



BERMUDA MERCHANT SHIPPING NOTICE

Maintenance, Testing and Inspection of Portable Fire Extinguishers

2021 - 028

Application

Ship Owners, Managers, Masters and Officers of Bermuda Registered Ships or Ships in Bermuda Waters

References

SOLAS 74/88 as amended - Regulation II-2 14.2.2.1
IMO Resolution A.951(23)
British Standard 5306 - Part B
MCA Marine Guidance Notice: 276

Summary

This Notice reproduces in part the guidance contained in IMO Resolution A.951(23), British Standard 5306 - Part B and MCA MGN 276. It provides general guidelines applicable to the maintenance and inspection of portable fire extinguishers on board Bermuda flagged ships.

Maintenance, testing and inspections shall be carried out based on the guidelines developed by the Organisation (IMO Resolution A.951(23)) and in a manner having due regard to ensuring the reliability of marine portable fire extinguishers.

This Notice supersedes Shipping Notice 2018-028 in respect to Portable Fire Extinguishers, which has now been withdrawn.

This Notice was issued on 5th May 2021

1. Introduction

(1) For the purposes of this Notice and for the maintenance of fire fighting equipment on a Bermuda ship the following definitions apply:

- a. **An accredited service agent / manufacturer.** An accredited service agent is one who is approved for a specified service by ABS, BV, DNV-GL, LR, Class NK, RINA or the UK Maritime and Coastguard Agency (MCA).
- b. **Competent Person.** A member of the ship's crew who has been trained for the work by and who carries out the work on board under the supervision of

an experienced person holding a Merchant Shipping STCW II/2 or III/2 Certificate of Competency and an Advanced Fire Fighting certificate, and in accordance with the ship's planned maintenance system, including documented procedures, work instructions and manuals, and using tools, spares and calibrated equipment readily available on board.

- c. **Primary Sealed Stored Pressure Extinguisher.** Stored pressure extinguisher in which the operating head and the valves controlling the flow of extinguishing medium during discharge can be detached from the body of the extinguisher without releasing propellant or medium, which are retained in the body by a closure that is ruptured on operation

2. Operational Readiness

- (1) All portable marine fire extinguishers should at all times be in good order and available for immediate use while the ship is in service. Portable extinguishers which have been discharged shall be immediately recharged or replaced with an equivalent unit.
- (2) All inspections and tests should be carried out and recorded in accordance with Annex A.2.

3. Annual Maintenance & Inspection (Basic service)

- (1) Extinguishers should be examined annually by a competent person or accredited service agent/manufacturer. During these examinations plastic collars or other fittings which may conceal the condition of the extinguisher body underneath should be removed.
- (2) The annual maintenance should:
 - a. Water, foam and water based extinguishers
 - b. Provide each extinguisher with a sign indicating it has been examined.
 - c. Provide test certificates and records to be retained on board for inspection.
 - d. Renew charges for portable fire extinguishers if, on checking there is any indication of deterioration in the contents or loss of pressure.
 - e. Recharge or renew CO₂ extinguishers and the gas propellant cylinders for other types if the gas loss by weight exceeds 10% of the original weight
- (3) Dry powder extinguishers may suffer from compaction when subject to vibration. At least one extinguisher should be discharged annually and the retention of contents checked. When the retention is found to be in excess of 15% of the initial charge further extinguishers should be discharged to determine if compaction is occurring. If it is found to have happened all affected extinguishers should be refilled and recharged.

4. Additional Maintenance and Inspection (Extended Service)

- (1) In addition to the above 'basic service', at least one extinguisher from each batch of extinguishers on board should be test discharged at five yearly intervals by a competent person and inspected in accordance with the

guidance provided in IMO Resolution A.951(23) Table 9.1.3 (reproduced in annex A).

- (2) One of each batch of the following extinguisher types should be test discharged at 5 yearly intervals:
 - a. Powder, water, foam and water based extinguishers (non-primary sealed)
 - b. CO2 extinguishers that have been previously hydraulically tested
- (3) Whenever possible this test discharge should be conducted as part of a drill and records of this test should be maintained.
- (4) Batch as mentioned above should be taken to mean extinguishers of the same type and manufacture year.

5. Hydrostatic Testing

- (1) All fire extinguishers that are either permanently under pressure or subjected to internal pressure upon activation should be hydrostatically pressure tested at intervals not exceeding 10 years - at this time any propellant cylinder is to also be hydrostatically tested, or replaced. Hydrostatic testing and a thorough inspection and internal examination prior to recharging, must be carried out by an accredited service agent/manufacturer.
- (2) The test pressure and test date must be marked clearly on each extinguisher. Note: 'hard-stamping' is only acceptable on steel CO2 extinguishers and propellant cylinders. Test certificates or test records must be provided and retained on board for inspection.

Table 1: Extinguisher Servicing Intervals

Type of extinguisher	Basic Service	Extended Service	Hydrostatic Test
Water, Foam and Water Based	Every Year	Every 5 Years	Every 10 Years
Powder	Every Year	Every 5 Years	Every 10 Years
Primary Sealed	Every Year	Every 10 Years ¹	Every 10 Years
CO2	Every Year	---	Every 10 Years

¹ Primary sealed portable fire extinguishers should be returned to an accredited service agent or the manufacturer for recharge

6. Spare Charges, Additional Fire Extinguishers and Refilling of Extinguishers

- (1) For fire extinguishers of the same type, capable of being recharged on board, spare charges should be provided amounting to 100% for the first 10 extinguishers and 50% for the remaining extinguishers, but not more than 60 in total.
- (2) For extinguishers which cannot be recharged by a competent person on board, additional portable fire extinguishers of the same quantity, type, capacity and

number as determined in the paragraph above should be provided in lieu of spare charges.

- (3) Instructions for recharging the extinguishers should be carried on board. Periodic refilling of the cylinders should be in accordance with the manufacturer's recommendations. Only refill charges approved for the extinguisher may be used for recharging.

ANNEX A

Portable Extinguishers Periodical Inspections and Maintenance - From IMO Res.A.951(23)

- (1) Extinguishers should be subject to periodical inspections in accordance with the manufacturer's instructions and serviced at intervals not exceeding one year.
- (2) At least one extinguisher of each type manufactured in the same year and kept on board a ship should be test discharged at five yearly intervals (as part of a fire drill).
- (3) All extinguishers together with propellant cartridges should be hydraulically tested in accordance with the recognized standard or the manufacturer's instruction at intervals not exceeding ten years.
- (4) Service and inspection should only be undertaken by, or under the supervision of, a person with demonstrable competence, based on the inspection guide in table 2.
- (5) Records of inspections should be maintained. The records should show the date of inspection, the type of maintenance carried out and whether or not a pressure test was performed.
- (6) Extinguishers should be provided with a visual indication of discharge.
- (7) Instructions for recharging extinguishers should be supplied by the manufacturer and be available for use on board.

Table 2 Inspection guide

ANNUAL INSPECTION	
Safety clip and indicating devices	Check to see if the extinguisher may have been operated.
Pressure indicating device	Where fitted, check to see that the pressure is within limits. Check that dust covers on pressure indicating devices and relief valves are in place.
External examination	Inspect for corrosion, dents or damage which may affect the safe operation of the extinguisher.
Weight	Weigh the extinguisher and check the mass compared to the fully charged extinguisher.
Hose and nozzle	Check that hoses and nozzles are clear and undamaged.
Operating instructions	Check that they are in place and legible.

INSPECTION AT RECHARGE	
Water and foam charges	Remove the charge to a clean container if to be reused and check if it is still suitable for further use. Check any charge container.
Powder charges	Examine the powder for reuse. Ensure that it is free flowing and that there is no evidence of caking lumps or foreign bodies.
Gas cartridge	Examine for damage and corrosion.

INSPECTION AT FIVE AND TEN YEAR INTERVALS**INSPECTION AFTER DISCHARGE TEST**

Air passages and operating mechanism	Prove clear passage by blowing through vent holes and vent devices in the cap. Check hose, nozzle strainer, discharge tube and breather valve, as applicable. Check the operating and discharge control. Clean and lubricate as required.
Operating mechanism	Check that the safety pin is removable and that the lever is undamaged.
Gas cartridge	Examine for damage and corrosion. Weigh the cartridge to ascertain that it is within prescribed limits.
O-rings washers and hose diaphragms	Check O-rings and replace hose diaphragms if fitted.
Water and foam bodies	Inspect the interior. Check for corrosion and lining deterioration. Check separate containers for leakage or damage.
Powder body	Examine the body and check internally for corrosion and lining deterioration.

INSPECTION AFTER RECHARGE

Water and foam	Replace the charge in accordance with the manufacturers instructions.
Reassemble	Reassemble the extinguisher in accordance with the manufacturers instructions.
Maintenance label	Fill in entry on maintenance label, including full weight.
Mounting of extinguishers	Check the mounting bracket or stand.
Report	Complete a report on the state of maintenance of the extinguisher.