

---

STATUTORY INSTRUMENTS

---

**1993 No. 69**

**MERCHANT SHIPPING**  
**SAFETY**

**The Merchant Shipping (Navigational  
Equipment) Regulations 1993**

*Made* - - - - *18th January 1993*  
*Laid before Parliament* *25th January 1993*  
*Coming into force* - - *15th February 1993*

The Secretary of State for Transport, after consulting with the persons referred to in section 22(2) of the Merchant Shipping Act 1979(1) in exercise of the powers conferred on him by section 21(1) (a) and (b), (3), (4), (5) and (6), and section 22(1) of that Act and of all other powers enabling him in that behalf, hereby makes the following Regulations:—

**Citation**

1. These Regulations may be cited as the Merchant Shipping (Navigational Equipment) Regulations 1993 and shall come into force on 15th February 1993.

**Interpretation, revocation and application**

2.—(1) In these Regulations the following expressions have the following meanings respectively:

“Category A, B or C Waters” means any water not being the sea or Category D Waters and, in particular, means waters of any of the areas specified in column 2 of the Annex to Merchant Shipping Notice No. M1504;

“Category D Waters” means, as respects any period specified in the Annex to Merchant Shipping Notice No. M1504, the waters of the areas specified in column 3 of that Annex;

“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 1 per cent of the estimated mass of all structural material, whichever is less;

---

(1) 1979 c. 39; section 21(6)(b), (ba) and (bb) were inserted by the Criminal Justice Act 1982 (c. 48).

“interference” has the same meaning as in section 19(4) of the Wireless Telegraphy Act 1949(2);

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

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

“Merchant Shipping Notice” means a Notice described as such and issued by the Department of Transport; and any reference to a particular Merchant Shipping Notice includes a reference to any document amending or replacing that Notice which is considered by the Secretary of State to be relevant from time to time and is specified in a Merchant Shipping Notice;

“the Organisation” means the International Maritime Organisation;

“Passenger Certificate Class II(A)” means a certificate issued under or pursuant to the Merchant Shipping Acts 1894 to 1988 for passenger ships engaged on voyages of any kind other than international voyages;

“Passenger Certificate Class III” means a certificate so issued for passenger ships engaged only on voyages in the course of which they are at no time more than 70 miles by sea from their point of departure and not more than 18 miles from the coast of the United Kingdom, and which are at sea only in favourable weather and during Restricted periods;

“Passenger Certificate Class IV” means a certificate so issued for passenger ships engaged only on voyages in Category A, B, C and D Waters;

“Passenger Certificate Class V” means a certificate so issued for passenger ships engaged only on voyages in Category A, B and C Waters;

“Passenger Certificate Class VI” means a certificate so issued for passenger ships engaged on voyages with not more than 250 passengers on board, to sea, or in Category A, B, C and D Waters, in all cases in favourable weather and during Restricted periods, in the course of which the ships are at no time more than 15 miles, exclusive of any Category A, B, C and D Waters, from their point of departure nor more than 3 miles from land;

“Passenger Certificate Class VI(A)” means a certificate so issued for passenger ships carrying not more than 50 passengers for a distance of not more than 6 miles on voyages to or from isolated communities on the islands or coasts of the United Kingdom and which do not proceed for a distance of more than 3 miles from land subject to any conditions which the Secretary of State may impose;

“passenger ship” means a ship carrying more than 12 passengers;

“pleasure craft” means a vessel primarily used for sport or recreation;

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

“Restricted period” means a period falling wholly within the following limits:—

- (a) from the 1st April to 31st October, both dates inclusive; and
- (b) between one hour before sunrise and one hour after sunset in the case of ships fitted with navigation lights conforming to the collision regulations and between sunrise and sunset in the case of any other ships;

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

“sea” does not include any waters of Category A, B, C or D;

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

“tons” means gross tonnage and shall be:

- (a) for a ship having alternative gross tonnages under paragraph 13 of Schedule 5 of the Merchant Shipping (Tonnage) Regulations 1982<sup>(3)</sup> the larger of those tonnages;
- (b) for a ship having its tonnage determined both under Part II and regulation 16 of those Regulations its gross tonnage as determined under regulation 16;

“voyage” includes an excursion.

- (a) (2) (a) Reference in these Regulations to any performance standard adopted by the Organisation (referred to in regulations 11, 16, 19(1), 28, 30, 32, 37, 39 and 43 hereof) and to any relevant performance standard shall be construed as references to the standards specified as such in Merchant Shipping Notice No. M[1513] which are appropriate for that equipment.
  - (b) For the purposes of these Regulations, the results of verifications and tests carried out by the bodies and laboratories of other member States offering suitable and satisfactory guarantees of technical and professional competence and independence shall be accepted.
- (3) These Regulations shall apply in relation to ships (except pleasure craft and fishing vessels) which are:
- (a) sea-going United Kingdom ships, other than passenger ships, of 150 tons or over;
  - (b) United Kingdom passenger ships other than those having Passenger Certificates of Class V; and
  - (c) other sea-going ships of 150 tons or over while they are within the United Kingdom 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) The Merchant Shipping (Navigational Equipment) Regulations 1984<sup>(4)</sup> and the Merchant Shipping (Navigational Equipment) (Amendment) Regulations 1985<sup>(5)</sup> are hereby revoked.

## PART I

### GENERAL

#### **Provision of navigational equipment installations**

**3.—**(1) Every ship shall be fitted with a magnetic compass installation which shall comply with Part II of these Regulations.

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

- (a) be fitted with a gyro compass installation which shall comply with Part III of these Regulations;

---

(3) S.I.1982/841.

(4) S.I. 1984/1203, amended by S.I. 1985/659.

(5) S.I. 1985/659.

- (b) be fitted with a radar installation which shall comply with Part IV of these Regulations. From 1st February 1995 the radar installation shall 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) if constructed on or after 25th May 1980 be fitted with an echo sounder installation which shall comply with Part V of these Regulations;
  - (b) if constructed on or after 1st September 1984 be fitted with a speed and distance measuring installation which shall comply with Part VI of these Regulations.
- (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 of these Regulations: Provided that this requirement shall apply to ships constructed before 1st September 1984, only when engaged on international voyages;
  - (b)
    - (i) if less than 10,000 tons, be fitted with a radar installation which shall comply with Part IV of these Regulations. From 1st February 1995 the radar installation shall be capable of working in the 9 GHz frequency band;
    - (ii) if 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. From 1st February 1995, 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 of these Regulations;
  - (b) if constructed on or after 1st September 1984 be fitted with a speed and distance measuring installation which shall comply with Part VI of these Regulations;
  - (c) whenever constructed, be fitted with a direction finder installation which shall comply with Part VII of these Regulations;
  - (d) until 1st February 1999, if constructed on or after 25th May 1980 and before 1st February 1995, be fitted with radio equipment for homing on the radiotelephone distress frequency which shall comply with Part VIII of these Regulations.
- (6) Every United Kingdom ship having a Passenger Certificate of Class II(A) or III shall either—
- (a) be fitted with an echo sounder installation which shall comply with Part V of these Regulations; 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 II(A), 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 IX of these Regulations:

provided that this requirement shall not apply to ships, other than tankers, of less than 15,000 tons constructed before 1st September 1984.

(8) After 1st February 1995, 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 regulations 3(2)(b) or 3(4)(b).

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

### **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.

### **Interference with other installations**

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.

(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.

### **Provision of electrical energy**

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.

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

---

AC supplies:	variation from nominal voltage of $\pm 10\%$
--------------	--

DC supplies:	variation from nominal frequency of $\pm 6\%$ 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 25th 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) If 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 paragraph (1) of this regulation.

(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) above.

(4) If 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. 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 United Kingdom 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.—(1) Navigational equipment required by these Regulations shall be of a type which has been approved by the Secretary of State:

Provided that 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.

(2) Any approval given by the Secretary of State pursuant to these Regulations shall be given in writing and shall specify the conditions (if any) on which it is given.

## PART II

### MAGNETIC COMPASS INSTALLATION

#### **Magnetic compass performance standards**

11. Every magnetic compass installation required to be provided shall comply with the performance standard adopted by the Organisation and shall, in the case of a United Kingdom ship, comply with the relevant performance standard.

#### **The magnetic compass installation**

12.—(1) Except in the case of United Kingdom ships having Passenger Certificates of Class IV, VI or VI(A), 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°.

(2) In the case of United Kingdom ships having Passenger Certificates of Class IV, VI or VI(A) the magnetic compass installation shall comprise one efficient magnetic compass at the steering position.

#### **Adjustment of magnetic compasses**

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.

#### **Spare magnetic compass**

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.

#### **Emergency steering position**

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

## PART III

### GYRO COMPASS INSTALLATION

#### Gyro compass performance standards

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

#### Siting of gyro compass installation

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  $\pm 0.5^\circ$ .

(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  $\pm 0.5^\circ$ ,

(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 1st 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  $360^\circ$ .

## 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 Organisation and shall, in the case of a United Kingdom ship, comply with the relevant performance standard.

(a) (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 of these Regulations;

(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 1st September 1984 the plotting facilities shall be at least as effective as a reflection plotter.

### **Radar watch**

21. While a United Kingdom 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.

### **Performance of radar installations**

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.

### **Qualifications of radar observers**

23. For the purposes of these Regulations, a person is a “qualified radar observer” if he holds:
- (a) a valid Radar Observer’s Certificate granted by the Secretary of State;  
or
  - (b) a valid certificate of attendance granted at the conclusion of a radar simulator course which has been approved by the Secretary of State;  
or
  - (c) a valid Electronic Navigation Systems Certificate granted by the Secretary of State,  
or
  - (d) a valid Navigation Control Certificate granted by the Secretary of State,  
or
  - (e) a certificate recognised by the Secretary of State as being equivalent to any of the certificates mentioned in (a), (b), (c) or (d).

### **Siting of radar installation**

24.—(1) The antenna unit of the radar installation shall be sited so that satisfactory overall performance is achieved in relation to:

- (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.

### **Alignment of heading marker**

25. The radar heading marker (and stern marker if fitted) shall be aligned to within 1° 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.

### Measurement of shadow sectors

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.

### Display sizes

27. A radar installation required to be provided which is or was installed onboard a ship on or after 1st September 1984 shall provide a relative plan display having an effective diameter, without external magnification, of not less than:

- (a) 180 millimetres(7) on ships of 500 tons or over but less than 1600 tons;
- (b) 250 millimetres(7) on ships of 1600 tons or over but less than 10,000 tons;
- (c) 340 millimetres(7) 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 Organisation and shall, in the case of a United Kingdom 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 Organisation and shall, in the case of a United Kingdom ship, comply with the relevant performance standard.

---

(7) Display diameters of 180, 250 and 340 millimetres correspond respectively to 9, 12 and 16 inch cathode ray tubes.

(7) Display diameters of 180, 250 and 340 millimetres correspond respectively to 9, 12 and 16 inch cathode ray tubes.

(7) Display diameters of 180, 250 and 340 millimetres correspond respectively to 9, 12 and 16 inch cathode ray tubes.

### **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**

#### **Direction-finder performance standard**

**32.** Every direction-finder installation required to be provided shall comply with the performance standard adopted by the Organisation and shall, in the case of a United Kingdom ship, comply with the relevant performance standard.

#### **Siting of direction-finder installation**

**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.

(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.

#### **Means of communication**

**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.

(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.

#### **Calibration**

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

- (a) (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 paragraph (2)(a) of this regulation.
- (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 Schedule 1 to these Regulations.

(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 Schedule 2 to these Regulations, of checkbearings taken for the verification of calibration, the bearings being numbered in the order in which they were taken.

## **PART VIII**

### **FOR HOMING ON THE RADIOTELEPHONE**

#### **DISTRESS FREQUENCY (2182 kHz)**

#### **Homing equipment performance standards**

**37.** Every homing installation required to be provided shall comply with the performance standard adopted by the Organisation and shall, in the case of a United Kingdom ship, comply with the relevant performance standard.

#### **Siting of homing installation**

**38.—(1)** The homing equipment shall be so sited that efficient determination of radio bearings by means of the equipment will not be affected by extraneous noises.

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

## PART IX

### AUTOMATIC RADAR PLOTTING AID INSTALLATION

#### **Automatic radar plotting aid performance standards**

**39.** Every automatic radar plotting aid installation required to be provided shall comply with the performance standard adopted by the Organisation and shall, in the case of a United Kingdom ship, comply with the relevant performance standard.

#### **Siting and other requirements of automatic radar plotting aid installations**

**40.**—(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 of these Regulations.

(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.

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

**41.** When at any time on or after the coming into force of these Regulations, a United Kingdom 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.

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

**42.** For the purpose of regulation 41 of these Regulations, a person shall be qualified in the operational use of automatic radar plotting aids if he holds:

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

## PART X

### INSTALLATION OF A RATE OF TURN INDICATOR

#### **Rate of turn indicator performance standards**

**43.** Every rate of turn indicator installation required to be provided shall comply with the performance standard adopted by the Organisation and shall, in the case of a United Kingdom ship, comply with the relevant performance standard.

### **Siting of the rate of turn indicator installation**

44. 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 XI EXEMPTIONS**

### **Exemptions**

45. The Secretary of State may exempt any ship or description of ships from all or any of the provisions of these Regulations (as may be specified on the exemption) on such terms, if any, as he may specify and may, subject to giving reasonable notice, alter or cancel any such exemption.

## **PART XII PENALTIES**

### **Penalties**

46.—(1) If a ship proceeds or attempts to proceed to sea without carrying a navigational equipment installation with which it is required by these Regulations to be provided, or if such installation does not comply in all respects with the requirements of these Regulations relevant to such installation, the owner and master of the ship shall each be guilty of an offence and liable on summary conviction to a fine not exceeding the statutory maximum or, on conviction on indictment, to imprisonment for a term not exceeding 2 years and a fine.

(2) If 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 level 5 on the standard scale.

(3) If 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 level 5 on the standard scale; 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 level 5 on the standard scale.

(4) If a ship proceeds or attempts to proceed to sea without carrying a qualified radar observer which it is required to carry under regulation 21 of these Regulations the owner and master of the ship shall each be guilty of an offence and liable on summary conviction to a fine not exceeding level 5 on the standard scale.

(5) If while a ship is at sea and a radar watch is being kept—

- (a) the radar installation is not under the control of a qualified radar observer, or
- (b) 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 42,

the owner and master of the ship shall each be guilty of an offence and liable on summary conviction to a fine not exceeding level 5 on the standard scale.

(6) If 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 level 5 on the standard scale.

(7) It shall be a defence in proceedings for an offence under this regulation to prove that the person charged took all reasonable steps to avoid commission of the offence.

### **Compensation and enforcement of detention**

47. Section 460(1) and section 692(1) to (3) and (5) of the Merchant Shipping Act 1894(6) (which relate respectively to liability for costs and compensation for the detention of a ship and enforcing the detention of a ship) shall have effect in relation to a ship detained under these Regulations subject to the following modifications—

- (a) in section 460(1) the following words shall be omitted—
  - “by reason of the condition of the ship or the act or default of the owner”
  - “provisional”
  - “as an unsafe ship”
  - “and survey”
  - “or survey”; and
- (b) for the words “this Part of this Act” in section 460(1) and “this Act” wherever they appear in section 692, there shall be substituted “the Merchant Shipping (Navigational Equipment) Regulations 1993”.

Signed by authority of the Secretary of State for Transport

18th January 1993

*Caithness*  
Minister of State,  
Department of Transport

**Status:** This is the original version (as it was originally made). This item of legislation is currently only available in its original format.

SCHEDULE 1

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 Merchant Shipping (Navigational Equipment) Regulations 1993, 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

SCHEDULE 2

Regulation 36(d)

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

Serial Number of Bearings	Date	Times (GMT/UTC) and ship's	Ship's Approximate Position		Distance from Transmitter	Direction-Finder Bearing of (Name and frequency)	Direction-Finder Relative Bearing Correct for QE	Ship's Head by Compass 0/360°	Total Compass Error	Convergence Applied	Ship's Head Corrected (True)	True Bearing by Direction-Finder [Col. (8) and Col. (12)]	True Bearing by Visual Check or Calculation (whether Visual or Calculation to be indicated; if Calculation, the method to be stated)	Correction required to make Col. (13) equal Col. (14) (indicating whether - or +)	Signature of Observer or Observers
(1)	(2)	(3)	Latitude	Longitude											



## EXPLANATORY NOTE

*(This note is not part of the Order)*

These Regulations revoke and re-enact the Merchant Shipping (Navigational Equipment) Regulations 1984, as amended in 1985, and implement the requirements of the 1988 Global Maritime Distress and Safety System (GMDSS) Conference amendments to Regulation 12 of Chapter V of the International Convention for the Safety of Life at Sea 1974 (SOLAS 74). The Regulations align the radar equipment requirements and radar maintenance arrangements on United Kingdom vessels with Regulation V/12 of SOLAS 74. The Regulations also align the United Kingdom magnetic compass and directionfinder requirements with Regulation V/12 of SOLAS 74. The Regulations refer to a Merchant Shipping Notice which specifies the navigational equipment performance standards adopted by the International Maritime Organisation and the relevant standards which apply to United Kingdom vessels.