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STATUTORY INSTRUMENTS

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**1993 No. 69**

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

**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<sup>(1)</sup> on ships of 500 tons or over but less than 1600 tons;
- (b) 250 millimetres<sup>(1)</sup> on ships of 1600 tons or over but less than 10,000 tons;

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- (c) 340 millimetres<sup>(1)</sup> in the case of one radar installation and 250 millimetres in the case of the other on ships of 10,000 tons or over.

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