been evaluated by the Authority in accordance with regulation 9(5)(a); and

(b) every person designated to provide medical first aid on the ship holds—

(i) a valid medical first aid Certificate issued in terms of the *Merchant Shipping (Medical Training) Regulations, 1992 as amended*; or

(ii) a valid certificate in medical first aid issued in accordance with the STCW Convention by or on behalf of another party to the convention which has been evaluated by the Authority in accordance with regulation 9(5)(a).";

- (b) by the substitution for subregulation (3) of the following subregulation:

"(3) Every person who is designated the duties referred to in subregulation (1) shall undertake approved refresher training at intervals not exceeding five years."

9 Amendment of regulation 20 of the Regulations

Regulation 20 of the Regulations is amended—

- (a) by the substitution for subregulation (1) of the following subregulation

"(1) The owner and the master of every ship shall ensure that every person designated to take charge of a fire-fighting party on the ship holds—

(a) a valid Fire-Fighting Certificate issued in accordance with the Code, or an approved equivalent certification;

(b) in the case of a tanker of 100 GT or more, a valid appropriate advanced fire-fighting course certificate issued in accordance with the Code, or an approved equivalent certification; and

(c) in the case of a ship of less than 100 GT, a valid Fire-Fighting (Small Vessels) Certificate issued in accordance with the Code, or an approved equivalent qualification.”;

(b) by the substitution for the words preceding paragraph (a) of subregulation (2) of the following words:

"(2)The owner and the master of every ship to which these regulations apply shall ensure that every person designated to control fire-fighting operations on the ship holds—”;

(c) by the substitution for the words following "Convention" of subregulation (2)(b) by the following:

“a valid certificate in advanced fire-fighting issued in accordance with the STCW Convention by or on behalf of another party to the Convention which has been evaluated by the Authority in accordance with regulation 9(5)(a).”;

(d) by the substitution for subregulation (3) of the following subregulation:

"(3)(a) Subject to paragraph (b), every person who is designated the duties referred to in subregulation (1) or (2) shall undertake approved refresher training at intervals not exceeding five years.

(b) Paragraph (a) does not apply if the person holds the

certification mentioned in subregulation (1)(b) and demonstrates continued professional competence in accordance with regulation 3(2)(a)(i) of the *Merchant Shipping (Training and Certification) Regulations, 1999 as amended*."

10 Insertion of regulation 20A in the Regulations

The following regulation is inserted in the Regulations after regulation 20

“Employment of qualified personnel on ships equipped with survival craft or rescue boats

20A The owner and master of every ship that is equipped with one or more survival craft or rescue boats shall ensure that there is employed a sufficient number of persons, to take charge of the survival craft or rescue boats, who hold—

(a) a valid certificate of proficiency in survival craft and rescue boats issued in accordance with regulation 48 of the *Merchant Shipping (Training and Certification) Regulations, 1999*; or

(b) a valid certificate of proficiency in survival craft and rescue boats issued in accordance with the STCW Convention which has been evaluated by the Authority in accordance with regulation 9(5)(a).

(c) Every person who is employed to take charge of a survival craft or rescue boat shall undertake approved refresher training (or demonstrate continued professional competence in accordance with regulation 3(2)(a)(i) of the Training and Certification Regulations xxx at intervals not exceeding 5 years.”.

11 Amendment of regulation 21 of the Regulations

by the substitution of subregulation (a) and (b) for the following subregulation:

“(a) a valid certificate of proficiency in fast rescue boats issued in accordance with regulation 49 of the Training and Certification Regulations; or

(b) a valid certificate of proficiency in fast rescue boats issued in accordance with the STCW Convention by or on behalf of another party to that Convention which has been evaluated by the Authority in accordance with regulation 9(5)(a).”.

12 Insertion of a paragraph in the Regulations

The following paragraph is inserted after subregulation 21(b):

"Every person who is employed to take charge of a fast rescue boat shall undertake approved refresher training at intervals not exceeding 5 years."

13 Amendment of regulation 23 of the Regulations

Regulation 23 of the Regulations is amended—

by the substitution in subregulation (1)(b) of the words "column 3" with "column 4" and the substitution of the table with the following:

Item	Column 1	Column 2	Column 3	Column 4
	Title of certificate issued before commencement of repealed regulations	Equivalent certificate or endorsement under repealed regulations	Equivalent certificate or endorsement under Training and Certification Regulations 1999	Equivalent certificate or endorsement under Training and Certification Regulations 2012
1	Master of a foreign-going ship	Deck Officer Class 1	Master	Master
2	—	Deck Officer Class 2 endorsed Master (Limited Trade)	Chief Mate endorsed: —Master of a ship of less than 3000 GT on unlimited voyages	Chief Mate endorsed: —Master of a ship of less than 3000 GT on unlimited voyages
3	Chief Navigating Officer of a foreign-going ship	Deck Officer Class 2 endorsed Master (Short Sea Trade)	Chief Mate endorsed: —Master of a ship of less than 500 GT on near-coastal voyages	Chief Mate endorsed: —Master of a ship of less than 1600 GT on near-coastal voyages
4	—	Deck Officer Class 2	Chief Mate	Chief Mate
5	—	Deck Officer Class 3 endorsed Master (Limited Trade)	Deck Officer endorsed: —Master of a ship of less than 500 GT on unlimited voyages —Chief Mate of a ship of less than 3 000 GT on unlimited voyages	Deck Officer endorsed: —Chief Mate of a ship of less than 3 000 GT on unlimited voyages
6	—	Deck Officer Class 3 endorsed Master (Short Sea Trade)	Deck Officer endorsed: —Master of a ship of less than 500 GT on near-coastal voyages —Chief Mate of a ship of less than 3 000 GT on unlimited voyages	Deck Officer endorsed: —Master of a ship of less than 1600 GT on near-coastal voyages —Chief Mate of a ship of less than 3 000 GT on near coastal voyages —Master of a ship of any tonnage operating within a port operations area
7	Second Navigating Officer of a foreign-going ship	Deck Officer Class 3	Deck Officer	Deck Officer
8	—	Deck Officer Class 4 endorsed Master (Limited Trade)	Deck Officer endorsed: —Master of a ship of less than 500 GT on unlimited voyages	Deck Officer endorsed: —Chief mate of a ship of less than 1600 GT on unlimited voyages

Item	Column 1	Column 2	Column 3	Column 4
	Title of certificate issued before commencement of repealed regulations	Equivalent certificate or endorsement under repealed regulations	Equivalent certificate or endorsement under Training and Certification Regulations 1999	Equivalent certificate or endorsement under Training and Certification Regulations 2012
9	Master of a coasting ship of 100 GT or more	Deck Officer Class 4 endorsed Master (Short Sea Trade)	Deck Officer endorsed: —Master of a ship of less than 500 GT on near-coastal voyages	Deck Officer endorsed: —Master of a ship of less than 200 GT on near-coastal voyages
10	—	Deck Officer Class 4 endorsed Master (Port Operation)	Deck Officer endorsed: —Master of a ship of any tonnage operating within a port operations area	Deck Officer endorsed: —Master of a ship of less than 1600GT operating within a port operations area
11	—	Deck Officer Class 4 endorsed Port Operation Service	Master (Port Operations)	Master (Port Operations) —Master of a ship of less than 1600GT operating within a port operations area
12	—	Deck Officer Class 4	Deck officer	Deck officer
13	—	Deck Officer Class 5 endorsed Master (Short Sea Trade)	Mate (Coastal) endorsed: —Master of a ship of less than 500 GT on near-coastal voyages	Mate (Coastal) endorsed: —Master of a ship of less than 1600 GT on near-coastal voyages
14	—	Deck Officer Class 5 endorsed Master (Port Operation)	Mate (Coastal) endorsed: —Master of a ship of any tonnage operating within a port operations area	Mate (Coastal) endorsed —Master of a ship of less than 1600GT operating within a port operations area
15	—	Deck Officer Class 5 endorsed Port Operation Service	Master (Port Operations)	Master (Port Operations) —Master of a ship of less than 1600GT operating within a port operations area
16	Navigating Officer of a coasting ship of 100 GT or more	Deck Officer Class 5	Mate (Coastal)	Mate (Coastal)
17	—	Deck Officer Class 6 (Unlimited trade)	Skipper (Unlimited)	Skipper (coastal)
18	—	Deck Officer Class 6 (Short Sea Trade)	Skipper (Coastal)	Skipper (Coastal)
19	—	Deck Officer Class 6 (Restricted Trade)	Skipper (Port Operations)	Skipper (Port Operations)
20	—	Dangerous Cargo Endorsement (Petroleum), (Chemical) or (Gas)	Tanker Cargo Endorsement (Petroleum), (Chemical) or (Gas), as appropriate	Tanker Cargo Endorsement (Petroleum), (Chemical) or (Gas), as appropriate

Item	Column 1	Column 2	Column 3	Column 4
	Title of certificate issued before commencement of repealed regulations	Equivalent certificate or endorsement under repealed regulations	Equivalent certificate or endorsement under Training and Certification Regulations 1999	Equivalent certificate or endorsement under Training and Certification Regulations 2012
20A		-	Fisherman Grade 2 with high seas command endorsement	Skipper (Fishing ≥ 24m) With Unlimited Waters Command Endorsement
21	Skipper of a fishing, sealing or shore-based whaling boat of 100GT or more	Fisherman Grade 2	Fisherman Grade 2	Skipper (Fishing ≥ 24m)
21A	—		Fisherman Grade 3 With High Seas Command Endorsement	Deck Officer (Fishing ≥ 24m) Endorsed: - Master of a fishing vessel of less than 24 m in length operating in unlimited waters
22	Mate of a fishing, sealing or shore-based whaling boat of 100GT or more	Fisherman Grade 3	Fisherman Grade 3	Deck Officer (Fishing ≥ 24m) Endorsed: - Master of a fishing vessel of less than 24m in length operating in unlimited waters
23	Boatswain of a fishing, sealing or shore-based whaling boat of 100 GT or more	Fisherman Grade 4 (Skipper)	Fisherman Grade 4 (Skipper)	Deck Officer (Fishing < 24m)
24	Skipper of a coasting ship or a fishing, sealing or shore-based whaling boat of less than 100 GT	Fisherman Grade 4 (Skipper)	Fisherman Grade 4 (Skipper)	Deck Officer (Fishing < 24m)
25	Mate of a coasting ship or a fishing, sealing or shore-based whaling boat of less than 100 GT	Fisherman Grade 4 (Watchkeeper)	Fisherman Grade 4 (Watchkeeper)	Deck Officer (Fishing < 24m)
26	—	Fisherman Grade 4	Fisherman Grade 4 (Skipper)	Deck Officer (Fishing < 24m)
27	Chief Engineer-Officer of a foreign-going ship	Marine Engineer-Officer Class 1	Chief Engineer Officer (> 3000 kW)	Chief Engineer Officer (> 3000 kW)
28	Second Engineer-Officer of a foreign-going ship	Marine Engineer-Officer Class 2	Second Engineer Officer (> 3 000 kW) endorsed: —Chief Engineer Officer of a ship of less than 3 000 kW propulsion power	Second Engineer Officer (> 3 000 kW) endorsed: —Chief Engineer Officer of a ship of less than 3 000 kW propulsion power

Item	Column 1	Column 2	Column 3	Column 4
	Title of certificate issued before commencement of repealed regulations	Equivalent certificate or endorsement under repealed regulations	Equivalent certificate or endorsement under Training and Certification Regulations 1999	Equivalent certificate or endorsement under Training and Certification Regulations 2012
29	—	Marine Engineer-Officer Class 3 with Service Endorsement	Second Engineer Officer (< 3 000 kW) endorsed: (a)—Chief Engineer Officer of a ship of less than 750 kW propulsion power (b)—Chief Engineer Officer of a ship of any kilowatt propulsion power operating within a port operations area	Second Engineer Officer (< 3 000 kW) endorsed: (a)—Chief Engineer Officer of a ship of less than 750 kW propulsion power (b)—Chief Engineer Officer of a ship of any kilowatt propulsion power operating within a port operations area
30	Chief Engineer-Officer of a coasting ship	Marine Engineer-Officer Class 3	Second Engineer Officer (< 3000 kW) endorsed: (a) —Chief Engineer Officer of a ship of any kilowatt propulsion power operating within a port operations area (b) Chief Engineer Officer (Port Operations)	Second Engineer Officer (< 3 000 kW) endorsed: (a)—Chief Engineer Officer of a ship of any kilowatt propulsion power operating within a port operations area (b) Chief Engineer Officer (Port Operations)
30A	—	Marine Engineer-Officer Class 3 with Service Endorsement (Non STCW)	Marine Engineer-Officer Class 3 with Service Endorsement (Non STCW)	Chief Engineer Officer (Fishing)
30B	—	Marine Engineer-Officer Class 4 with Service Endorsement (Non STCW)	Marine Engineer-Officer Class 4 with Service Endorsement (Non STCW)	Chief Engineer Officer (Fishing)
31	Second Engineer-Officer of a coasting ship	Marine Engineer-Officer Class 4	(a) Engineer Officer endorsed: —Chief Engineer Officer of a ship of less than 1 500 kW propulsion power operating within a port operations area (b) Second Engineer Officer (Port Operations)	(a) Engineer Officer endorsed: —Chief Engineer Officer of a ship of less than 1 500 kW propulsion power operating within a port operations area (b) Second Engineer Officer (Port Operations)
32	—	Marine Motorman Higher Grade	Marine Motorman Higher Grade	Marine motorman higher grade

Item	Column 1	Column 2	Column 3	Column 4
	Title of certificate issued before commencement of repealed regulations	Equivalent certificate or endorsement under repealed regulations	Equivalent certificate or endorsement under Training and Certification Regulations 1999	Equivalent certificate or endorsement under Training and Certification Regulations 2012
33	Marine Engineman	Marine Motorman Grade 1	Marine Motorman Grade 1	Marine Motorman Grade 1
34	Assistant Marine Engineman, any brake horsepower	Marine Motorman Grade 2	Marine Motorman Grade 2	Marine Motorman Grade 2
35	Assistant Marine Engineman, under 150 brake horsepower	Marine Motorman Grade 3	Marine Motorman Grade 3	
36	Able Seaman	Efficient Deck Rating	Able Seaman	Able Seafarer Deck
36A			Ordinary seaman	Ordinary seafarer deck
37	Lifeboatman	Proficiency in Survival Craft	Proficiency in Survival Craft	Proficiency in survival craft and rescue boats
38	—	Efficient Engine-room Rating	Oiler	Able seafarer engine
38A			Wiper	Ordinary seafarer engine
39	—	Efficient Cook	Efficient Cook	Efficient cook
40	—	Proficiency in Survival Craft (Local)	Proficiency in Liferfts	Proficiency in Liferfts
41	—	Efficient General Purpose Rating	General Purpose Rating (Port Operations)	General Purpose Rating (Port Operations)."

10 Amendment of regulation 24B of the Regulations

Regulation 24B of the Regulations is amended—

- (a) by the substitution of subregulation (1) with the following subregulation:

"(1) Every owner commits an offence who contravenes regulation 4(1) or (4), 6(1), 6A(1), 6B, 24(1) or 24A."; and

- (b) by the substitution for subregulation (4) of the following subregulation:

"(4) Every seaman commits an offence who contravenes regulation 6 or 6A(3)."

11 Amendment of Annex 1 to the Regulations

The following Annex is substituted for Annex 1 to the Regulations:

“Annex 1**Watchkeeping principles and arrangements for ships other than fishing vessels***(Regulation 6)***Part 1 Voyage planning****1 General**

1.1 The intended voyage shall be planned in advance, taking into account all pertinent information, and any course laid down shall be checked before the voyage begins.

1.2 The chief engineer officer shall, in consultation with the master, determine in advance the needs of the intended voyage, taking into account the requirements for fuel, water, lubricants, chemicals, expendable and other spare parts, tools, supplies and any other requirements.

2 Planning prior to each voyage

Before each voyage, the master of every ship shall ensure that the intended route from the port of departure to the first port of call is planned using adequate and appropriate charts and other nautical publications necessary for the intended voyage, containing accurate, complete and up-to-date information regarding those navigational limitations and hazards that are of a permanent or predictable nature and that are relevant to the safe navigation of the ship.

3 Verification and display of planned route

When the route planning is verified taking into account all pertinent information, the planned route shall be clearly displayed on appropriate charts and shall be continuously available to the officer in charge of the watch, who shall verify each course to be followed before using it during the voyage.

4 Deviation from planned route

If a decision is made, during a voyage, to change the next port of call of the planned route, or if it is necessary for the ship to deviate substantially from the planned route for other reasons, then an amended route shall be planned before deviating substantially from the route originally planned.

Part 2 Watchkeeping principles in general

5. Watches shall be carried out based on the following bridge and engine-room resource management principles:
- .1 proper arrangements for watchkeeping personnel shall be ensured in accordance with the situations;
 - .2 any limitation in qualifications or fitness of individuals shall be taken into account when deploying watchkeeping personnel;
 - .3 understanding of watchkeeping personnel regarding their individual roles, responsibility and team roles shall be established;
 - .4 the master, chief engineer officer and officer in charge of watch duties shall maintain a proper watch, making the most effective use of the resources available, such as information, installations/equipment and other personnel;
 - .5 watchkeeping personnel shall understand functions and operation of installations/equipment, and be familiar with handling them;
 - .6 watchkeeping personnel shall understand information and how to respond to information from each station/installation/equipment;
 - .7 information from the stations/installations/equipment shall be appropriately shared by all the watchkeeping personnel;
 - .8 watchkeeping personnel shall maintain an exchange of appropriate communication in any situation; and
 - .9 watchkeeping personnel shall notify the master/chief engineer officer/officer in charge of watch duties without any hesitation when in any doubt as to what action to take in the interest of safety.

Part 3 Watchkeeping at sea**Division 1 Principles applying to watchkeeping generally****6 General**

6.1 Owners, masters, chief engineer officers and watchkeeping personnel shall observe the following principles to ensure that safe watches are maintained at all times.

6.2 The master of every ship shall ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch. Under the master's general direction, the officers of the navigational watch are responsible for navigating the ship safely during their periods of duty, when they will be particularly concerned with avoiding collision and stranding.

6.3 The chief engineer officer of every ship shall, in consultation with the master, ensure that watchkeeping arrangements are adequate to maintain a safe engineering watch.

7 Protection of marine environment

The master, officers and ratings shall be aware of the serious effects of

operational and accidental pollution of the marine environment and shall take all possible precautions to prevent such pollution, particularly within the framework of relevant international and national regulations.

Division 2 Principles to be observed in keeping a navigational watch

8 General

The officer in charge of the navigational watch is the master's representative and is primarily responsible at all times for the safe navigation of the ship and for complying with the collision regulations.

9 Look-out

9.1 A proper look-out shall be maintained at all times in compliance with rule 5 of the annex to the collision regulations, and shall serve the purpose of—

- .1 maintaining a continuous state of vigilance by sight and hearing as well as by all other available means, with regard to any significant change in the operating environment;
- .2 fully appraising the situation and the risk of collision, stranding and other dangers to navigation; and
- .3 detecting ships or aircraft in distress, shipwrecked persons, wrecks, debris and other hazards to safe navigation.

9.2 The look-out must be able to give full attention to the keeping of a proper look-out and no other duties shall be undertaken or assigned that could interfere with that task.

9.3 The duties of the look-out and helmsperson are separate and the helmsperson shall not be considered to be the look-out while steering, except in small ships where an unobstructed all-round view is provided at the steering position and there is no impairment of night vision or other impediment to the keeping of a proper look-out.

The officer in charge of the navigational watch may be the sole look-out in daylight provided that on each such occasion—

- .1 the situation has been carefully assessed and it has been established without doubt that it is safe to do so;
- .2 full account has been taken of all relevant factors, including, but not limited to—
 - state of weather;
 - visibility;
 - traffic density;
 - proximity of dangers to navigation; and
 - the attention necessary when navigating in or near traffic

separation schemes; and

.3 assistance is immediately available to be summoned to the bridge when any change in the situation so requires.

9.4 In determining that the composition of the navigational watch is adequate to ensure that a proper look-out can continuously be maintained, the master shall take into account all relevant factors, including those described in this annex, as well as the following factors:

- .1 visibility, and state of weather and sea;
- .2 traffic density, and other activities occurring in the area in which the ship is navigating;
- .3 the attention necessary when navigating in or near traffic separation schemes or other routing measures;
- .4 the additional workload caused by the nature of the ship's functions, immediate operating requirements and anticipated manoeuvres;
- .5 the fitness for duty of any crew members on call who are assigned as members of the watch;
- .6 knowledge of and confidence in the professional competence of the ship's officers and crew;
- .7 the experience of each officer of the navigational watch, and the familiarity of that officer with the ship's equipment, procedures, and manoeuvring capability;
- .8 activities taking place on board the ship at any particular time, including radio communication activities, and the availability of assistance to be summoned immediately to the bridge when necessary;
- .9 the operational status of bridge instrumentation and controls, including alarm systems;
- .10 rudder and propeller control and ship manoeuvring characteristics;
- .11 the size of the ship and the field of vision available from the conning position;
- .12 the configuration of the bridge, to the extent that the configuration might inhibit a member of the watch from detecting by sight or hearing any external development;
- .13 any other relevant standard, procedure or guidance relating to watchkeeping arrangements and fitness for duty that has been specified in a marine notice.

10 Watch arrangements

When deciding the composition of the watch on the bridge, which may include appropriately qualified ratings, the following factors, *inter alia*, shall be taken into account:

- .1 at no time shall the bridge be left unattended;

- .2 weather conditions, visibility and whether there is daylight or darkness;
- .3 proximity of navigational hazards that may make it necessary for the officer in charge of the watch to carry out additional navigational duties;
- .4 use and operational condition of navigational aids such as radar or electronic position-indicating devices and any other equipment affecting the safe navigation of the ship;
- .5 whether the ship is fitted with automatic steering;
- .6 whether there are radio duties to be performed;
- .7 unmanned machinery space (UMS) controls, alarms and indicators provided on the bridge, procedures for their use and limitations;
- .8 any unusual demands on the navigational watch that may arise as a result of special operational circumstances.

11 Taking over the watch

- 11.1 The officer in charge of the navigational watch shall not hand over the watch to the relieving officer if there is reason to believe that the latter is not capable of carrying out the watchkeeping duties effectively, in which case the master shall be notified.
- 11.2 The relieving officer shall ensure that the members of the relieving watch are fully capable of performing their duties, particularly as regards their adjustment to night vision. Relieving officers shall not take over the watch until their vision is fully adjusted to the light conditions.
- 11.3 Before taking over the watch, relieving officers shall satisfy themselves as to the ship's estimated or true position and confirm its intended track, course and speed, and UMS controls as appropriate and shall note any dangers to navigation expected to be encountered during their watch.
- 11.4 Relieving officers shall personally satisfy themselves regarding—
 - .1 the standing orders and other special instructions of the master relating to navigation of the ship;
 - .2 the position, course, speed and draught of the ship;
 - .3 prevailing and predicted tides, currents, weather, visibility and the effect of these factors upon course and speed;
 - .4 procedures for the use of main engines to manoeuvre when the main engines are on bridge control; and
 - .5 the navigational situation, including but not limited to—
 - .5.1 the operational condition of all navigational and safety equipment being used or likely to be used during the watch;
 - .5.2 the errors of gyro- and magnetic compasses;
 - .5.3 presence and movement of ships in sight or known to be in the vicinity;

- .5.4 the conditions and hazards likely to be encountered during the watch; and
 - .5.5 the possible effects of heel, trim, water density and squat on under-keel clearance.
- 11.5 If at any time the officer in charge of the navigational watch is to be relieved when a manoeuvre or other action to avoid any hazard is taking place, the relief of that officer shall be deferred until such action has been completed.
- 12 Performing the navigational watch**
- 12.1 The officer in charge of the navigational watch shall—
- .1 keep the watch on the bridge;
 - .2 in no circumstances leave the bridge until properly relieved;
 - .3 continue to be responsible for the safe navigation of the ship, despite the presence of the master on the bridge, until informed specifically that the master has assumed that responsibility and this is mutually understood; and
 - .4 notify the master when in any doubt about what action to take in the interest of safety.
- 12.2 During the watch, the course steered, position and speed shall be checked at sufficiently frequent intervals, using any available navigational aids necessary, to ensure that the ship follows the planned course.
- 12.3 The officer in charge of the navigational watch shall have full knowledge of the location and operation of all safety and navigational equipment on board the ship and shall be aware and take account of the operating limitations of the equipment.
- 12.4 The officer in charge of the navigational watch shall not be assigned or undertake any duties that would interfere with the safe navigation of the ship.
- 12.5 When using radar, the officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the provisions on the use of radar contained in the collision regulations.
- 12.6 In cases of need, the officer in charge of the navigational watch shall not hesitate to use the helm, engines and sound signalling apparatus. However, timely notice of intended variations of engine speed shall be given where possible or effective use made of UMS engine controls provided on the bridge in accordance with the applicable procedures.
- 12.7 Officers of the navigational watch shall know the handling characteristics of their ship, including its stopping distances, and should appreciate that other ships may have different handling characteristics.

- 12.8 A proper record shall be kept during the watch of the movements and activities relating to the navigation of the ship.
- 12.9 It is of special importance that at all times the officer in charge of the navigational watch ensures that a proper look-out is maintained. In a ship with a separate chartroom, the officer in charge of the navigational watch may visit the chartroom, when essential, for a short period for the necessary performance of navigational duties, but shall first ensure that it is safe to do so and that proper look-out is maintained.
- 12.10 Operational tests of shipboard navigational equipment shall be carried out at sea as frequently as practicable and as circumstances permit, in particular before hazardous conditions affecting navigation are expected. Whenever appropriate, these tests shall be recorded. Tests shall also be carried out before port arrival and departure.
- 12.11 The officer in charge of the navigational watch shall make regular checks to ensure that—
- .1 the person steering the ship, or the automatic pilot, is steering the correct course;
 - .2 the standard compass error is determined at least once a watch and, when possible, after any major alteration of course; the standard and gyro-compasses are frequently compared and repeaters are synchronized with their master compass;
 - .3 the automatic pilot is tested manually at least once a watch;
 - .4 the navigation and signal lights and other navigational equipment are functioning properly;
 - .5 the radio equipment available in the bridge is functioning properly in accordance with item 19 of this annex; and
 - .6 the UMS controls, alarms and indicators are functioning properly.
- 12.12 The officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the requirements in force of the Safety Convention. The officer shall take into account—
- .1 the need to station a person to steer the ship and to put the steering into manual control in good time to allow any potentially hazardous situation to be dealt with in a safe manner; and
 - .2 that with a ship under automatic steering it is highly dangerous to allow a situation to develop to the point where the officer in charge of the navigational watch is without assistance and has to break the continuity of the look-out in order to take emergency action.
- 12.13 Officers of the navigational watch shall be thoroughly familiar with the use of all electronic navigational aids carried, including their capabilities and limitations, and shall use each of these aids when appropriate and shall bear in mind that the echo sounder is a valuable navigational aid.

- 12.14 The officer in charge of the navigational watch shall use the radar whenever restricted visibility is encountered or expected, and at all times in congested waters, having due regard to its limitations.
- 12.15 The officer in charge of the navigational watch shall ensure that range scales employed are changed at sufficiently frequent intervals so that echoes are detected as early as possible. It shall be borne in mind that small or poor echoes may escape detection.
- 12.16 Whenever radar is in use, the officer in charge of the navigational watch shall select an appropriate range scale and observe the display carefully, and shall ensure that plotting or systematic analysis begins in ample time.
- 12.17 The officer in charge of the navigational watch shall notify the master immediately—
- .1 if restricted visibility is encountered or expected;
 - .2 if the traffic conditions or the movements of other ships are causing concern;
 - .3 if difficulty is experienced in maintaining course;
 - .4 on failure to sight land, a navigation mark or to obtain soundings by the expected time;
 - .5 if, unexpectedly, a land or a navigation mark is sighted or a change in soundings occurs;
 - .6 on breakdown of the engines, propulsion machinery remote control, steering gear or any essential navigational equipment, alarm or indicator;
 - .7 if the radio equipment malfunctions;
 - .8 in heavy weather, if in any doubt about the possibility of weather damage;
 - .9 if the ship meets any hazard to navigation, such as ice or a derelict; and
 - .10 in any other emergency or if in any doubt.
- 12.18 Despite the requirement to notify the master immediately in the foregoing circumstances, the officer in charge of the navigational watch shall in addition not hesitate to take immediate action for the safety of the ship, where circumstances so require.
- 12.19 The officer in charge of the navigational watch shall give watchkeeping personnel all appropriate instructions and information that will ensure the keeping of a safe watch, including a proper look-out.
- 13 Watchkeeping under different conditions and in different areas**
- 13.1 *Clear weather*
- 13.1.1 The officer in charge of the navigational watch shall take frequent and accurate compass bearings of approaching ships

as a means of early detection of risk of collision and bear in mind that such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large ship or a tow or when approaching a ship at close range. The officer shall also take early and positive action in compliance with the applicable collision regulations, and subsequently check that the action is having the desired effect.

13.1.2 In clear weather, whenever possible, the officer in charge of the navigational watch shall carry out radar practice.

13.2 *Restricted visibility*

13.2.1 When restricted visibility is encountered or expected, the first responsibility of the officer in charge of the navigational watch is to comply with the relevant rules in the collision regulations, with particular regard to the sounding of fog signals, proceeding at a safe speed and having the engines ready for immediate manoeuvre. In addition, the officer shall—

- .1 inform the master;
- .2 post a proper look-out;
- .3 exhibit navigation lights; and
- .4 operate and use the radar.

13.3 *In hours of darkness*

The master and the officer in charge of the navigational watch, when arranging look-out duty, shall have due regard to the bridge equipment and navigational aids available for use, their limitations, and procedures and safeguards implemented.

13.4 *Coastal and congested waters*

13.4.1 The largest scale chart on board, suitable for the area and corrected with the latest available information, shall be used. Fixes shall be taken at frequent intervals, and shall be carried out by more than one method whenever circumstances allow. When using ECDIS, appropriate usage code (scale) electronic navigational charts shall be used and the ship's position shall be checked by an independent means of position fixing at appropriate intervals.

13.4.2 The officer in charge of the navigational watch shall positively identify all relevant navigational marks.

13.5 *Navigation with pilot on board*

13.5.1 Despite the duties and obligations of pilots, their presence on board does not relieve the master or officer in charge of the navigational watch from their duties and obligations for the

safety of the ship. The master and the pilot shall exchange information regarding navigation procedures, local conditions and the ship's characteristics. The master and/or the officer in charge of the navigational watch shall co-operate closely with the pilot and maintain an accurate check on the ship's position and movement.

- 13.5.2 If in any doubt about the pilot's actions or intentions, the officer in charge of the navigational watch shall seek clarification from the pilot and, if doubt still exists, shall notify the master immediately and take whatever action is necessary before the master arrives.

13.6 *Ship at anchor*

If the master considers it necessary, a continuous navigational watch shall be maintained at anchor. While at anchor, the officer in charge of the navigational watch shall—

- .1 determine and plot the ship's position on the appropriate chart as soon as practicable;
- .2 when circumstances permit, check at sufficiently frequent intervals whether the ship is remaining securely at anchor by taking bearings of fixed navigation marks or readily identifiable shore objects;
- .3 ensure that proper look-out is maintained;
- .4 ensure that inspection rounds of the ship are made periodically;
- .5 observe meteorological and tidal conditions and the state of the sea;
- .6 notify the master and undertake all necessary measures if the ship drags anchor;
- .7 ensure that the state of readiness of the main engines and other machinery is in accordance with the master's instructions;
- .8 if visibility deteriorates, notify the master;
- .9 ensure that the ship exhibits the appropriate lights and shapes and that appropriate sound signals are made in accordance with all applicable regulations;
- .10 take measures to protect the environment from pollution by the ship and comply with applicable pollution regulations; and

Division 3 Principles to be observed in keeping an engineering watch

14 General

- 14.1 The term *engineering watch* as used in this annex means either

a person or a group of personnel comprising the watch or a period of responsibility for an officer during which the physical presence in machinery spaces of that officer may or may not be required.

- 14.2 The officer in charge of the engineering watch is the chief engineer officer's representative and is primarily responsible at all times for the safe and efficient operation and upkeep of machinery affecting the safety of the ship and is responsible for the inspection, operation and testing, as required, of all machinery and equipment under the responsibility of the engineering watch.

15 Watch arrangements

- 15.1 The composition of the engineering watch shall at all times be adequate to ensure the safe operation of all machinery affecting the operation of the ship, in either automated or manual mode, and be appropriate to the prevailing circumstances and conditions.
- 15.2 When deciding the composition of the engineering watch, which may include appropriately qualified ratings, the following criteria, *inter alia*, shall be taken into account:
- .1 the type of ship and the type and condition of the machinery;
 - .2 the adequate supervision, at all times, of machinery affecting the safe operation of the ship;
 - .3 any special modes of operation dictated by conditions such as weather, ice, contaminated water, shallow water, emergency conditions, damage containment or pollution abatement;
 - .4 the qualifications and experience of the engineering watch;
 - .5 the safety of life, ship, cargo and port, and protection of the environment;
 - .6 the observance of international and national regulations;
 - .7 maintaining the normal operations of the ship.

16 Taking over the watch

- 16.1 The officer in charge of the engineering watch shall not hand over the watch to the relieving officer if there is reason to believe that the latter is obviously not capable of carrying out the watchkeeping duties effectively, in which case the chief engineer officer shall be notified.
- 16.2 The relieving officer of the engineering watch shall ensure that

the members of the relieving engineering watch are apparently fully capable of performing their duties effectively.

- 16.3 Before taking over the engineering watch, relieving officers shall satisfy themselves about at least the following:
- .1 the standing orders and special instructions of the chief engineer officer relating to the operation of the ship's systems and machinery;
 - .2 the nature of all work being performed on machinery and systems, the personnel involved and potential hazards;
 - .3 the level and, where applicable, the condition of water or residues in bilges, ballast tanks, slop tanks, reserve tanks, fresh water tanks, sewage tanks and any special requirements for use or disposal of tank contents;
 - .4 the condition and level of fuel in the reserve tanks, settling tank, day tank and other fuel storage facilities;
 - .5 any special requirements relating to sanitary system disposals;
 - .6 the condition and mode of operation of the various main and auxiliary systems, including the electrical power distribution system;
 - .7 where applicable, the condition of monitoring and control console equipment, and which equipment is being operated manually;
 - .8 where applicable, the condition and mode of operation of automatic boiler controls such as flame safeguard control systems, limit control systems, combustion control systems, fuel-supply control systems and other equipment related to the operation of steam boilers;
 - .9 any potentially adverse conditions resulting from bad weather, ice, or contaminated or shallow water;
 - .10 any special modes of operation dictated by equipment failure or adverse ship conditions;
 - .11 the reports of engine-room ratings relating to their assigned duties;
 - .12 the availability of fire-fighting appliances;
 - .13 the state of completion of the engine-room log.

17 Performing the engineering watch

- 17.1 The officer in charge of the engineering watch shall ensure that the established watchkeeping arrangements are maintained and that, under direction, engine-room ratings, if forming part of the engineering watch, assist in the safe and efficient operation of the propulsion machinery and auxiliary equipment.
- 17.2 The officer in charge of the engineering watch shall continue to be

responsible for machinery-space operations, despite the presence of the chief engineer officer in the machinery spaces, until specifically informed that the chief engineer officer has assumed that responsibility and this is mutually understood.

- 17.3 All members of the engineering watch shall be familiar with their assigned watchkeeping duties. In addition, every member shall, with respect to the ship in which they are serving, have knowledge of—
- .1 the use of appropriate internal communication systems;
 - .2 the escape routes from machinery spaces;
 - .3 the engine-room alarm systems and be able to distinguish between the various alarms, with special reference to the fire-extinguishing media alarm; and
 - .4 the number, location and types of fire-fighting equipment and damage-control gear in the machinery spaces, and their use and the various safety precautions to be observed.
- 17.4 Any machinery not functioning properly, expected to malfunction or requiring special service shall be noted along with any action already taken. Plans shall be made for any further action if required.
- 17.5 When the machinery spaces are in the manned condition, the officer in charge of the engineering watch shall at all times be readily capable of operating the propulsion equipment in response to needs for changes in direction or speed.
- 17.6 When the machinery spaces are in the periodically unmanned condition, the designated duty officer in charge of the engineering watch shall be immediately available and on call to attend the machinery spaces.
- 17.7 All bridge orders shall be promptly executed. Changes in direction or speed of the main propulsion units shall be recorded, except where the Authority has determined that the size or characteristic of a particular ship make such recording impracticable. The officer in charge of the engineering watch shall ensure that the main propulsion unit controls, when in the manual mode of operation, are continuously attended under stand-by or manoeuvring conditions.
- 17.8 Due attention shall be paid to the ongoing maintenance and support of all machinery, including mechanical, electrical, electronic, hydraulic and pneumatic systems, their control apparatus and associated safety equipment, all accommodation service systems equipment and the recording of stores and spare gear usage.
- 17.9 The chief engineer officer shall ensure that the officer in charge of the engineering watch is informed of all preventive maintenance, damage control, or repair operations to be performed during the engineering watch. The officer in charge of the engineering watch shall be responsible for the isolation, bypassing and adjustment of all

- machinery under the responsibility of the engineering watch that is to be worked on, and shall record all work carried out.
- 17.10 When the engine-room is put in a stand-by condition, the officer in charge of the engineering watch shall ensure that all machinery and equipment that may be used during manoeuvring is in a state of immediate readiness and that an adequate reserve of power is available for steering gear and other requirements.
- 17.11 Officers in charge of an engineering watch shall not be assigned or undertake any duties that would interfere with their supervisory duties in respect of the main propulsion system and ancillary equipment. They shall keep the main propulsion plant and auxiliary systems under constant supervision until properly relieved, and shall periodically inspect the machinery in their charge. They shall also ensure that adequate rounds of the machinery and steering-gear spaces are made for the purpose of observing and reporting equipment malfunction or breakdown, performing or directing routine adjustments, required upkeep and any other necessary tasks.
- 17.12 Officers in charge of an engineering watch shall direct any other member of the engineering watch to inform them of potentially hazardous conditions that may adversely affect the machinery or jeopardize the safety of life or of the ship.
- 17.13 The officer in charge of the engineering watch shall ensure that the machinery space watch is supervised, and shall arrange for substitute personnel in the event of the incapacity of any engineering watch personnel. The engineering watch shall not leave the machinery spaces unsupervised in a manner that would prevent the manual operation of the engine-room plant or throttles.
- 17.14 The officer in charge of the engineering watch shall take the action necessary to contain the effects of damage resulting from equipment breakdown, fire, flooding, rupture, collision, stranding, or other cause.
- 17.15 Before going off duty, the officer in charge of the engineering watch shall ensure that all events related to the main and auxiliary machinery that have occurred during the engineering watch are suitably recorded.
- 17.16 The officer in charge of the engineering watch shall co-operate with any engineer in charge of maintenance work during all preventive maintenance, damage control or repairs. This shall include but not necessarily be limited to—
- .1 isolating and bypassing machinery to be worked on;
 - .2 adjusting the remaining plant to function adequately and safely during the maintenance period;
 - .3 recording, in the engine-room log or other suitable document, the equipment worked on and the personnel involved, and which safety steps have been taken and by whom, for the

- benefit of relieving officers and for record purposes; and
- .4 testing and putting into service, when necessary, the repaired machinery or equipment.
- 17.17 The officer in charge of the engineering watch shall ensure that any engine-room ratings that perform maintenance duties are available to assist in the manual operation of machinery in the event of automatic equipment failure.
- 17.18 The officer in charge of the engineering watch shall bear in mind that changes in speed, resulting from machinery malfunction, or any loss of steering, may imperil the safety of the ship and life at sea. The bridge shall be notified immediately in the event of fire and of any impending action in machinery spaces that may cause reduction in the ship's speed, imminent steering failure, stoppage of the ship's propulsion system or any alteration in the generation of electric power or similar threat to safety. This notification, where possible, shall be given before changes are made to allow the bridge the maximum available time to take whatever action is possible to avoid a potential marine casualty.
- 17.19 The officer in charge of the engineering watch shall notify the chief engineer officer without delay—
- .1 when engine damage or a malfunction occurs that may be such as to endanger the safe operation of the ship;
 - .2 when any malfunction occurs that, it is believed, may cause damage or breakdown of propulsion machinery, auxiliary machinery or monitoring and governing systems; and
 - .3 in any emergency or if in any doubt about what decision or measures to take.
- 17.20 Despite the requirement to notify the chief engineer officer in the foregoing circumstances, the officer in charge of the engineering watch shall in addition not hesitate to take immediate action for the safety of the ship, its machinery and crew, where circumstances so require.
- 17.21 The officer in charge of the engineering watch shall give the watchkeeping personnel all appropriate instructions and information that will ensure the keeping of a safe engineering watch. Routine machinery upkeep, performed as incidental tasks as a part of keeping a safe watch, shall be set up as an integral part of the watch routine. Detailed repair maintenance involving repairs to electrical, mechanical, hydraulic, pneumatic or applicable electronic equipment throughout the ship shall be performed with the cognizance of the officer in charge of the engineering watch and chief engineer officer. These repairs shall be recorded.

18 Engineering watchkeeping under different conditions and in different areas**18.1 *Restricted visibility***

The officer in charge of the engineering watch shall ensure that permanent air or steam pressure is available for sound signals and that at all times bridge orders relating to changes in speed or direction of operation are immediately implemented and, in addition, that auxiliary machinery used for manoeuvring is readily available.

18.2 *Coastal and congested waters*

The officer in charge of the engineering watch shall ensure that all machinery involved with the manoeuvring of the ship can immediately be placed in the manual mode of operation when notified that the ship is in congested waters. The officer in charge of the engineering watch shall also ensure that an adequate reserve of power is available for steering and other manoeuvring requirements. Emergency steering and other auxiliary equipment shall be ready for immediate operation.

18.3 *Ship at anchor*

18.3.1 At an unsheltered anchorage the chief engineer officer shall consult with the master whether or not to maintain the same engineering watch as when under way.

18.3.2 When a ship is at anchor in an open roadstead or any other virtually "at-sea" condition, the officer in charge of the engineering watch shall ensure that—

- .1 an efficient engineering watch is kept;
- .2 periodic inspection is made of all operating and stand-by machinery;
- .3 main and auxiliary machinery is maintained in a state of readiness in accordance with orders from the bridge;
- .4 measures are taken to protect the environment from pollution by the ship, and that applicable pollution-prevention regulations are complied with; and
- .5 all damage-control and fire-fighting systems are in readiness.

Division 4 Principles to be observed in keeping a radio watch**General**

Masters and radio watchkeeping personnel shall comply with the following provisions to ensure that an adequate safety radio watch is maintained while the ship is at sea. In complying with this annex, account shall be taken of regulation 16 and the radio regulations.

19 Watch arrangements

In deciding the arrangements for the radio watch, the master of every ship shall—

- .1 ensure that the radio watch is maintained in accordance with the relevant provisions of the radio regulations.
- .2 ensure that the primary duties for radio watchkeeping are not adversely affected by attending to radio traffic not relevant to the safe movement of the ship and safety of navigation; and
- .3 take into account the radio equipment fitted on board and its operational status.

20 Performing the radio watch

20.1 The radio operator performing radio watchkeeping duties shall—

- .1 ensure that watch is maintained on the frequencies specified in the radio regulations; and
- .2 while on duty, regularly check the operation of the radio equipment and its sources of energy and report to the master any observed failure of this equipment.

20.2 The requirements of the radio regulations relating to the keeping of a radiotelegraph or radio log, as appropriate, shall be complied with.

20.3 The maintenance of radio records, in compliance with the requirements of the radio regulations, is the responsibility of the radio operator designated as having primary responsibility for radiocommunications during distress incidents. The following shall be recorded, together with the times at which they occur:

- .1 a summary of distress, urgency and safety radiocommunications;
- .2 important incidents relating to the radio service;
- .3 where appropriate, the position of the ship at least once per day;
- .4 a summary of the condition of the radio equipment, including its sources of energy.

20.4 The radio records shall be kept at the distress communications operating position, and shall be made available for inspection by the master, a surveyor, or any duly authorised officer carrying out port State control.

Part 4 Watchkeeping in port**Division 1 Principles applying to all watchkeeping****21 General**

On any ship safely moored or safely at anchor under normal circumstances in port, the master shall arrange for an appropriate and effective watch to be maintained for the purpose of safety. Special requirements may be necessary for special types of ships' propulsion systems or ancillary equipment and for ships carrying hazardous, dangerous, toxic or highly flammable materials or other special types of cargo.

22 Watch arrangements

- 22.1 Arrangements for keeping a deck watch when the ship is in port shall at all times be adequate to—
- .1 ensure the safety of life, of the ship, the port and the environment, and the safe operation of all machinery related to cargo operations;
 - .2 observe international and national regulations; and
 - .3 maintain order and the normal routine of the ship.
- 22.2 The master shall decide the composition and duration of the deck watch depending on the conditions of mooring, type of ship and character of duties.
- 22.3 If the master considers it necessary, a qualified officer shall be in charge of the deck watch.
- 22.4 The necessary equipment shall be so arranged as to provide for efficient watchkeeping.
- 22.5 The chief engineer officer, in consultation with the master, shall ensure that engineering watchkeeping arrangements are adequate to maintain a safe engineering watch while in port. When deciding the composition of the engineering watch, which may include appropriate engine-room ratings, the following points are among those to be taken into account:
- .1 on all ships of 3 000 kW propulsion power or more there shall always be an officer in charge of the engineering watch;
 - .2 on ships of less than 3 000 kW propulsion power there may be, at the master's discretion and in consultation with the chief engineer officer, no officer in charge of the engineering watch; and
 - .3 officers, while in charge of an engineering watch, shall not

be assigned or undertake any task or duty that would interfere with their supervisory duty in respect of the ship's machinery system.

23 Taking over the watch

- 23.1 Officers in charge of the deck or engineering watch shall not hand over the watch to their relieving officer if they have any reason to believe that the latter is obviously not capable of carrying out watchkeeping duties effectively, in which case the master or chief engineer shall be notified accordingly. Relieving officers of the deck or engineering watch shall ensure that all members of their watch are apparently fully capable of performing their duties effectively.
- 23.2 If, at the moment of handing over the deck or engineering watch, an important operation is being performed it shall be concluded by the officer being relieved, except when ordered otherwise by the master or chief engineer officer.

Division 2 Taking over the deck watch

- 24 Before taking over the deck watch, the relieving officer shall be informed about the following by the officer in charge of the deck watch:
- .1 the depth of the water at the berth; the ship's draught; the level and time of high and low waters; the securing of the moorings, the arrangement of anchors and the scope of the anchor chain, and other mooring features important to the safety of the ship; the state of main engines and their availability for emergency use;
 - .2 all work to be performed on board the ship; the nature, amount and disposition of cargo loaded or remaining, and any residue on board after unloading the ship;
 - .3 the level of water in bilges and ballast tanks;
 - .4 the signals or lights being sounded or exhibited;
 - .5 the number of crew members required to be on board and the presence of any other persons on board;
 - .6 the state of fire-fighting appliances;
 - .7 any special port regulations;
 - .8 the master's standing and special orders;
 - .9 the lines of communication available between the ship and shore personnel, including port authorities, in the event of an emergency arising or assistance being required;
 - .10 any other circumstances of importance to the safety of the ship, its crew, cargo or protection of the environment from pollution;

.11 the procedures for notifying the appropriate authority of any environmental pollution resulting from ship activities.

- 25 Relieving officers, before assuming charge of the deck watch, shall ensure that—
- .1 the securing of moorings and anchor chain is adequate;
 - .2 the appropriate signals or lights are properly exhibited or sounded;
 - .3 safety measures and fire protection regulations are being maintained;
 - .4 they are aware of the nature of any hazardous or dangerous cargo being loaded or discharged and the appropriate action to be taken in the event of any spillage or fire;
 - .5 no external conditions or circumstances imperil the ship and that it does not imperil others; and
 - .6 they are aware of any ballasting or de-ballasting operations in progress and, where applicable, the current status of anti-heeling pumps and systems.

Division 3 Taking over the engineering watch

- 26 Before taking over the engineering watch, the relieving officer shall be informed about the following by the officer in charge of the engineering watch:
- .1 the standing orders of the day, any special orders relating to the ship operations, maintenance functions, repairs to the ship's machinery or control equipment;
 - .2 the nature of all work being performed on machinery and systems on board ship, personnel involved and potential hazards;
 - .3 the level and condition, where applicable, of water or residue in bilges, ballast tanks, slop tanks, sewage tanks, reserve tanks and special requirements for the use or disposal of tank contents;
 - .4 any special requirements relating to sanitary system disposals;
 - .5 the condition and state of readiness of portable fire-extinguishing equipment and fixed fire-extinguishing installations and fire-detection systems;
 - .6 authorised repair personnel on board engaged in engineering activities, their work locations and repair functions and other authorised persons on board and the required crew;
 - .7 any port regulations pertaining to ship effluents, fire-fighting requirements and ship readiness, particularly during potential bad weather conditions;
 - .8 the lines of communication available between the ship and shore personnel, including port authorities, in the event of an

emergency arising or assistance being required;

.9 any other circumstances of importance to the safety of the ship, its crew, cargo or the protection of the environment from pollution;

.10 the procedures for notifying the appropriate authority of any environmental pollution resulting from engineering activities.

27 Relieving officers, before assuming charge of the engineering watch, shall satisfy themselves that they are fully informed by the officer being relieved, as outlined above, and—

.1 be familiar with existing and potential sources of power, heat and lighting and their distribution;

.2 know the availability and condition of ship's fuel, lubricants and all water supplies; and

.3 be ready to prepare the ship and its machinery, as far as is possible, for stand-by or emergency conditions as required.

Division 4 Performing the deck watch

28 The officer in charge of the deck watch shall—

.1 make rounds to inspect the ship at appropriate intervals;

.2 pay particular attention to—

.2.1 the condition and securing of the gangway, anchor chain and moorings, especially at the turn of the tide and in berths with a large rise and fall, if necessary, taking measures to ensure that they are in normal working condition;

.2.2 the draught, under-keel clearance and the general state of the ship, to avoid dangerous listing or trim during cargo handling or ballasting;

.2.3 the weather and sea state;

.2.4 the observance of all regulations concerning safety and fire protection;

.2.5 the water level in bilges and tanks;

.2.6 all persons on board and their location, especially those in remote or enclosed spaces; and

.2.7 the exhibition and sounding, where appropriate, of lights and signals;

.3 in bad weather, or on receiving a storm warning, take the necessary measures to protect the ship, persons on board and cargo;

.4 take every precaution to prevent pollution of the environment by the ship;

.5 in an emergency threatening the safety of the ship, raise the alarm, inform the master, take all possible measures to prevent

any damage to the ship, its cargo and persons on board, and, if necessary, request assistance from the shore authorities or neighbouring ships;

.6 be aware of the ship's stability condition so that, in the event of fire, the shore fire-fighting authority may be advised of the approximate quantity of water that can be pumped on board without endangering the ship;

.7 offer assistance to ships or persons in distress;

.8 take necessary precautions to prevent accidents or damage when propellers are to be turned; and

.9 enter in the appropriate log-book all important events affecting the ship.

Division 5 Performing the engineering watch

29 Officers in charge of the engineering watch shall pay particular attention to—

.1 the observance of all orders, special operating procedures and regulations concerning hazardous conditions and their prevention in all areas in their charge;

.2 the instrumentation and control systems, monitoring of all power supplies, components and systems in operation;

.3 the techniques, methods and procedures necessary to prevent violation of the pollution regulations of the local authorities; and

.4 the state of the bilges.

30 Officers in charge of the engineering watch shall—

.1 in emergencies, raise the alarm when in their opinion the situation so demands, and take all possible measures to prevent damage to the ship, persons on board and cargo;

.2 be aware of the deck officer's needs relating to the equipment required in the loading or unloading of the cargo and the additional requirements of the ballast and other ship stability control systems;

.3 make frequent rounds of inspection to determine possible equipment malfunction or failure, and take immediate remedial action to ensure the safety of the ship, of cargo operations, of the port and the environment;

.4 ensure that the necessary precautions are taken, within their area of responsibility, to prevent accidents or damage to the various electrical, electronic, hydraulic, pneumatic and mechanical systems of the ship; and

.5 ensure that all important events affecting the operation, adjustment or repair of the ship's machinery are satisfactorily recorded.

Division 6 Watch in port on ships carrying hazardous cargo**31 General**

31.1 The master of every ship carrying cargo that is hazardous, whether explosive, flammable, toxic, health-threatening or environment-polluting, shall ensure that safe watchkeeping arrangements are maintained. On ships carrying hazardous cargo in bulk, this will be achieved by the ready availability on board of a duly qualified officer or officers, and ratings where appropriate, even when the ship is safely moored or safely at anchor in port.

31.2 On ships carrying hazardous cargo other than in bulk, the master shall take full account of the nature, quantity, packing and stowage of the hazardous cargo and of any special conditions on board, afloat and ashore.

32 Cargo watch

32.1 Officers with the responsibility for the planning and conduct of cargo operations shall ensure that such operations are conducted safely through the control of the specific risks, including when non-ship's personnel are involved.”.

12 Insertion of Annex 2 to the Regulations

The following Annex is inserted after Annex 1 of the Regulations:

“Annex 2**Watchkeeping principles and arrangements for fishing vessels****Part 1 Voyage planning****1 General**

1.1 The intended voyage shall, as far as possible, be planned in advance taking into account all pertinent information, and any course laid down shall be checked before the voyage begins.

1.2 The chief engineer officer shall, in consultation with the master, determine in advance the needs of the intended voyage, taking into account the requirements for fuel, water, lubricants, chemicals, expendable and other spare parts, tools, supplies and any other requirements.

Part 2 Watchkeeping at sea**Division 1 Principles applying to watchkeeping generally****2 General**

2.1 The following principles shall be observed to ensure that safe watches are maintained at all times.

2.2 The master of every fishing vessel shall ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch. Under the master's general direction, the officers of the watch are responsible for navigating the vessel safely during their periods of duty, when they will be particularly concerned with avoiding collision and stranding.

2.3 The chief engineer officer of every fishing vessel shall, in consultation with the master, ensure that watchkeeping arrangements are adequate to maintain a safe engineering watch.

2.4 The watch system shall be such that the efficiency of watchkeeping personnel is not impaired by fatigue. Duties shall be so organized that the first watch at the commencement of a voyage and the subsequent relieving watches are sufficiently rested and otherwise fit for duty.

3 Protection of marine environment

The master, officers and ratings shall be aware of the serious effects of operational and accidental pollution of the marine environment and shall take all possible precautions to prevent such pollution, particularly within the framework of relevant international and national regulations.

Division 2**Principles to be observed in keeping a navigational watch****4 General**

The officer in charge of the navigational watch is the master's representative and is primarily responsible at all times for the safe navigation of the vessel and for complying with the collision regulations.

5 En route to or from fishing grounds**5.1 Watch arrangements**

5.1.1 The composition of the navigational watch shall at all times be adequate and appropriate to the prevailing circumstances and conditions, and shall take into account the need for maintaining a proper look-out.

5.1.2 When deciding the composition of the navigational watch, the following factors, *inter alia*, shall be taken into account:

- .1 at no time is the wheelhouse to be left unattended;
- .2 weather conditions, visibility and whether there is daylight or darkness;
- .3 proximity of navigational hazards that may make it necessary for the officer in charge of the watch to carry out additional navigational duties;
- .4 use and operational condition of navigational aids such as radar or electronic position-indicating devices and of any other equipment affecting the safe navigation of the vessel;
- .5 whether the vessel is fitted with automatic steering;
- .6 any unusual demands on the navigational watch that may arise as a result of special operational circumstances.

5.2 Navigation

5.2.1 During the watch, course steered, position and speed shall be checked at sufficiently frequent intervals, using any available navigational aids necessary to ensure that the vessel follows the planned course.

5.2.2 The officer in charge of the navigational watch shall have full knowledge of the location and operation of all safety and navigational equipment on board the vessel, and shall be aware and take account of the operating limitations of such equipment.

5.2.3 The officer in charge of a navigational watch shall not be assigned or undertake any duties that would interfere with the safe navigation of the vessel.

5.3 *Navigational equipment*

5.3.1 The officer in charge of the navigational watch shall make the most effective use of all navigational equipment at the officer's disposal.

5.3.2 When using radar, the officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the provisions on the use of radar contained in the collision regulations.

5.3.3 In cases of need, the officer of the navigational watch shall not hesitate to use the helm, engines, and sound and light signalling apparatus.

5.4 *Navigational duties and responsibilities*

5.4.1 The officer in charge of the navigational watch shall—

- .1 keep watch in the wheel house;
- .2 in no circumstances leave the wheelhouse until properly relieved;
- .3 continue to be responsible for the safe navigation of the vessel despite the presence of the master in the wheelhouse, until informed specifically that the master has assumed that responsibility and this is mutually understood;
- .4 notify the master when in any doubt as to what action to take in the interest of safety; and
- .5 not hand over the watch to a relieving officer if there is reason to believe that the latter is not capable of carrying out the watchkeeping duties effectively, in which case the master shall be notified.

5.4.2 On taking over the navigational watch, the relieving officer shall confirm and be satisfied about the vessel's estimated or true position and confirm its intended track, course and speed, and shall note any dangers to navigation expected to be encountered during the watch and any traffic in the immediate vicinity.

5.4.3 Whenever practicable, a proper record shall be kept of the movements and activities during the navigational watch relating to the navigation of the vessel.

5.5 *Look-out*

5.5.1 A proper look-out shall be maintained in compliance with rule 5 of annex to the collision regulations. It shall serve the purpose of—

- .1 maintaining a continuous state of vigilance by sight and

hearing as well as by all other available means, with regard to any significant changes in the operating environment;

.2 fully appraising the situation and the risk of collision, stranding and other dangers to navigation; and

.3 detecting ships or aircraft in distress, shipwrecked persons, wrecks and debris.

5.5.2 In determining that the composition of the navigational watch is adequate to ensure that a proper look-out can continuously be maintained, the master shall take into account all relevant factors, including those described under item 5.1 of this annex, as well as the following factors:

.1 visibility, and state of weather and sea;

.2 traffic density, and other activities occurring in the area in which the vessel is navigating;

.3 the attention necessary when navigating in or near traffic separation schemes and other routing measures;

.4 the additional workload caused by the nature of the vessel's functions, immediate operating requirements and anticipated manoeuvres;

.5 rudder and propeller control and vessel manoeuvring characteristics;

.6 the fitness for duty of any crew members on call who may be assigned as members of the watch;

.7 knowledge of and confidence in the professional competence of the vessel's officers and crew;

.8 the experience of the officer of the navigational watch and the familiarity of that officer with the vessel's equipment, procedures, and manoeuvring capability;

.9 activities taking place on board the vessel at any particular time, and the availability of assistance to be summoned immediately to the wheelhouse when necessary;

.10 the operational status of instrumentation in the wheelhouse and controls, including alarm systems;

.11 the size of the vessel and the field of vision available from the conning position;

.12 the configuration of the wheelhouse, to the extent the configuration might inhibit a member of the watch from detecting by sight or hearing any external developments;

.13 any relevant standards, procedures and guidelines relating to watchkeeping arrangements and fitness for duty that have been specified in a marine notice.

5.6 *Weather conditions*

The officer in charge of the navigational watch shall take relevant measures and notify the master when adverse changes in weather could

affect the safety of the vessel, including conditions leading to ice accretion.

6 Navigation with pilot on board

The presence of a pilot on board does not relieve the master or officer in charge of the navigational watch from their duties and obligations for the safety of the vessel. The master and the pilot shall exchange information regarding navigation procedures, local conditions and the vessel's characteristics. The master and the officer in charge of the navigational watch shall co-operate closely with the pilot and maintain an accurate check of the vessel's position and movement.

7 Vessels engaged in fishing or searching for fish

7.1 In addition to the principles in item 5 of this annex, the following factors shall be taken into account and properly acted upon by the officer in charge of the navigational watch:

- .1 other vessels engaged in fishing and their gear, own vessel's manoeuvring characteristics, particularly its stopping distance and the diameter of turning circle at sailing speed and with the fishing gear overboard;
- .2 safety of the crew on deck;
- .3 adverse effects on the safety of the vessel and its crew through reduction of stability and freeboard caused by exceptional forces resulting from fishing operations, catch handling and stowage, and unusual sea and weather conditions;
- .4 the proximity of offshore structures, with special regard to any safety zones;
- .5 wrecks and other underwater obstacles that could be hazardous for fishing gear.

7.2 When stowing the catch, attention shall be given to the essential requirements for adequate freeboard, adequate stability and watertight integrity at all times during the voyage to the landing port, taking into account consumption of fuel and stores, risk of adverse weather conditions and, especially in winter, risk of ice accretion on or above exposed decks in areas where ice accretion is likely to occur.

8 Vessel at anchor

The master shall ensure, with a view to the safety of the vessel and the crew, that a proper watch is maintained at all times from the wheelhouse or deck on fishing vessels at anchor.

9 Performing the navigational watch

9.1 The officer in charge of the navigational watch shall—

- .1 keep the watch on the bridge;

- .2 in no circumstances leave the bridge until properly relieved;
 - .3 continue to be responsible for the safe navigation of the ship, despite the presence of the master on the bridge, until informed specifically that the master has assumed that responsibility and this is mutually understood; and
- 9.2 During the watch, the course steered, position and speed shall be checked at sufficiently frequent intervals, using any available navigational aids necessary, to ensure that the ship follows the planned course.
- 9.3 The officer in charge of the navigational watch shall have full knowledge of the location and operation of all safety and navigational equipment on board the ship and shall be aware and take account of the operating limitations of the equipment.
- 9.4 The officer in charge of the navigational watch shall not be assigned or undertake any duties that would interfere with the safe navigation of the ship.
- 9.6 When using radar, the officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the provisions on the use of radar contained in the collision regulations.
- 9.7 In cases of need, the officer in charge of the navigational watch shall not hesitate to use the helm, engines and sound signalling apparatus. However, timely notice of intended variations of engine speed shall be given where possible or effective use made of UMS engine controls provided on the bridge in accordance with the applicable procedures.
- 9.8 Officers of the navigational watch shall know the handling characteristics of their ship, including its stopping distances, and should appreciate that other ships may have different handling characteristics.
- 9.9 A proper record shall be kept during the watch of the movements and activities relating to the navigation of the ship.
- 9.10 It is of special importance that at all times the officer in charge of the navigational watch ensures that a proper look-out is maintained. In a ship with a separate chartroom, the officer in charge of the navigational watch may visit the chartroom, when essential, for a short period for the necessary performance of navigational duties, but shall first ensure that it is safe to do so and that proper look-out is maintained.
- 9.11 Operational tests of shipboard navigational equipment shall be carried out at sea as frequently as practicable and as circumstances permit, in particular before hazardous conditions affecting navigation are expected. Whenever appropriate, these tests shall be recorded. Tests shall also be carried out before port arrival and departure.
- 9.12 The officer in charge of the navigational watch shall make regular checks to ensure that—

- .1 the person steering the ship, or the automatic pilot, is steering the correct course;
 - .2 the standard and gyro-compasses are frequently compared and repeaters are synchronized with their master compass;
 - .3 the automatic pilot is tested manually at least once a watch;
 - .4 the navigation and signal lights and other navigational equipment are functioning properly; and
 - .5 the radio equipment available in the bridge is functioning properly in accordance with the radio regulations; and
- 9.13 The officer in charge of the navigational watch shall take into account that with a ship under automatic steering, it is highly dangerous to allow a situation to develop to the point where the officer in charge of the navigational watch is without assistance and has to break the continuity of the look-out in order to take emergency action.
- 9.14 Officers of the navigational watch shall be thoroughly familiar with the use of all electronic navigational aids carried, including their capabilities and limitations, and shall use each of these aids when appropriate and shall bear in mind that the echo sounder is a valuable navigational aid.
- 9.15 The officer in charge of the navigational watch shall use the radar whenever restricted visibility is encountered or expected, and at all times in congested waters, having due regard to its limitations.
- 9.16 The officer in charge of the navigational watch shall ensure that range scales employed are changed at sufficiently frequent intervals so that echoes are detected as early as possible. It shall be borne in mind that small or poor echoes may escape detection.
- 9.17 Whenever radar is in use, the officer in charge of the navigational watch shall select an appropriate range scale and observe the display carefully, and shall ensure that plotting or systematic analysis begins in ample time.
- 9.18 The officer in charge of the navigational watch shall notify the master immediately—
- .1 if restricted visibility is encountered or expected;
 - .2 if the traffic conditions or the movements of other ships are causing concern;
 - .3 if difficulty is experienced in maintaining course;
 - .4 on failure to sight land, a navigation mark or to obtain soundings by the expected time;
 - .5 if, unexpectedly, a land or a navigation mark is sighted or a change in soundings occurs;
 - .6 on breakdown of the engines, propulsion machinery remote control, steering gear or any essential navigational equipment, alarm or indicator;

- .7 if the radio equipment malfunctions;
- .8 in heavy weather, if in any doubt about the possibility of weather damage;
- .9 if the ship meets any hazard to navigation, such as ice or a derelict; and
- .10 in any other emergency or if in any doubt.

- 9.19 Despite the requirement to notify the master immediately in the foregoing circumstances, the officer in charge of the navigational watch shall in addition not hesitate to take immediate action for the safety of the ship, where circumstances so require.
- 9.20 The officer in charge of the navigational watch shall give watchkeeping personnel all appropriate instructions and information that will ensure the keeping of a safe watch, including a proper look-out.

10 Watchkeeping under different conditions and in different areas

10.1 *Clear weather*

10.1.1 The officer in charge of the navigational watch shall take frequent and accurate compass bearings of approaching ships as a means of early detection of risk of collision and bear in mind that such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large ship or a tow or when approaching a ship at close range. The officer shall also take early and positive action in compliance with the applicable collision regulations, and subsequently check that the action is having the desired effect.

10.1.2 In clear weather, whenever possible, the officer in charge of the navigational watch shall carry out radar practice.

10.6 *Ship at anchor*

If the master considers it necessary, a continuous navigational watch shall be maintained at anchor. While at anchor, the officer in charge of the navigational watch shall—

- .1 determine and plot the ship's position on the appropriate chart as soon as practicable;
- .2 when circumstances permit, check at sufficiently frequent intervals whether the ship is remaining securely at anchor by taking bearings of fixed navigation marks or readily identifiable shore objects;
- .3 ensure that proper look-out is maintained;
- .4 ensure that inspection rounds of the ship are made periodically;
- .5 observe meteorological and tidal conditions and the state of the sea;

- .6 notify the master and undertake all necessary measures if the ship drags anchor;
- .7 ensure that the state of readiness of the main engines and other machinery is in accordance with the master's instructions;
- .8 if visibility deteriorates, notify the master;
- .9 ensure that the ship exhibits the appropriate lights and shapes and that appropriate sound signals are made in accordance with all applicable regulations;
- .10 take measures to protect the environment from pollution by the ship and comply with applicable pollution regulations; and

Division 3 Principles to be observed in keeping an engineering watch

11 General

11.1 The term *engineering watch* as used in this annex means either a person or a group of personnel comprising the watch or a period of responsibility for an officer during which the physical presence in machinery spaces of that officer may or may not be required.

11.2 The officer in charge of the engineering watch is the chief engineer officer's representative and is primarily responsible at all times for the safe and efficient operation and upkeep of machinery affecting the safety of the vessel and is responsible for the inspection, operation and testing, as required, of all machinery and equipment under the responsibility of the engineering watch.

12 Watch arrangements

12.1 The composition of the engineering watch shall at all times be adequate and appropriate to the prevailing circumstances and conditions and shall take into account the need to ensure the safe operation of all machinery affecting the operation of the vessel.

12.2 When deciding the composition of the engineering watch, the following criteria, *inter alia*, shall be taken into account:

- .1 the type of vessel and the type and condition of the machinery;
- .2 the adequate supervision, at all times, of machinery affecting the safe operation of the vessel;
- .3 any special modes of operation dictated by conditions such as weather, ice, contaminated water, shallow water, emergency conditions, damage containment or pollution abatement;
- .4 the qualifications and experience of the engineering watch;
- .5 the safety of life, ship, cargo and port and protection of the environment;

- .6 the observance of relevant international and national regulations;
- .7 maintaining the normal operations of the vessel.

13 **Taking over the watch**

13.1 The officer in charge of the engineering watch shall not hand over the watch to the relieving officer if there is reason to believe that the latter is obviously not capable of carrying out the watchkeeping duties effectively, in which case, the chief engineer officer shall be notified.

13.2 The relieving officer of the engineering watch shall ensure that the members of the relieving engineering watch are apparently fully capable of performing their duties effectively.

13.3 Before taking over the engineering watch, relieving officers shall satisfy themselves about at least the following:

- .1 the standing orders and special instructions of the chief engineer officer relating to the operation of the vessel's systems and machinery;
- .2 the nature of all work being performed on machinery and systems, the personnel involved and potential hazards;
- .3 the level and, where applicable, the condition of water or residues in bilges, ballast tanks, slop tanks, reserve tanks, fresh water tanks, sewage tanks and any special requirements for use or disposal of tank contents;
- .4 the condition and level of fuel in reserve tanks, settling tank, day tank and other fuel storage facilities;
- .5 any special requirements relating to sanitary system disposals;
- .6 the condition and mode of operation of the various main and auxiliary systems, including the electrical power distribution system;
- .7 where applicable, the condition of monitoring and control console equipment, and which equipment is being operated manually;
- .8 where applicable, the condition and mode of operation of automatic boiler controls such as flame safeguard control systems, limit control systems, combustion control systems, fuel-supply control systems and other equipment related to the operation of steam boilers;
- .9 any potentially adverse conditions resulting from bad weather, ice, or contaminated or shallow water;
- .10 any special modes of operation dictated by equipment failure or adverse vessel conditions;
- .11 the availability of fire-fighting appliances;
- .12 the state of completion of the engine-room log.

14 Performing the engineering watch

14.1 The officer in charge of the engineering watch shall ensure that the established watchkeeping arrangements are maintained and that, under direction, other personnel, if forming part of the engineering watch, assist in the safe and efficient operation of the vessel's propulsion machinery and auxiliary equipment.

14.2 The officer in charge of the engineering watch shall continue to be responsible for machinery-space operations despite the presence of the chief engineer officer in the machinery spaces, until specifically informed that the chief engineer officer has assumed that responsibility and this is mutually understood.

14.3 All members of the engineering watch shall be familiar with their assigned watchkeeping duties. In addition, every member shall, with respect to the vessel in which they are serving, have knowledge of—

- .1 the use of appropriate internal communication systems;
- .2 the escape routes from machinery spaces;
- .3 the engine-room alarm systems and be able to distinguish between the various alarms, with special reference to the fire-extinguishing media alarm; and
- .4 the number, location and types of fire-fighting equipment and damage-control gear in the machinery spaces, and their use and the various safe precautions to be observed.

14.4 Any machinery not functioning properly, expected to malfunction or requiring special service shall be noted along with any action already taken. Plans shall be made for any further action if required.

14.5 When machinery spaces are in the manned condition, the officer in charge of the engineering watch shall at all times be readily capable of operating the propulsion equipment in response to needs for changes in direction or speed.

14.6 When machinery spaces are in the periodically unmanned condition, the designated duty officer in charge of the engineering watch shall be immediately available and on call to attend the machinery spaces.

14.7 The officer in charge of the engineering watch shall ensure that the main propulsion unit controls, when in the manual mode of operation, are continuously attended under stand-by or manoeuvring conditions.

14.8 When the engine-room is put in a stand-by condition, the officer in charge of the engineering watch shall ensure that all machinery and equipment that may be used during manoeuvring is in a state of immediate readiness and that an adequate reserve of power is available for steering gear and other requirements.

14.9 Officers in charge of an engineering watch shall direct any other

member of the engineering watch to inform them of potentially hazardous conditions that may adversely affect the machinery or jeopardise the safety of life or of the vessel.

14.10 Before going off duty, the officer in charge of the engineering watch shall ensure that all events related to the main and auxiliary machinery that have occurred during the engineering watch are suitably recorded.

14.11 The officer in charge of the engineering watch shall bear in mind that changes in speed, resulting from machinery malfunction, or any loss of steering, may imperil the safety of the ship and life at sea. The bridge shall be notified immediately in the event of fire and of any impending action in machinery spaces that may cause reduction in the vessel's speed, imminent steering failure, stoppage of the vessel's propulsion system or any alteration in the generation of electric power or similar threat to safety. This notification, where possible, shall be given before changes are made to allow the bridge the maximum available time to take whatever action is possible to avoid a potential marine casualty.

14.12 The officer in charge of the engineering watch shall notify the chief engineer officer without delay—

- .1 when engine damage or a malfunction occurs that may be such as to endanger the safe operation of the vessel;
- .2 when any malfunction occurs that, it is believed, may cause damage or breakdown of propulsion machinery, auxiliary machinery or monitoring and governing systems; and
- .3 in any emergency or if in any doubt about what decision or measures to take.

14.13 Despite the requirement to notify the chief engineer officer in the foregoing circumstances, the officer in charge of the engineering watch shall not hesitate to take immediate action for the safety of the vessel, its machinery and crew where circumstances require.

15 Restricted visibility

The officer in charge of the engineering watch shall ensure that permanent air or steam pressure is available for sound signals and that at all times bridge orders relating to changes in speed or direction of operation are immediately implemented and, in addition, that auxiliary machinery used for manoeuvring is readily available.

16 Vessel at anchor

16.1 At an unsheltered anchorage the chief engineer officer shall consult with the master whether or not to maintain the same engineering watch as when under way.

16.2 When a vessel is at anchor in an open roadstead or any other virtually "at-sea" condition, the officer in charge of the engineering watch shall ensure that—

- .1 an efficient engineering watch is kept;
- .2 periodic inspection is made of all operating and stand-by machinery;
- .3 main and auxiliary machinery is maintained in a state of readiness in accordance with orders from the bridge;
- .4 measures are taken to protect the environment from pollution by the vessel, and that applicable pollution-prevention regulations are complied with; and
- .5 all damage-control and fire-fighting systems are in readiness.

Division 4 Principles to be observed in keeping a radio watch

17 General

The master shall ensure that an adequate radio watch is maintained while the vessel is at sea, on appropriate frequencies, taking into account the requirements of the radio regulations.”.

Explanatory note

(This note is not part of the regulations)

- 1 These regulations amend the *Merchant Shipping (Safe Manning) Regulations, 1999*, made under section 356 of the *Merchant Shipping Act, 1951*.
- 2 These amendments will bring about the proper qualification of operators for non-GMDSS and GMDSS equipped vessels to utilize the same distress alerting procedures and equipment.
- 3 Ultimately one distress alerting system will be utilized by all radio operators. This will bring about, a large degree of interoperability between SOLAS and non-SOLAS vessels.
- 4 These regulations intend to bring about an expansion of all training institutions to conduct the appropriate courses. These courses should incorporate the CEPT syllabus as for Region 1 of the ITU Regions, with appropriate conversion courses for current holders of Restricted Radiotelephone Operator's Certificates. The syllabi are contained in the Handbook for Marine Radiocommunication.
- 5 These are the main objects of the amendments:
 - To update watchkeeping principles and arrangements for non- fishing vessel personnel, taking into account South Africa's obligations under the STCW Convention.
 - The amendments are consequential upon the making of the *Merchant Shipping (Training and Certification) Regulations 1999* comply with the 2010 Manila Amendments to the STCW Convention and Code which overhaul the training and certification requirements and arrangements for seafarers under the STCW Convention and Code.
 - The amendments are consequential upon the making of the *Merchant Shipping (Training and Certification) (Fishing and Marine Motorman Qualifications) Regulations, 2012*, which overhaul the training and certification requirements and arrangements for seagoing fishing vessel personnel and certain other non-STCW engine department personnel. The main object of the amendments is to introduce consistency with these regulations.
 - The purpose of these amendments is to align radio operator's qualifications with those requirements as per the International Telecommunication Union (ITU), Radio Regulations 2008, read with the Merchant Shipping Radio Installations Regulations, 2010 as amended.
 - The ITU regulations were amended in 2007 by World Radio Conference, to enforce the transition to GMDSS radio installations on ships. This necessitated consequential changes to the Merchant Shipping Radio Installation Regulations and the Safe Manning Regulations. (Transitional processes have been in force in many countries since 1999).
 - The ITU Radio Regulations of 2008 does not make provision for the Restricted Radiotelephone Operator's Certificate that is currently required by the regulations. This certificate has become problematic and is only valid for the Southern African Coastal waters.
 - To make consequential changes.