
STATUTORY INSTRUMENTS

1998 No. 1012

**The Merchant Shipping (Fire Protection:
Large Ships) Regulations 1998**

PART II

FIRE PREVENTION AND FIRE APPLIANCES

PASSENGER SHIPS

SHIPS OF CLASS I

Fire pumps, fire main, water service pipes, hydrants, hoses and nozzles

3.—(1) Every ship of Class I shall be provided with appliances whereby at least two jets of water can reach any part of the ship normally accessible to the passengers or crew while the ship is being navigated and any store room and any part of any cargo space when empty.

(2) Every ship of Class I of 4,000 tons or over shall be provided with at least three fire pumps operated by power and every such ship of under 4,000 tons shall be provided with at least two such pumps. Each pump shall be capable of delivering at least one jet of water simultaneously from each of any two hydrants, hoses and nozzles provided in the ship and shall comply with the requirements of regulation 38.

- (a) (3) (a) In every ship of Class I of 1,000 tons or over the arrangement of the sea connections, pumps and the sources of power for operating them shall be such as will ensure that a fire in any one compartment will not put all the fire pumps out of action.
- (b) If in any ship of Class I of less than 1,000 tons a fire in any one compartment could put all the fire pumps out of the action there shall be provided, in a position outside the machinery spaces, an independently driven power-operated emergency fire pump and its source of power and sea connection. Such a pump shall be capable of producing at least one jet of water simultaneously from each of any two hydrants and hoses through nozzles which comply with the requirements of regulation 40(5)(b), while simultaneously maintaining a pressure of at least 210 kPa at any hydrant in the ship.

(4) In every ship of Class I there shall be provided a fire main, water service pipes, hydrants, hoses and nozzles which shall be so arranged that they comply with the requirements of regulations 39 and 40 when all watertight doors and all doors in main vertical zone bulkheads are closed.

(5) In every ship of Class I at least one fire hose shall be provided for every hydrant fitted in compliance with these Regulations. Such hoses shall be used only for the purpose of extinguishing fires or for testing the fire-extinguishing appliances at fire drills and surveys.

(6) In every ship of Class I where in any machinery space of Category A, access is provided at a low level from an adjacent shaft tunnel, two hydrants fitted with hoses and nozzles shall be provided external to, but near the entrance to, that machinery space. Where such access is not provided from a tunnel but is provided from another space or spaces there shall be provided in one of those spaces two hydrants fitted with hoses and nozzles near the entrance to the machinery space of Category A. Such provisions need not be made when the tunnel or adjacent spaces are not part of an escape route.

(7) In every ship of Class I carrying more than 36 passengers, water from the fire main shall, as far as practicable, be kept immediately available by maintaining the pressure in the fire main or by providing an easily operable and readily accessible remote control for the fire pumps.

(8) In every ship of Class I carrying more than 36 passengers, all hose nozzles shall be of an approved dual-purpose type capable of producing a water-spray and a plain jet of water, and shall incorporate a shut-off facility.

(9) In every ship of Class I at least three water-fog applicators in addition to the nozzles required by these Regulations shall be provided in special category spaces.

(10) In every ship of Class I hydrants in machinery spaces shall be fitted with hoses having dual-purpose nozzles. Additionally, in respect of ships carrying more than 36 passengers, each machinery space of Category A shall be provided with at least two suitable water-fog applicators.

Additional requirements for ships constructed on or after 25th May 1980

(11) Notwithstanding paragraph (7) above, in every ship of Class I of 1,000 tons or over, the arrangement of fire pumps, fire mains and hydrants shall be such that at least one jet of water is immediately available from any one hydrant in an interior location. Arrangements shall also be made to ensure the continuation of the output of water by the automatic starting of a fire pump required by these Regulations.

(12) In every ship of Class I in every special category space and ro-ro cargo space the number of hydrants with hoses shall be so arranged that at least two jets of water each from a single length of hose, not emanating from the same hydrant, may reach any part of the space. Such hydrants shall be positioned near the accesses to the protected spaces.

Portable fire extinguishers in accommodation, cargo and service spaces

4.—(1) In every ship of Class I there shall be provided on each deck below the bulkhead deck a sufficient number of portable fire extinguishers so that at least two shall be readily available for use in every accommodation space, service space and control station between main vertical zones. In enclosed accommodation spaces, service spaces and control stations above the bulkhead deck at least one such extinguisher shall be provided for use on each side of the ship in such spaces. The number of such extinguishers in such spaces shall not be less than five in a ship of 1,000 tons or over. In addition at least one portable fire extinguisher and a fire blanket shall be provided in every galley; provided that where the deck area of any galley exceeds 45 square metres, at least two such extinguishers and two such blankets shall be provided.

(2) In every ship of Class I at least one portable fire extinguisher shall be provided for use in each control station.

(3) One of the portable fire extinguishers intended for use in any space shall be available near the entrance to that space.

(4) In every ship of Class I there shall be provided in each special category space and cargo space intended for the carriage of motor vehicles with fuel in their tanks for their own propulsion—

- (a) at least two portable extinguishers, suitable for extinguishing oil fires, for every 40 metres length of deck space, so arranged that at least one extinguisher is available on each side of the space and at least one extinguisher is available at each access to the space;
- (b) one portable foam-applicator unit complying with the requirements of Schedule 6 in Merchant Shipping Notice MSN 1665; not less than two such applicators shall be available in the ship for use in any such space.

Fixed fire-extinguishing systems in cargo spaces

5.—(1) In every ship of Class I of 1,000 tons or over there shall be provided a fixed gas fire-extinguishing system complying with the requirements of Schedule 4 in Merchant Shipping Notice MSN 1666 which shall be so arranged as to protect every cargo space.

(2) The Secretary of State may exempt any ship (other than a ship engaged in the carriage of dangerous goods) from the requirements of paragraph (1) if to require compliance therewith would be unreasonable on account of the short duration of the voyages on which the ship is engaged.

Additional requirements for ships constructed on or after 25th May 1980

(3) In every ship of Class I engaged in the carriage of dangerous goods there shall be provided a fixed gas fire-extinguishing system complying with the requirements of Schedule 4 in Merchant Shipping Notice MSN 1666 to protect every cargo space, or with a fire-extinguishing system which can be shown to provide equivalent protection for the cargoes carried (other than special category spaces and spaces where a fixed pressure water-spraying system is fitted in accordance with paragraphs (4) and (5)).

(4) In every ship of Class I there shall be provided in each special category space of a fixed pressure water-spraying system complying with the requirements of Schedule 3 in Merchant Shipping Notice MSN 1666. The Secretary of State may permit in lieu of such a system any other fixed fire-extinguishing system provided that it has been shown by full-scale test in conditions simulating a flowing petrol fire in a special category space to be not less effective in controlling fires likely to occur in such a space.

(5) In every ship of Class I there shall be provided in each cargo space (other than a special category space) intended for the carriage of motor vehicles with fuel in their tanks for their own propulsion a fixed pressure water-spraying system complying with the requirements of Schedule 3, or a fixed gas fire-extinguishing system complying with the requirements of Schedule 4 in Merchant Shipping Notice MSN 1666.

(6) In every ship of Class I there shall be provided in each open ro-ro cargo space having a deck over and in each space deemed to be a closed ro-ro cargo space not capable of being sealed, a fixed pressure water-spraying system complying with Schedule 3 in Merchant Shipping Notice MSN 1666.

Special requirements for cargo space ventilation

Requirements for ships constructed on or after 1st September 1984

6.—(1) In every ship of Class I there shall be provided—

- (a) in each special category space an effective power-ventilation system sufficient to give at least 10 air changes per hour; the Secretary of State may require an increased number of air changes when vehicles are being loaded and unloaded;
- (b) in each cargo space, other than a special category space intended for the carriage of motor vehicles with fuel in their tanks for their own propulsion, an effective power-ventilation system sufficient to give at least 10 air changes per hour for ships carrying more than 36 passengers and 6 air changes per hour for ships carrying not more than 36 passengers.

(2) The power-ventilation systems referred to in paragraph (1) shall be entirely separate from other ventilation systems and shall be operated at all times when vehicles are in such spaces. Ventilation ducts serving such spaces capable of being effectively sealed shall be separated for each

such space. The system shall be capable of being controlled from a position outside such spaces. In addition—

- (a) the ventilation shall be such as to prevent air stratification and the formation of air pockets;
- (b) means shall be provided to indicate on the navigating bridge any loss or reduction of the required ventilating capacity;
- (c) arrangements shall be provided to permit a rapid shut-down and effective closure of the ventilation system in case of fire, taking into account the weather and sea conditions.

Machinery spaces of Category A

7.—(1) In every ship of Class I there shall be provided for the protection of any machinery space of Category A at least one of the following fixed fire-extinguishing systems—

- (a) a fixed pressure water-spraying system complying with the requirements of Schedule 2 in Merchant Shipping Notice MSN 1666;
- (b) a fixed gas fire-extinguishing system complying with the requirements of Schedule 4 in Merchant Shipping Notice MSN 1666; or
- (c) a fixed high-expansion foam fire-extinguishing system complying with the requirements of Schedule 8 in Merchant Shipping Notice MSN 1666.

(2) If the engine and boiler rooms are not entirely separated from each other by a bulkhead or if fuel oil can drain from the boiler room into the engine room, the combined engine and boiler rooms shall, for the purpose of this regulation, be regarded as a single space.

(3) In addition to the requirements of paragraph (1) there shall be provided—

- (a) in each boiler room one or more foam fire extinguishers each of at least 135 litres capacity or carbon dioxide fire extinguishers each of at least 45 kilogrammes capacity placed in such positions as to be readily accessible in the event of fire and sufficient in number to enable foam or carbon dioxide to be directed on to any part of the boiler room and spaces containing any part of the oil fuel installation;
- (b) in each boiler room at least one portable foam-applicator unit complying with Schedule 6 in Merchant Shipping Notice MSN 1665;
- (c) in each firing space and in each space which contains any part of any oil fuel installation at least two portable fire extinguishers suitable for extinguishing oil fires;
- (d) in each firing space a receptacle containing at least 0.3 cubic metre of sand or other dry material suitable for extinguishing oil fires together with a scoop for its distribution or, alternatively, an additional portable fire extinguisher suitable for extinguishing oil fires.

(4) In addition to the requirements of paragraph (1) there shall be provided in any space containing internal combustion type machinery—

- (a) one or more foam fire extinguishers of at least 45 litres or carbon dioxide extinguishers of at least 16 kilogrammes capacity; the extinguishers shall be sited so as to be readily accessible in the event of fire and they shall be sufficient in number to enable foam or carbon dioxide to be directed on to any part of the fuel and lubricating oil pressure systems, gearing and other areas of high fire risk;
- (b) at least one portable foam-applicator unit complying with the requirements of Schedule 6 in Merchant Shipping Notice MSN 1665;
- (c) portable fire extinguishers suitable for extinguishing oil fires sufficient in number to ensure that at least one extinguisher is not more than 10 metres walking distance from any position within the space: provided that there shall be not less than two such extinguishers; and

- (d) in passenger ships carrying more than 36 passengers each machinery space of Category A shall be provided with at least two suitable water-fog applicators.

Machinery spaces containing steam turbines or enclosed steam engines

8.—(1) In every ship of Class I there shall be provided in spaces containing steam turbines or enclosed pressure-lubricated steam engines used either for main propulsion, or having in the aggregate a total power of not less than 375 kW for auxiliary purposes—

- (a) foam fire extinguishers each of at least 45 litres capacity or carbon dioxide fire extinguishers each of at least 16 kilogrammes capacity sufficient in number to enable foam or carbon dioxide to be directed on to any part of the pressure lubrication system and on to any part of the casings enclosing pressure lubricated parts of the turbine, engines or associated gearing and any other areas of high fire risk; provided that such extinguishers shall not be required if equivalent protection is provided in such spaces by a fixed fire-extinguishing system fitted in compliance with regulation 7(1);
- (b) portable fire extinguishers suitable for extinguishing oil fires sufficient in number to ensure that at least one extinguisher is not more than 10 metres walking distance from any position within the space: provided that there shall be not less than two such extinguishers;

Additional requirements for ships constructed on or after 1st September 1984

- (c) in addition, where such spaces are to be periodically unattended, a fire-extinguishing system, specified in regulation 7(1) shall be fitted.

Fire-extinguishing appliances in other machinery spaces

Requirements for ships constructed on or after 25th May 1980

9. In every ship of Class I where a fire hazard exists in any machinery space for which no specific provisions for fire-extinguishing are required by regulation 7 or 8 there shall be provided in or adjacent to that space a sufficient number of portable fire extinguishers to ensure that at least one extinguisher is not more than 10 metres walking distance from any position within that space unless equivalent means of fire extinction are provided.

Paint lockers etc.

10. In every ship of Class I, every paint locker and flammable liquid locker shall be protected by an approved fire-extinguishing system.

Fire patrol, detection and alarm systems

- (a) **11. (1) (a)** In every ship of Class I an efficient patrol system shall be maintained so that any outbreak of fire may be promptly detected.
- (b) In every such ship manually-operated call points complying with the requirements of Schedule 5 of Merchant Shipping Notice MSN 1666 shall be fitted throughout the accommodation, service and special category spaces which will enable the fire patrol to give an alarm immediately to the navigating bridge or fire control station. Such a manually-operated call point shall be positioned adjacent to each exit from every special category space.
- (c) Each member of the fire patrol shall be trained to be familiar with the arrangements of the ship as well as the location and operation of any equipment he may be called upon to use.

(d) In every such ship carrying more than 36 passengers, each member of the fire patrol shall be provided with a two-way portable radio telephone apparatus.

(2) In every ship of Class I there shall be provided in any part of the ship which is not reasonably accessible to the fire patrol, and in each cargo space (other than special category spaces) containing motor vehicles with fuel in their tanks for their own propulsion, a fixed fire detection and fire alarm system of an approved type complying with Schedule 5 of Merchant Shipping Notice MSN 1666 or a sample extraction smoke detection system complying with the requirements of Schedule 6 of Merchant Shipping Notice MSN 1666.

(3) The Secretary of State may exempt any ship from the requirement in paragraph (2) to provide a fixed fire alarm and fire detection system or a sample extraction smoke detection system in any part of the ship which is not accessible to the fire patrol, if he is satisfied that to require compliance therewith would be unreasonable on account of the short duration of the voyages on which the ship is engaged.

(4) Every ship of Class I shall at all times when at sea, or in port (except when out of service), be so manned and equipped as to ensure that any initial fire alarm is immediately received by a responsible member of the crew.

(5) In every ship of Class I a special alarm, operated from the navigating bridge or fire control station, shall be fitted to summon the crew. This alarm may be part of the ship's general alarm system but it shall be capable of being sounded independently of the alarm to the passenger spaces.

(6) For ships constructed on or after 1st October 1994 a general emergency alarm shall be provided in every Class I ship carrying more than 36 passengers. In the case of a ship of Class I constructed before 1st October 1994 carrying more than 36 passengers a general emergency alarm shall be provided not later than 1st October 1997. The alarm shall be audible throughout all the accommodation and normal crew working spaces and open decks, and its sound pressure level shall comply with the requirements of the Code on Alarms and Indicators adopted by IMO by Resolution A.686(17). The alarm shall continue to function after it has been triggered until it is manually turned off or is temporarily interrupted by a message on the public address system.

(7) In every ship of Class I a public address system or other effective means of communication shall be available throughout the accommodation, service space and control stations, and on and after 1st October 1997 the system shall also be audible on the open deck.

Additional requirements for ships constructed on or after 25th May 1980

(8) In every ship of Class I, in any machinery space where the main propulsion and associated machinery including sources of main electrical supply are provided with automatic or remote control which are under continuously manned supervision from a control room, there shall be provided a fixed fire detection and fire alarm system of an approved type complying with Schedule 5 of Merchant Shipping Notice MSN 1666.

(9) In special category spaces in which the patrol is not maintained by a continuous fire watch at all times during the voyage there shall be provided in that space a fixed fire detection and fire alarm system of an approved type complying with Schedule 5 in Merchant Shipping Notice MSN 1666.

Additional requirement for ships constructed on or after 1st January 1994

(10) In every ship of Class I, where a public space spans three or more decks by means of permanent openings and contains combustibles (such as furniture) and enclosed spaces (such as shops, offices and restaurants), the entire main vertical zone containing that space shall be protected throughout with a smoke detection system complying with the requirements (other than of paragraph (1)(i)) of Schedule 5 of Merchant Shipping Notice MSN 1666.

Additional requirement for ships constructed on or after 1st October 1994

- (a) (11) (a) Every ship of Class I carrying more than 36 passengers shall have the detection alarms for the systems required by regulation 64 centralised in a continuously manned central control station.
- (b) In addition, controls for remote closing of the fire doors and shutting down the ventilation fans shall be centralised in the same location. The ventilation fans shall be capable of reactivation by the crew at the continuously manned control station.
- (c) The control panels in the central control station shall be—
 - (i) capable of indicating open or closed positions of fire doors and on or off status of the detectors, alarms and fans;
 - (ii) continuously powered and shall have an automatic change-over to standby power supply in case of loss of normal supply;
 - (iii) powered from the main source of electric power and from the emergency source of electrical power required by regulation 46 of the Merchant Shipping (Passenger Ship Construction and Survey) Regulations 1984⁽¹⁾;
 - (iv) designed on the fail-safe principal; occurrence of a fault condition shall initiate a visual and audible fault-signal at the control panel.

Firemen's outfits

- 12.—(1) Every ship of Class I shall be provided with—
- (a) two firemen's outfits and, in addition, two firemen's outfits for every 80 metres (or part thereof) of the aggregate of the lengths of all passenger spaces and service spaces on the deck which carries such spaces or, if there is more than one such deck, on the deck which has the largest aggregate of such lengths; and
 - (b) every such outfit shall comply with the requirements of regulation 46; two such outfits shall include breathing apparatus of the air-hose type and the remainder shall include breathing apparatus of the self-contained type provided that where the air hose of an air-hose type breathing apparatus is required, in order to comply with paragraph 1 of Schedule 5, in Merchant Shipping Notice MSN 1665 to exceed 36 metres in length a self-contained breathing apparatus shall be provided either in addition to or as a substitute for that air-hose type breathing apparatus.
- (2) Two such firemen's outfits shall be available at any one storage position.
- (3) In every ship of Class I carrying more than 36 passengers—
- (a) for each pair of breathing apparatus there shall be provided one water-fog applicator which shall be stored adjacent to such apparatus;
 - (b) at least two spare charges for each breathing apparatus shall be provided, and all air cylinders for breathing apparatus shall be interchangeable;
 - (c) two additional firemen's outfits shall be provided for each main vertical zone;
 - (d) at least two firemen's outfits shall be stored in each main vertical zone.

International shore connection

13. Every ship of Class I of 500 tons or over shall be provided with at least one international shore connection which shall comply with the requirements of Schedule 1 in Merchant Shipping Notice MSN 1665 to enable water to be supplied from another ship or from the shore to the fire

(1) [S.I. 1984/1216](#), to which there are amendments not relevant to these Regulations.

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main. Fixed provision shall be made to enable such a connection to be used on the port side and on the starboard side of the ship.