Commonwealth of Dominica

Office of the Maritime Administrator

TO: **ALL SHIPOWNERS, OPERATORS, MASTERS AND OFFICERS OF MERCHANT SHIPS, MOBILE OFFSHORE DRILLING UNITS (MODU's) AND RECOGNIZED ORGANIZATIONS**

SUBJECT: **Maintenance and Inspection of Fire-Protection Systems and Appliances**

REFERENCE:
(a) SOLAS Chapter II-2 Regulations 5 and 6
(b) MSC Circular 850 adopted 8 June 1998

PURPOSE: **This Circular provides Administration guidelines for the proper maintenance and inspection of fire protection systems, appliances, and emergency equipment. General guidelines applicable to all fire protection systems and appliances, and specific guidelines applicable to testing and examination of fixed and portable fire extinguishers, foam systems, and self-contained breathing apparatus are provided.**

It should be noted that the general guidelines contained in this Circular are not an all inclusive list of maintenance or inspection items for fire protection systems, fire fighting appliances, and emergency equipment. The specific guidelines contained in this Circular address areas in which the Administration feels there is need for additional guidance or clarification. Vessel owners should be familiar with and follow the equipment manufacturers recommendations, as well as Class Society requirements and applicable requirements of SOLAS, except where these recommendations or requirements are superseded by this Circular.

APPLICABILITY: **This Circular applies to all ships, MODU's and mobile offshore units (MOU's) under the Dominica International registry.**

GUIDELINES:

Inquiries concerning the subject of this Circular should be directed to the Deputy Maritime Administrator
Commonwealth of Dominica, 32 Washington Street, Fairhaven, MA 02719 USA
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1.0 General Guidelines for the Maintenance and Inspection of Fire-Protection Systems and Appliances.

1.1 Operational Readiness.

All fire protection systems and appliances should 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 vessel classification society and this Administration should be made to ensure safety is not diminished. A specific authorization must be obtained from the Administration prior to sailing, or in the case of MODUs and MOUs before continuing to engage in offshore operations with a fire protection system under repairs.

1.2 Maintenance and Testing.

Instructions for on-board maintenance and testing of active and passive fire protection systems and appliances should be understood easily, illustrated wherever possible, and, as appropriate, should include the following 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, listing identified non-conformities and their targeted completion dates.

1.3 Weekly Testing and Inspections.

Weekly inspections should be carried out to ensure that:

.1 all public address systems and general alarm systems are functioning properly; and

.2 breathing apparatus cylinders do not present a threat of leakages.

1.4 Monthly Examinations and Inspections.

Ships officers are responsible for performing monthly examinations of firefighting system equipment and recording the examinations in the ship's official logbook. Monthly inspections should be carried out to ensure that:

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.1 all fireman's outfits, fire extinguishers, fire hydrants, hose and nozzles are in place, properly arranged, and are in proper condition;

.2 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;

.3 sprinkler system pressure tanks have correct levels of water as indicated by glass gauges;

.4 all sprinkler system pumps automatically operate when pressure in the systems is reduced;

.5 all fire pumps are operated; and

.6 all fixed fire-extinguishing installations using extinguishing gas are free from leakage.

1.5 Quarterly Examinations and Inspections.

Ships officers are responsible for performing quarterly tests and examinations of the following firefighting system equipment and recording the test and examinations in the ship's official log book. Quarterly inspections should be carried out to ensure that:

.1 all automatic alarms for the sprinkler systems are tested using the test valves for each section;

.2 the international shore connection is in proper condition;

.3 lockers providing storage for fire-fighting equipment contain proper inventory and equipment is in proper condition;

.4 all fire doors and fire dampers are tested for local operation; and

.5 all CO_2 bottle connections for cable operating system clips should be checked for tightness on fixed fire-extinguishing installations.

1.6 Annual Testing and Inspections.

As part of the annual statutory survey for Safety Equipment Certification, the following inspections and tests should be carried out to ensure that:

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.1 all fire extinguishers are checked for proper location, charging pressure, and condition;

.2 fire detection systems are tested for proper operation, as appropriate;

.3 all fire doors and dampers are tested for remote operation;

.4 all foam-water and water-spray fixed fire-fighting systems are tested for operation;

.5 all accessible components of fixed fire-fighting systems are visually inspected for proper condition;

.6 all fire pumps, including sprinkler system pumps, are flow tested for proper pressures and flows;

.7 all hydrants are tested for operation;

.8 all antifreeze systems are tested for proper solutions;

.9 sprinkler system connections from the ship's fire main are tested for operation;

.10 all fire hoses are hydrostatically tested;

.11 breathing apparatus air recharging systems checked for air quality;

.12 control valves of fixed fire-fighting systems should be inspected; and

.13 air should be blown through the piping of extinguishing gas systems.

The verification of the examinations and tests described Section 1.2 thru 1.6 above are an integral part of the annual statutory surveys for the SOLAS Safety Equipment Certificate. The inspection and/or verification of the applicable items in Section 1.2 thru 1.7 shall be to the satisfaction of the attending classification society surveyor.

1.7 Five-year Service.

At least once every five years, the following inspections and tests should be carried out:

· control valves of fixed fire-fighting systems should be internally inspected.

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2.0 Fixed CO_2 and Halon Systems.

2.1 Verification of Cylinder Contents.

Every two years the contents of the cylinders are verified by weight or isotropic measurement as part of the survey for issuance of the SOLAS Safety Equipment Certificate. Weight scales may be used to verify cylinder contents and recharging is required if the loss in charge is 10 percent or more. Generally the weigh scales are included as part of the CO_2 system equipment in order to satisfy SOLAS, Chapter II-2, Regulation 5.1.11.

2.2 Hydrostatic Testing.

All fixed CO_2 and Halon cylinders must be hydrostatically tested as follows:

.1 after each 20 years of service,

.2 prior to recharging a discharged cylinder, if 10 years or more since last hydrostatic test; or

.3 when visual inspection reveals a potential defect.

Hydrostatic test dates must be stamped on the cylinders. Hydrostatic testing must be performed by a authorized servicing facility which has been certified by a government agency or recognized classification society, and by extinguisher manufacturer to perform this type of work. The facility must be acceptable to the attending classification society surveyor. The same facility should recharge the cylinders after testing to demonstrate serviceability.

3.0 Portable Fire Extinguishers.

3.1 Annual Survey.

The examination of the fire extinguishers is an integral part of the annual statutory surveys for the SOLAS Safety Equipment Certification. The fire extinguishers should be examined and, if necessary, serviced annually. The annual servicing/examination of the portable fire extinguishers can be carried out by the crew, if the crew is properly trained, or by an authorized service facility. The classification society surveyor must be satisfied with the condition of the extinguishers.

3.2 Servicing of Fire Extinguishers by the Crew of a Vessel.

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A vessel crew may service powder, foam, or water type portable fire extinguishers subject to the following:

.1 The equipment required to test, examine, and service the extinguishers is obtained and maintained in a calibrated and serviceable condition.

.2 The crew is properly trained in the testing, examination and servicing of fire extinguishers and the extinguisher manufacturer's servicing instructions are followed.

.3 The testing and inspection is carried out to the satisfaction of the attending classification society surveyor.

3.3 Verification of Fire Extinguishers Contents.

Every two years in conjunction with the issuance of the SOLAS Safety Equipment Certificate, the contents of the cylinders must be verified. Weighing of the portable CO_2 cylinders in the presence of the classification society surveyor is an acceptable method of verification. Other methods of determining contents of the cylinders, such as isotropic measurement, may also be accepted provided the equipment is properly calibrated, the operator of the device is trained and qualified in its use, and the classification society surveyor is satisfied with the measurements. If an alternative method is used, spot checks of cylinder contents by weighing may be required to verify the accuracy and consistency of the measurement device.

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

.1 For fire extinguishers of the same type, capable of being recharged on board, the spare charges should 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).

.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 paragraph a 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. 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.

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3.5 Authorized Servicing Facilities.

The classification society surveyor may also accept a servicing certificate from an authorized servicing facility for both the annual and biannual examination, servicing and verification of the portable fire extinguishers.

3.6 Hydrostatic Testing of Portable Fire Extinguishers.

Portable fire extinguishers shall be hydrostatically tested as follows:

.1 Dry Powder Extinguishers every 10 years;

.2 CO_2 Extinguishers every 10 years;

.3 Other Extinguishers every 10 years.

A hydrostatic test may also be required by the classification society surveyor or Dominica Nautical Inspector if visual examination indicates a potential defect in the cylinder. The hydrostatic test date must be permanently marked on the bottles.

3.7 Hydrostatic Testing Facilities.

Hydrostatic testing must be performed by a servicing facility that has been certified by a government agency or classification society, and by the extinguisher manufacturer to perform this type of work. This same facility should recharge the cylinder after testing to demonstrate serviceability.

4.0 Fixed Foam System.

4.1 Foam Analysis.

Foam analysis is a part of the survey for issuance of the SOLAS Safety Equipment Certificate and thus is performed every two years. The class society surveyor may require it at other times if there is cause to question the suitability of the foam or condition of the storage tank.

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5.0 Self-Contained Breathing Apparatus (SCBA).

5.1 Annual Examination.

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

5.2 Hydrostatic Testing of Self-contained Breathing Apparatus Cylinders.

Hydrostatic testing of SCBA cylinders shall be carried out once every five 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 vessel's classification society. Servicing of the cylinders must be performed to the satisfaction of the classification society surveyor.

5.3 Spare Charges and Recharging of Breathing Apparatus Air Cylinders.

.1 Two spare charges suitable for use with the breathing apparatus should be provided for each required apparatus.

.2 If passenger ships carrying not more than 36 passengers and cargo ships are equipped with suitably located means for fully recharging the air cylinders free from contamination, only one spare charge is required for each required apparatus.

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