

Subject

Maintenance, inspection and test of Fire-Protection Systems and Appliances on board the Marshall Islands -flagged ships

ClassNK

Technical Information

No. TEC-0997

Date 6 August 2014

To whom it may concern

The Marshall Islands Administration has issued the Marine Notice No.2-011-14 Rev.6/14 "Maintenance and Inspection of Fire Protection Systems and Appliances", in reference to maintenance, inspection and test of Fire-Protection System and Appliances on board the Marshall Islands -flagged ships. The essential points of the Notice are shown below.

Purpose of the Marine Notice No.2-011-14 Rev. 6/14

This Notice addresses general maintenance, testing and inspection of fire protection systems, appliances and emergency equipment. It incorporates the provisions of MSC.1/Circ.1432, Revised Guidelines for the Maintenance and Inspection of Fire Protection Systems and Appliances. It includes the addition of a chart (Appendix 1) that summarizes the intervals for maintenance, testing and inspection of the fire protection systems and appliances and designates the entity required to conduct the inspection.

Application of the Marine Notice No.2-011-14 Rev. 6/14

1. This Notice applies to all Marshall Islands -flagged ships including Mobile Offshore Drilling Units (MODUs) and Mobile Offshore Units (MOUs).
2. Our surveyors will confirm that the maintenance and testing records of fire protection systems and appliances are kept on board for the Marshall Islands -flagged ships at every survey for Safety Equipment.
3. Where particular arrangements create practical difficulties, alternative testing and maintenance procedures as well as maintenance period should be consulted to the Administration. (See the 2.4 of this Notice)

Please refer to the original text of the Marine Notice No.2-011-14 Rev.6/14 (Attachment 1) which is also available on International Registries, Inc. Internet Homepage (<http://www.register-iri.com>).

This Technical Information now supersedes the previous ClassNK Technical Information No.TEC-0935.

(To be continued)

NOTES:

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On-board requirement of Fire Protection Systems and Appliances [5.3.1, 5.4, 5.5, 6.4, 8.5, 8.6, 10.5, 10.6 and 11.1]:

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Attachment:

1. Marine Notice No.2-011-14 Rev.6/14 "Maintenance and Inspection of Fire Protection Systems and Appliances"



**REPUBLIC OF
THE MARSHALL ISLANDS**
**OFFICE OF THE
MARITIME ADMINISTRATOR**

Marine Notice

No. 2-011-14

Rev. 6/14

**TO: ALL SHIPOWNERS, OPERATORS, MASTERS AND OFFICERS OF
MERCHANT SHIPS, AND RECOGNIZED ORGANIZATIONS**

SUBJECT: Maintenance and Inspection of Fire Protection Systems and Appliances.

- References:**
- (a) Maritime Regulation 2.11
 - (b) SOLAS Chapter II-2, as amended
 - (c) International Code for Fire Safety Systems (FSS Code), as amended
 - (d) MSC/Circ.849, dated 8 June 1998
 - (e) MSC.1/Circ.1432, dated 31 May 2012
 - (f) MSC/Circ.1085, dated 13 June 2003
 - (g) Resolution A.951(23), adopted on 5 December 2003
 - (h) MSC.1/Circ.1275, dated 3 June 2008
 - (i) MSC.1/Circ.1312, dated 10 June 2009 and Corr.1, dated 22 November 2011
 - (j) MSC.1/Circ.1313, as amended by Resolutions MSC. 206(81) and MSC.217(82), dated 10 June 2009
 - (k) MSC.1/Circ.1318, dated 11 June 2009
 - (l) MSC.1/Circ.1395/Rev.1, dated 9 July 2013
 - (m) Marshall Islands Marine Notice 2-011-11
 - (n) MSC.1/Circ.1315, dated 10 June 2009
 - (o) MSC/Circ.1081, dated 13 June 2003
 - (p) Resolution MSC.338(91), dated 30 November 2012

PURPOSE:

This Notice addresses general maintenance, testing and inspection of fire protection systems, appliances and emergency equipment. It incorporates the provisions of MSC.1/Circ.1432, *Revised Guidelines for the Maintenance and Inspection of Fire Protection Systems and Appliances*, reference (e) above. It includes the addition of a chart (Appendix 1) that summarizes the intervals for maintenance, testing and inspection of the fire protection systems and appliances and designates the entity required to conduct the inspection. Reference (n) above has also been incorporated into this Notice. This Notice supersedes Rev. 12/13 and reflects the incorporation of amendment to SOLAS II-2/15, new paragraph 2.2.6, (reference (p) above) as well as the addition of a new paragraph 5.2.3 regarding control valve examinations with the rest renumbered.

This Notice is not intended as an exhaustive listing of applicable requirements, but addresses those provisions where the Republic of the Marshall Islands (RMI) Maritime Administrator (the “Administrator”) requirements differ or where the Administrator has deemed additional clarification or emphasis necessary.

Any questions about the inspection, service or testing requirements of this Notice should be directed to: technical@register-iri.com.

APPLICABILITY:

This Notice applies to all ships, mobile offshore drilling units (MODUs) and mobile offshore units (MOUs).

REQUIREMENTS:

1.0 Safety Management-Onboard Maintenance Plan

- 1.1 SOLAS II-2/14 requires ships to carry on board, and available for inspection, a plan that details the maintenance, testing and inspection of fire protection systems and appliances. The Administrator requires the onboard maintenance plan to be consistent with the ship’s safety management system.
- 1.2 Certain maintenance procedures and inspections may be performed by competent crewmembers who have completed an advanced fire-fighting training course, while others should be performed by persons specifically trained in the maintenance of such systems. The onboard maintenance plan shall indicate, in accordance with Appendix 1 of this Notice, the inspections and maintenance that are to be completed by competent crew members versus other trained personnel.
- 1.3 Prior to performing any work, a plan consistent with the ship’s Safety Management System for carrying out safe maintenance, inspection and testing shall be developed to account for all personnel and all foreseeable hazards. The plan shall establish an effective communications system between the inspection personnel and on-duty crew.

2.0 Application of Requirements, Guidelines and Recommendations

- 2.1 With respect to the maintenance, testing and inspection of fire protection systems and appliances, ships’ owners and officers shall be familiar with and follow the applicable requirements of the International Convention for Safety at Life at Sea, 1974, (SOLAS ‘74), as amended, the International Code for Fire Safety Systems (FSS Code), as amended, MODU Code (1979, 1989 and 2009 editions) and Classification Society requirements.
- 2.2 Minimum recommended levels of maintenance, testing and inspection to be included in an onboard maintenance plan are laid out in various International Maritime Organization (IMO) guidance documents (see References section above). This guidance has been adopted by the Administrator, except where superseded by this Notice.

- 2.3 Equipment manufacturers' recommendations, where existent, shall be followed by ships' owners and officers in the maintenance, testing and inspection of such equipment. Manufacturer maintenance manuals should be available on board where appropriate.
- 2.4 Where particular arrangements create practical difficulties, alternative testing and maintenance procedures shall be to the satisfaction of the Administrator.

3.0 Operational Readiness

- 3.1 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 maintenance, testing or repair, then suitable arrangements acceptable to the ship's Classification Society and the Administrator shall be made to ensure fire protection capability is not diminished through the provision of alternative fixed or portable fire protection equipment or other measures.
- 3.2 While underway or prior to sailing or in the case of MODUs and MOUs engaging in operations with a fire protection system under repair, a dispensation or short term certificate, as appropriate, must be obtained from the Administrator.

4.0 Maintenance, Testing and Inspection

- 4.1 Onboard maintenance, testing and inspections shall be carried out in accordance with the ship's maintenance plan at the intervals indicated in Appendix 1 of this Notice, as appropriate.
- 4.2 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. They should be illustrated wherever possible, and, as appropriate, include for each system or appliance:
- .1 maintenance and repair instructions;
 - .2 schedule of periodic maintenance;
 - .3 list of replaceable parts; and
 - .4 log for records of inspections and maintenance (See also section 12.0 below).

5.0 Fixed Gas Fire-Extinguishing Systems

5.1 General

Shipbuilders/shipyards, Classification Societies, insurers, owners/operators, system service personal and all others involved shall carefully and critically review, routinely inspect and maintain, and verify and test their fixed gas fire-extinguishing systems to ensure that they will operate correctly during an emergency.

5.1.1 Flexible Hoses

As of 31 May 2013 and in accordance with MSC.1/Circ.1432 paragraph 10.1.2, flexible hoses should be replaced at the intervals recommended by the manufacturer and not exceeding every 10 years.

5.1.2 Two-year Inspection/Service

Every two (2) years (i.e., during the second or third periodical survey), fixed gas fire-extinguishing systems, except fixed CO₂ extinguishing systems which are addressed in section 5.2 below, shall be checked by an authorized service facility acceptable to the vessel's Classification Society

- a. all high pressure extinguishing agents cylinders and pilot cylinders should be weighed or have their contents verified by other reliable means to confirm that the available charge in each is above 95 per cent of the nominal charge. Cylinders containing less than 95 per cent of the nominal charge could be refilled; and
- b. blow dry compressed air or nitrogen through the discharge piping or otherwise confirm the pipe work and nozzles are clear of any obstructions. This may require the removal of nozzles, if applicable.

5.1.3 10-year (Hydrostatic Testing)

At least once every 10 years, a hydrostatic test and internal examination of 10% of the system's extinguishing agent and pilot cylinders shall be conducted. If one or more cylinders fail, a total of 50% of the onboard cylinders shall be tested. If further cylinders fail, all cylinders shall be tested.

In cases where cylinders for fixed-gas firefighting systems (except Halon systems) have been date stamped prior to delivery of a vessel, the first 10-year hydrostatic test may be harmonized with drydocking at the Second Special Survey under the IMO Harmonized System of Survey and Certification, provided that the initial date stamp (month/year) on the cylinder does not exceed 12 months before the vessel delivery date.

5.2 Fixed CO₂ Fire Extinguishing Systems

5.2.1 Every two (2) years, fixed CO₂ extinguishing systems shall be checked by an authorized service facility acceptable to the vessel's Classification Society

5.2.2 Fixed CO₂ fire-extinguishing systems shall be maintained and inspected in accordance with the guidelines contained in MSC.1/Circ.1318, *Guidelines for the Maintenance and Inspection of Fixed Carbon Dioxide Fire-Extinguishing Systems* (reference (k) above), which are intended to demonstrate that the system is kept in good working order and readily available for use as specified in SOLAS '74, regulation II-2/14.2.1.2. These guidelines supplement the fire-extinguishing system manufacturer's approved maintenance instructions.

- 5.2.3 In addition to the maintenance and inspection requirements of paragraph 5.2.2. above, at least once every five (5) years, all control valves of fixed CO₂ systems are to be internally examined.
- 5.2.4 The survey requirements for cargo ships under section 6.1 of MSC.1/Circ.1318 should be carried out during the second or third periodical survey under the IMO Harmonized System of Survey and Certification.

5.3 Halon Systems

5.3.1 Use of Halon Systems

SOLAS '74, regulation II-2/10 permits the use of Halons as fire extinguishing media on ships built before 1 October 1994. The Administrator has not established a phase-out date for existing Halon systems. However, it should be noted that the release of Halons into the atmosphere when testing existing systems is prohibited. In addition, the European Commission considers that supply of a non-EU flagged ship in an EU-port with Halon an illegal export. Therefore, in a case where Halon is discharged for whatever reason, refilling of such systems on non-EU flagged ships with Halon is not possible and that ship will be detained until a new fixed fire-fighting system is installed on board. See RMI Marine Notice 2-011-11, *Systems Using Halogenated Hydrocarbons (Halon) and Other Ozone Depleting Substances*, reference (m) above, for additional information.

5.3.2 Minimum Recommended Maintenance

.1 Verification of Cylinder Contents

At least biennially (intervals of two (2) years $\pm$ three (3) months) as part of the survey for issuance of the SOLAS SEC, the contents of the Halon cylinders should be weighed or have their contents verified by other reliable means to confirm that the available charge in each is above 95% of the nominal charge as far as reasonably practicable, as determined by the Administrator. Cylinders containing less than 95% of the nominal charge should be refilled.

.2 Hydrostatic Testing

(a) All Halon cylinders must be hydrostatically tested as follows:

- after each 20 years of service;
- prior to recharging a discharged cylinder; or
- when visual inspection reveals a potential defect.

(b) Hydrostatic test dates must be stamped on the cylinders. Hydrostatic testing must be performed by an authorized servicing facility which has been certified by a government agency or Classification Society. The facility must be acceptable to the attending Classification Society

surveyor. The same facility should recharge the cylinders after testing to demonstrate serviceability.

- (c) Visual inspection and non-destructive testing (NDT) of Halon cylinders may be performed in lieu of hydrostatic testing by an authorized servicing facility which has been certified by a government agency or Classification Society.

5.3.3 Relaxed Maintenance Schedule

- .1 Based on the logistical difficulties associated with locating servicing facilities and suppliers for the testing and maintenance of existing fixed Halon fire suppression systems and components, the Administrator will consider a relaxed maintenance schedule with regard to the hydrostatic testing of the Halon storage cylinders.
- .2 Consideration for the application of the relaxed hydrostatic testing requirements for the fixed Halon system storage cylinders will be given on a case-by-case basis, and must be approved in writing by the Administrator.
- .3 Under the relaxed maintenance schedule, the hydrostatic testing interval of 20 years for the Halon storage may be extended by five (5) years provided the following conditions are met:
 - a cylinder has not been discharged during its service history;
 - cylinder contents are verified by weighing or isotropic measurement;
 - cylinder pressure/levels are verified to be acceptable;
 - a thorough visual inspection of cylinders reveal no potential defects; and
 - cylinders are gauged to the extent considered necessary, and the wall thickness readings kept on board for future comparative reference.
- .4 In addition, a thorough examination shall be made of all accessible component parts of the Halon system, including control valves and connections, to verify satisfactory condition and freedom from leakage: and selected control valves shall be opened out for internal examination to the extent necessary.
- .5 Any suspect cylinders that do not meet the provisions stated above must be tested, or taken out of service.
- .6 The cylinder inspection and thickness gauging shall then be repeated annually as part of the annual servicing requirement of the system, until the end of the five (5) year period of extension.

5.4 Alternative Fixed Gas Fire-Fighting Media and Systems

The Administrator recognizes that there are other media (e.g., NOVEC™ 1230 fluid, INERGEN®, FM 200®, etc.) that can be used in fixed gas fire-extinguishing systems for machinery spaces and cargo pump rooms. Use of such alternatives shall be subject to

approval with any attached conditions, as appropriate, by the Administrator and in accordance with SOLAS Chapter II-2 requirements for alternative fire-fighting systems and relevant guidance¹. Maintenance and inspection of these systems shall be carried out in accordance with manufacturer's instructions and/or Classification Society requirements.

5.5 Alternative to Ineffective Fixed Gas Fire-Fighting Systems

Water supplies as defined in SOLAS II-2/Reg.19.3.1.2 are considered as an acceptable alternative for the ineffective fixed gas fire-extinguishing system, for ships when allowed to carry any of the cargoes contained in table 2 of MSC.1/Circ.1395/Rev.1, *Lists of Solid Bulk Cargoes for Which a Fixed Gas Fire-Extinguishing System May be Exempted or for Which a Fixed Gas Fire-Extinguishing System is Ineffective*, reference (1), above. Such an arrangement when provided for the carriage of any of the above cargoes should be verified for compliance by the vessel's Classification Society.

6.0 Fixed Dry Chemical Powder Fire-Extinguishing Systems

- 6.1 Such system is to be serviced and tested in accordance with the Manufacturer's requirements and the Classification Society's requirements, should it have any. Particular attention is to be paid to the condition of the powder for any sign of moisture ingress and that its properties remain as per type approval.
- 6.2 In accordance with MSC.1/Circ. 1432 (reference (e) above), two-year inspections shall be carried out on fixed dry chemical powder systems. The inspections shall be conducted by an authorized service facility acceptable to the vessel's Classification Society or the attending Class Surveyor(s) who is (are) to perform a general examination of the distribution piping and installation of the dry chemical powder fire-extinguishing system to confirm, to the extent possible, that the system has not been modified from its original installation. Part of such verification should include also the following minimum requirements:
- The piping distribution system is to be blown through with Nitrogen (N₂) or dry air to ensure it is free of any obstruction. The nozzles, if any, are to be removed to ensure that they are free and not blocked during the blow-through operation.
 - Operational test of local and remote controls and section valves.
 - The contents verification of propellant gas cylinders containing Nitrogen (N₂) including remote operating stations is to be confirmed.

¹ Such guidance includes, but is not limited to, *Revised Guidelines for the Approval of Equivalent Fixed Gas Fire-Extinguishing Systems*, as referred to in SOLAS '74 for Machinery Spaces and Cargo Pump-Rooms (MSC/Circ.848, adopted 8 June 1998 and as amended by MSC.1/Circ.1267, adopted 4 June 2008); *Guidelines for the Approval of Fixed Aerosol Fire-Extinguishing Systems Equivalent to Fixed Gas Fire-Extinguishing Systems*, as referred to in SOLAS '74, for Machinery Spaces (MSC/Circ. 1007, adopted 26 June 2001) and *Revised Guidelines for the Approval of Equivalent Water-Based Fire Systems for Machinery Spaces and Cargo Pump-Rooms* (MSC.1/Circ. 1165, adopted 10 June 2005 and as amended by MSC.1/Circ.1386, adopted 10 December 2010).

- Flexible discharge hoses are to be inspected to confirm that they are maintained in good condition and have not perished, especially when located on open decks. In case of any doubt the hoses are to be subjected to a full working pressure test.
- The dry chemical powder containment tank and its associate safety valves are to be inspected for signs of corrosion or deterioration which may affect the safety of the system. In case of any doubt the tank is to be tested and safety valve set points adjusted and confirmed at the shop.

6.3 High pressure cylinders, including N₂ cylinders, shall be subjected to periodical tests at intervals not exceeding 10 years as provided in paragraph 6.1.2 of MSC.1/Circ.1318, reference (k), above. See also 5.1.3 of this Notice, above, regarding harmonization with drydocking.

6.4 For ships carrying liquefied gases in bulk, the guidelines for the approval of fixed dry chemical powder fire-extinguishing systems are contained in MSC.1/Circ. 1315, *Guidelines for the Approval of Fixed Dry Chemical Powder Fire-Extinguishing Systems for the Protection of Ships Carrying Liquefied Gases in Bulk*, reference (n), above.

7.0 Foam Concentrates for Fixed Fire-Extinguishing Systems and Portable Foam Applications

7.1 Applicability

The revised guidelines contained in MSC.1/Circ.1312, *Performance and Testing Criteria, and Surveys of Foam Concentrates for Fixed Fire-Extinguishing Systems* (reference (i) above), with reference to MSC.1/Circ.1312/Corr.1 (reference (i) above), should be applied to the foam concentrates (not their generating equipment) used for:

.1 fixed deck foam fire-extinguishing systems required for:

- tankers by SOLAS '74, regulations II-2/10.8 and chapter 14 of the FSS Code;
- chemical tankers as specified by SOLAS regulation II-2/1.6.2.1.2 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk; and

.2 fixed foam fire-extinguishing systems in:

- machinery spaces according to chapter 6 of the FSS Code; and for
- portable foam applications according to chapter 4 of the FSS Code.

7.2 Type Approval of Foam Concentrates

7.2.1 Foam concentrates for all fixed systems and for portable foam applicators placed on ships should be type approved. Tests, including fire tests, should be performed in accordance with paragraphs 3.1 to 3.14 of the *Revised Guidelines for the Performance and Testing Criteria and Surveys of Foam Concentrates for Fixed Fire-Extinguishing Systems*

(reference (i) above) by the foam concentrate manufacturer at laboratories acceptable to the Classification Society.

- 7.2.2 Type approvals conducted in accordance with the Guidelines in MSC/Circ.582 and MSC/Circ.582/Corr.1, and MSC/Circ.799, which are superseded by MSC.1/Circ.1312 remained valid only until 1 July 2012.

7.3 Periodical Controls of Foam Concentrates Stored on Board

- 7.3.1 Certain installation conditions such as excessive ambient storage temperature, contamination of the foam concentrate and incomplete filling of the tank may lead to abnormal ageing of the concentrates. As a result, periodic testing of concentrates is necessary.
- 7.3.2 The first periodical control of foam concentrates (except for protein-based alcohol resistant foam concentrates) should be performed not more than three (3) years after being supplied to the ship, and after that, every year. These tests should be performed by laboratories or authorized service suppliers deemed acceptable to the Classification Society.
- 7.3.3 Protein-based alcohol-resistant foam concentrates should be subjected to a chemical stability test prior to delivery to the ship and annually thereafter. See paragraph 3.14 of reference (i) above.
- 7.3.4 Guidance on performance and testing criteria and surveys of low-expansion concentrates, medium-expansion concentrates and high-expansion concentrates for fixed fire-extinguishing systems are found in MSC/Circ. 1312, MSC/Circ.798 and MSC/Circ. 670, respectively.

8.0 Portable Fire Extinguishers

8.1 General

- 8.1.1 All portable fire extinguishers shall be subject to periodical inspections in accordance with the manufacturer's instructions.
- 8.1.2 All portable fire extinguishers should be provided with a visual indication of discharge and instructions for recharging should be provided by the manufacturer and be available onboard.
- 8.1.3 Service and inspection should only be undertaken by, or under the supervision of, a person with demonstrable competence, based upon the inspection guide (Table 9.1.3) contained in Resolution A.951(23), Improved Guidelines for Marine Portable Fire Extinguishers (reference (g) above).

8.2 Annual Inspection/Service

All portable fire extinguishers shall be serviced at intervals not exceeding one (1) year.

8.3 Five-year Inspection/Service

At least one (1) extinguisher of each type manufactured in the same year and kept on board a ship should be test discharged at five (5) year intervals as part of a fire drill.

8.4 Ten-year Inspection/Service

All fire extinguishers together with propellant cartridges shall be hydrostatically tested in accordance with the recognized standard or the manufacturer's instruction at intervals not exceeding 10 years. However, a hydrostatic test may be also required by the Classification Society Surveyor or RMI Nautical Inspector if visual examination indicates a potential defect in the cylinder. The hydrostatic test date must be permanently and clearly marked on the bottles. It must be performed by a servicing facility which has been certified by a government agency or Classification Society and is acceptable by the vessel's Classification Society, or by the extinguisher manufacturer to perform this type of work. The same facility should recharge the cylinder after testing to demonstrate serviceability.

8.5 Number and Arrangement of Portable Fire Extinguishers on Board Ships

Vessels constructed on or after 1 January 2009 should use the table shown in MSC.1/Circ.1275, Unified Interpretation of SOLAS Chapter II-2 on the *Number and Arrangement of Portable Fire Extinguishers on Board Ships* (reference (h) above), as reference for determining the number and arrangement of portable fire extinguishers in accommodation spaces, service spaces, control spaces, control stations, machinery spaces of category A, other machinery spaces, cargo spaces, weather decks and other spaces onboard ships. Vessels which may not comply with the above should be brought into compliance by the first renewal or intermediate Safety Equipment survey coming after 1 November 2011.

For vessels constructed prior to 1 January 2009, shipowners/operators are encouraged to implement the unified interpretation of MSC.1/Circ.1275 (reference (h) above).

8.6 Spare Charges, Additional Fire Extinguishers, and Refilling of Extinguishers

8.6.1 For fire extinguishers of the same type, capable of being recharged on board, the spare charges shall be provided as follows:

- 100% for the first 10 extinguishers and 50% for the remaining extinguishers but not more than 60 (fractions to be rounded off to next whole number).

- 8.6.2 For extinguishers which cannot be recharged by the crew, additional portable fire extinguishers of the same quantity, type, capacity and number as determined in the paragraph above shall be provided in lieu of spare charges.
- 8.6.3 Instructions for recharging the extinguishers shall be carried on board. Periodic refilling of the cylinders shall be in accordance with the manufacturer's recommendations. Lacking same, refill is required when the extinguishing media starts to lose effectiveness. Partially emptied extinguishers should also be recharged. Only refills approved for the fire extinguisher in question may be used for recharging.

9.0 Water Mist, Water Spray and Sprinkler Systems

9.1 Ten-Year Service

The hydrostatic test and internal examination for gas and water pressure cylinders shall be conducted in accordance with EN 1968:2002 +A1 or equivalent Classification Society requirements. See also 5.1.3 of this Notice, above, regarding harmonization with drydocking.

10.0 Self-Contained Breathing Apparatus (SCBA)

10.1 Weekly Inspections

SCBA should be inspected weekly to ensure that they are in the correct pressure range.

10.2 Monthly Inspections

For ships subject to the *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)*, *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)* and *Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code)*, SCBAs shall be inspected at least once a month by a responsible ship's officer.

10.3 Annual Examination

All SCBAs shall be examined at least annually as part of the annual statutory survey for the SEC or MODU Code Certificate. If applicable, the SCBAs air recharging systems should be checked for air quality as part of the annual statutory survey for the SEC or MODU Code Certificate.

10.4 Hydrostatic Testing of SCBA Cylinders

- 10.4.1 Hydrostatic testing of SCBA cylinders shall be carried out once every five (5) years. The hydrostatic test date must be permanently marked on the bottles. Intervals for hydrostatically testing cylinders of the ultra lightweight type may vary and will depend upon the requirements of the cylinder manufacturer and the ship's Classification Society.

Servicing of the cylinders must be performed to the satisfaction of the Classification Society surveyor.

- 10.4.2 In cases where SCBA cylinders have been date stamped prior to delivery of a vessel, the first 5-year hydrostatic test may be harmonized with drydocking at the First Special Survey under the IMO Harmonized System of Survey and Certification, provided that the initial date stamp (month/year) on the cylinder does not exceed six (6) months before the vessel delivery date.

10.5 Spare Charges and Recharging of SCBA Cylinders

- 10.5.1 Two (2) interchangeable spare charges suitable for use with the SCBA should be provided for each required apparatus.
- 10.5.2 Passenger ships carrying not more than 36 passengers and cargo ships equipped with suitable located means for fully recharging the air cylinders free from contamination, only one (1) interchangeable spare charge is required for each required apparatus.
- 10.5.3 Passenger ships carrying more than 36 passengers constructed on or after 1 July 2010 shall be fitted with a suitably located means for fully recharging breathing air cylinders, free from contamination. The means for recharging shall be either:
- .1 breather air compressors supplied from the main and emergency switchboard, or independently driven, with a minimum capacity of 60 l/min per required breathing apparatus, not to exceed 420 l/min; or
 - .2 self-contained high-pressure storage systems of suitable pressure to recharge the breathing apparatus used on board, with a capacity of at least 1,200 l/per required breathing apparatus, not to exceed 50,000 l of free air.
- 10.5.4 On or after 1 July 2014, all ships unless provided with an onboard means of recharging breathing apparatus cylinders, shall have a suitable number of spare cylinders to replace those used during training or drills. The Administrator does not prescribe any minimum number, however the shipboard safety management system needs to include provisions that sufficient spares corresponding to the number of breathing apparatus being used during drills, are available onboard.

10.6 Smoke Helmet

Recognizing the problems and operational drawbacks associated with the use of a smoke helmet type breathing apparatus as identified in Unified Interpretation of SOLAS Regulation II-2/15.2.11, in force before 1 July 2002 (reference (f) above), the use of such apparatus shall not be permitted onboard those ships which may still be able to carry this type of equipment as permitted prior to the 2002 amendments to SOLAS Chapter II-2 (reference (b) above). Accordingly, additional SCBAs shall be provided to replace any smoke helmet-type breathing apparatus where these devices may form part of the minimum equipment requirement.

11.0 Emergency Escape Breathing Devices (EEBDs)

11.1 Number and Locations

- 11.1.1 SOLAS '74 requires at least two (2) EEBDs to be located in the accommodations and additional EEBDs to be placed in the machinery spaces. The Administrator considers "machinery spaces" to mean Category A Machinery Spaces such as engine rooms and boiler rooms. Auxiliary Machinery Spaces such as Steering Gear Compartments, Refrigeration Machinery Rooms, Bow Thruster Compartments, and the like do not have to be fitted with EEBDs.
- 11.1.2 Inasmuch as MSC/Circ.849, *Guidelines for the Performance, Location, Use and Care of Emergency Escape Breathing Devices* (reference (d) above), is referenced in SOLAS II-2/13.3.4 and 13.4.3, the Administrator is treating the guidelines contained in the Circular as mandatory.
- 11.1.3 For compliance with the last sentence in Paragraph 4.6 of MSC/Circ.849, only those control spaces and workshops that are remotely located from the machinery space escape routes need be considered.
- 11.1.4 In achieving compliance with paragraph 4.6 of MSC/Circ.849, a minimum of two (2) EEBDs should be located on each level of the machinery space. If a machinery space contains an enclosed primary escape trunk having a door at each level, only one (1) EEBD need be located on each level².
- 11.1.5 Under no circumstances shall an EEBD be used to enter an enclosed shipboard space in which the atmosphere is known or suspected to be oxygen-depleted, oxygen-enriched, toxic or flammable.

11.2 Maintenance and Care

- 11.2.1 The EEBD should be examined and maintained in accordance with the manufacturer's instructions, including any instructions for hydrostatic testing. It should be noted that when an EEBD is fitted with a small capacity oxygen cartridge (two (2) inches or less in diameter), some manufacturers specify a fixed service life without scheduled hydrostatic pressure testing. In the absence of manufacturer's instructions, hydrostatic testing should be carried out at intervals not exceeding five (5) years, unless specifically prohibited by the manufacturers.

² The term "level" should be interpreted as meaning a deck where watchstanding personnel reside, workshops and control stations are located, or the crew may be employed during routine maintenance. In essence, two (2) EEBDs are required only on those deck "levels" where people are likely to be employed. Platform decks that serve to divide long ladders into segments and partial decks where personnel are not likely to be employed for any significant period of time are not considered as "levels" and do not require EEBDs.

- 11.2.2 In cases where EEBD cylinders have been date stamped prior to delivery of a vessel, the first hydrostatic test may be harmonized with drydocking at the First Special survey under the IMO Harmonized System of Survey and Certification, provided that the initial date stamp (month/year) on the cylinder does not exceed six (6) months before the vessel delivery date.
- 11.2.3 Sufficient spare EEBDs should be kept on board to replace units that are used, reach their expiry date, or otherwise become unserviceable. See MSC.1/Circ.1081 (reference (o) above) which addresses the number of EEBDs, including spares, required under SOLAS II-2.
- 11.2.4 Maintenance requirements, manufacturer's trademark and serial number, shelf life with accompanying manufacture date and name of approving authority should be printed on each EEBD.

12.0 Records

- 12.1 Records of the inspections shall be carried on board the ship, or may be computer based. They shall include as appropriate:
- .1 Weekly inspections;
 - .2 Monthly inspections;
 - .3 Quarterly inspections;
 - .4 Annual inspections;
 - .5 Biennial (2-yearly) inspections;
 - .6 5-year inspections;
 - .7 10-year inspections;
 - .8 20-year inspections;
 - .9 Other maintenance and testing, including whether a pressure test was performed;
 - .10 Age of foam concentrates and subsequent controls; and
 - .11 Deficiencies identified and corrective actions taken.
- 12.2. In cases where the inspections and maintenance are carried out by trained service technicians other than the ship's crew, inspection reports shall be requested to be provided at the completion of the testing. These reports shall be included in the records of inspections.

Firefighting Systems and Appliances
Summary of Maintenance, Testing and Inspection Intervals
Appendix 1

Note: This chart is intended as reference tool and should not be substituted for an actual reading of circulars referred to within this Marine Notice. The numbers within parentheses under the inspection interval refer to the IMO Circular(s) noted in the first column.

	Weekly	Monthly	Quarterly	Annually	Biennially (2-year intervals)	5-year	10-year (Hydrostatic testing)	20-year (Hydrostatic testing)
Breathing Apparatus (includes SCBA) (MSC.1/Circ.1432)	Ship ² (4.5)	Tanker: Ship ² , See MN § 10.2		Ship ² (7.8)		Shore ³ (9.4)		
EEBDs (MSC.1/Circ.1432)	Ship ² (4.5)			Ship ² (7.8)		hydrostatic testing- see MN § 11.2.1		
Ventilation system and fire dampers (MSC.1/Circ.1432)			Ship ² (6.3)	Ship ² (7.6)				
Fixed fire detection and alarm systems MSC.1/Circ.1432	Ship ² (4.1)	Ship ² (5.10)		Ship ² (7.2)				
Fire doors (MSC.1/Circ.1432)	Ship ² (4.3)		Ship ² (6.4)	Ship ² (7.7)				
Fire hoses, fire hydrants, fire main, fire nozzles and fire pumps (MSC.1/Circ.1432)		Ship ² (5.1)	Ship ² (6.1)	Ship ² (7.1)		Ship ² (7.1.4)		
International shore connections			Ship ² (6.1)					
Fireman's outfit MSC.1/Circ. 1432)		Ship ² (5.5)						
Fire stations and lockers		Ship ² (5.5)						
Fixed Gas fire extinguishing systems (except CO ₂ & Halon) MSC.1/Circ. 1432)	Ship ² (4.2)	Ship ² (5.2)		Ship ² (7.3)	Shore ³ (8.1) or Ship ²	Shore ³ (9.1)	Shore ³ (10.1)	

	Weekly	Monthly	Quarterly	Annually	Biennially (2-year intervals)	5-year	10-year (Hydrostatic testing)	20-year (Hydrostatic testing)
Fixed CO ₂ fire extinguishing systems (MSC.1/Circ.1318)		Ship ² (4)		Ship ² (5)	Passenger ships (± 3 months):Shore ³ (6.1) (6.2)	Internal examination of all control valves (Shore ³)	Shore ³ (6.1.2)	
					Cargo ships (intermediate, periodical or renewal survey*): Shore ³ (6.1)			
					Cargo ships (renewal survey*) Shore ³ (6.2)			
Fixed Halon fire extinguishing systems (MSC.1/Circ.1432/ MN 2-011-14)		Ship ² (5.2)		Ship ² (7.3)	Shore ¹	Shore ³ (9.1)		Shore ³ (10/§5.3))
Fixed Dry Chemical Powder fire extinguishing systems (MSC.1/Circ.1432)		Ship ² (5.6)		Ship ² (7.9)	Shore ³ (8.2)		Shore ³ (10.3)	
Fixed aerosol extinguishing systems (MSC.1/Circ.1432)		Ship ² (5.7)		Ship ² (7.10)			Shore ³ (10.4)	
Foam fixed fire-extinguishing systems (MSC.1/Circ.1432)		Ship ² (5.3)	Ship ² (6.2)	Ship ² (7.4)		Shore ³ (9.2)		
Foam concentrates stored on board for the foam fixed fire-extinguishing system (MSC.1/Circ.1312)				Shore ⁴ (5); After first 3 years-; For alcohol resistant protein; prior to delivery and annually thereafter				

	Weekly	Monthly	Quarterly	Annually	Biennially (2-year intervals)	5-year	10-year (Hydrostatic testing)	20-year (Hydrostatic testing)
Portable foam applicators and foam concentrate stored on board for portable foam applicators (MSC.1/Circ.1432/ MSC.1/Circ.1312)		Ship ² (5.8)		Ship ² (7.11)				
				Concentrate: Prior to delivery and annually thereafter, Ship ⁴ (7.11/5)				
				Concentrate: Protein based /alcohol resistant, Ship ⁴ (7.11/5)				
Portable fire extinguishers (A.951(23))				Ship ² (9.1 & Table 9.1.3)		Ship ² (9.1.1)	Shore ³ (9.1.2)	
PA + gen. alarm systems (MSC.1/Circ.1432)	Ship ² (4.4)							
Water-mist, water spray and sprinkler systems (MSC.1/Circ.1432)	Ship ² (4.7)	Ship ² (5.4)		Ship ² (7.5)		Shore ³ (9.3)	Shore ³ (10.2)	
Wheeled (mobile) fire extinguishers (MSC.1/Circ.1432)		Ship ² (5.9)		Ship ² (7.12)		Shore ³ (9.6)	Shore ³ (10.5)	
Galley and deep fat cooking fire-extinguishing systems (MSC.1/Circ.1432)				Ship ² (7.13)				
Low location lighting systems (MSC.1/Circ.1432)	Ship ² (4.6)					Shore ³ (9.5)		

Key: Entity to Conduct Inspection

¹ = Shore service as part of the annual statutory survey for the Safety Equipment Certificate (SEC): The inspection and/or verification shall be to the satisfaction of the attending Classification Society surveyor.

² = Ships officers are responsible for performing tests and examinations of these firefighting systems or equipment, unless manufacturers require annual servicing by authorized agent. The tests and examinations may be required to be carried out in the presence of the Classification Society, if deemed necessary by either the Administrator or an entity acting for and on behalf of the Administrator.

³ = checked by an authorized service facility acceptable to the vessel's Classification Society.

⁴ = tests should be performed by the shipowner or operator via laboratories or authorized service suppliers deemed acceptable to the Classification Society.

*Refer to survey guidelines under the Harmonized System of Survey and Certification, 2007(resolution A. 1053(27)).

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