

SHIPPING ACT, 2007
SHIPPING (NAVIGATIONAL EQUIPMENT)
REGULATIONS 2007

Made by the Minister under sections 157 and 404 of the Shipping
Act 2007

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1. These Regulations may be cited as the Shipping (Navigational Equipment) Regulations 2007. Citation

2. (1) In these Regulations – Interpretation and application

"the Act" means the Shipping Act 2007;

"constructed" in respect of a ship means a stage of construction where:

- (a) the keel is laid; or
- (b) (i) construction identifiable with a specific ship begins, and
- (ii) assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less;

"interference" in relation to wireless telegraphy, means the prejudicing by any emission or reflection of electromagnetic energy of the fulfillment of the purposes of the telegraphy (either generally or in part, and, without prejudice to the generality of the preceding words, as respects all, or as respects any, of the recipients or intended recipients of any message, sound or visual image intended to be conveyed by the telegraphy), and the expression "interfere" shall be construed accordingly;

"international voyage" means a voyage from a port in one country to a port in another country;

"length" has the meaning given in section 2 of the Act;

"maintenance" means any activity intended to keep an installation in satisfactory working condition and includes tests, measurements, replacements, adjustments and repair;

"the Organization" means the International Maritime Organization;

"passenger ship" means a ship carrying more than 12 passengers;

"pleasure vessel" has the meaning given in section 2 of the Act;

"radar watch" means observing displayed radar information, the frequency of observation depending upon the prevailing conditions;

"safe distance", in relation to a unit of equipment, means the minimum distance, approved by the Director and specified on that unit, at which the unit should be installed from a magnetic compass, in order to minimise deviation to the compass;

"tanker" means a cargo ship constructed or adapted for the carriage in bulk of liquid cargoes of a flammable nature;

"tons" means gross tonnage

"voyage" includes an excursion.

(2) Reference in these Regulations to any performance standard adopted by the Organization (referred to in regulations 11, 16, 19(1), 28, 30, 32, 37 and 41 hereof) and to any relevant performance standard shall be construed as references to the standards specified in the First Schedule which are appropriate for that equipment.

(3) These Regulations shall apply in relation to ships (except pleasure vessel and fishing vessels) which are:

- (a) sea-going Trinidad and Tobago ships, other than passenger ships, which are 24 metres in length and of 150 tons or over;
- (b) Trinidad and Tobago passenger ships other than those of less than 24 metres in length; and
- (c) other sea-going cargo ships of 24 metres or more in length and 150 tons or over, and other sea-going passenger ships of 24 metres in length or over, while they are within Trinidad and Tobago or the territorial waters thereof.

(4) A rigidly connected composite unit of a pushing vessel and associated pushed vessel, when designed as a dedicated and integrated tug and barge combination, shall be regarded as a single ship for the purpose of these Regulations.

- (5) (a) Subject to paragraph (b), for the purposes of these Regulations passenger ships shall be arranged in Classes as follows: -

Class III Ships, other than ships of Classes IV to VI, which do not go on international voyages.

Class IV Ships engaged on voyages in the course of which they are at no time more than 100 miles by sea from their point of departure and not more than 20 miles from land, and which are at sea only in favourable weather.

Class V Ships carrying not more than 250 passengers for a distance of not more than 15 miles on voyages and which do not proceed for a distance of more than 3 miles from land, subject to any conditions which the Director may impose or in such circumstances as the Director may consider appropriate.

Class VI Ships engaged on voyages with not more than 200 passengers on board, in the course of which the ships are at no time more than 10 miles from their point of

departure nor more than 2 miles from land and which are at sea only in favourable weather, and subject to any other conditions which the Director may impose.

- (b) The above Classes of ships do not include ships engaged on international voyages.

PART I GENERAL

3. (1) Every ship shall be fitted with a magnetic compass installation which shall comply with Part II.

Provision of
navigational
equipment
installations

(2) Every ship of 500 tons or over but less than 1600 tons constructed on or after 1 September 1984 shall:

- (a) be fitted with a gyro compass installation which shall comply with Part III;
- (b) be fitted with a radar installation which shall comply with Part IV and be capable of working in the 9 GHz frequency band;
- (c) be fitted with indicators showing the rudder angle, the rate of revolution and direction of thrust of each propeller and, if fitted with variable pitch propellers or lateral thrust propellers, the pitch and operational mode of such propellers. All these indicators shall be readable from the normal navigation control position.

(3) Every ship of 500 tons or over but less than 1600 tons when engaged on an international voyage shall:

- (a) where constructed on or after 25 May 1980 be fitted with an echo sounder installation which shall comply with Part V;
- (b) where constructed on or after 1 September 1984 be fitted with a speed and distance measuring installation which shall comply with Part VI

(4) Every ship of 1600 tons or over, whenever constructed, shall:

- (a) be fitted with a gyro compass installation which shall comply with Part III; for ships constructed before 1 September 1984, this requirement applies only when they are engaged on international voyages;
- (b) (i) where less than 10,000 tons, be fitted with a radar installation which shall comply with Part IV and the radar installation shall be capable of working in the 9 GHz frequency band;
- (ii) where of 10,000 tons or over, be fitted with two radar installations, each capable of being operated independently of the other which shall comply with Part IV of these Regulations; at least one of the radar installations shall be capable of operating in the 9 GHz frequency band;

- (c) be fitted with indicators showing the rudder angle, the rate of revolution and direction of thrust of each propeller and, if fitted with variable pitch propellers or lateral thrust propellers, the pitch and operational mode of such propellers. All these indicators shall be readable from the normal navigation control position.

(5) Every ship of 1600 tons or over when engaged on an international voyage shall:

- (a) whenever constructed, be fitted with an echo sounder installation which shall comply with Part V;
- (b) where constructed on or after 1 September 1984 be fitted with a speed and distance measuring installation which shall comply with Part VI;
- (c) whenever constructed, be fitted with a direction finder installation which shall comply with Part VII;

(6) Every Trinidad and Tobago ship of Class III or IV shall either-

- (a) be fitted with an echo sounder installation which shall comply with Part V ; or
- (b) be provided with-
 - (i) two hand lead lines each 45 metres long and each with a lead weighing at least 3 kilograms; and
 - (ii) in the case of a ship of 1600 tons or over having a Passenger Certificate of Class III, an efficient mechanical depth sounding device.

(7) Every ship of 10,000 tons or over shall be fitted with an automatic radar plotting aid which shall comply with Part VIII, except ships, other than tankers, of less than 15,000 tons constructed before 1 September 1984.

(8) Passenger ships irrespective of size and cargo ships of 300 tons gross tonnage and upwards when engaged on international voyages shall be fitted with a radar installation capable of operating in the 9 GHz frequency band. This radar may be one of those required by regulation 3(2)(b) or 3(4)(b).

(9) Every ship of 100,000 tons or over constructed on or after 1 September 1984 shall be fitted with a rate of turn indicator which shall comply with Part IX .

Serviceability of installations

4. (1) Each navigational equipment installation required by these Regulations to be provided shall be in a satisfactory working condition whenever the ship goes to sea: provided that, except in respect of magnetic compass, direction-finding and homing installations, this requirement shall not apply when a ship is going to sea from a place at which prompt maintenance is not available or practicable without delaying the ship.

(2) Each navigational equipment installation required by these Regulations shall be in a satisfactory working condition at all times when the ship is at sea, unless there is a defect in an installation and maintenance is being carried out or is not practicable.

(3) Each navigational equipment installation required by these Regulations shall, where practicable, be mounted in such a manner as to prevent the performance and reliability of the installation being adversely affected by vibration.

(4) Units of each navigational equipment installation required by these Regulations shall, where practicable, be sited in positions which facilitate easy access for operation and maintenance.

5. (1) At no time while the ship is at sea shall any interference or mechanical noise produced by any navigational equipment installation required by these Regulations be such as to prevent the effective reception of radio signals.

Interference with other installations

(2) At no time while the ship is at sea shall any interference or mechanical noise produced by any equipment in the ship be sufficient to prevent the efficient operation of any navigational equipment installation required by these Regulations.

(3) Units of navigational equipment installations, where practicable, shall not be installed closer to the ship's standard and steering compasses than the appropriate compass safe distances marked on the units.

6. (1) There shall be provided in every ship at all times while the ship is at sea and at all reasonable times when she is in port, a supply of electrical energy suitable and sufficient for the operation of the navigational equipment installations required by these Regulations, for testing purposes and for the charging of any rechargeable batteries which are a source of electrical energy for the navigational equipment installations.

Provision of electrical energy

(2) The supply of electrical energy shall not exceed the limits set out below:

AC supplies: variation from nominal voltage of +/-10%;
variation from nominal frequency of +/-6%;

DC supplies: variation from nominal voltage:
110/220V supplies, +10%, -20%
24/32V supplies, +30%, -10%.

(3) Readily accessible means shall be provided for isolating each navigational equipment installation from its source of electrical energy without causing any interruption to, or adversely affecting, the supply of electrical energy to any other equipment.

(4) Where a ship is required to be provided with two radar installations-

- (a) they shall be so installed that failure of either radar installation shall not cause the supply of electrical energy to the other radar installation to be interrupted or adversely affected; and
- (b) on ships constructed on or after 25 May 1982, both radar installations shall be capable of being operated one at a

time, from the ship's emergency source of electrical energy, if provided.

Charging of batteries 7. (1) Where rechargeable batteries are provided on a ship as a source of electrical energy for any part of the navigational equipment installations, adequate means shall be provided on board the ship for the charging of such batteries from the ship's main source of electrical energy.

(2) Any such battery when not in use shall be capable of being fully charged within a period of not more than 16 hours by the means of charging required by sub-regulation (1).

(3) When any such battery is float-charged whilst in use, the voltage used for charging the battery shall be within the limits set out in regulation 6(2).

(4) Where any navigational installation derives electrical energy for internal circuits from non-rechargeable batteries, failure of such batteries, where practicable, shall not cause malfunction of the installation and Where this is not practicable, the installation shall be provided with means to test the condition of such batteries.

Servicing and operating information 8. Adequate information and instructions as to the use and maintenance of every navigational equipment installation required by these Regulations shall be provided by the owner and shall be available at all times for use when the particular installation is being operated, tested or serviced. In Trinidad and Tobago ships such information and instructions shall be in English.

Spares and tools 9. For each navigational equipment installation required by these Regulations there shall be supplied such special tools and equipment as are necessary for shipboard maintenance and such spares as are likely to be required for the duration of the intended voyage.

Approval of navigational equipment 10 Navigational equipment required by these Regulations shall be of a type which has been approved by the Director. In the case of a ship registered in a State party to the Safety of Life at Sea Convention 1974 this requirement shall not apply in relation to any equipment of a type approved by the Administration of that State.

PART II MAGNETIC COMPASS INSTALLATION

Magnetic compass performance standards 11. Every magnetic compass installation required to be provided shall comply with the performance standards adopted by the Organization and shall, in the case of a Trinidad and Tobago ship, comply with the relevant performance standard.

The magnetic compass installation 12. (1) Except in the case of Trinidad and Tobago ships having Passenger Certificates of Class V or VI, the magnetic compass installation shall comprise:

- (a) a standard magnetic compass, fitted on the centre line of the ship and mounted on a binnacle;
- (b) a steering magnetic compass, fitted on the centre line of the ship and mounted on a binnacle, unless heading information provided by the standard compass required under (a) is available to and is clearly readable by the helmsman at the main steering position;
- (c) adequate means of communication between the standard compass position and the normal navigation control position; and
- (d) means for taking bearings as nearly as practicable over an arc of the horizon of 360 degrees.

(2) In the case of Trinidad and Tobago ships having Passenger Certificates of Class V or VI the magnetic compass installation shall comprise one efficient magnetic compass at the steering position.

13. Each of the magnetic compasses referred to in regulation 12(1) shall be properly adjusted and its table or curve of residual deviations shall be available at all times.

Adjustment of magnetic compasses

14. A spare magnetic compass, interchangeable with the standard compass, shall be carried in every ship of 150 tons and over to which these Regulations apply, unless the steering compass mentioned in regulation 12(1)(b) or a gyro compass mentioned in regulation 16 is carried.

Spare magnetic compass

15. (1) Ships of 150 tons and over which are provided with emergency steering positions shall at least be provided with a telephone or other means of communication for relaying heading information to such positions.

Emergency steering position

(2) In addition, ships of 500 tons gross tonnage and upwards constructed on or after 15 February 1993 shall be provided with arrangements for supplying visual compass readings to the emergency steering position.

PART III GYRO COMPASS INSTALLATION

16. Every gyro compass installation required to be provided shall comply with the performance standard adopted by the Organization and shall, in the case of a Trinidad and Tobago ship, comply with the relevant performance standard.

Gyro compass performance standards

17. (1) The master compass shall be installed with its fore-and-aft datum line parallel to the ship's fore-and-aft datum line to within +/-0.5 degrees.

Siting of gyro compass installation

(2) The compass card of the master compass, or a repeater of the heading information, shall be sited so that it is clearly readable by the helmsman when steering the ship.

(3) Where provided, repeaters used for taking visual bearing shall be installed with their fore-and-aft datum lines parallel to the ship's fore-and-aft datum line to within +/-0.5 degrees.

(4) The master compass shall be sited so as to avoid, where practicable, excessive errors being caused to the gyro compass installation due to the ship rolling, pitching or yawing.

(5) Where in a gyro compass installation fitted on or after 1 September 1984, failure of one repeater could cause an error in any other repeater a readily accessible means shall be provided for isolating each repeater output from the master compass.

Provision of gyro repeaters

18. On ships of 1600 tons or over a gyro repeater or gyro repeaters shall be provided and shall be suitably placed for taking bearings as nearly as practicable over an arc of the horizon of 360 degrees.

PART IV RADAR INSTALLATION

Radar performance standards and interswitching facilities

19. (1) Every radar installation required to be provided shall comply with the performance standard adopted by the Organization and shall, in the case of a Trinidad and Tobago ship, comply with the relevant performance standard.

(2) (a) Where such a radar installation includes additional radar units and facilities for interswitching, at least one arrangement of units when used together shall comply with all the requirements of this Part;

(b) where two radar installations are required to be provided on a ship, they shall be so installed that each radar installation can be operated individually and both can be operated simultaneously without being dependent upon one another.

Provision of plotting facilities

20. Facilities for plotting radar readings shall be provided on the navigating bridge of every ship required to be fitted with a radar installation. In ships of 1600 tons gross tonnage and upwards constructed on or after 1 September 1984 the plotting facilities shall be at least as effective as a reflection plotter.

Radar watch

21. While a Trinidad and Tobago ship which is required to be fitted with a radar installation is at sea and a radar watch is being kept, the radar installation shall be under the control of a qualified radar observer who may be assisted by unqualified personnel.

22. The performance of the radar installation shall be checked before the ship proceeds to sea and at least once every four hours whilst the ship is at sea and radar watch is being maintained. Performance of radar installations
23. For the purposes of these Regulations, a person is a "qualified radar observer" if he holds: Qualifications of radar observers
- (a) a valid Radar Observer's Certificate granted by the Director; or
 - (b) a valid certificate of attendance granted at the conclusion of a radar simulator course which has been approved by the Director; or
 - (c) a valid Electronic Navigation Systems Certificate granted by the Director; or
 - (d) a valid Navigation Control Certificate granted by the Director; or
 - (e) a certificate recognised by the Director as being equivalent to any of the certificates mentioned in (a), (b), (c) or (d).
24. (1) The antenna unit of the radar installation shall be sited so that satisfactory overall performance is achieved in relation to: Siting of radar installation
- (a) the avoidance of shadow sectors;
 - (b) the avoidance of false echoes caused by reflections from the ship's structure; and
 - (c) the effect of antenna height on the amplitude and extent of sea-clutter.
- (2) The radar display shall be sited on the bridge from which the ship is normally navigated. The siting of one of the displays shall be such that:
- (a) an observer, when viewing the display, faces forward and is readily able to maintain visual lookout;
 - (b) there is sufficient space for two observers to view the display simultaneously.
25. The radar heading marker (and stern marker where fitted) shall be aligned to within one degree of the ship's fore-and-aft line as soon as practicable after the radar installation has been installed in the ship. Where inter-switching facilities are provided, the heading marker shall be aligned with all arrangements of units. The marker shall be re-aligned as soon as practicable whenever it is found to be substantially inaccurate. Alignment of heading marker
26. The angular width and bearing of any shadow sectors displayed by the radar installation shall be determined and recorded. The record shall be shown on a diagram adjacent to the radar display and be kept up to date following any change likely to affect shadow sectors. Measurement of shadow sectors
27. A radar installation required to be provided which is or was installed onboard a ship on or after 1 September 1984 shall provide a relative plan display having an effective diameter, without external magnification, of not less than: Display sizes
- (a) 180 millimetres on ships of 500 tons or over but less than 1600 tons;

- (b) 250 millimetres(1) on ships of 1600 tons or over but less than 10,000 tons;
- (c) 340 millimetres(1) in the case of one radar installation and 250 millimetres in the case of the other on ships of 10,000 tons or over.

PART V ECHO SOUNDER INSTALLATION

Echo sounder
performance
standards

28. Every echo sounder installation required to be provided shall comply with the performance standard adopted by the Organization and shall, in the case of a Trinidad and Tobago ship, comply with the relevant performance standard.

Siting of echo
sounder installation

29. (1) The transducer unit or units of such echo sounder installation shall be sited so as to avoid, where practicable, the vicinity of all underwater openings in, or projections from, the hull, such as plugs, anodes or other transducers, so that satisfactory overall performance is achieved.

(2) The echo sounder graphical display shall, where practicable, be sited on the bridge in a position to facilitate easy access and viewing, and where the effect of any lighting necessary for the equipment does not interfere with the keeping of an effective look-out.

PART VI SPEED AND DISTANCE MEASURING INSTALLATION

Speed and distance
measuring equipment
performance
standards

30. Every speed and distance measuring installation required to be provided shall comply with the performance standard adopted by the Organization and shall, in the case of a Trinidad and Tobago ship, comply with the relevant performance standard.

Siting of speed and
distance measuring
installation

31. (1) Where applicable, the transducer unit of the speed and distance measuring installation shall be sited so as to avoid, where practicable, the vicinity of all underwater openings in, or projections from, the hull, such as plugs, anodes or other transducers, so that satisfactory overall performance is achieved.

(2) Where a towed log is fitted, the position of the log register shall be selected so that the log line and its rotator when streamed are as clear as is practicable from disturbed water in the close vicinity of the ship so that the rotation of the log line is not impeded by any part of the ship or its equipment.

(3) The display shall, where practicable be sited on the bridge in a position to facilitate easy access and viewing and where the effect of any lighting necessary for the equipment does not interfere with the keeping of an effective look-out.

PART VII
DIRECTION-FINDER INSTALLATION

32. Every direction-finder installation required to be provided shall comply with the performance standard adopted by the Organization and shall, in the case of a Trinidad and Tobago ship, comply with the relevant performance standard.

Direction-finder
performance standard

33. (1) The direction-finder shall be so sited that efficient determination of radio bearings by means of the direction-finder will not be affected by extraneous noises.

Siting of direction-
finder installation

(2) The direction-finder antenna system shall be mounted in such a manner that the efficient determination of radio bearings by means of the direction-finder will be affected as little as possible by the proximity of antennas, derricks, wire halyards and other large metal objects.

34. (1) In every ship required to be fitted with a direction-finder installation an efficient two-way means of calling and voice communication shall be provided between the receiver forming part of the direction-finder and the position from which the ship is normally navigated.

Means of
communication

(2) In every such ship an efficient means of signalling shall be provided for use when calibrating or taking check bearings of the direction-finder installation between the receiver forming part of the direction-finder installation and the place on the ship from which visual bearings are taken.

35 (1) The master of every ship required to be fitted with a direction-finder installation shall cause the direction-finder to be calibrated in accordance with this regulation as soon as practicable after it has been installed in the ship and where any change is made in the position of the direction-finding antenna system

Calibration

(2) (a) The direction-finder installation shall be calibrated by two persons, one being experienced in the taking of radio bearings and the other experienced in the taking of visual bearings. The calibration shall be carried out by taking simultaneous radio and visual bearings of a transmitter, and such bearings shall be taken at intervals of not greater than 5 degrees throughout 360 degrees on a frequency between 283.5 kHz and 315 kHz.

(b) Calibration tables and curves which enable radio bearings obtained by the direction-finder installation to be adjusted to within two degrees of the correct bearing shall be prepared on the basis of the bearings taken in accordance with subregulation (2)(a).

(c) Following satisfactory calibration and the preparation of calibration tables and curves, a Certificate of Calibration of

Direction-Finder shall be completed in the form specified in the Second Schedule.

(3) The master of every such ship shall cause the calibration tables and curves prepared in accordance with the foregoing provisions of this regulation to be verified by check bearings or by a further calibration whenever any changes are made in the position of:

- (a) any antennas; or
- (b) any structure on deck; or
- (c) the arrangement of cargo above deck,

which might affect appreciably the accuracy of the direction-finder.

Records of
calibration and
verification

36. The master of every ship required to be fitted with a direction-finder installation shall cause the following records to be kept in a place accessible to any person operating the direction-finder, and to be available for inspection at any reasonable time by a surveyor of ships:

- (a) a list or diagram indicating the position, on the most recent occasion on which the direction-finder was calibrated, of the antennas and all moveable structures on board the ship which might affect the accuracy of the direction-finder;
- (b) the calibration tables and curves which were prepared on the most recent occasion on which the direction-finder was calibrated;
- (c) a certificate of calibration signed by the persons making the calibration relating to the most recent occasion on which the direction-finder was calibrated; and
- (d) a record, in the form specified in the Third Schedule, of check-bearings taken for the verification of calibration, the bearings being numbered in the order in which they were taken.

PART VIII AUTOMATIC RADAR PLOTTING AID INSTALLATION

Automatic radar
plotting aid
performance
standards

37. Every automatic radar plotting aid installation required to be provided shall comply with the performance standard adopted by the Organization and shall, in the case of a Trinidad and Tobago ship, comply with the relevant performance standard.

Siting and other
requirements of
automatic radar
plotting aid
installations

38. (1) Where the automatic radar plotting aid installation is provided as an additional unit to a radar installation it shall be sited as close as is practicable to the display of the radar with which it is associated.

(2) Where the automatic radar plotting aid installation forms an integral part of a complete radar system that radar system shall be regarded as one of the radar installations required by regulation 3(4)(b) and accordingly shall comply with the relevant requirements of Part IV.

(3) The automatic radar plotting aid installation shall be interconnected with such other installations as is necessary to provide heading and speed information to the automatic radar plotting aid.

39. When at any time on or after the coming into force of these Regulations, a Trinidad and Tobago ship required to be fitted with an automatic radar plotting aid is at sea and a radar watch is being kept on the automatic radar plotting aid, the installation shall be under the control of a person qualified in the operational use of automatic radar plotting aids, who may be assisted by unqualified personnel.

Use of an automatic radar plotting aid to assist in the radar watch

40. For the purpose of regulation 39, a person shall be qualified in the operational use of automatic radar plotting aids if he holds:

Qualifications of observers using an automatic radar plotting aid to assist in keeping a radar watch

- (a) a valid Electronic Navigation Systems Certificate granted by the Director, or
- (b) a valid Navigation Control Certificate granted by the Director, or
- (c) a valid Automatic Radar Plotting Aids Certificate granted by the Director, or
- (d) a certificate recognised by the Director as being equivalent to any of the certificates mentioned in (a), (b) or (c).

PART IX INSTALLATION OF A RATE OF TURN INDICATOR

41. Every rate of turn indicator installation required to be provided shall comply with the performance standard adopted by the Organization and shall, in the case of a Trinidad and Tobago ship, comply with the relevant performance standard.

Rate of turn indicator performance standards

42. The display shall, where practicable, be sited on the bridge in a position to facilitate easy access and viewing, and where the effect of any lighting necessary for the equipment does not interfere with the keeping of an effective look-out.

Siting of the rate of turn indicator installation

PART X SUPPLEMENTARY

43 Without prejudice to section 185 of the Act -

Penalties

- (a) where any of the requirements of regulations 6 or 7 are contravened then the owner and the master shall each be guilty of an offence and liable on summary conviction to a fine not exceeding [US\$30,000];
- (b) where the information and instructions required to be provided by regulation 8 are not provided the owner shall

be guilty of an offence and liable on summary conviction to a fine not exceeding [US\$30,000]; and if such information and instructions are not available as required by that regulation the owner and master shall each be guilty of an offence and liable on summary conviction to a fine not exceeding [US\$30,000];

- (c) where a ship proceeds or attempts to proceed to sea without carrying a qualified radar observer which it is required to carry under regulation 21 the owner and master of the ship shall each be guilty of an offence and liable on summary conviction to a fine not exceeding [US\$30,000];
- (d) where, while a ship is at sea and a radar watch is being kept-
 - (i) the radar installation is not under the control of a qualified radar observer, or
 - (ii) an automatic radar plotting aid is being used and such aid is not under the control of a person qualified in the use of such aids in accordance with regulation 40,

the owner and master of the ship shall each be guilty of an offence and liable on summary conviction to a fine not exceeding [US\$30,000];

(e) where the master of any ship fails to ensure that in respect of that ship all the requirements of regulations 35 and 36 are complied with he shall be guilty of an offence and liable on summary conviction to a fine not exceeding [US\$30,000].

Enforcement of
detention

44. In any case where a ship does not comply with the requirements of these Regulations, the ship shall be liable to be detained and section 384 of the Shipping Act, which relates to the detention of a ship, shall have effect in relation to the ship, subject to the modification that as if for the words "this Act" wherever they appear, there were substituted "the Shipping (Navigational Equipment) Regulations 2007."

FIRST SCHEDULE

Regulations 2(2),11, 16, 19(1),
28,30,32,37 and 41

International Maritime Organization performance standards for navigational equipment

In this Schedule references to 'A.xxx(yy)' mean the 'xxx' Resolution of the IMO Assembly adopted at its 'yy' session, and any amendment thereto or replacement thereof.

PART I

Navigational equipment installed before 1 January 1997 shall meet the standards specified in the table below:

<i>Fitted on or after</i>	<i>1 April 1976</i>	<i>25 May 1980</i>	<i>1 September 1984 (see Note 1)</i>	<i>1 February 1993 (see Note 2)</i>
MAGNETIC COMPASS		A.382(X)	A.382(X)	A.382(X)
GYRO COMPASS			A.424(XI)	A.424(XI).
RADAR	A.222(VII)	A.222(VII)	A.278(VII),A.477(XII)	A.424(XI), A.477(XII)
ECHO SOUNDER		A.224(VII)	A.224(VII)	A.224(VII)
SPEED AND DISTANCE MEASURING EQUIPMENT			A.478(XII)	A.478(XII).
DIRECTION FINDER		A.223(VII)	A.223(VII).	A.665(16)
AUTOMATIC RADAR PLOTTING AID (ARPA)			A.422(XII)	A.422(XII)
RATE OF TURN INDICATOR			A.526(13)	A.526(13)

Notes:

1. Equipment fitted on or after 1 September 1984 must also meet the general requirements specified in A.574(14).
2. Equipment fitted on or after 1 February 1993 must also meet the general requirements specified in A.694(17).

PART II

Navigational equipment installed on or after 1 January 1997 shall meet the standards specified in the table below:

EQUIPMENT	IMO RESOLUTION
MAGNETIC COMPASS	A.382(X)
GYRO COMPASS	A.424(XI)
RADAR	A.477(XII) and A.278(VIII)
ECHO SOUNDER	A.224(VII)
SPEED AND DISTANCE MEASURING EQUIPMENT	A.824(19)
DIRECTION FINDER	A.665(16)
AUTOMATIC RADAR PLOTTING AID (ARPA)	A.823(19)
RATE OF TURN INDICATOR	A.526(13)

PART III

The standards for navigational equipment not the subject of a carriage requirement are specified in the table below:

<i>EQUIPMENT</i>	<i>IMO RESOLUTION</i>
DECCA NAVIGATOR	A.816(19)
ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS (ECDIS)	A.817(19)
LORAN-C AND CHAYKA RECEIVERS	A.818(19)
GLOBAL POSITIONING SYSTEM (GPS) RECEIVER SYSTEM	A.819(19)

Notes: All equipment should also meet the general requirements specified in Resolution A.694(17). Note also the general requirements for electromagnetic compatibility specified in Resolution A.813(19).

SECOND SCHEDULE

Regulation 35(2)(c)

Certificate of Calibration of Direction-Finder

We, the undersigned, hereby certify that we have today-

- (a) calibrated, in accordance with Part VII of the Model Shipping (Navigational Equipment) Regulations 2001, the direction-finder installed in the

s.s.

-

m.v.

- (b) handed to the master of that ship tables of calibration corrections;
- (c) adjusted the said direction-finder so that the readings taken thereby, when corrected with such tables, differ from the correct bearings by no more than plus or minus two degrees.

We hereby further certify that the master of the said ship has been furnished with a list or diagram indicating the position, at the time of such calibration, of the antennas and of all moveable structures on board the ship which might affect the accuracy of the direction-finder.

.....Radio Observer
Visual Observer
Date

THIRD SCHEDULE

Regulation 36(d)

RECORD OF CHECK-BEARINGS TAKEN BY MEANS OF THE DIRECTION-FINDER

1	Ship's Approximate Position	
2	Direction-Finder Bearing of (Name and frequency)	
3	Serial Number of Bearings	
4	Date	
5	Times (GMT(UTC) and ship's)	
6	Latitude – Ship's approximate position	
7	Longitude– Ship's approximate position	
8	Distance from Transmitter	

9	Direction-Finder Relative Bearing Correct for QE	
10	Ship's Head by Compass 0/360°	
11	Total Compass Error	
12	½ Convergency Applied	
13	Ship's Head Corrected (True)	
14	True Bearing by Direction-Finder [Row (8) and Row (12)]	
15	Correction required to make Row (13) equal Row (14) (indicating whether -- or +)	

Signature of Observer or Observers

- (1)
- (2)
- (3)
- (4)
- (5)