
STATUTORY INSTRUMENTS

1975 No. 330

The Fishing Vessels (Safety Provisions) Rules 1975

PART II

FISHING VESSEL CONSTRUCTION RULES

F

ELECTRICAL EQUIPMENT AND INSTALLATIONS

General

38. In every vessel of 12 metres in length and over to which these Rules apply electrical equipment and installations including any electrical means of propulsion shall be such that the vessel and all persons on board are protected against electrical hazards.

Distribution systems

39.—(1) In every vessel of 12 metres in length and over to which these Rules apply main and emergency switchboards shall be suitably guarded and so arranged as to provide easy access without danger to any person. Adequate non-conducting mats or gratings shall be provided. Exposed parts which may have a voltage between conductors or to earth exceeding 250 volts direct current or 55 volts alternating current shall not be installed on the face of any switch-board or control panel.

(2) In every such vessel hull return shall not be used for the power, heat and light distribution systems.

(3) In every such vessel where two or more generating sets may be in operation at the same time for providing the auxiliary services essential for the propulsion and safety of the vessel each generator shall be arranged to supply such essential services and means shall be provided to trip automatically sufficient non-essential load when the total current exceeds the connected generator capacity.

(4) In every such vessel cable systems and electrical equipment shall be so installed as to reduce interference with radio reception to a minimum.

Electrical precautions

40.—(1) In every vessel of 12 metres in length and over to which these Rules apply electrical equipment shall be so constructed and installed that there will be no danger to any person handling it in a proper manner.

(a) Subject to sub-paragraph (b) below, where electrical equipment is to be operated at a voltage in excess of 55 volts the exposed metal parts of such equipment which are not intended to have a voltage above that of earth, but which may have such a voltage under fault conditions, shall be earthed;

(b) exposed metal parts of portable electrical lamps, tools and similar apparatus, to be operated at a voltage in excess of 55 volts shall be earthed through a conductor in the supply cable

unless, by the use of double insulation or a suitable isolating transformer, protection at least as effective as earthing through a conductor is provided.

(2) In every such vessel every fixed electrical cable shall be of a flame retarding type. All metal sheaths and armour of any electric cable shall be electrically continuous and shall be earthed. Electric cable which is neither metal sheathed nor armoured shall, if installed where its failure might cause a fire or explosion, be effectively protected.

(3) In every such vessel wiring shall be supported in such a manner as to avoid chafing or other damage.

(4) In every such vessel joints in all electrical conductors except those in low voltage communications circuits shall be made only in junction or outlet boxes or by a suitable method such that it retains the original mechanical, flame retarding and electrical properties of the cable. Junction or outlet boxes shall be so constructed as to confine the spread of fire.

(5) In every such vessel lighting fittings shall be so arranged that the rise in temperature will not damage the associated wiring or cause a fire risk in the surrounding materials.

(6) In every such vessel electrical circuits, other than a circuit which operates the vessel's steering gear, shall be protected against overload and short circuit. There shall be clearly and permanently indicated on or near each overload protective device the current carrying capacity of the circuit which it protects and the rating or setting of the device.

(7) In every such vessel electrical equipment shall not be installed in spaces where flammable mixtures are liable to accumulate unless it is of a type which will not cause ignition.

(8) In every such vessel every lighting circuit terminating in a bunker or hold shall be provided with an isolating switch positioned outside that bunker or hold.

Requirements for vessels of 24.4 metres in length and over

41.—(1) In every vessel of 24.4 metres in length and over to which these Rules apply where electric power is the only power for maintaining auxiliary services essential for the propulsion or safety of the vessel there shall be provided two or more generating sets of such power that the aforesaid services can be operated when any one of the sets is out of service.

(2) In every such vessel where the main source of electric power is situated below the uppermost continuous deck and within the machinery casings there shall be provided outside the machinery casings a self-contained emergency source of electric power so arranged as to ensure its functioning in the event of failure by reason of fire or otherwise of the main electrical installation.

(3) In every such vessel where the main source of electric power is situated above the uppermost continuous deck and outside the machinery casings such source of power shall be capable of operating simultaneously for a period of at least 3 hours the services indicated in paragraph (5) below in addition to any other electrical load.

(4) In any such vessel where properly installed electric navigation lights supplied from the emergency source of power are provided in addition to the normal navigation lights oil navigation lights need not be carried.

(5) Subject to paragraph (9) below, in every such vessel the emergency source of electric power shall be capable of operating simultaneously for a period of at least three hours the following services:—

- (a) the general alarm if electrically operated;
- (b) the watertight doors if they are electrically or electro-hydraulically operated and their indicators and the warning signals if electrically operated;
- (c) emergency lights at launching stations and over-side, in all alleyways, stairways and exits, in the machinery spaces and in the place where the emergency source of electric power,

if any, is situated; and in control stations for radio, navigation or other services essential to the safety of the vessel;

- (d) emergency navigation lights fitted in accordance with paragraph (4) above, communication equipment, fire detecting systems and signals which may be required in an emergency, and the daylight signaling lamp.

(6) In every such vessel the emergency source of electric power shall be either accumulator (storage) batteries capable of supplying the services set out in paragraph (5) above without being recharged or suffering an excessive voltage drop, or a generator driven by internal combustion type machinery with an independent fuel supply and with efficient starting arrangements. The fuel provided for such machinery shall have a flash point of not less than 43°C. (Closed Test).

(7) In every such vessel the emergency source of electric power shall be so arranged that it will operate efficiently when the vessel is listed 22½ degrees either way and when the trim of the vessel is 10 degrees from a level keel.

(8) In every such vessel adequate means shall be provided for the regular testing of the emergency source of electric power and its associated circuits.

(9) In any vessel of 24.4 metres in length and over but less than 45 metres in length to which these Rules apply adequate alternative means of supply for the emergency lighting systems set out in sub-paragraph (5)(c) above may be installed.

Requirements for vessels of 12 metres in length and over but less than 24.4 metres in length

42.—(1) In every vessel of 12 metres in length and over but less than 24.4 metres in length to which these Rules apply where electric power is the only means for maintaining auxiliary services essential for the safety of the vessel there shall be provided at least two independent sources of electric power, one of which may be main engine driven. Such auxiliary services shall be capable of being operated when any one of the sources of electric power is out of operation.

(2) In every such vessel the alternative source of electric power required by this Rule shall be capable of operating simultaneously for a period of at least 3 hours the following services:—

- (a) the vessel's emergency lights in stairways and exits, in the machinery space and wheelhouse and at the liferaft storage position;
- (b) emergency communications and signals equipment if they are operated from the vessel's main source of electric power;
- (c) the daylight signalling lamp if it is operated by the vessel's main source of electric power.

(3) In any such vessel the alternative source of electric power may be accumulator (storage) batteries capable of supplying the services set out in paragraph (2) above without being recharged or suffering an excessive voltage drop.

(4) In every such vessel the alternative source of electric power shall be so arranged that it will operate efficiently when the vessel is listed 22½ degrees either way and when the trim of the vessel is 10 degrees from a level keel.

(5) In every such vessel adequate means shall be provided for the regular testing of the alternative source of electric power and its associated circuits.

(6) In any such vessel adequate alternative means of supply for the emergency lighting systems set out in paragraph (2)(a) above may be installed.

Accumulator (storage) batteries and associated charging equipment

43.—(1) In every vessel of 12 metres in length and over to which these Rules apply where accumulator batteries provide the auxiliary electric power such batteries shall, together with dynamos or alternating current generators, be of sufficient capacity to provide an adequate reserve

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of electric power under all foreseeable service conditions. The batteries, their means of charging, charging voltage and current protection arrangements shall be effective and fit for their intended service.

(2) In every such vessel not less than two dynamos or two alternating current generators each being capable of supplying sufficient auxiliary power for the safety of the vessel and maintaining the charge rate for the vessel's batteries shall be provided as a means of charging those batteries. Dynamos or alternating current generators may be driven by the main engine, subject to compliance with the provisions of paragraph (6) below.

(3) In every such vessel the output of any dynamo or alternating current generator driven by a variable speed engine shall be based on the lowest operational speed of the engine. Throughout the entire operating engine speed range the dynamo or alternating current generator shall operate within its safe speed range.

(4) In every such vessel accumulator (storage) batteries shall be housed in boxes, trays or compartments which are constructed to provide protection of the batteries from damage and ventilated to reduce the accumulation of explosive gas to a minimum. Where fans are fitted in exhaust ducts from compartments assigned principally to the storage of batteries they shall be of a flameproof type. Electrical arrangements liable to are shall not be installed in any compartment used principally for the storage of accumulator batteries. Lead acid and nickel alkaline batteries shall not be housed in the same space.

(5) In every such vessel where accumulator batteries are used for starting the main engine not less than two batteries shall be available and each battery shall be capable of supplying adequate starting power and shall be of sufficient capacity to start the main engine or engines not less than twelve times successively if the engine is reversible or not less than six times successively if the engine is non-reversible, unless alternative means of starting are provided.

(6) In every vessel of 19 metres in length and over but less than 24.4 metres in length to which these Rules apply one battery charging dynamo or alternating current generator shall be driven by an independent prime mover.