

**Republic of
the Marshall Islands**



**Maintenance and Inspection
of Fire Protection Systems and Appliances**

MARITIME ADMINISTRATOR

May/2023

MN 2-011-14

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**REPUBLIC OF
THE MARSHALL ISLANDS**

MARITIME ADMINISTRATOR

Marine Notice

No. 2-011-14

Rev. May/2023

**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) **SOLAS**, *International Convention for the Safety of Life at Sea*, Consolidated Edition 2020
 - (b) **FSS Code**, *International Code for Fire Safety Systems* 2015 Edition
 - (c) **IMO Circular [MSC/Circ.670](#)**, *Guidelines for the performance and testing criteria and surveys of high-expansion foam concentrates for fixed fire-extinguishing systems*
 - (d) **IMO Circular [MSC/Circ.798](#)**, *Guidelines for the performance and testing criteria and surveys of medium-expansion foam concentrates for fire-extinguishing systems*
 - (e) **IMO Circular [MSC/Circ.849](#)**, *Guidelines for the performance, location, use and care of emergency escape breathing devices (EEBDs)*, issued 8 June 1998
 - (f) **IMO Circular [MSC/Circ.1081](#)**, *Unified interpretation of the revised SOLAS Chapter II-2*, issued 13 June 2003
 - (g) **IMO Circular [MSC.1/Circ.1275](#)**, *Unified interpretation of SOLAS chapter II-2 on the number and arrangement of portable fire extinguishers on board ships*, as corrected by [MSC.1/Circ.1275/Corr.1](#), issued 31 March 2017
 - (h) **IMO Circular [MSC.1/Circ.1312](#)**, *Revised guidelines for the performance and testing criteria, and surveys of foam concentrates for fixed fire-extinguishing systems*, as corrected by [MSC.1/Circ.1312/Corr.1](#)
 - (i) **IMO Circular [MSC.1/Circ.1315/Rev.1](#)**, *Revised Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk*, issued 5 December 2022
 - (j) **IMO Circular [MSC.1/Circ.1318/Rev.1](#)**, *Revised Guidelines for the maintenance and inspections of fixed carbon dioxide fire-extinguishing systems*, issued 25 May 2021
 - (k) **IMO Circular [MSC.1/Circ.1395/Rev.5](#)**, *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*, issued 28 April 2022
 - (l) **IMO Circular [MSC.1/Circ.1432](#)**, *Revised guidelines for the maintenance and inspection of fire protection systems and appliances*, issued 31 May 2012, amended by IMO Circular [MSC.1/Circ.1516](#), issued 08 June 2015

- (m) **IMO Circular [MSC.1/Circ.1515](#)**, *Revised design guidelines and operational recommendations for ventilation systems in ro-ro cargo spaces*, issued 8 June 2015
- (n) **RMI [Maritime Regulations](#)** (MI-108)
- (o) **RMI Yacht Code 2021 ([MI-103](#))**
- (p) **RMI Marine Notice [2-011-11](#)**, *Systems Using Halogenated Hydrocarbons (Halons) and Other Ozone Depleting Substances*
- (q) **RMI Marine Notice [2-011-58](#)**, *Life Saving Appliances and Firefighting Systems for Private Yachts*

PURPOSE

This Notice addresses the intervals for maintenance, testing, and inspection of fire protection systems, appliances, and equipment. It also identifies the entity required to conduct the inspection.

This Notice supersedes Rev. Sep/2021. Its applicability to yachts was clarified and §5.5 amended to clarify the parameters for allowing an equivalent means of delivering water to a fixed gas fire-fighting system.

APPLICABILITY

This Notice applies to all ships. This includes mobile offshore units (MOUs) and unless specified otherwise in the Republic of the Marshall Islands (RMI) Yacht Code ([MI-103](#)), Commercial Yachts, Yachts Engaged in Trade, and Private Yachts Limited Charter. It does not apply to private yachts except as provided in MN [2-011-58](#).

REQUIREMENTS

1.0 Onboard Maintenance Plan

- 1.1 SOLAS Regulation II-2/14 requires ships to carry on board, and make 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 (SMS). See MN [2-011-13](#).
- 1.2 Certain maintenance procedures and inspections may be performed by competent crewmembers who have completed an advanced fire-fighting training course, while others must be performed by persons specifically trained in the maintenance of these systems. The onboard maintenance plan must indicate, in accordance with Appendix A 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 SMS for carrying out safe maintenance, inspection, and testing must be developed to account for all personnel and all foreseeable hazards. The plan, among other things, must establish effective communication between the inspection personnel and on-duty crew.

2.0 Application of Requirements, Guidelines, and Recommendations

- 2.1 Ships' owners and officers must be familiar the maintenance, testing, and inspection of fire protection systems and appliances and follow the applicable requirements of:
 - .1 SOLAS, as amended;
 - .2 the International Code for Fire Safety Systems (FSS Code), as amended;
 - .3 the Code for the Construction and Equipment of Mobile Offshore Drilling Units (MODU Code) (1979, 1989, and 2009 editions); and
 - .4 Recognized Organizations (ROs).
- 2.2 Various IMO guidance documents (see References) lay out the minimum recommended levels of maintenance, testing, and inspections to include in an onboard maintenance plan. The guidance in these documents has been adopted by the Administrator as guidance, except where otherwise noted in this Notice.
- 2.3 Where manufacturer's maintenance manuals and inspection guidelines exist, they must be available onboard and followed.
- 2.4 Where particular arrangements create practical difficulties, alternative testing and maintenance procedures must be to the satisfaction of the Administrator.

3.0 Operational Readiness

- 3.1 All fire protection systems and appliances must 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 RO and the Administrator must be made to ensure fire protection capability is not diminished by providing alternative fixed or portable fire protection equipment or other measures.
- 3.2 The RO must provide a recommendation to the Administrator for review while the vessel is underway, or before it sails. This also applies when an MOU is engaging in operations with a fire protection system under repair.

4.0 Maintenance, Testing, and Inspection

- 4.1 Onboard maintenance, testing, and inspections must be carried out according to the ship's maintenance plan at the intervals indicated in Appendix A, as appropriate.
- 4.2 Per IMO [MSC.1/Circ.1318/Rev.1](#), instructions must be easily understandable for on-board maintenance and testing of active and passive fire protection systems and appliances. They should be illustrated wherever possible. As appropriate, they should include for each system or appliance:

- .1 maintenance and repair instructions;
- .2 a schedule of periodic maintenance;
- .3 a list of replaceable parts; and
- .4 a log for records of inspections and maintenance (see also §12.0).

5.0 Fixed Gas Fire-Extinguishing Systems

5.1 General

Fixed gas fire-extinguishing systems must be carefully and critically reviewed, routinely inspected and maintained, verified, and tested to ensure that they will correctly operate during an emergency.

.1 Flexible Hoses

Flexible hoses must be replaced at the intervals recommended by the manufacturer and not exceeding every 10 years.

.2 Two Year Testing and Inspections

- a. Every two years (during the second or third periodical survey), fixed gas fire-extinguishing systems, except fixed carbon dioxide (CO₂) extinguishing systems (see §5.2), must be checked by an authorized service facility acceptable to the vessel's RO.
- b. All high-pressure extinguishing agents, cylinders, and pilot cylinders must 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. Cylinders containing less than 95% of the nominal charge must be refilled; and
- c. 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.

.3 Ten-Year Hydrostatic Testing

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

- b. With cylinders for fixed-gas fire-fighting systems (except Halon) that have been date stamped before vessel delivery, the first 10-year hydrostatic test may be harmonized with drydocking at the second renewal survey under the IMO Harmonized System of Survey and Certification. This is contingent on the initial date stamp (month/year) on the cylinder not exceeding 12 months before the vessel delivery date.

5.2 Fixed CO2 Fire-Extinguishing Systems

- .1 Every two years, fixed CO2 extinguishing systems must be checked by an authorized service facility acceptable to the vessel's RO.
- .2 Fixed CO2 fire-extinguishing systems must be maintained and inspected in accordance with IMO Circular [MSC.1/Circ.1318/Rev.1](#). This ensures that that the system is kept in good working order and readily available for use as specified in SOLAS Regulation II-2/14.2.1.2. These guidelines supplement the fire-extinguishing system manufacturer's approved maintenance instructions.
- .3 At least once every five years, all control valves of fixed CO2 systems must be internally examined according to MSC.1/Circ.1318/Rev.1, §7.
- .4 The survey requirements for cargo ships under MSC.1/Circ.1318/Rev.1, §6.1 should be carried out during the second or third periodical survey under the IMO Harmonized System of Survey and Certification.
- .5 As per MSC.1/Circ.1318/Rev.1, §6.1.2:

High-pressure cylinders should be subjected to periodical tests at intervals not exceeding 10 years. At the 10-year inspection, at least 10% of the total number provided should be subjected to an internal inspection and hydrostatic test. If one or more cylinders fail, a total of 50% of the onboard cylinders should be tested. If further cylinders fail, all cylinders should be tested. Before the 20-year anniversary and every 10-year anniversary thereafter, all cylinders should be subjected to a hydrostatic test.

5.3 Halon Systems

- .1 For halon fire protection systems use, refer to MN [2-011-11](#).
- .2 Halon Minimum Recommended Maintenance
 - a. Verifying Cylinder Contents

The contents of the Halon cylinders should be weighed or have their contents verified by other reliable means at least every two years, plus or minus three months, as part of the survey for issuing the SOLAS Safety Equipment Certificate (SEC). This is 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 with less than 95% of the nominal charge should be refilled¹.

b. Hydrostatic Testing

All Halon cylinders must be hydrostatically tested:

- (1) after each 20 years of service;
- (2) before recharging a discharged cylinder; or
- (3) when visual inspection reveals a potential defect.

.3 Hydrostatic test dates

Hydrostatic test dates must be stamped on the cylinders. Hydrostatic testing must be performed by an authorized servicing facility certified by a government agency or RO. The facility must be acceptable to the attending RO surveyor. The same facility should recharge the cylinders after testing to demonstrate their serviceability.

.4 Visual inspection and non-destructive testing

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

5.4 Alternative Fixed Gas Fire-Fighting Media and Systems

- .1 The Administrator recognizes that there are other media (e.g., NOVECTTM 1230 fluid, INERGEN[®], FM 200[®], etc.) that can be used in fixed gas fire-extinguishing systems for machinery spaces and cargo pump rooms.
- .2 Using these alternatives is subject to Administrator approval with any attached conditions, as appropriate.
- .3 The alternatives must also be in accordance with SOLAS Chapter II-2/17 requirements for alternative fire-fighting systems and relevant guidance².

1. Per [MSC.1/Circ.1432](#).

2. This guidance includes but is not limited to: [MSC/Circ.1002](#), *Guidelines on alternative design and*

- .4 Maintenance and inspection of these systems must be carried out in accordance with manufacturer's instructions or RO requirements.
- 5.5 Equivalent Means for Cargoes where a Fixed Gas Fire-Fighting System is Ineffective

The Administrator allows water to be delivered by equivalent means per SOLAS Regulation II-2/19.3.1.2 where fixed gas fire-extinguishing systems have been deemed ineffective for the cargoes listed [MSC.1/Circ.1395/Rev.5](#) (Table 2). Any such arrangement must be verified for compliance by the vessel's RO.

6.0 Fixed Dry Chemical Powder Fire-Extinguishing Systems

- 6.1 Fixed dry chemical powder fire-extinguishing systems must be serviced and tested in accordance with the manufacturer's and the RO's requirements. Particular attention must be paid to the powder condition for any signs of moisture ingress and that its properties remain as per the type approval.
- 6.2 In accordance with IMO Circular [MSC.1/Circ.1432](#), two-year inspections must be carried out on fixed, dry chemical powder systems.
 - .1 The inspections must be conducted by an authorized service facility acceptable to the vessel's RO or the attending RO surveyor(s).
 - .2 They must perform a general distribution piping and installation examination 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.
 - .3 This verification should also include the following minimum requirements:
 - a. The piping distribution system must be blown through with nitrogen (N₂) or dry air to ensure it is free of any obstruction. The nozzles, if any, must be removed to ensure that they are free and not blocked during the blow-through operation.
 - b. Operational test of local and remote controls and section valves.
 - c. The contents verification of propellant gas cylinders containing N₂ including remote operating stations must be confirmed.
 - d. Flexible discharge hoses must 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 must be subjected to a full working pressure test.

arrangements for fire safety, as corrected by MSC/Circ.1002/[Corr.1](#), [Corr.2](#), [Corr.3](#) and amended by [MSC.1/Circ.1552](#).

- e. The dry chemical powder containment tank and its associate safety valves must be inspected for signs of corrosion or deterioration which may affect the safety of the system. In case of any doubt the tank must be tested, and safety valve set points adjusted and confirmed at the shop.
- 6.3 High pressure cylinders, including nitrogen cylinders, must have periodic tests at intervals not over 10 years as provided in IMO Circular [MSC.1/Circ.1318/Rev.1](#), §6.1.2 of. See also §5.1.3 of this Notice 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 in IMO Circular [MSC.1/Circ.1315/Rev.1](#) apply to systems installed or on after 1 July 2023. Systems approved based on [MSC.1/Circ.1315](#) and installed before 1 July 2023 are permitted to remain in service as long as they are serviceable.

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

- 7.1 Periodical Controls for Foam Concentrates in fixed storage tank(s) installed on Board
- .1 The first periodical control for foam concentrates (except protein-based, alcohol-resistant ones) should be performed not more than three years after being supplied to the ship, and after that, every year. These tests should be conducted by laboratories or authorized service suppliers acceptable to the RO.
 - .2 Protein-based, alcohol-resistant foam concentrates should be subjected to a chemical stability test before delivery to the ship and annually thereafter.

7.2 Performance and Testing Criteria

Guidance on performance and testing criteria and surveys of low, medium, and high-expansion concentrates for fixed fire-extinguishing systems are found in IMO Circulars [MSC/Circ. 670](#), [MSC/Circ.798](#), and [MSC.1/Circ. 1312](#).

7.3 Portable containers or portable tanks

- .1 In accordance with IMO Circular [MSC.1/Circ. 1432](#) portable containers or portable tanks containing foam concentrate (excluding protein-based ones), less than 10 years old, that remain factory sealed, may normally be accepted without carrying out the periodical foam control tests referred to in [MSC.1/Circ.1312](#).
- .2 In accordance with IMO Circular [MSC.1/Circ. 1432](#) protein-based foam concentrate portable containers and portable tanks must be thoroughly checked. If more than five years old, the foam concentrate must be given the periodical foam control tests required or renewed as referred to in MSC.1/Circ.1312.

8.0 Portable Fire Extinguishers

8.1 General

- .1 All portable fire extinguishers must be periodically inspected in accordance with the manufacturer's instructions.
- .2 Where recharged on board, all portable fire extinguishers should be provided with a visual discharge indicator. The manufacturer's instructions for recharging should be available onboard.
- .3 Service and inspection should only be undertaken by, or under the supervision of, a person with demonstrable competence, based upon the inspection guide in IMO Resolution [A.951\(23\)](#), *Improved Guidelines for Marine Portable Fire Extinguishers* (Table 9.1.3).

8.2 Annual Inspection/Service

All portable fire extinguishers must be serviced at intervals not exceeding one year.

8.3 Five-Year Inspection/Service

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

8.4 Ten-year Inspection/Service

- .1 All fire extinguishers together with propellant cartridges must be hydrostatically tested in accordance with the recognized standard or the manufacturer's instructions at intervals not exceeding 10 years.
- .2 A hydrostatic test may be also required by the RO 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.
- .3 The servicing facility performing the hydrostatic tests must be:
 - a. certified by a government agency or an RO; and
 - b. accepted by the vessel's RO or the extinguisher manufacturer.
- .4 The same facility should recharge the cylinder after testing to demonstrate serviceability.

8.5 Number and Arrangement of Portable Fire Extinguishers

- .1 When determining the number and arrangement of portable fire extinguishers vessels, constructed on or after 01 January 2009, must use as a reference the table shown in IMO Circular [MSC.1/Circ.1275³](#) as corrected by [MSC.1/Circ.1275/Corr.1](#), for
 - a. accommodation spaces;
 - b. service spaces;
 - c. control spaces and stations;
 - d. machinery spaces of category A;
 - e. other machinery spaces;
 - f. cargo spaces;
 - g. weather decks; and
 - h. other spaces onboard ships.
- .2 Although not a requirement, this unified interpretation may also be used for determining the number and arrangement of portable fire extinguishers for vessels constructed before 01 January 2009.

8.6 Spare Charges, Additional Fire Extinguishers, and Refilling

For fire extinguishers of the same type, able to be recharged on board, the spare charges must be provided as required by SOLAS:

- .1 100% for the first 10 extinguishers and
- .2 50% for the remaining extinguishers, but not more than 60 (fractions must be rounded off to next highest whole number).
- .3 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 must be provided in lieu of spare charges.
- .4 Instructions for recharging the extinguishers must be carried on board. Periodic refilling of the cylinders must be in accordance with the manufacturer's recommendations. Without these recommendations, a 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.

3. Unified interpretation of SOLAS chapter II-2 on the number and arrangement of portable fire extinguishers on board ships.

9.0 Ten-Year Servicing: Water Mist, Water Spray, and Sprinkler Systems

The hydrostatic test and internal examination for gas and water pressure cylinders must be conducted in accordance with EN 1968:2002+A1, *Transportable Gas Cylinders – Periodic Inspection and Testing of Seamless Steel Gas Cylinders*, or equivalent RO requirements. See also §5.1.3 of this Notice about harmonization with drydocking.

10.0 Self-Contained Breathing Apparatus

10.1 Weekly Inspections

Self-Contained Breathing Apparatus (SCBA) should be inspected weekly to ensure that they are in the correct pressure range.

10.2 Monthly Inspections

SCBAs that are part of the fire-fighter's outfit must be inspected by a ship's officer at least once a month. Refer to Appendix A of this Notice. Monthly SCBA inspections must also be recorded for ships subject to the:

- .1 International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code);
- .2 International Bulk Chemical Code (IBC Code); and
- .3 Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code) for vessels built or converted before 1 July 1986.

10.3 Annual Testing and Inspections

- .1 All SCBAs and their onboard means of recharging (if fitted) must be inspected and tested at least annually by competent crew members, unless manufacturers require annual servicing by an authorized agent.
- .2 The tests and examinations of the IMO survey guidelines under the Harmonized System of Survey and Certification must be carried out in the presence of the RO, or an entity acting for and on behalf of the Administrator.

10.4 Hydrostatic Testing of SCBA Cylinders

- .1 Hydrostatic testing of SCBA cylinders must be carried out once every five years.
 - a. The hydrostatic test date must be permanently marked on the bottles.

- b. 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 RO.
 - c. Cylinder servicing must be performed to the satisfaction of the RO surveyor.
- .2 In cases where SCBA cylinders have been date stamped before a vessel's delivery, the first five-year hydrostatic test may be harmonized with drydocking at the First Special Survey under the IMO Harmonized System of Survey and Certification. This is possible provided that the initial date stamp (month/year) on the cylinder is not more than six months before the vessel delivery date.

10.5 Spare Charges and Recharging of SCBA Cylinders

- .1 Two interchangeable spare charges suitable for SCBA use must be provided for each required apparatus.
- .2 In accordance with SOLAS II-2/10, only one interchangeable spare charge is needed for each required apparatus on passenger ships carrying not more than 36 passengers and cargo ships. A suitably located means for fully recharging breathing air cylinders, free from contamination, is required for passenger ships constructed on or after 01 July 2010 carrying more than 36 passengers.
- .3 All ships, unless provided with an onboard means of recharging breathing apparatus cylinders, are required to have a suitable number of spare cylinders to replace those used during training or drills. The Administrator does not prescribe any minimum number. The shipboard SMS must include provisions that sufficient spares are available onboard⁴ corresponding to the number of breathing apparatuses being used during drills.

11.0 Emergency Escape Breathing Devices

- 11.1 The Administrator treats the Guidelines contained in [MSC/Circ.849](#) as mandatory.
- 11.2 Only control spaces and workshops that are remotely located from the machinery space escape routes should be considered to comply with IMO Circular MSC/Circ.849, paragraph 4.6.

4. For the suitable number of spare air cylinders to be provided in connection with drills, see [MSC.1/Circ.1555](#), *Unified interpretation of SOLAS chapter II-2*.

- 11.3 To comply with IMO Circular MSC/Circ.849, paragraph 4.6, a minimum of two EEBDs should be located on each level of the machinery space. If a machinery space contains an enclosed primary escape trunk with a door at each level, only one EEBD need be located on each level⁵.
- 11.4 An EEBD must not be used under any circumstances to enter an enclosed shipboard space in which the atmosphere is known or suspected to be oxygen-depleted or enriched, toxic, or flammable.
- 11.5 EEBDs must be examined and maintained in accordance with the manufacturer's instructions, including those for hydrostatic testing.
- .1 It should be noted that when an EEBD is fitted with a small capacity oxygen cartridge (two inches (50.8mm) or less in diameter), some manufacturers specify a fixed service life without scheduled hydrostatic pressure testing.
- .2 In the absence of manufacturer's instructions, hydrostatic testing must be carried out at intervals not exceeding five years, unless specifically prohibited by the manufacturers.
- 11.6 In cases where EEBD cylinders have been date stamped before 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. This is provided that the initial date stamp (month/year) on the cylinder is not more than six months before the vessel delivery date.
- 11.7 Maintenance requirements, manufacturer's trademark and serial number, shelf life with accompanying manufacture date, and name of the approving authority must be printed on each EEBD. See IMO Circular MSC/Circ.849, §5.3.
- 11.8 Sufficient spare EEBDs should be on board to replace units that are used, reach their expiry date, or otherwise become unserviceable. IMO Circular [MSC/Circ.1081](#) addresses the number of EEBDs, including spares, required under SOLAS II-2.

5. 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 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.

12.0 Records

12.1 The following inspection records must be carried on board the ship, as appropriate:

Report Frequency
weekly
monthly
quarterly
annual
biennial (two-yearly)
five-year
10-year:
20-year
other maintenance and testing, including whether a pressure test was performed
records of water quality in automatic sprinkler systems
age of foam concentrates and subsequent controls
deficiencies identified, and corrective actions taken

12.2 Where the inspections and maintenance are carried out by trained service technicians, other than the ship's crew, an inspection report must be provided at the completion of the testing. These reports must be included in the inspection records.

13.0 Questions

Questions about the inspection, service, or testing requirements of this Notice should be directed to: technical@register-iri.com or for yachts: yachttec@register-iri.com.

Appendix A - Fire-fighting Systems and Appliances: Summary of Maintenance, Testing and Inspection Intervals

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

	Weekly	Monthly	Quarterly	Annually	Biennially (two-year intervals)	Five-year	10-year (Hydrostatic testing)	20-year (Hydrostatic testing)
Breathing Apparatus (includes SCBA and air recharging systems) (MSC.1/Circ.1432)	Ship ² (4.5)	Tanker ⁵ ; Ship ² , see §10.2 of this Notice		Ship ² (7.8)		Shore ³ (9.4)		
EEBDs (MSC.1/Circ.1432)	Ship ² (4.5)			Ship ² (7.8)		hydrostatic testing- see §11.5 of this Notice		
Ventilation system and fire dampers (MSC.1/Circ.1432)			Ship ² (6.3)	Ship ² (7.6)				
Ventilation systems (MSC.1/Circ.1515)				RO-RO ² (Part 2-2)		RO-RO ³ (Part 2-2)		
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 (MSC.1/Circ.1432)			Ship ² (6.1)					
Fireman's outfit (MSC.1/Circ. 1432)		Ship ² (5.5)						
Fire stations and lockers (MSC.1/Circ.1432)		Ship ² (5.5)						
Fixed Gas fire- extinguishing systems (except CO ₂ and 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 (two-year intervals)	Five-year	10-year (Hydrostatic testing)	20-year (Hydrostatic testing)
Fixed CO ₂ fire-extinguishing systems (MSC.1/Circ.1318/Rev.1)		Ship ² (4)		Ship ² (5)	Passenger ships (± three (3) months): Shore ³ (6.1) (6.2)	Shore ³ (6 and 7)	Shore ³ (6.1.2)	Shore ³ , see §5.2.5 of this Notice
					Cargo ships (intermediate, periodical or renewal survey*): Shore ³ (6.1)			
Fixed Halon fire-extinguishing systems (MSC.1/Circ.1432/ MN 2-011-11)		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 three (3) years-; For alcohol resistant protein; prior to delivery and annually thereafter				
		Ship ² (5.8)		Ship ² (7.11)				

	Weekly	Monthly	Quarterly	Annually	Biennially (two-year intervals)	Five-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)				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 (IMO Resolution A.951(23))				Ship ² (9.1 & Table 9.1.3)		Ship ² (9.1.1)	Shore ³ (9.1.2)	
Public Address + general alarm systems (MSC.1/Circ.1432)	Ship ² (4.4)							
Water-mist, water spray and sprinkler systems (MSC.1/Circ.1432 as amended by MSC.1/Circ.1516)	Ship ² (4.7)	Ship ² (5.4)	Ship ² (6.5)	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, ISO 15371:2015)				Ship ² (7.13)				
Low location lighting systems (MSC.1/Circ.1432)	Ship ² (4.6)					Shore ³ (9.5)		
Fire-protected lifeboats, where fitted. (Water spray System, Air Support System, Breather valve,	Ship ² (MSC.1/Circ.1205 /Rev.1	Ship ² (MSC.1/Circ.1205 /Rev.1 Table 6)		Ship ² (MSC.402(96), 6.2)	Hyperbaric evacuation system (A.692(17), 4.1.2)	Shore ³ (MSC.402(96), 4.3)		

	Weekly	Monthly	Quarterly	Annually	Biennially (two-year intervals)	Five-year	10-year (Hydrostatic testing)	20-year (Hydrostatic testing)
Hyperbaric evacuation system)	Table 6, and MSC.1/Circ .1579)			Hyperbaric evacuation system (A.692(17) , 4.1.3)				

Key: Entity to Conduct Inspection

1. Shore service as part of the annual/ periodical statutory survey for the SOLAS Safety Equipment Certificate or Passenger Ship Safety Certificate: The inspection and/or verification must be to the satisfaction of the attending RO survey.
 2. Ships officers are responsible for performing tests and examinations of these fire-fighting systems or equipment, unless manufacturers require annual servicing by an authorized agent. The tests and examinations may be required to be carried out in the presence of the RO, 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 RO.
 4. Tests should be performed by the shipowner or operator via laboratories or authorized service suppliers deemed acceptable to the RO.
 5. IBC/IGC Code, chapters 14.
- * Refer to the IMO survey guidelines under the Harmonized System of Survey and Certification.