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Circular 09/2017

Sub : Guideline on the maintenance, testing and the inspection of safety equipment on board.

The following annexes are developed on the basis of various IMO circulars and circulars of Bangladesh flag administration towards the maintenance, testing and inspection intervals of various safety equipments on board. The ship owners, operators, Masters & Chief Engineers on board Bangladesh flag ships are advised to follow the guideline along with the manufactures instruction book as appropriate, to prepare a ship specific maintenance schedule.

Principal Officer

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Date: 05-10-2017

Distribution :

1. Managing Director, Bangladesh Shipping Corporation, BSC Bhaban, Saltgola Road, P.O. Box No. 641, Chittagong - 4100.
2. ✓ The Chairman, Bangladesh Ocean Going Ships Owners Association, House No – 11/B (6th Floor), Road No-30, Gulshan – 2, Dhaka. → With a request to inform all your members.
3. All Recognised Organisation.
4. Managing Director, Brave Royal Ship Management Ltd, Kabir Manjil (4th Floor), SK Mujib Road, Agrabad C/A, Chittagong – 4100.
5. Managing Director, Vanguard Maritime Ltd, Arif Chamber, 98, Agrabad C/A, Chittagong – 4100.
6. Managing Director, Worldera Corporation Ltd, 61 Sam's View, Block-A, Road No-1, Bashundhara R/A, Dhaka-1229.
7. Managing Director, Crown Maritime & Shipping Services, House No. 1 & 7, Road No. 95, Block- Cen (A), North Avenue, Gulshan-2, Dhaka-1212.
8.

Copy to :

1. The Secretary, Ministry of Shipping, Dhaka.
2. The Director General, Department of Shipping, Dhaka.
3. Nautical Surveyor, Mercantile Marine Office, Chittagong.
4. Nautical Surveyor, Mercantile Marine Office, Khulna.



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Annexure to circular 09/2017

Introduction

This overview by Bangladesh Flag Administration provides requirements and recommendations for maintenance and inspection of safety equipment in a compact and practical tool for ship owners, operators registered under Bangladesh Flag.

Procedure

Certain maintenance procedures and inspections may be performed by competent crew members, while others shall be performed by service provider. Which parts of the inspections and maintenance shall be completed by competent crew members or service provider is indicated in the list.

Precautions

As a general rule all inspections shall be carried out in accordance with the system manufacturer's instructions and safety precautions. If equipment is undergoing maintenance or testing then suitable arrangements shall be made to ensure safety is not diminished through the provision of alternate equipment or other measures.

Records

Records of the inspections shall be carried on board of the ship, or may be computer-based. In cases where the inspections and maintenance are carried out by service provider other than the ship's crew, inspection reports shall be provided upon the completion of the inspections. Some inspections required by SOLAS shall be entered in the log-book.

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1. Life Saving Appliances

Equipment / Requirement	Regulation	Ship Type	Interval	By	Remark
Means of Embarkation on and Disembarkation from ships (Gangways, accommodation ladders incl. winch and fittings as well as use for pilot transfer)	Maintenance and inspection	All	Monthly	Crew	In accordance with manufacturer's instructions. Maintenance of wires acc. to SOLAS III/20.4.
	Examination	All	Annually	Crew	=====
	Examination and operational test with specified max. operational load	All	5-yearly	Service Provider	=====
	Examine cylinder gauges to confirm they are in the correct pressure range	All	Weekly	Crew	=====
Emergency escape breathing devices (EEBDs)	Check according to maker's instructions	All	Annually	Crew	=====
	Hydrostatic test and internal inspection of cylinders	All	Not required by Bangladesh Flag	Owner / Operator	The EEBD to be renewed once the service life is over as per maker. If no service life provided by maker, the EEBD to be renewed after 15 years of service life from date of manufacture.
Testing of emergency lighting					
Falls used in launching appliances	Maintenance	All	At each abandon ship drill	Crew	=====
	Renewal	All	Weekly Monthly Annually	Crew	Special concentration to be given for the hidden areas and areas of end terminations.
	Replacement of first-aid outfit and anti-seasickness medicine of lifeboat equipment	All	Latest after 5 years or earlier when necessary due to deterioration	Crew	=====
Replacement of food rations of lifeboat equipment	All	Maker's expiry date	Crew	=====	

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Equipment / Requirement	Regulation	Ship Type	Interval	By	Remark
Maintenance of hydrostatic release units (non-disposable)	SOLAS III/20.9.1	All	Annually	Service Provider	Administration may extend this period to 17 months.
Immersion suits and anti-exposure Suits	Inspection	All	Monthly	Crew	=====
	Air pressure test (seams and closures)	All	3-yearly	Service Provider	=====
Maintenance of inflatable life rafts, lifejackets	SOLAS III/20.8.1.1	All	Annually	Service Provider	Administration may extend this period to 17 months. Inflatable life rafts: Administration can accept specific life rafts for extended service intervals acc. to SOLAS III/20.8.3 and MSC.1/Circ.1328.
Launching appliances	Launching appliance annual thorough examination	All	Annually	Service Provider	Administration accepts this period to be adjusted +/- 03 months to match the annual / periodical survey dates of Safety Equipment certificate.
	Dynamic test of the winch brake	All	Annually	Service Provider	Applicable load: Weight of survival craft without persons on board.
	On-load release gear/automatic release hooks thorough examination and operational test incl. free-fall lifeboat release system	All	Annually	Service Provider	=====
	Dynamic test of the winch brake	SOLAS III/20.11.1.3 MSC.1/Circ.1206/Rev.1/Appendix of Annex 1, para. 3.1 and 3.3 as applicable	All	5-yearly	Service Provider
On-load release gear/automatic release hooks five yearly overhaul and operational test incl. free-fall lifeboat release system.	SOLAS III/20.11.2.3 + 20.11.3.3 MSC.1/Circ.1206/Rev.1/Appendix of Annex 1, para. 4	All	5-yearly	Service Provider	Applicable load: 1.1 x Weight of fully equipped survival craft with equivalent weight of max. permitted number of persons. To be performed in connection with the annually required thorough examination.

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Equipment / Requirement	Regulation	Ship Type	Interval	By <small>(see page 19)</small>	Remark
Examination of lifeboats	MSC.1/Circ.1206/Rev.1	All	Yearly	Service Provider	Engine, propulsion, maneuvering and power supply system.
Lifeboats (except free-fall lifeboats)	Moving from stowed position	All	Weekly	Crew	=====
	Turning out from stowed position	All	Monthly	Crew	=====
Inspection of lifeboat equipment	SOLAS III/20.7.2	All	Monthly	Crew	=====
Test run of life- and rescue boat engines	SOLAS III/20.6.2	All	Weekly	Crew	=====
	MSC.1/Circ.1206/Rev.1				
Lifeboats with self-contained air support system	Examination	Tanker (chem/dass)	Yearly	Service Provider	Incl. external inspection of air cylinders.
	Hydrostatic test of air cylinders	Tanker (chem/dass)	5-yearly	Service Provider	=====
Examination of lifeboats with sprinkler system	MSC.1/Circ.1206/Rev.1	Tanker (oil)	Yearly	Service Provider	=====
Battery replacement of lifebuoy lights	LSA Code, para. 1.2.3	All	Maker's expiry date	Crew	Annually, if not marked with expiration date.
Marine evacuation systems (MES)	Service	Passenger ships	Annually	Service Provider	Administration may extend this period to 17 months.
	Test	Passenger ships	6-yearly	Service Provider	Deployment on rotational basis at intervals to be agreed by Administration, however each system to be deployed at least once every six years.
Testing of public address systems and general alarm systems	SOLAS III/20.6.4 MSC.1/Circ.1432, para. 4.4	All	Weekly	Crew	=====
Replacement of rocket parachute flares and rockets line throwing	LSA Code, para. 1.2.3	All	Maker's expiry date	Crew	=====
Replacement of smoke signals	LSA Code, para. 1.2.3	All	Maker's expiry date	Crew	=====
Visual inspection of survival craft, rescue boats and launching appliances	SOLAS III/20.6.1	All	Weekly	Crew	=====

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2 Fire Protection and Fire Fighting Equipment

Equipment / Requirement	Regulation	Ship Type	Interval	By <small>(see page 19)</small>	Remark	
Air recharging system for SCBAs	The compressed air equipment shall be inspected.	Tanker (chem/gas)	Monthly	Crew	=====	
	The equipment shall be inspected and tested.		Annually	Service Provider	=====	
Self-contained breathing apparatuses (SCBAs)	Check breathing apparatus air recharging systems, if fitted, for air quality.	All	Annually	Service Provider	=====	
	Examine cylinder gauges to confirm they are in the correct pressure range	All	Weekly	Crew	=====	
	The breathing apparatus shall be inspected.	Tanker (chem/gas)	Monthly	Crew	=====	
	The equipment shall be inspected and tested.		Annually	Service Provider	=====	
	Check all breathing apparatus face masks and air demand valves are in serviceable condition.	All	Annually	Crew	=====	
	Perform hydrostatic testing of all self-contained breathing apparatus cylinders.	All	5-yearly	Service Provider	=====	
	Fixed fire detection and alarm systems	Verify all fire detection and fire alarm control panel indicators are functional by operating the lamp/indicator test switch.	All	Weekly	Crew	=====
		Test a sample of detectors and manual call points so that all devices have been tested within five years.	All	Monthly	Crew	=====
		Test all fire detection systems and fire detection systems used to automatically release fire-extinguishing systems for proper operation, as appropriate.	All	Annually	Crew	=====
		Visually inspect all accessible detectors for evidence of tampering obstruction, etc., so that all detectors are inspected within one year				
Fire dampers	Test emergency power supply switchover.					
	Test all fire dampers for local operation.	All	Weekly	Crew	=====	

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Equipment / Requirement	Regulation	Ship Type	Interval	By <small>(See page 19)</small>	Remark	
Fire doors	Test all fire dampers for remote operation.	MSC.1/Circ.1432, para. 7.6	All	Monthly	Crew	=====
	Verify that all fire door control panel indicators, if provided, are functional by operating the lam/indicator switch.	MSC.1/Circ.1432, para. 4.3	All	Weekly	Crew	=====
	Test all fire doors located in main vertical zone bulkheads for local operation.	MSC.1/Circ.1432, para. 6.4	Passenger ships	Quarterly	Crew	=====
	Test all remotely controlled fire doors for proper release.	MSC.1/Circ.1432, para. 7.7	All	Annually	Crew	=====
	Inspection in accordance with the manufacturer's instruction and based on inspection guide in Res.A.951(23), table 9.1.3.	Res.A.951 (23), para. 9.1	All	Annually	Crew	By, or under supervision of, a person with demonstrable competence (e.g. advanced fire-fighting training course according to STCW Code, para. A-VI/3).
Portable fire extinguishers	At least one fire extinguisher of each type manufactured in the same year and kept on board a ship shall be test discharged as part of a fire drill.	Res.A.951 (23), para. 9.1.1	All	5-yearly	Crew	=====
	All fire extinguishers together with propellant cartridges shall be hydraulically tested in accordance with the recognized standard or the manufacturer's instruction.	Res.A.951 (23), para. 9.1.2	All	10-yearly	Service Provider	Spares to be maintained on board –(SOLAS Ch II-2 Reg 10.3.3); spare charges (which can be recharged on board) or spare extinguishers (which cannot be recharged on board) – 100% for first 10 extinguishers, 50% of remaining extinguishers. BUT no more than 60 charges or spare extinguishers are required.
Wheeled (mobile) fire extinguishers	Verify that all are in place, properly arranged, and are in proper condition.	MSC.1/Circ.1432, para. 5.9	All	Monthly	Crew	=====
	Inspection in accordance with the manufacturer's instructions.	MSC.1/Circ.1432, para. 7.12.1	All	Annually	Crew	=====
	Wheeled (mobile) fire extinguishers shall be visually inspected to check that all accessible components are in proper condition.	MSC.1/Circ.1432, para. 7.12.2	All	Annually	Crew	=====
	The hydrostatic test date of each cylinder is to be checked.	MSC.1/Circ.1432, para. 7.12.3	All	Annually	Crew	=====
	Dry powder wheeled (mobile) fire extinguishers are to be inventoried to ensure that the powder is agitated.	MSC.1/Circ.1432, para. 7.12.4	All	Annually	Crew	=====
	Visually examination of at least one wheeled (mobile) extinguisher of each type manufactured in the same year and kept on board.	MSC.1/Circ.1432, para. 9.6	All	5-yearly	Crew	=====

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Equipment / Requirement	Regulation	Ship Type	Interval	By	Remark	
Fire-fighter's outfits	All fire extinguishers together with propellant cartridges shall be hydraulically tested in accordance with the recognized standard or the manufacturer's instruction.	All	10-yearly	Service Provider	=====	
	Verify lockers providing storage for fire-fighting equipment contain their full inventory and equipment is in serviceable condition.	MSC.1/Circ.1432, para. 5.5	All	Monthly	Crew	=====
	Verify that all fire hydrants, hose and nozzles are in place, properly arranged, and are in serviceable condition.	MSC.1/Circ.1432, para. 5.1.1	All	Monthly	Crew	=====
	Operate all fire pumps to confirm that they continue to supply adequate pressure.	MSC.1/Circ.1432, para. 5.1.2	All	Monthly	Crew	=====
	Verify that emergency fire pump fuel supply is adequate and heating system in satisfactory condition, if applicable.	MSC.1/Circ.1432, para. 5.1.3	All	Monthly	Crew	=====
	Verify that international shore connection(s) is/are in serviceable condition.	MSC.1/Circ.1432, para. 6.1	All	Quarterly	Crew	=====
	Visually inspect all accessible components for proper condition.	MSC.1/Circ.1432, para. 7.1.1	All	Annually	Crew	=====
	Flow test all fire pumps for proper pressure and capacity. Test emergency fire pump with isolation valves closed	MSC.1/Circ.1432, para. 7.1.2	All	Annually	Crew	=====
	Test all hydrant valves for proper operation.	MSC.1/Circ.1432, para. 7.1.3	All	Annually	Crew	=====
	Pressure test a sample of fire hoses at the maximum fire main pressure, so that all fire hoses are tested within five years.	MSC.1/Circ.1432, para. 7.1.4	All	Annually	Crew	=====
Fire mains, fire pumps, hydrants, hoses and nozzles	Verify all fire pump relief valves, if provided, are properly set.	MSC.1/Circ.1432, para. 7.1.5	All	Annually	Crew	=====
	Examine all filters/strainers to verify they are free of debris and contamination.	MSC.1/Circ.1432, para. 7.1.6	All	Annually	Crew	=====
	Verify that the nozzle size/type is correct, maintained and working.	MSC.1/Circ.1432, para. 7.1.7	All	Annually	Crew	=====

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Equipment / Requirement	Regulation	Ship Type	Interval	By	Remark	
Galley exhaust ducts	Verify galley exhaust ducts and filters are free of grease build-up.	MSC.1/Circ.1432, para. 7.6.2	All	Weekly	Crew	=====
	Verify all portable foam applicators are in place, properly arranged, and are in proper condition.	MSC.1/Circ.1432, para. 5.8	All	Monthly	Crew	=====
	Verify that all portable foam applicators are set to the correct proportioning ratio for the foam concentrate supplied and the equipment is in proper order.	MSC.1/Circ.1432, para. 7.11.1	All	Monthly	Crew	=====
	Verify that all portable containers or portable tanks containing foam concentrate remain factory sealed, and the manufacturer's recommended service life interval has not been exceeded.	MSC.1/Circ.1432, para. 7.11.2	All	Monthly	Crew	=====
Portable foam applicator units	Portable containers or portable tanks containing foam concentrate, excluding protein based concentrates, less than 10 years old, that remain factory sealed can normally be accepted without the periodical foam control tests required in MSC.1/Circ.1312 being carried out.	MSC.1/Circ.1432, para. 7.11.3	All	Monthly (if seal is OK – analysis 10 yearly)	Crew and Service Provider	Foam control tests are to be conducted by an approved service supplier or an accredited laboratory.
	Protein based foam concentrate portable containers and portable tanks shall be thoroughly checked and, if more than five years old, the foam concentrate shall be subjected to the periodical foam control tests required in MSC.1/Circ.1312, or renewed.	MSC.1/Circ.1432, para. 7.11.4	All	Monthly (if all OK – analysis 05 yearly)	Crew and Service Provider	=====
	The foam concentrates of any non-sealed portable containers and portable tanks, and portable containers and portable tanks where production data is not documented, shall be subjected to the periodical foam control tests required in MSC.1/Circ.1312.	MSC.1/Circ.1432, para. 7.11.5	All	Yearly (1 st 03 years from date of supply onbd no test required)	Service Provider	=====
Ventilation systems	Test all ventilation controls interconnected with fire-protection systems for proper operation.	MSC.1/Circ.1432, para. 7.6.3	All	Annually	Crew	=====

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3. Fixed Fire Fighting Systems

Aerosol fire-extinguishing systems	Regulation	Ship Type	Interval	By	Remark
Verify that all electrical connections and/or manual operating stations are properly arranged, and are in proper condition.	MSC.1/Circ.1432, para. 5.7	All	Monthly	Crew	=====
Verify that condensed or dispersed aerosol generators have not exceeded their mandatory replacement date. Pneumatic or electric actuators shall be demonstrated working, as far as practicable.	MSC.1/Circ.1432, para. 7.10	All	Annually	Crew	=====
Maintenance by approved service supplier.	---	All	2-yearly	Service Provider	=====
Condensed or dispersed aerosol generators are to be renewed in accordance with manufacturer's recommendations.	MSC.1/Circ.1432, para. 10.4	All	10-yearly	Service Provider	=====

Alternative gas fire-extinguishing systems (e.g. FM 200, NOVEC 1230 or Halon)	Regulation	Ship Type	Interval	By	Remark
Verify that all fixed fire-extinguishing system control panel indicators are functional by operating the lamp/indicator test switch.	MSC.1/Circ.1432, para. 4.2.1	All	Weekly	Crew	=====
Verify that all control/section valves are in the correct position.	MSC.1/Circ.1432, para. 4.2.1				
Verify containers/cylinders fitted with pressure gauges are in the proper range and the installation free from leakage.	MSC.1/Circ.1432, para. 5.2	All	Monthly	Crew	=====
Visually inspect all accessible components for proper condition.	MSC.1/Circ.1432, para. 7.3	All	Annually	Crew	=====
Externally examine all high pressure cylinders for evidence of damage or corrosion.					
Check the hydrostatic test date of all storage containers.					
Functionally test all fixed system audible and visual alarms.					
Verify all control/section valves are in the correct position.					
Check the connections of all pilot release piping and tubing for tightness.					
Examine all flexible hoses in accordance with manufacturer's recommendations.					

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Alternative gas fire-extinguishing systems (e.g. FM 200, NOVEC 1230 or Halon)	Regulation	Ship Type	Interval	By	Remark
Test all fuel shut-off controls connected to fire-protection systems for proper operation.					
The boundaries of the protected space shall be visually inspected to confirm that no modifications have been made to the enclosure that have created uncloseable openings that would render the system ineffective.					
If cylinders are installed inside the protected space, verify the integrity of the double release lines inside the protected space, and check low pressure or circuit integrity monitors on release cabinet, as applicable.					
Maintenance by approved service supplier.		All	2-yearly	Service Provider	=====
All high pressure extinguishing agents cylinders and pilot cylinders shall 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 shall be refilled.	MSC.1/Circ.1432, para. 8.1.1	All	2-yearly	Service Provider	=====
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.	MSC.1/Circ.1432, para. 8.1.2	All	2-yearly	Service Provider	=====
Perform internal inspection of all control valves.	MSC.1/Circ.1432, para. 9.1	All	5-yearly	Service Provider	=====
Perform a hydrostatic test and internal examination of 10 per cent of the system's extinguishing agent and pilot cylinders. If one or more cylinders fail, a total of 50 per cent of the onboard cylinders shall be tested. If further cylinders fail, all cylinders shall be tested.	MSC.1/Circ.1432, para. 10.1	All	10-yearly	Service Provider	If permitted by the Administration, visual inspection and NDT (non-destructive testing) of halon cylinders may be performed in lieu of hydrostatic testing
Flexible hoses shall be replaced at the intervals recommended by the manufacturer and not exceeding every 10 years.	MSC.1/Circ.1318, para. 6.1.2	All	At least 10-yearly	Service Provider	Hose Assemblies are to be delivered on board with type test certificate.
CO₂ fire-extinguishing systems					
General visual inspection of the overall system condition for obvious signs of damage.	MSC.1/Circ.1318, para. 4.1	All	Monthly	Crew	=====
Verify that all stop valves are in the closed position.	MSC.1/Circ.1318, para. 4.1.1	All	Monthly	Crew	=====
Verify that all releasing controls are in the proper position and readily accessible for immediate use	MSC.1/Circ.1318, para. 4.1.2	All	Monthly	Crew	=====

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CO ₂ fire-extinguishing systems	Regulation	Ship Type	Interval	By	Remark
Verify that all discharge piping and pneumatic tubing is intact and has not been damaged.	MSC.1/Circ.1318, para. 4.1.3	All	Monthly	Crew	=====
Verify that all high pressure cylinders are in place and properly secured.	MSC.1/Circ.1318, para. 4.1.4	All	Monthly	Crew	=====
Verify that the alarm devices are in place and do not appear damaged.	MSC.1/Circ.1318, para. 4.1.5	All	Monthly	Crew	=====
Verify that the pressure gauge is reading in the normal range.	MSC.1/Circ.1318, para. 4.2.1	All	Monthly	Crew	=====
Verify that the liquid level indicator is reading within the proper level.	MSC.1/Circ.1318, para. 4.2.2	All	Monthly	Crew	For low-pressure systems only.
Verify that the manually operated storage tank main service valve is secured in the open position.	MSC.1/Circ.1318, para. 4.2.3	All	Monthly	Crew	For low-pressure systems only.
Verify that the vapor supply line valve is secured in the open position.	MSC.1/Circ.1318, para. 4.2.4	All	Monthly	Crew	For low-pressure systems only.
The boundaries of the protected space shall be visually inspected to confirm that no modifications have been made to the enclosure that have created uncloseable openings that would render the system ineffective.	MSC.1/Circ.1318, para. 5.1	All	Annually	Crew	=====
All storage containers shall be visually inspected for any signs of damage, rust or loose mounting hardware. Cylinders that are leaking, corroded, dented or bulging shall be hydrostatically tested or replaced.	MSC.1/Circ.1318, para. 5.2	All	Annually	Crew	=====
System piping shall be visually inspected to check for damage, loose supports and corrosion. Nozzles shall be inspected to ensure they have not been obstructed by the storage of spare parts or a new installation of structure or machinery.	MSC.1/Circ.1318, para. 5.3	All	Annually	Crew	=====
The manifold shall be inspected to verify that all flexible discharge hoses and fittings are properly tightened.	MSC.1/Circ.1318, para. 5.4	All	Annually	Crew	=====
All entrance doors to the protected space shall close properly and shall have warning signs, which indicate that the space is protected by a fixed carbon dioxide system and that personnel shall evacuate immediately if the alarms sound. All remote releasing controls shall be checked for clear operating instructions and indication as to the space served.	MSC.1/Circ.1318, para. 5.5	All	Annually	Crew	=====
Maintenance by approved service supplier.	-----	All	2-yearly	Service Provider	=====
All high pressure cylinders and pilot cylinders shall be weighed or have their contents verified by other reliable means to confirm that the available charge in each is above 90% of the nominal charge. Cylinders containing less than 90% of the nominal charge shall be refilled. The liquid level of low pressure storage tanks shall be checked to verify that the required amount of carbon dioxide to protect the largest hazard is available.	MSC.1/Circ.1318, para. 6.1.1	Passenger ships	2-yearly ± 3 months	Service Provider	=====
		Cargo ships	2-yearly	Service Provider	=====

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CO ₂ fire-extinguishing systems	Regulation	Ship Type	Interval	By <small>(see page 19)</small>	Remark
The hydrostatic test date of all storage containers shall be checked.	MSC.1/Circ.1318, para. 6.1.2	Passenger ships	2-yearly ± 3 months	Service Provider	=====
		Cargo ships	2-yearly	Service Provider	=====
The discharge piping and nozzles shall be tested to verify that they are not blocked. The test shall be performed by isolating the discharge piping from the system and flowing dry air or nitrogen from test cylinders or suitable means through the piping.	MSC.1/Circ.1318, para. 6.1.3	Passenger ships	2-yearly ± 3 months	Service Provider	=====
		Cargo ships	2-yearly	Service Provider	=====
Where possible, all activating heads shall be removed from the cylinder valves and tested for correct functioning by applying full working pressure through the pilot lines. In cases where this is not possible, pilot lines shall be disconnected from the cylinder valves and blanked off or connected together and tested with full working pressure from the release station and checked for leakage. In both cases this shall be carried out from one or more release stations when installed.	MSC.1/Circ.1318, para. 6.2.1	Passenger ships	2-yearly ± 3 months	Service Provider	=====
		Cargo ships	At least 5-yearly	Service Provider	=====
If manual pull cables operate the remote release controls, they shall be checked to verify the cables and corner pulleys are in good condition and freely move and do not require an excessive amount of travel to activate the system.	MSC.1/Circ.1318, para. 6.2.2	Passenger ships	2-yearly ± 3 months	Service Provider	=====
		Cargo ships	At least 5-yearly	Service Provider	=====
All cable components should be cleaned and adjusted as necessary, and the cable connectors shall be properly tightened. If the remote release controls are operated by pneumatic pressure, the tubing shall be checked for leakage, and the proper charge of the remote releasing station pilot gas cylinders shall be verified. All controls and warning devices shall function normally, and the time delay, if fitted shall prevent the discharge of gas for the required time period.	MSC.1/Circ.1318, para. 6.2.3	Passenger ships	2-yearly ± 3 months	Service Provider	=====
		Cargo ships	At least 5-yearly	Service Provider	=====
After completion of the work, the system shall be returned to service. All releasing controls shall be verified in the proper position and connected to the correct control valves. All pressure switch interlocks shall be reset and returned to service. All stop valves shall be in the closed position.	MMD circ SEC/02/02	All	05-yearly	Service Provider	=====
		All	05-yearly	Service Provider	=====
High pressure cylinders shall be subjected to hydrostatic test after 20 years from the date of manufacture. There after this test to be carried out at every 05 years interval.	MSC.1/Circ.1318, para. 6.1.2	All	At least 10-yearly	Service Provider	Flexible hoses made of metal (inside and outside) not required to be renewed. Only the hoses made of rubber to be renewed.

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CO ₂ fire-extinguishing systems	Regulation	Ship Type	Interval	By	Remark
Low pressure CO ₂ bulk storage containers are subject to internal survey if the content has been released and the container is more than 5 years old but not more frequently than once within five years.	---	All	If the content has been released.	Service Provider	=====

Deep fat cooking fire-extinguishing systems	Regulation	Ship Type	Interval	By	Remark
Check in accordance with the manufacturer's instructions.	MSC.1/Circ.1432, para. 7.13	All	Annually	Crew	=====
Maintenance by approved service supplier.		All	2-yearly	Service Provider	=====

Dry chemical powder systems	Regulation	Ship Type	Interval	By	Remark
Verify that all control and section valves are in the proper open or closed position, and all pressure gauges are in the proper range.	MSC.1/Circ.1432, para. 5.6	All	Monthly	Crew	=====
Visually inspect all accessible components for proper condition.	MSC.1/Circ.1432, para. 7.9.1	All	Annually	Crew	=====
Verify that the pressure regulators are in proper order and within calibration.	MSC.1/Circ.1432, para. 7.9.2	All	Annually	Crew	=====
Agitate the dry chemical powder charge with nitrogen in accordance with system manufacturer's instructions.	MSC.1/Circ.1432, para. 7.9.3	All	Annually	Crew	Due to the powder's affinity for moisture, any nitrogen gas introduced for agitation must be moisture free.
Maintenance by approved service supplier.	Rules I-0, Sect. 3, C.1.1.4.2	All	2-yearly	Service Provider	=====
Blow dry nitrogen through the discharge piping to confirm that the pipe work and nozzles are clear of any obstructions.	MSC.1/Circ.1432, para. 8.2.1	All	2-yearly	Service Provider	=====
Operationally test local and remote controls and section valves.	MSC.1/Circ.1432, para. 8.2.2	All	2-yearly	Service Provider	=====
Verify the contents of propellant gas cylinders (including remote operating stations).	MSC.1/Circ.1432, para. 8.2.3	All	2-yearly	Service Provider	=====
Test a sample of dry chemical powder for moisture content.	MSC.1/Circ.1432, para. 8.2.4	All	2-yearly	Service Provider	=====
Subject the powder containment vessel, safety valve and discharge hoses to a full working pressure test.	MSC.1/Circ.1432, para. 8.2.5	All	2-yearly	Service Provider	=====

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Perform hydrostatic test and internal inspection of powder containment vessels.	Rules I-Q, Sect. 3, B.1.5.5/1.5	All	5-yearly	Service Provider	Hydrostatic test may be dispensed with, provided that their internal inspection does not reveal any deficiencies.
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Dry chemical powder systems	Regulation	Ship Type	Interval	By	Remark
Subject all powder containment vessels to hydrostatic or non-destructive testing (NDT) carried out by an accredited service agent.	MSC.1/Circ.1432, para. 10.3	All	10-yearly	Service Provider	In case of NDT contact the Administration.

Foam fire-extinguishing systems	Regulation	Ship Type	Interval	By	Remark
Verify that all control and section valves are in the proper open or closed position, and all pressure gauges are in the proper range.	MSC.1/Circ.1432, para. 5.3	All	Monthly	Crew	=====
Verify that the proper quantity of foam concentrate is provided in the foam system storage tank	MSC.1/Circ.1432, para. 6.2	All	Quarterly	Crew	=====
Visually inspect all accessible components for proper condition.	MSC.1/Circ.1432, para. 7.4.1	All	Annually	Crew	=====
Functionally test all fixed system audible alarms.	MSC.1/Circ.1432, para. 7.4.2	All	Annually	Crew	=====
Flow test all water supply and foam pumps for proper pressure and capacity, and confirm flow at the required pressure in each section (Ensure all piping is thoroughly flushed with fresh water after service.).	MSC.1/Circ.1432, para. 7.4.3	All	Annually	Crew	=====
Test all system cross connections to other sources of water supply for proper operation.	MSC.1/Circ.1432, para. 7.4.4	All	Annually	Crew	=====
Verify all pump relief valves, if provided, are properly set.	MSC.1/Circ.1432, para. 7.4.5	All	Annually	Crew	=====
Examine all filters/strainers to verify they are free of debris and contamination.	MSC.1/Circ.1432, para. 7.4.6	All	Annually	Crew	=====
Verify that all control/section valves are in the correct position	MSC.1/Circ.1432, para. 7.4.7	All	Annually	Crew	=====
Blow dry compressed air or nitrogen through the discharge piping or otherwise confirm the pipework and nozzles of high expansion foam systems are clear of any obstructions, debris and contamination.	MSC.1/Circ.1432, para. 7.4.8	All	Annually	Crew	This may require the removal of nozzles, if applicable.

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Take samples from all foam concentrates carried on board and subject them to the periodical control tests in MSC.1/Circ.1312, for low expansion foam, or MSC/Circ.670 for high expansion foam.	MSC.1/Circ.1432, para. 7.4.8	All	Annually	Service Provider	Except for non-alcohol resistant foam, the first test need not be conducted until 3 years after being supplied to the ship.
Test all fuel shut-off controls connected to fire-protection systems for proper operation.	MSC.1/Circ.1432, para. 7.4.8	All	Annually	Crew	=====
Maintenance by approved service supplier.	Rules 1-0, Sect. 3, C.1.1.4.2	All	2-yearly	Service Provider	=====
Perform internal inspection of all control valves.	MSC.1/Circ.1432, para. 9.2.1	All	5-yearly	Service Provider	=====

Foam fire-extinguishing systems	Regulation	Ship Type	Interval	By	Remark
Flush all high expansion foam system piping with fresh water, drain and purge with air.	MSC.1/Circ.1432, para. 9.2.2	All	5-yearly	Service Provider	=====
Check all nozzles to prove they are clear of debris.	MSC.1/Circ.1432, para. 9.2.3	All	5-yearly	Service Provider	=====
Test all foam proportioners or other foam mixing devices to confirm that the mixing ratio tolerance is within +30 to -10% of the nominal mixing ratio defined by the system approval.	MSC.1/Circ.1432, para. 9.2.4	All	5-yearly	Service Provider	=====

Water mist, water spray and sprinkler systems	Regulation	Ship Type	Interval	By	Remark
Verify that all control panel indicators and alarms are functional.	MSC.1/Circ.1432, para. 4.7.1	All	Weekly	Crew	=====
Visually inspect pump unit and its fittings.	MSC.1/Circ.1432, para. 4.7.2	All	Weekly	Crew	=====
Check the pump unit valve positions, if valves are not locked, as applicable.	MSC.1/Circ.1432, para. 4.7.3	All	Weekly	Crew	=====
Verify all control, pump unit and section valves are in the proper open or closed position.	MSC.1/Circ.1432, para. 5.4.1	All	Monthly	Crew	=====
Verify sprinkler pressure tanks or other means have correct levels of water.	MSC.1/Circ.1432, para. 5.4.2	All	Monthly	Crew	=====
Test automatic starting arrangements on all system pumps so designed.	MSC.1/Circ.1432, para. 5.4.3	All	Monthly	Crew	=====
Verify that all standby pressure and air/gas pressure gauges are within the proper pressure ranges.	MSC.1/Circ.1432, para. 5.4.3	All	Monthly	Crew	=====

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Test a selected sample of system section valves for flow and proper initiation of alarms.	MSC.1/Circ.1432, para. 5.4.4	All	Monthly	Crew	The valves selected for testing shall be chosen to ensure that all valves are tested within a one-year period.
Verify proper operation of all water mist, water-spray and sprinkler systems using the test valves for each section.	MSC.1/Circ.1432, para. 7.5.1	All	Annually	Crew	
Visually inspect all accessible components for proper condition.	MSC.1/Circ.1432, para. 7.5.2	All	Annually	Crew	
Externally examine all high pressure cylinders for evidence of damage or corrosion.	MSC.1/Circ.1432, para. 7.5.3	All	Annually	Crew	
Check the hydrostatic test date of all high pressure cylinders.	MSC.1/Circ.1432, para. 7.5.4	All	Annually	Crew	
Functionally test all fixed system audible and visual alarms.	MSC.1/Circ.1432, para. 7.5.5	All	Annually	Crew	
Flow test all pumps for proper pressure and capacity.	MSC.1/Circ.1432, para. 7.5.6	All	Annually	Crew	

Water mist, water spray and sprinkler systems	Regulation	Ship Type	Interval	By	Remark
Test all antifreeze systems for adequate freeze protection.	MSC.1/Circ.1432, para. 7.5.7	All	Annually	Crew	=====
Test all system cross connections to other sources of water supply for proper operation.	MSC.1/Circ.1432, para. 7.5.8	All	Annually	Crew	=====
Verify all pump relief valves, if provided, are properly set.	MSC.1/Circ.1432, para. 7.5.9	All	Annually	Crew	=====
Examine all filters/strainers to verify they are free of debris and contamination.	MSC.1/Circ.1432, para. 7.5.10	All	Annually	Crew	=====
Verify that all control/section valves are in the correct position.	MSC.1/Circ.1432, para. 7.5.11	All	Annually	Crew	=====
Blow dry compressed air or nitrogen through the discharge piping of dry pipe systems, or otherwise confirm the pipework and nozzles are clear of any obstructions.	MSC.1/Circ.1432, para. 7.5.12	All	Annually	Crew	This may require the removal of nozzles, if applicable.
Test emergency power supply switchover, where applicable.	MSC.1/Circ.1432, para. 7.5.13	All	Annually	Crew	=====
Visually inspect all sprinklers focusing in areas where sprinklers are subject to aggressive atmosphere (like saunas, spas, kitchen areas) and subject to physical damage (like luggage handling areas, gyms, play rooms, etc.) so that all sprinklers are inspected within one year.	MSC.1/Circ.1432, para. 7.5.14	All	Annually	Crew	=====
Check for any changes that may affect the system such as obstructions by ventilation ducts, pipes, etc.	MSC.1/Circ.1432, para. 7.5.15	All	Annually	Crew	=====

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Test a minimum of one section in each open head water mist system by flowing water through the nozzles.	MSC.1/Circ.1432, para. 7.5.16	All	Annually	Crew	The sections tested shall be chosen so that all sections are tested within a five-year period. =====
	MSC.1/Circ.1432, para. 7.5.17	All	Annually	Crew	
Test a minimum of two automatic sprinklers or automatic water mist nozzles for proper operation.	MSC.1/Circ.1432, para. 7.5.17	All	Annually	Crew	Water-spraying systems supplied from the fire main and consisting solely of an isolating valve and open nozzles are exempted from this requirement (e.g. for paint store). =====
Maintenance by approved service supplier.	====	All	2-yearly	Service Provider	
Flush all ro-ro deck deluge system piping with water, drain and purge with air.	MSC.1/Circ.1432, para. 9.3.1	All	5-yearly	Service Provider	=====
Perform internal inspection of all control/section valves.	MSC.1/Circ.1432, para. 9.3.2	All	5-yearly	Service Provider	=====
Check condition of any batteries, or renew in accordance with manufacturer's recommendations.	MSC.1/Circ.1432, para. 9.3.3	All	5-yearly	Service Provider	=====
Perform internal examination water pressure cylinders.	====	All	5-yearly	Service Provider	=====
Water mist, water spray and sprinkler systems	Regulation	Ship Type	Interval	By	Remark
Perform hydrostatic test and internal examination for gas and water pressure cylinders.	MSC.1/Circ.1432, para. 10.2	All	10-yearly	Service Provider	=====

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4. Radio and Navigational Equipment

Equipment / Requirement	Regulation	Ship Type	Interval	By	Remark
Testing of the automatic identification system (AIS)	SOLAS V/18.9	All	Annually	Service Provider	Administration accepts this period to be adjusted +/- 03 months to match the annual / periodical survey dates of Safety Equipment certificate.
Long range identification and tracking system (LRIT)	SOLAS V/19-1 SOLAS V/16 MSC.1/Circ.1307	All	Initial Only	Service Provider	The Initial Conformance Test Report shall be retained on board the ship. In case of any change from initial condition as per MSC circ 1307 para 7.2 and 7.3.
Checking of radio battery	SOLAS V/13.6.2	All	Annually	Crew	
Satellite EPIRBs	Testing according to MSC.1/Circ.1040/Rev.1.	All	Annually	Service Provider	Administration accepts this period to be adjusted +/- 03 months to match the annual / periodical survey dates of Safety Equipment certificate.
	Testing according to MSC/Circ.1039.	All	5-yearly	Service Provider	Administration accepts this period be adjusted with renewal survey date of Safety Equipment certificate.
Standard magnetic compass	Determination of Magnetic Compass Error	All	Once a watch	Crew	=====
	Adjustment incl. Curve of Residual Deviation	All	Annual	Master	Table or Curve of residual Deviation to be available at all times and compass deviation book to be properly maintained will be checked annually during safety equipment surveys. Res.A.1053(27), item (EA) 1.2.1.27
Steering gear	Testing	All	12 hours before departure	Crew	=====
	Emergency steering drill	All	Quarterly	Crew	=====
Voyage data recorder (VDR)	SOLAS V/18.8	All	Annually	Service Provider	Administration accepts this period be adjusted with renewal survey date of Safety Radio certificate



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5 Others

Equipment / Requirement	Regulation	Ship Type	Interval	By	Remark
Lightweight survey	SOLAS II-1/5.5 IS Code VIII/8.1.5	Passenger ships	5-yearly	Service Provider	=====
Low-location lighting systems	MSC.1/Circ.1432, para. 4.6	Passenger ships	Weekly	Crew	=====
	MSC.1/Circ.1432, para. 9.5 Res.A.752(18)	Passenger ships	5-yearly	Service Provider	=====
Medical oxygen	Replacement of oxygen.	All	2-yearly	Service Provider	=====
	Hydrostatic test and internal inspection of cylinders.	All	10-yearly	Service Provider	=====

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