

## Merchant Marine Circular No. 122

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To:	Owners/Operators of Panamanian flag ships Recognized Organizations
Subject:	Guidelines for the Maintenance and Inspection of Fire-Protection Systems and Appliances. Interpretation of Merchant Marine Circular 119 (item <b>d</b> ).
References:	Merchant Marine Circular 39 & Resolution No. 614-33-ALCN MSC/Circ.850, MSC/Circ. 847, MSC/Circ.582, 670 & 798 SOLAS 74, 2000 amendments and Merchant Marine Circulars 70, 91, 96 & 119 IMO Assembly Resolution A. 602(15), A.719(17), MSC/Circ.600 and MSC.27(61)

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Note: 11.1 revised April 2003 (see asterisk \*)

### 1 Purpose

- .1 This Merchant Marine Circular establishes new guidelines for the proper maintenance, testing, inspection and service of fixed and portable fire protection systems, appliances and emergency equipment. It replaces Merchant Marine Circular 96 and the following titles (with their respective requirements) on Merchant Marine Circulars 70 and 91: "SOLAS - Emergency Fire Pump," "Testing of CO<sub>2</sub> Cylinders" and "Portable Fire Extinguishers."
- .2 This Merchant Marine Circular interprets item **d** on the Merchant Marine Circular 119

### 2 Application

- .1 These Guidelines apply to all ships including Units under MODU Code or Technical Note MODU 1/83.

### 3 Operational readiness

- .1 All fire protection systems and appliances shall at all times be in good order and available for immediate use while the ship is in service. If a fire protection system is under repair, then suitable arrangements acceptable to the Recognized Organization that issued the pertinent safety certificate shall be made to ensure safety is not diminished. Under this circumstance, prior to sailing, the ship shall obtain a short-term certificate authorized by this office to the pertinent Recognized Organization. Unless expressly provided here otherwise, these authorizations for temporary non-compliance shall be issued for 60 days as per Merchant Marine Circular 39 and Resolution 614-33-ALCN or as per the Merchant Marine Circular or Resolution that regulates authorizations for temporary non-compliance at that time.

### 4 Maintenance and testing

- .1 Instructions for on-board maintenance, not necessarily by the ship's crew, and testing of active and passive fire protection systems and appliances shall be easily understood, illustrated wherever possible, and, as appropriate, shall include the following for each system or appliance:
  - a. maintenance and repair instructions;
  - b. schedule of periodic maintenance;
  - c. list of replaceable parts; and
  - d. log for records of inspections and maintenance, listing identified non-conformities and their targeted completion dates.

### 5 Weekly testing and inspections

- .1 Weekly inspections shall be carried out to ensure that:
  - a. all public address systems and general alarm systems are functioning properly; and
  - b. breathing apparatus cylinders do not present leakages.

### 6 Monthly testing and inspections

- .1 Monthly inspections shall be carried out to ensure that:
  - a. all fireman's outfits, fire extinguishers, fire hydrants, hose and nozzles are in place, properly arranged, and are in proper condition;
  - b. all fixed fire-fighting system stop valves are in the proper open or closed position, dry pipe sprinkler systems have appropriate pressures as indicated by gauges;
  - c. sprinkler system pressure tanks have correct levels of water as indicated by glass gauges;
  - d. all sprinkler system pumps automatically operate on reduction of pressure in the systems;
  - e. all fire pumps are operated; and
  - f. all fixed fire-extinguishing installation using extinguishing gas are free from leakage.

### 7 Quarterly testing and inspections

- .1 Quarterly inspections shall be carried out to ensure that:
  - a. all automatic alarms for the sprinkler systems are tested using the test valves for each section;
  - b. the international shore connection is in proper condition according to the specifications of the FSS Code;

- c. lockers providing storage for fire-fighting equipment contain proper inventory and equipment is in proper condition;
- d. all fire doors and fire dampers are tested for local operation; and
- e. all CO2 bottle connections for cable operating system clips shall be checked for tightness on fixed fire-extinguishing installations.

8 Annual testing and inspections

- .1 Annual inspections shall be carried out to ensure that:
  - a. all portable fire extinguishers are checked for proper location, charging pressure, and condition according to the ship's fire plan;
  - b. fire detection systems are tested for proper operation, as appropriate;
  - c. all fire doors and dampers are tested for remote operation;
  - d. all foam-water and water-spray fixed fire-fighting systems are tested for operation;
  - e. all accessible components of fixed fire-fighting systems are visually inspected for proper condition;
  - f. all fire pumps, including sprinkler system pumps, are flow tested for proper pressures and flows;
  - g. all hydrants are tested for operation;
  - h. all antifreeze systems are tested for proper solutions;
  - i. sprinkler system connections from the ship's fire main are tested for operation;
  - j. all fire hoses are hydrostatically tested;
  - k. All Self-contained breathing apparatus (including SCBA's on lifeboats) should be checked for external condition and air recharging systems checked for air quality;
- .2 Every two years, portable fire extinguishers and SCBA's cylinders shall be checked by a service agent or facility certified by the manufacturer to perform this type of work and accepted by the Recognized Organization issuing the pertinent safety certificate <sup>[§]</sup>. Every other year, these checks shall be carried out either by a service agent or facility (certified and accepted <sup>§</sup>) or by a deck or engine officer trained and assigned to this duty.
- .3 Halon installations of fire-extinguishing systems on board ships, which keel was laid or at a similar stage of construction on or after October 1994, are prohibited. Moreover, full-scale tests of Halon fire-extinguishing systems on board ships are prohibited since January 1992 in accordance with Resolution A.719(17)/2(b). However, an annual leakage test shall be carried out, MSC/Circ.600. The Chief Engineer can carry out this test if provided with the proper equipment and training.

9 Two year service

- .1 At least once every two years, the following inspections and tests shall be carried out:
  - a. CO2 Fixed System contents shall be verified at least every two years.
  - b. Air shall be blown through the piping of extinguishing gas systems.
- .2 The blow test (item 9.1(b)) shall be carried out by a service agent or facility certified by the manufacturer to perform this test and accepted by the Recognized Organization issuing the pertinent safety certificate.

10 Three year service

- .1 Periodical controls of foam concentrates stored on board
- .2 The first periodical control of fixed foam fire-extinguishing system and foam concentrates stored on board shall be performed after a period of 3 years (from the original installation date), after that, every year. A record of the age of the foam concentrates and of subsequent control should be kept on board readily available for inspection. Periodical controls or analysis will be performed by an independent or manufacturer's laboratory, which is accepted by the Recognized Organization issuing the pertinent safety certificate. Tests, controls or analysis of foam will be performed as per MSC/Circ.582, MSC/Circ. 670 and MSC/Circ.798.

11 Five-year service

- .1 Hydrostatic testing for all SCBA's cylinders (\*)
- .2 Hydrostatic testing for all SCBA's cylinders shall be carried out by a servicing facility or agent certified by the manufacturer to perform this type of work and accepted by the Recognized Organization issuing the pertinent safety certificate. Test certificates must be provided and kept on board for inspections. Test date and pressure must be stamped or tagged on each cylinder. This test shall not be carried on board.

12 Ten-year Service

- .1 At least once every ten years, the following inspections and tests should be carried out:
  - a. Control valves of fixed fire-fighting systems shall be internally inspected.
  - b. Hydrostatic Pressure Test of Portable Fire Extinguishers
- .2 Hydrostatic Testing for all Portable Fire Extinguishers and internal inspection of control valves of the fixed fire-fighting systems shall be carried out by a servicing facility or agent certified by the manufacturer to perform this type of work and accepted by the Recognized Organization issuing the pertinent safety certificate.
- .3 Portable Fire Extinguishers Test certificates must be provided and kept on board for inspections. Test date and pressure must be tagged on each bottle. This test shall not be carried on board.

13 Twenty-year Service

20 Year Period	1 0 Y r . Period	1 0 Y r . Period	1 0 Y r . Period	1 0 Y r . Period	1 0 Y r . Period	1 0 Y r . Period	1 0 Y r . Period
100%	100%	100%	100%	100%	100%	100%	100%

- .1 All (100%) CO<sub>2</sub> cylinders from the fixed fire system shall be hydrostatically tested before 20 years from the date of manufacture and the pressure test shall then be completed every ten years thereafter. Any percentage of CO<sub>2</sub> bottles can be hydrostatically tested at any interval of time but all (100%) shall be hydrostatically pressure tested no later than the datelines already established.
- .2 Hydrostatic testing for the fixed CO<sub>2</sub> system shall be carried out by a servicing facility or agent which has been certified by the manufacturer to perform this type of work and accepted by the Recognized Organization issuing the pertinent safety certificate. Test certificates must be provided and kept on board for inspections. Test date and pressure must be stamped on each bottle. This test shall not be carried on board.

.3 Ships (20 years or older) coming into our registry will be required to carry this test at the next scheduled dry-docking. However, no CO<sub>2</sub> cylinder onboard our ships shall reach 20 years from the date of manufacture without being hydrostatically tested.

14 The verification of the examinations and tests until here mentioned shall be to the satisfaction of the attending surveyor of the Recognized Organization that will endorse or issue the pertinent safety certificate.

15 Fire Extinguishers Spare Charges

.1 Spare charges shall be provided for 100% of the first 10 extinguishers and 50% of the remaining fire extinguishers capable of being recharged on board. Not more than 60 total spare charges are required. Instructions for recharging should be carried out on board.

.2 For fire extinguishers which cannot be recharged onboard, additional portable fire extinguishers of the same quantity, type, capacity and number as determined in above paragraph shall be provided.

16 Fire Protection - Paint Lockers

.1 Paint lockers shall be protected by:

- a. a carbon dioxide system, designed to give a minimum volume of free gas equal to 40% of the gross volume of the protected space;
- b. a dry powder system, designed for at least 0.5 kg powder/m<sup>3</sup>;
- c. a water spraying or sprinkler system, designed for 5 l/m<sup>2</sup> min. Water spraying systems may be connected to the fire main of the ship; or
- d. The fitting of a portable fire extinguisher immediately outside the entrance to the paint locker. The number of portable extinguishers is to be adequate to the size of the paint locker as determined by the Recognized Organization.

.2 In any case, the system shall be operable from outside the protected space

17 SOLAS - Emergency Fire Pump

.1 This Administration accepts gasoline engine driven portable emergency fire pumps on board cargo ships less than 2000 GRT. Proper precautions must be observed in the storage and handling of gasoline with this equipment.

18 Minimum Number of EEBD's in Machinery Spaces.

.1 In reference to the item **d** on the Merchant Marine Circular 119, the maximum number of persons (i.e. engineers and ratings) working during a normal day of operation shall be understood as the sum of ratings (from the engine department) and engineers on the ship's Minimum Safe Manning Certificate. If this sum exceeds six persons, then six EEBD's will be the minimum number required in machinery spaces.

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(\*) Revised April 2003

Inquiries concerning the subject of this Circular or any request should be directed to:

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[§] Whenever is stated “and **accepted** by the Recognized Organization issuing the pertinent safety certificate” it must be pointed out that this Administration recognizes the tests performed by an agent, facility or laboratory certified by any of her Recognized Organizations. Therefore, having the agreement of the Recognized Organization that issues the pertinent safety certificate, it is possible to hire the services of an agent, facility or laboratory certified by a Recognized Organization that no necessarily will issue or endorse the pertinent safety certificate.