



INSTRUCTIONS FOR THE GUIDANCE OF SURVEYORS ON

**FIRE APPLIANCES**

**MSIS27 CHAPTER 8**

Rev 11.25



## **PREFACE**

0.1 These Marine Survey Instructions for the Guidance of Surveyors (MSIS) are not legal requirements in themselves. They may refer to statutory requirements elsewhere. They do represent the MCA policy for MCA surveyors to follow.

0.2 If for reasons of practicality, for instance, these cannot be followed then the surveyor must seek at least an equivalent arrangement, based on information from the owner/operator. Whenever possible guidance should be sought from either Principal Consultant Surveyors or Survey Operation Branch, in order to maintain consistency between Marine Offices.

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## Recent Amendments

The amendments made in the most recent publication are shown below, amendments made in previous publications are shown in the document Amendment History.

Version Number	Status / Change	Date	Author Reviewer	Content Approver	Next Review Date/Expiry Date
06.20	<ul style="list-style-type: none"><li>Amendments to reflect publication of MGN628 and MGN629</li></ul>	21/6/2020	D Fenner	G Stone	01/06/2023
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11/25	<ul style="list-style-type: none"><li>Clarify requirement for emergency fire pumps outside of Machinery spaces only applies to vessels on the Register before 23/11/2002</li></ul>	24/10/25	D Fenner	L Page	01/10/27

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## 8.1 GENERAL

### 8.1.1 NOMINATED BODIES

For details of the Nominated Bodies mentioned throughout this chapter refer to the definitions contained in [MSN 1871](#) and [MSN 1872](#). For vessels over 24m reference is made to Recognised Organisations.

### 8.1.2 SUBMISSION OF PLANS

It is necessary for the owners of all vessels, including those being retrofitted, to ensure that their plans for Fire extinguishing arrangements are approved by MCA prior to their installations.

Plans and particulars of the fire extinguishing arrangements, appliances and fire detection arrangements for all new and existing United Kingdom Fishing Vessels should be submitted to a Consultant Fishing Vessel Surveyor for vessels of 24 metres registered length and over. Before 21 July 2020, for vessels under 24 metres registered length plans should comply with the requirements of Seafish or other recognised organisation. From 21 July 2020, for vessels under 24 metres registered length plans should comply with the requirements of MCA and MGNs 628 and 629 or other recognised organisation. Vessels with previously approved installations may have to resubmit the above documentation if the fire protected space is modified

### 8.1.3 DETAILS TO BE SUBMITTED

The details submitted for information or acceptance should include:

- i. the name of owners, type of vessel and area of operation, keel laying date, the Principal Length, Breadth and Depth and the kW rating of the main engines, auxiliary engines and motors;
- ii. the general layout of the fire main; the internal diameters of the fire main, service pipes, hydrants, hoses and nozzles; the fire main isolating and relief arrangements; the position of all hydrants; the position and capacity of the main and emergency fire pumps and, for electrically driven fire pumps not in the main machinery space, the cable runs from the source of power and position of starting arrangements;
- iii. a general arrangement plan of the engine room showing the position of the oil fuel tanks and their overflow pipes, oil fuel units and transfer pumps and any oil fuel tank levelling pipes and, where relevant, lubricating oil and hydraulic oil tanks;
- iv. full particulars of the proposed fixed fire extinguishing installations for the machinery spaces showing the distribution system, the position of the controls for these installations, the arrangements for stopping purifiers and oil fuel pressure pumps and oil fuel transfer pumps, ventilation and forced and induced draught fans, the remote means for closing oil fuel suction valves, position of screens and coamings provided to prevent spread of oil and means for closing openings to prevent admission of air; and
- v. particulars of the fire extinguishers, miscellaneous fire fighting appliances and plans of any manual fire alarm or detection system, whether or not required by

the Codes. The plans should indicate the position of the detector heads relative to any ventilation system inlets or outlets.

## 8.2 REQUIREMENTS FOR VESSELS OF 24 METRES IN LENGTH AND OVER

8.2.1 Surveyors should check that the items required by [MSN 1873](#) Chapter 5 of the Code of Practice for the Safe Construction and Operation of Fishing Vessels of 24 metres Registered Length and Over are provided on the vessel and that they are in good working order and, where applicable, not date-expired.

8.2.2 Spray/jet nozzles shall NOT be of aluminium construction.

8.2.3 Vessels using diesel oil and not fitted with arrangements for preheating fuel are not considered to have an oil fuel unit. Vessels using high viscosity fuel will be fitted with an oil fuel unit.

8.2.4 Consideration for existing vessels to be exempted from parts of the structural fire protection requirements must have an installation already fitted.

8.2.5 Halon has been phased out - refer to [MGN 258](#) (M + F), as may be amended or superseded, so that all new installations will use CO<sub>2</sub>, FM200 or other approved system (refer to [MSIS 12](#) Chapter 7.5 and 7.6 for further guidance). Should alternative systems other than CO<sub>2</sub> be proposed the approval certificates should be examined for any conditions which may require to be complied with before and during installation, together with test requirements on completion.

8.2.6 The weight of portable fire extinguishers should not exceed 25kg in the fully-serviced condition. Their contents should be as follows:

- Fluid type - not more than 13.5 litres, not less than 9 litres
- CO<sub>2</sub> type - not less than 3kg CO<sub>2</sub>
- Dry Powder - not less than 4.5kg powder)

8.2.7 Additional requirements for vessels of 60 metres in length and over are contained in Chapter 5.5 of [MSN 1873](#).

## 8.3 REQUIREMENTS FOR VESSELS OF 15 METRES IN LENGTH AND OVER BUT LESS THAN 24 METRES IN LENGTH

### 8.3.1 GENERAL

8.3.1.1 Surveyors should check that the items required by Chapter 5 of [MSN 1872](#) The Code of Safe Working Practice for the Construction and Use of 15 Metre Length Overall to Less than 24 Metre Registered Length Fishing Vessels are provided on the vessel and that they are in good working order and, where applicable, not date-expired.

8.3.1.2 Spray/jet nozzles shall NOT be of aluminium construction.

8.3.1.3 On vessels Registered before 23 November 2002 and continually registered since that date, if the power driven pump and its source of power and suction are situated in a machinery space, then an emergency fire pump its power source and suction (which may

be either power driven or manually operated) should be provided outside of the machinery space.

8.3.1.4 A power driven emergency pump referred to above should be connected to the fire main and a valve should be fitted to enable the section of fire main within the machinery space to be isolated from outside of that space.

8.3.1.5 Halon has been phased out - refer to [MGN 258](#) (M + F), as may be amended or superseded, so that all new installations will use CO<sub>2</sub>, FM200 or other approved system (refer to [MSIS 12](#) Chapter 7.5 and 7.6 for further guidance). Should alternative systems other than CO<sub>2</sub> be proposed refer to the Approval Certificates for any conditions which may require to be complied with before and during installation, together with test requirements on completion.

8.3.1.6 A manually operated emergency fire pump should be provided with an approved hose and 9.5mm spray/jet nozzle capable of delivering a 6m (20ft) jet of water to any part of the vessel. This may be allowed for existing vessels under the [MSN 1872](#) Annex 4.

8.3.1.7 A spare charge should be provided for each extinguisher required in the accommodation, service and machinery spaces.

8.3.1.8 The weight of portable fire extinguishers should not exceed 25kg in the fully-serviced condition. Their contents should be as follows:

- Fluid type - not more than 13.5 litres, not less than 9 litres
- CO<sub>2</sub> type - not less than 3kg CO<sub>2</sub>
- Dry Powder - not less than 4.5kg powder)

8.3.1.9 For "new vessels", that is vessels constructed after 2002, which require a power operated fire pump to deliver a minimum of 15 metres<sup>3</sup>/h at a pressure of not less than 2kg/metres<sup>2</sup>, as a quick on board test, the hose(s) and nozzle are to be able to fill a standard 75 litre fish box in less than 18 seconds (or 200 litre drum in less than 48 seconds).

## 8.3.2 ALTERNATIVE ARRANGEMENT

8.3.2.1 In some existing vessels a water spraying system supplied from a hand pump outside the machinery space which may be the hand pump listed above may be allowed for under [MSN 1872](#) Annex 4.

8.3.2.2 In existing vessels in which the hand pump suction and sea valve is within the machinery space the suction pipework should be lagged throughout the space and the sea valve should be operable from outside the space or should be secured in the open position by means of a self-locking plastic tie.

8.3.2.3 When examining the system the arrangements for bilging the engine room at the same time as fire-fighting should also be examined. Some vessels may have replaced the hand pump (permitted by [MSN 1872](#)) with a portable salvage pump; where a portable salvage pump is carried, the hand pump must also be retained.

## 8.4 REQUIREMENTS FOR VESSELS LESS THAN 15 METRES IN LENGTH

- 8.4.1 Surveyors and/or Inspectors should refer to the [MSN 1871 The Code of Practice for Fishing Vessels under 15 metres in length](#), and check that the items required are provided on the vessel and that they are in good working order and, where applicable, not date-expired.
- 8.4.2 Note the differing requirements for decked and open vessels at the lengths as stated in [MSN 1871](#).

## 8.5 REQUIREMENTS FOR FIRE PUMPS

### 8.5.1 GENERAL

See [MSIS 12](#) Para 5.1.1.3 for guidance on maximum pressure.

### 8.5.2 TESTING

- 8.5.2.1 Dependent on the nozzle sizes, the pumps should be rigged with the appropriate number of hoses, and operated to check that they deliver the total quantity of water, at the prescribed pressure, as determined by the Code requirements. The hydrants should be selected to produce the most demanding conditions on the pump and the pressures checked to ensure that they comply with the requirements.
- 8.5.2.2 Emergency pumps, where fitted, should be operated to show that they can produce the required jets of water in accordance with the Code requirements without anyone having to enter the machinery space which contains the main fire pumps. It should be verified that the ventilating arrangements for the emergency fire pump room are such as to permit the aforesaid pumps to operate efficiently.

- 8.5.2.3 See also [MSIS 12](#) Para 5.5.

### 8.5.3 HAND PUMPS AND POWER PUMPS IN LIEU (WHERE THIS MAY BE ALLOWED FOR EXISTING VESSELS UNDER [MSN 1872 ANNEX 4](#).)

- 8.5.3.1 See [MSIS 12](#) Para 5.1.3

### 8.5.4 INDEPENDENTLY DRIVEN POWER OPERATED EMERGENCY FIRE PUMPS

- 8.5.4.1 See [MSIS 12](#) para 5.1.5.2.

- 8.5.4.2 These pumps should be manufactured to an accepted classification society standard. On installation, surveyors should witness performance tests to demonstrate the suction and delivery heads, and the capacity and general stability of the unit but final acceptance of such pumps is dependent on the performance after installation in the vessel in relation to the discharge and pressure requirements of the Codes.

- 8.5.4.3 The emergency fire pump should be capable of operating for a period of at least 3 hours.

## 8.5.5 EMERGENCY FIRE PUMPS

- 8.5.5.1 See [MSIS 12](#) Para 5.1.5.3
- 8.5.5.2 A suitable sea suction and a discharge connection to the fire main should be incorporated and the arrangements should permit isolation of the fire main from the machinery spaces, e.g. by means of screw lift valves or switch cocks positioned outside the machinery spaces.
- 8.5.5.3 Where the surveyor is satisfied that it is impracticable for the emergency fire pump sea suction to be sited outside the compartment containing the main fire pump, it may exceptionally be sited in that space providing the sea suction pipe and valve are enclosed in a substantial trunk (6 millimetres plating is considered acceptable), and the valve either locked open or geared to a suitable position outside the compartment.

(Note: The valve should be locked by means of a weak restraint, such as a self-locking plastic tie. When a weak restraint is used a notice should be placed in a prominent position alongside the valve stating that it is a suction valve for the emergency fire pump and must remain open in normal circumstances. The valve should only be closed to facilitate repair work or prevent flooding.)

- 8.5.5.4 If the emergency pumping unit is located in the shaft tunnel, the position of the controls for closing any watertight doors between the engine room and shaft tunnel should be such that they will not readily be cut off by a fire in the machinery spaces. In general an emergency fire pump should not be situated in a small compartment which has common boundaries with machinery spaces containing the main fire pumps if the compartment would be rendered untenable by a fire in those spaces. Where the surveyor considers it impracticable to locate the pump other than in such a space, it will normally be necessary to insulate the common boundaries to Class A 60 standards.

- 8.5.5.5 For guidance on pumps in steering flats see [MSIS 12](#) Para 5.1.5.4.

- 8.5.5.6 Only under exceptional circumstances would consideration be given to the use of a portable diesel driven emergency fire pump in lieu of a permanently fitted emergency fire pump. In these cases reference should be made to the Principal Fishing Vessel Surveyor for guidance and approval.

### 8.5.5.7 Capacity

The output of power driven emergency fire pumps is governed by the size of nozzle, the number of jets of water and a hydrant pressure of 2.5/2.0 bar (Over 24 m/15 to 24 m) or a throw of 12 metres as required by the Codes. The fire main should normally be kept full of water but where it is necessary for it to be drained in service, e.g. for frost protection, consideration should be given to increasing the output of the pump so that pressure in the fire main becomes available with the minimum possible delay.

### 8.5.5.8 Starting arrangements

See [MSIS 12](#) para 5.1.6.1

- 8.5.5.9 Compressed air may be accepted as the sole means of starting if a manually operated air compressor or manual starting air compressor unit is provided. All these methods of

starting should be such that at least four starts of the emergency fire pump are possible within a period of 10 minutes.

8.5.5.10 If only a manually operated compressor is fitted; a small air bottle which would provide one start of the emergency fire pump should be fitted in addition to the main air receiver.

8.5.5.11 See [MSIS 12](#) Para 5.1.6.5, 7

## **8.6 REQUIREMENTS FOR THE FIRE MAIN, WATER SERVICE PIPES AND HYDRANTS**

8.6.1 Fire main, water service pipes and hydrants should be of a type approved by the MCA, in accordance with [MSN 1665](#), as amended by [MSN 1733](#) and as may further be amended or superseded. See [MSIS 12](#) Para 5.2 for further guidance.

8.6.2 For the purposes of the Codes and these Instructions the fire main should be deemed to start at the fire pump discharge valve and hence includes all parts of the fire main and branches both within and outside the machinery space.

### **8.6.3 TESTING**

See [MSIS 12](#) Para 5.2.4.4

### **8.6.4 HYDRANTS**

8.6.4.1 *Fitted in tunnels*

See [MSIS 12](#) Para 5.2.2.1

8.6.4.2 *Valves*

Hydrant valves fitted in fire mains should be designed to open with an anti-clockwise rotation of the hand wheel.

8.6.4.3 *Blank caps*

See [MSIS 12](#) Para 5.2.2.4

### **8.6.5 EXPANSION GLANDS AND COUPLINGS**

See [MSIS 12](#) Para 5.2.4.2.

### **8.6.6 PERMANENT CONNECTIONS**

See [MSIS 12](#) Para 5.2.3.1. A connection from the fire main to the net store is permissible.

### **8.6.7 MATERIALS**

See [MSIS 12](#) Para 5.2.4.1. The intention of this requirement is to ensure that pressure can be maintained in fire mains for a reasonable period of time, even though a section of the fire main in the affected area may be engulfed by fire.

**8.6.8 AVAILABILITY OF A WATER SUPPLY**

8.6.8.1 In respect of new vessels the attention of owners and builders is drawn to the advantage of having a supply of water immediately available at the fire hydrants, particularly in machinery, accommodation and service spaces for dealing with incipient fires. In new vessels having unattended machinery spaces, the MCA would expect this facility to be provided.

8.6.8.2 For guidance on pressurised systems see [MSIS 12](#) Para 5.2.5.2

**8.6.9 ISOLATING ARRANGEMENTS - MACHINERY SPACES**

See [MSIS 12](#) Para 5.2.6

**8.6.10 STAND PIPE AND HYDRANT VALVE BORE SIZE**

See [MSIS 12](#) Para 5.2.8

**8.6.11 DRAINAGE**

See [MSIS 12](#) Para 5.2.7

**8.7 REQUIREMENTS FOR FIRE HOSES, NOZZLES, ETC****8.7.1 GENERAL**

Fire hoses, nozzles and spray nozzles should be of a type approved by the MCA and of a sufficient size to deliver the required quantity of water.

**8.7.2 HOSES**

8.7.2.1 The requirements concerning the number and length of hoses are specified in the Codes (number of hoses should equal the number of hydrants plus one spare hose, but does not include any hoses required in machinery spaces). However, while 20 metres may be regarded as the standard length of hoses, the substitution of two 10 metre lengths of hose, as appropriate, is recommended for use in and about the accommodation spaces.

8.7.2.2 The Codes require the provision of one fire hose and nozzle for each hydrant in the vessel unless there is complete interchangeability of fire hose couplings and nozzles. Hoses should be efficiently connected to their end couplings.

8.7.2.3 See also [MSIS 12](#) Para 5.3.1.4

**8.7.3 NOZZLES**

For guidance see [MSIS 12](#) Para 5.3.2

**8.7.4 SPRAY NOZZLES**

For guidance see [MSIS 12](#) Para 5.3.2

## 8.8 REQUIREMENTS FOR FIRE EXTINGUISHERS

### 8.8.1 GENERAL

For guidance see [MSIS 12](#) Para 6.1.1, 6.1.3

### 8.8.2 STOWAGE

For guidance see [MSIS 12](#) Para 6.7

### 8.8.3 CHARGES

For guidance see [MSIS 12](#) Para 6.8

### 8.8.4 NON-PORTABLE FIRE EXTINGUISHERS

#### 8.8.4.1 GENERAL

See [MSIS 12](#) Para 3.5.1.

8.8.4.1.1 It is recommended that non-portable extinguishers be secured by a band type bracket fitted in halves round the body of the extinguisher with a non-corrodible hinge and securing pin. Whatever method is chosen to secure the extinguisher, it should be capable of ready release without the use of tools.

#### 8.8.4.2 NON-PORTABLE FIRE EXTINGUISHERS IN MACHINERY SPACES

8.8.4.2.1 These fire extinguishers are required in vessels fitted with oil-fired boilers or oil-burning equipment, in vessels having internal combustion machinery and in certain machinery spaces containing steam machinery.

8.8.4.2.2 Non-portable fire extinguishers required in the firing spaces at the oil fuel installation of vessels having main or auxiliary oil-fired boilers need not, in general, be in addition to similar extinguishers already provided in the combined space to meet other requirements.

8.8.4.2.3 See [MSIS 12](#) Para 6.6.2, 3

### 8.8.5 PORTABLE FIRE EXTINGUISHERS

8.8.5.1 All portable fire extinguishers, including CO<sub>2</sub> extinguishers, should be tested by hydraulic pressure to the surveyor's satisfaction every TEN years, in accordance with [MGN 276](#) or its successor, and the date of this test marked on the extinguisher. The surveyor should be satisfied with the adequacy of the standards of workmanship and supervision of the persons carrying out the servicing of fire extinguishing equipment.

8.8.5.2 See [MGN276](#).

8.8.5.3 A proportion of these extinguishers should be discharged (if possible by those likely to use them in an emergency) at periodical inspections. IMO Resolution A.951(23) recommends test discharges at five yearly intervals.

8.8.5.4 Particular attention should be paid to the distribution and visibility of portable and other self-contained fire extinguishers in order that they will be readily seen and accessible if there is a fire in the compartment they are intended to serve.

8.8.5.5 In periodically unattended machinery spaces some of the portable fire extinguishers should be sited near the entrances.

8.8.5.6 *Portable fire extinguishers in accommodation spaces*

For guidance see [MSIS 12](#) Para 6.2

8.8.5.7 *Portable fire extinguishers in machinery spaces*

For guidance see [MSIS 12](#) para 6.4

8.8.5.8 In new vessels fire extinguishers of less than 9 litres capacity or equivalent should not be accepted. In existing vessels, providing the surveyor is satisfied that any extinguisher of less than 9 litres capacity or equivalent, fitted in addition to Code requirements is adequate for the particular hazard involved, it may continue to be accepted. On renewal of the extinguisher, the 9 litre size should be provided.

8.8.5.9 *Portable fire extinguishers in service spaces*

For guidance see [MSIS 12](#) Para 6.3.1

8.8.5.10 Extinguishers of less than 9 litres capacity or equivalent, provided in addition to Code requirements, for use in special positions in service spaces e.g. radio rooms, switchboards, etc. may be accepted provided they comply with the relevant British Standard specifications and are not less than 4.5 litres capacity or equivalent.

8.8.5.11 *Portable Fire Extinguishers for Under 15m Vessels*

8.8.5.11.1 For Under 15 metre vessels see additional guidance below.

There are two sizes quoted in the checklists:

Designation	Equivalent Dry Powder	Equivalent Foam
5A/34B	1 Kg ABC Dry powder	1.75 Litre. AFFF
13A/113B	4 Kg ABC Dry powder	6 Litres. AFFF

8.8.5.11.2 The designation gives a measure of the ability of the extinguisher. 'A' indicates a wood based fire, B' indicates a liquid based fire; the number indicates fire size which has been used to test the extinguisher.

8.8.5.11.3 Where it is not practicable to carry or store a large fire extinguisher, an alternative is to carry a combination of others to make up the required capacity. Add the numbers before the 'A' and the 'B' together, and if these exceed the total required the extinguishers will provide an equivalent capacity, e.g. two 8A/70B extinguishers would give a capacity of 16A/140B, which is greater than the required 13A/113B.

8.8.5.11.4 In any case the minimum acceptable size of extinguisher acceptable would be 5A/34B. A fire may require more than one smaller extinguisher to put it out.

## 8.9 REQUIREMENTS FOR FIRE ALARM AND DETECTION SYSTEMS

### 8.9.1 GENERAL

- 8.9.1.1 Fire alarm and detection systems should be of a type approved in accordance with [MSN 1666](#), as amended by [MSN 1733](#) and as may further be amended or superseded, and FSS for new installations,.
- 8.9.1.2 Vessels under 15 m LOA which are required to have smoke alarms, need not have equipment which is type approved but must be fit for purpose. Domestic household smoke detectors are acceptable.
- 8.9.1.3 Vessels over 15 m LOA require automatic fire detection and alarm for the machinery spaces, galley and accommodation, which is fit for purpose. Indication must be visual and audible within the wheelhouse, and electrical supply must be from both main and emergency power. A fixed fire detection system throughout is now required for all existing 15-24 m vessels, whether originally required or not.
- 8.9.1.4 Where vessels over 24 m RL require automatic fire detection (protection method IIIF) in the accommodation and service spaces, it must be an approved type. The required detection for the machinery space is also to be type approved. Details of the requirements are stipulated in [MSN 1873](#).
- 8.9.1.5 Where fire alarm and detection systems are of the heat sensitive type they should generally meet the requirements of [MSN 1666](#). Where a smoke detecting system, piped to a central cabinet, is provided the arrangement should allow for visual smoke indication in association with the visible and audible alarms required.
- 8.9.1.6 See [MSIS 12](#) Para 4.8.4 for guidance on sample extraction smoke detection systems.
- 8.9.1.7 The arrangement of smoke accumulator points should be such that no part of the overhead deck is more than 12 metres from a smoke accumulator. It is recommended that not more than four smoke accumulators should be connected to one pipe line leading to the smoke detecting cabinet. Where more than one accumulator is served by one main lead, branch leads should be of about the same length.
- 8.9.1.8 Detecting heads of a specific type, e.g. heat sensitive or ionisation type should be arranged in accordance with the conditions of acceptance.

### 8.9.2 MACHINERY SPACES

- 8.9.2.1 For guidance see [MSIS 12](#) Para 4.5.3.
- 8.9.2.2 Machinery spaces should have more than one type of detector fitted. Further advice on types of detectors is given in [MGN 291](#) "Fire Detection and Alarm Systems on Fishing Vessels".

### 8.9.3 TESTS

- 8.9.3.1 For guidance see [MSIS 12](#) Para 4.7.

## 8.10 REQUIREMENTS FOR FIXED PRESSURE WATER SPRAYING SYSTEM FOR MACHINERY SPACES

### 8.10.1 GENERAL

8.10.1.1 See [MSIS 12](#) Paras 3.7.6 and 7.13.2.

### 8.10.2 PUMP

8.10.2.1 The pump supplying the system should in general be reserved exclusively for that purpose.

8.10.2.2 Wherever possible the sea inlet to the pump should be in the space containing that pump and should be so arranged that when the vessel is afloat it will not be necessary to shut off the supply of sea water to the pump for any purpose other than the inspection or repair of the pump. Pump suction chambers should be flooded at all times when the vessel is in service.

### 8.10.3 PIPING

The piping system should be of a corrosion resistant material, e.g. galvanised steel and as the 'dry pipe' principle is involved due regard should be paid to the heat resistance of the material used and the possibility of its being subjected to very high temperatures prior to the introduction of water.

### 8.10.4 NOZZLES

Water spraying nozzles should be of an accepted type suitable for extinguishing burning oil. Full details of proposed nozzles should be submitted for consideration indicating spray characteristics and proposed spacing. Reasonably uniform distribution of water is a criterion of acceptance; this would not be achieved by a hollow cone form of spray. The number and arrangement of the nozzles should ensure an effective distribution of water spray and the following table shows the application rates which are generally acceptable.

Category	Fire risk	Application rate (litres/metre <sup>2</sup> /minute)
I	Boiler fronts or roof firing areas, oilfuel units; centrifugal separators (not oily water); oil fuel purifiers and clarifiers.	20
II	Hot oil fuel pipes near exhaust pipes or similar heated surfaces on main or auxiliary diesel engines.	10
III	Tank top area; oil tanks not forming part of the vessel's structure.	5

### 8.10.5 MANUALLY OPERATED WATER SPRAYING SYSTEMS

8.10.5.1 For existing vessels which comply with [MSN 1872](#) Annex 4 Section 3.6.1 - this contains the general requirements for manually operated fixed water spraying systems required in

vessels of less than 21 metres in length mainly or wholly constructed of wood or similar material and decked in way of the machinery space. The requirements are to apply equally to vessels of GRP construction. Should the system be removed from the vessel a fully approved fixed fire fighting system, complying with [MSN 1872](#), Paragraph 5.1.6.2, should replace it.

- 8.10.5.2 In any such water spray system, efficient spray nozzles, suitably positioned, should be provided, and in new vessels each should be capable of discharging not less than 4.5 litres per minute, the number of heads being such that an application rate of 5 litres/metre<sup>2</sup>/minute is obtained. Paragraph 8.5.3 refers to the capacity of the hand pump provided.
- 8.10.5.3 Where such a system is fitted, a 20 millimetres bore ring main fitted with suitable nozzles giving effective spray may be considered acceptable subject to satisfactory test. Perforated pipes in lieu of nozzles are not considered acceptable.

## **8.10.6 WATER SPRAYING SYSTEMS ADDITIONAL TO CODE REQUIREMENTS**

- 8.10.6.1 Where a fixed water spraying system is accepted as additional to Code requirements in the accommodation and service spaces full details should be submitted to a Consultant Fishing Vessel Surveyor. Such a system may be supplied from either the fire main or from the fire pump delivery chest through a valve conspicuously marked as to its function.
- 8.10.6.2 This arrangement being in effect an alternative way of applying the water available to the best advantage. However, it should be possible to shut off the system from a readily accessible position should it be decided that the water could be used more effectively from fire hoses.

## **8.11 REQUIREMENTS FOR FIXED FIRE SMOTHERING GAS (AND STEAM) SYSTEMS**

### **8.11.1 GENERAL**

- 8.11.1.1 In the vessel Codes, where required and especially where machinery spaces are periodically unattended, a type approved fixed extinguishing system is required in all vessels of 15 metres in length and over.
- 8.11.1.2 Visual and audible alarms shall be fitted to warn crew that the system is about to be discharged.
- 8.11.1.3 Clear operating instructions shall be posted at the control station for all installations.
- 8.11.1.4 See [MSIS 12](#) Para 7.2.1.

- 8.11.1.5 Fixed fire smothering steam installations are not recommended as more effective systems are now available; none are known to be currently fitted to any UK fishing vessels.

### **8.11.2 SMOTHERING GAS INSTALLATIONS - CARBON DIOXIDE**

- 8.11.2.1 For guidance see [MSIS 12](#) Paras 3.7.4, 7.3 and 7.4.

8.11.2.2 Where a defect in a copper pipe is found a report should be made to the Consultant Fishing Vessel Surveyors.

### 8.11.3 ALARMS

See [MSIS 12](#) Para 7.3.4.5.

### 8.11.4 Local availability

8.11.4.1 The connection for manual operation provided to meet [MSN 1872](#) Annex 4 Paragraph 3.9.4(iv) for existing vessels, (where carbon dioxide is used as the extinguishing medium for a space containing any oil-fired boiler or oil fuel installation a quantity of gas which can be discharged without danger to the operator should be available for manual application, by means of a suitable applicator, in the firing area of the boiler and in the vicinity of the oil fuel unit), is intended to be an extension of the CO<sub>2</sub> system and such quantity of gas is not required to be in addition to the statutory charge.

8.11.4.2 Where it is impracticable or undesirable to provide such a facility, any of the following alternative appliances may be accepted:

- i. an accepted foam making branch pipe if a pressurised fire main is provided; or
- ii. a 45 kg CO<sub>2</sub> or 135 litres foam extinguisher.
- iii. The siting of such connections or hand operated appliances in relation to the burners of a roof-fired boiler may require special consideration having regard to the need to be able to combat any incipient fire with maximum efficiency and minimum effort.
- iv. A smaller quantity of CO<sub>2</sub> than that referred to above or an equivalent non-portable foam extinguisher may be accepted in small vessels at the discretion of the surveyor.

### 8.11.4 SMOTHERING GAS INSTALLATIONS - VAPOURISING FLUID SYSTEMS

For guidance see [MSIS 12](#) Para 7.5 and 7.6.

### 8.11.5 Requirements for aerosol systems

For guidance see [MSIS12](#) Section 7.7

## 8.12 REQUIREMENTS FOR FIXED FOAM FIRE EXTINGUISHING INSTALLATIONS

For guidance see [MSIS 12](#) Para 7.9 and 7.10.

## 8.12.1 HIGH EXPANSION FOAM INSTALLATIONS

For guidance see [MSIS 12](#) Para 7.10.

## 8.13 REQUIREMENTS FOR FIRE-FIGHTER'S OUTFITS

8.13.1 For guidance see [MSIS 12](#) Para 9.1

### 8.13.2 AIR HOSE

- 8.13.2.1 Where smoke helmets or masks are provided, the length of air hose supplied should be determined by the size of the vessel and normally a maximum length of 36 metres need not be exceeded. Allowance should be made for the drop in level from the outer atmosphere to, and for deviation from the straight in, the accommodation space holds or machinery spaces on vessels of moderate size. Eighteen metres should be regarded as the minimum length of air hose for each smoke helmet or mask.
- 8.13.2.2 Where more than 36 metres of hose are needed to reach any part of the accommodation, service, hold or machinery spaces from the open deck, then subject to self-contained breathing apparatus being provided, not more than 36 metres of hose need be provided.
- 8.13.2.3 However, when more than 36 metres of air hose are provided, the surveyor should ensure through practical tests that not only is the air pump capable of supplying sufficient air to a person working under arduous conditions, but that the wearer themselves is capable of physically handling the length of hose provided.

## 8.14 MISCELLANEOUS

### 8.14.1 FIRE BUCKETS

Fire buckets should be of about 9 litres capacity and be light and easy to handle. They should not be of material which is readily flammable.

### 8.14.2 SAND

- 8.14.2.1 [MSN 1872](#) Annex 4 require sand with means for distribution to be provided in firing spaces of vessels fitted with oil-fired boilers. This should be at least 0.15m<sup>3</sup> of sand, together with a scoop for distribution.
- 8.14.2.2 Where galleys are oil-fired it is recommended that a suitable quantity of sand should be provided in the galley.
- 8.14.2.3 Containers for sand should be fitted with a cover, preferably hinged, and should be clearly marked to indicate that they contain sand for fire fighting purposes. They should not be of material which is readily flammable. Other suitable dry material may be accepted in lieu of sand.

## **8.15 MEANS FOR STOPPING MACHINERY, SHUTTING OFF OIL FUEL SUCTION PIPES AND CLOSING OF OPENINGS**

### **8.15.1 GENERAL**

Means for stopping machinery, shutting off oil fuel suction pipes and closing of openings should be of a type approved by the MCA or Classification Society.

### **8.15.2 CLOSING OF OPENINGS**

For guidance see [MSIS 12](#) Para 10.8.2.

### **8.15.3 VENTILATION SYSTEMS**

For guidance see [MSIS 12](#) Para 10.8.3.

### **8.15.4 REMOTE MEANS OF CONTROL**

8.15.4.1 For general guidance see [MSIS 12](#) Para 10.8.4.

#### *8.15.4.2 Pull wire arrangements*

In new vessels pull wire arrangements for closing oil fuel suction valves are not recommended and should not be fitted because the wire may stretch unduly in a fire, but arrangements incorporating only a short length of wire may be considered on their merits. Where permitted, the wire should be of steel without fibre core.

#### *8.15.4.3 Power operation*

8.15.4.3.1 Power operated means for the closure of openings should, if they are the only means, be treated in a similar manner to power operated means provided for the closure of oil fuel valves (see [MSIS 12](#) Para 10.8.4). With regard to the remote means provided for stopping oil fuel pressure pumps, surveyors should ensure that such a facility is not merely part of a remote control system, i.e. designed to stop and start the said pumps, unless a manual reset is provided which requires to be operated before starting can be effected.

8.15.4.3.2 The remote controls for stopping ventilation fans serving accommodation spaces should be extended to include remote stops for fans used in conjunction with air conditioning units and any controls for operating the re-circulation of air should be capable of being rapidly put into the non-recirculation mode. This is to enable the units to be rapidly stopped from the centralised position to prevent circulation of smoke throughout the accommodation.

## **8.16 INTERNATIONAL SHORE CONNECTION**

For guidance see [MSIS 12](#) Para 5.4

## Document Amendment History

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06.20	<ul style="list-style-type: none"><li>• Amendments to reflect publication of MGN628 and MGN629</li></ul>	21/06/20	D Fenner	G Stone	01/06/2023
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