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Alert on Detainable Deficiencies

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Notice to: Ship Owners/ Managers/ Operators / Surveyors/ Auditors

Following a recent Port State Control (PSC) inspection, several deficiencies have been imposed that resulted in the detention of the vessel. Dromon wishes to draw attention to these detainable deficiencies to avoid recurrence.

COVERS (hatchway-, portable-, tarpaulins, etc.)

During the PSC Inspection, it was noted that *“Overall condition and weather tightness of hatch covers found seriously corroded and gaskets partially removed, hinged and relevant support between hatch covers’ panels found in very poor condition”*.

According to Regulation 16, International Convention on Load Lines, 1966 and Protocol of 1988, as amended in 2003, *“Hatchways closed by weathertight covers of steel or other equivalent material fitted with gaskets and clamping devices”* should be as:

Weathertight covers

Where weathertight covers are of mild steel the strength shall be calculated with assumed loads not less than 1.75 metric tons per square meter (358 pounds per square foot) on hatchways in position 1, and not less than 1.30 metric tons per square meter (266 pounds per square foot) on hatchways in position 2, and the product of the maximum stress thus calculated and the factor of 4.25 shall not exceed the minimum ultimate strength of the material. They shall be so designed as to limit the deflection to not more than 0.0028 times the span under these loads. Mild steel plating forming the tops of covers shall be not less in thickness than 1% of the spacing stiffeners or 6 mm (0.24 inches) if that be greater.

The strength and stiffness of covers made of materials other than mild steel shall be equivalent to those of mild steel to the satisfaction of the Administration.

Means for securing weathertightness

The means for securing and maintaining weathertightness shall be to the satisfaction of the Administration. The arrangements shall ensure that the tightness can be maintained in any sea conditions, and for this purpose tests for tightness shall be required at the initial survey and may be required at annual inspections or at more frequent intervals.

DECKS (-cracking) / BEAMS, FRAMES, FLOORS-CORROSION (Structural condition)

During the PSC Inspection, it was noted that *"In engine room part of floor have been found holed next to oil cooler". Also, it was noted that "Many places on Starboard side (deck, hatch coamings, bulwark) heavily corroded, holed and cracked. Some places on Starboard side temporarily replaced"*.

According to Ch. II-1, Regulation 3-1, International Convention for the Safety of life at Sea, 1974, and its Protocol of 1988, *"Structural, mechanical and electrical requirements for ships"* should be as:

In addition to the requirements contained elsewhere in the present regulations, ships shall be designed, constructed, and maintained in compliance with the structural, mechanical and electrical requirements of a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1, or with applicable national standards of the Administration which provide an equivalent level of safety.

LIFEBOATS (Life saving appliances)

During the PSC Inspection, it was noted that:

- (a) *"Starboard lifeboat inoperative"*.
- (b) *"Port and starboard Lifeboat reflector band not available. Lifeboat flashlights not available"*.
- (c) *"Stored mechanical power system which is independent of the ship's power supplies to launch the rescue boat it serves in the fully loaded and equipped condition Is not fitted on Rescue Boat davit No evidence of exemption/authorization by Flag State"*.

As per [MSC.402\(96\)](#) *"Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear"*, the following apply:

§6.2.3: For lifeboats (including free-fall lifeboats), rescue boats and fast rescue boats, the following items shall be thoroughly examined and checked for satisfactory condition and operation:

- (a) condition of the boat structure including fixed and loose equipment (including a visual examination of the external boundaries of the void spaces, as far as practicable)
- (b) engine and propulsion system.
- (c) sprinkler system, where fitted.
- (d) air supply system, where fitted.
- (e) manoeuvring system
- (f) power supply system
- (g) bailing system
- (h) fender/skate arrangements
- (i) rescue boat righting system, where fitted

§6.2.4: For release gear of lifeboats (including free-fall lifeboats), rescue boats, fast rescue boats and liferafts, the following shall be thoroughly examined for satisfactory condition and operation after the annual operational test of the winch brake with the empty boat or equivalent load, as required by paragraph 6.2.10:

- (a) operation of devices for activation of release gear
- (b) excessive free play (tolerances)
- (c) hydrostatic interlock system, where fitted
- (d) cables for control and release; and
- (e) hook fastening.

Notes: The setting and maintenance of release gear are critical operations with regard to maintaining the safe operation of lifeboats (including free-fall lifeboats), rescue boats, fast rescue boats and davit launched liferafts. Utmost care shall be taken when carrying out all inspection and maintenance operations on the equipment. No maintenance or adjustment of the release gear shall be undertaken while the hooks are under load.

§6.2.5: The operational test of davit-launched lifeboats' and rescue boats' on-load release function shall be carried out as follows:

- (a) position the boat partially in the water such that the mass of the boat is substantially supported by the falls and the hydrostatic interlock system, where fitted, is not triggered
- (b) operate the on-load release gear
- (c) reset the on-load release gear; and
- (d) examine the release gear and hook fastening to ensure that the hook is completely reset and no damage has occurred.

§6.2.6: The operational test of davit-launched lifeboats' and rescue boats' off-load release function shall be carried out as follows:

- (a) position the boat so that it is fully waterborne
- (b) operate the off-load release gear
- (c) reset the off-load release gear; and
- (d) recover the boat to the stowed position and prepare for operational readiness.

During the test, prior to hoisting, it shall be checked that the release gear is completely and properly reset. The final turning-in of the boat shall be done without any persons on board.

§6.2.7: The operational test of the free-fall lifeboat release function shall be carried out as follows:

- (a) engage the arrangements for the test without launching the lifeboat, required by paragraph 4.7.6.4 of the LSA Code, as specified in the manufacturer's operating instructions
- (b) if required to be on board, ensure that the operator is properly seated and secured in the seat location from which the release mechanism is to be operated
- (c) operate the release mechanism to release the lifeboat
- (d) reset the lifeboat in the stowed configuration
- (e) repeat the procedures referred to in .2 to .4 above, using the back-up release mechanism, if applicable
- (f) remove the arrangements for the test without launching the lifeboat, required by paragraph 4.7.6.4 of the LSA Code; and
- (g) verify that the lifeboat is in the ready to launch stowed configuration.

§6.2.8 The operational test of the davit-launched liferaft automatic release function shall be carried out as follows:

- (a) manually release the hook with a load of 150 kg on the hook
- (b) automatically release the hook with a dummy weight of 200 kg on the hook when it is lowered to the ground
- (c) examine the release hook and hook fastening to ensure that the hook is completely reset and no damage has occurred.

If a raft is used for the test instead of a dummy weight, the automatic release function shall release the raft when waterborne.

§6.2.9: For launching appliances for lifeboats (including free-fall lifeboats), rescue boats, fast rescue boats and liferafts, the following items shall be examined for satisfactory condition and operation:

- (a) davit or other launching structures, in particular with regard to corrosion, misalignments, deformation and excessive free play
- (b) wires and sheaves, possible damage such as kinks and corrosion
- (c) lubrication of wires, sheaves and moving parts; and
- (d) if applicable:
 - I. functioning of limit switches
 - II. stored power systems
 - III. hydraulic systems; and
- (e) for winches:
 - I. inspecting the braking system in accordance with winch manual
 - II. replacing brake pads, when necessary
 - III. winch foundation; and
 - IV. if applicable, remote-control system and power supply system.

§6.2.10: For winches of the launching appliances for lifeboats (including free-fall lifeboats), rescue boats, fast rescue boats and liferafts, annual operational testing shall be done by lowering the empty craft or boat or equivalent load. When the craft has reached its maximum lowering speed and before the craft enters the water, the brake shall be abruptly applied. Following these tests, the stressed structural parts shall be reinspected where the structure permits the reinspection.

§6.3: Five-year thorough examination, overhaul, and overload operational tests

§6.3.1: The five-year operational test of the winches of the launching appliances shall be carried out with a proof load equal to 1.1 times the weight of the survival craft or rescue boat and its full complement of persons and equipment. When the proof load has reached its maximum lowering speed, the brake shall be abruptly applied.

§6.3.2: Following these tests, the stressed structural parts shall be reinspected where the structure permits the reinspection.

§6.3.3: The operational tests and overhaul at five-year intervals of release gear for lifeboats (including free-fall lifeboats), rescue boats, fast rescue boats and liferafts shall include:

- (a) dismantling of hook release units
- (b) examinations regarding tolerances and design requirements
- (c) adjustment of release gear system after assembly
- (d) operational tests as per paragraphs 6.2.5, 6.2.6, 6.2.7 or 6.2.8 above, as applicable, but with a load equal to 1.1 times the weight of the survival craft or rescue boat and its full complement of persons and equipment; and
- (e) examinations of vital parts with regard to defects and cracks

§6.3.4 Any other overhaul if required shall be carried out in accordance with paragraph 6.3.3.

WINCHES AND CAPSTANS (Working and Living Conditions - Living conditions)

During the PSC Inspection, it was noted that *“Crane anchor mooring winches are heavily corroded many places leaking oil. Mooring turnbuckles are heavily corroded and holed”*.

Correct operation of the mooring equipment onboard is important for the overall safe operation of a vessel in port. To ensure safety, it's imperative for ship's personnel to maintain high standards of integrity of the mooring equipment. A way to achieve this is to incorporate all the parts of the mooring equipment into the ship's planned maintenance system.

Some of the important points that must be considered while carrying out mooring equipment maintenance are given below:

- (a) Make Checks Prior Mooring.
- (b) Do Frequent Greasing of Moving Parts.
- (c) Check Brake Liners.
- (d) Check Break Drums.
- (e) Check Brake Linkages.
- (f) Inspect Gear / Hydraulic Oil.
- (g) Carry Out Regular Visual Inspection.
- (h) Clear Walkway; and
- (i) Maintenance of Steel Wire Mooring Ropes.

FIRE FIGHTING EQUIPMENT AND APPLIANCES (Fire safety)

During the PSC Inspection, it was noted that *“Frw paint store. Fire extinguisher heavily corroded”*.

According to [Resolution A.951\(23\)](#), as adopted on 5 December 2003, *“Improved guidelines for marine portable fire extinguishers”*, ANNEX – *point 9*, the periodical inspection and maintenance shall be as such:

- (a) Extinguishers should be subject to periodical inspections in accordance with the manufacturer's instructions and serviced at intervals not exceeding one year.

- (b) 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).
- (c) 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.
- (d) 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 9.1.3.
- (e) 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.
- (f) Extinguishers should be provided with a visual indication of discharge.
- (g) Instructions for recharging extinguishers should be supplied by the manufacturer and be available for use on board.

Table 9.1.3 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 manufacturer's instructions.
Reassemble	Reassemble the extinguisher in accordance with the manufacturer's 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.

GANGWAY, ACCOMMODATION-LADDER (Working and Living Conditions - Living conditions)

During the PSC Inspection, it was noted that *“Port and Starboard gangway Ladder not safety. Many places are holed. Lifeboat ladder mooring ropes and deck fixing area damaged not in use”*.

According to Regulation 3-9, International Convention for the Safety of life at Sea, 1974, and its Protocol of 1988, *“Means of embarkation on and disembarkation from ships”* the following apply:

Ships constructed on or after 1 January 2010 shall be provided with means of embarkation on and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders, in accordance with paragraph 2 (see below), unless the Administration deems that compliance with a particular provision is unreasonable or impractical.

The means of embarkation and disembarkation required in paragraph 1 shall be constructed and installed based on the guidelines developed by the Organization.

For all ships the means of embarkation and disembarkation shall be inspected and maintained in suitable condition for their intended purpose, considering any restrictions related to safe loading. All wires used to support the means of embarkation and disembarkation shall be maintained as specified in regulation III/20.4.

In addition, [MSC.1/Circ. 1331](#) of IMO regarding maintenance:

§4: Maintenance

- (a) Accommodation ladders and gangways, including associate winch and fittings, should be properly maintained and inspected at appropriate intervals as required by SOLAS regulation III/20.7.2, in accordance with manufacturers' instructions. Additional checks should be made each time the accommodation ladder and gangway are rigged, looking out for signs of distortion, cracks and corrosion. Close examination for possible corrosion should be carried out, especially when an aluminium accommodation ladder/gangway has fittings made of mild steel.
- (b) Bent stanchions should be replaced or repaired and guard ropes should be inspected for wear and renewed where necessary.
- (c) Moving parts should be free to turn and should be greased as appropriate.
- (d) The lifting equipment should be inspected, tested, and maintained paying careful attention to the condition of the hoist wire. The wires used to support the means of embarkation and disembarkation should be renewed, when necessary, as required by SOLAS regulation II-1/3-9.
- (e) Arrangements should also be made to examine the underside of gangways and accommodation ladders at regular intervals.
- (f) All inspections, maintenance work and repairs of accommodation ladders and gangways should be recorded to provide an accurate history for each appliance. The information to be recorded appropriately on board should include the date of the most recent inspection, the name of the person or body who carried out that inspection, the due date for the next inspection and the dates of renewal of wires used to support the embarkation and disembarkation arrangement.

EMERGENCY FIRE PUMP AND ITS PIPES (Emergency Systems)

During the PSC Inspection, it was noted that *“Vessel em. Fire pump not enough pressure. Many fire hoses, hydrants leaking water. Fire line heavily corroded and leaking water.”*.

As per SOLAS, Ch. II-2, Reg. 14, the fire-fighting systems, and appliances shall be kept in good working order and readily available for immediate use.

For the fire hoses and fire pumps, as per [MSC.1/Circ.1432](#), below maintenance programme should be followed:

§5.1: Monthly inspections:

- (a) verify all fire hydrants, hose and nozzles are in place, properly arranged, and are in serviceable condition.
- (b) operate all fire pumps to confirm that they continue to supply adequate pressure; and
- (c) emergency fire pump fuel supply adequate, and heating system in satisfactory condition, if applicable.

§6.1: Quarterly inspections:

- (a) Verify international shore connection(s) is in serviceable condition.

§7.1: Annual inspections:

- (a) visually inspect all accessible components for proper condition.
- (b) flow test all fire pumps for proper pressure and capacity. Test emergency fire pump with isolation valves closed.
- (c) test all hydrant valves for proper operation.
- (d) pressure test a sample of fire hoses at the maximum fire main pressure, so that all fire hoses are tested within five years.
- (e) verify all fire pump relief valves, if provided, are properly set.
- (f) examine all filters/strainers to verify they are free of debris and contamination; and
- (g) nozzle size/type correct, maintained and working.

PILOT LADDERS AND HOIST/PILOT TRANSFER ARRANGEMENTS (Safety of Navigation)

During the PSC Inspection, it was noted that *"Pilot station area not safe: pilot ladders not fixed to bulwark"*.

According to SOLAS Chapter V, Regulation 23, paragraph 4-5-6, and **IMO Resolution A.1045 (27)**:

Means shall be provided to ensure safe, convenient and unobstructed passage for any person embarking on, or disembarking from, the ship between the head of the pilot ladder, or of any accommodation ladder or other appliance, and the ship's deck. Where such passage is by means of:

- (a) a gateway in the rails or bulwark, adequate handholds shall be provided
- (b) a bulwark ladder, two handhold stanchions rigidly secured to the ship's structure at or near their bases and at higher points shall be fitted. The bulwark ladder shall be securely attached to the ship to prevent overturning.
- (c) Shipside doors used for pilot transfer shall not open outwards.
- (d) Mechanical pilot hoists shall not be used.

IMO Resolution A.1045 (27), paragraph 5:

Means should be provided to ensure safe, convenient and unobstructed passage for any person embarking on, or disembarking from, the ship between the head of the pilot ladder, or of any accommodation ladder, and the ship's deck; such access should be gained directly by a platform securely guarded by handrails. Where such passage is by means of:

- (a) a gateway in the rails or bulwark, adequate handholds should be provided at the point of embarking on or disembarking from the ship on each side which should be not less than 0.7 m or more than 0.8 m apart. Each handhold should be rigidly secured to the ship's structure at or near its base and at a higher point, not less than 32 mm in diameter and extend not less than 1.2 m above the top of the bulwarks. Stanchions or handrails should not be attached to the bulwark ladder;
- (b) a bulwark ladder should be securely attached to the ship to prevent overturning. Two handhold stanchions should be fitted at the point of embarking on or disembarking from the ship on each side which should be not less than 0.7 m or more than 0.8 m apart. Each stanchion should be rigidly secured to the ship's structure at or near its base and at a higher point, should be not less than 32 mm in diameter and should extend not less than 1.2 m above the top of the bulwarks. Stanchions or handrails should not be attached to the bulwark ladder.

FIRE-DAMPERS (Fire safety)

During the PSC Inspection, it was noted that *"The following designated fire dampers were found not easily and safely reachable: captain deck aft portside - main deck starboard aft side- chain locker fwd. portside"*.

Uncontrolled fire is always a serious risk. In an emergency a fire can spread via ventilation ductwork. Therefore, it is essential that the ventilation ductwork is equipped with high-quality and robust fire dampers that also prevent smoke from spreading and therefore enable safety for escape routes.

Fire Dampers are used in air transfer openings, ducts, and other places where fire rated structures are penetrated. If these openings weren't protected, the fire would easily spread to other spaces and damage the property and pose a danger to people working in that environment.

SOLAS / Chapter 11-2 / Regulation 14.1 requires that:

- (a) Fire protection systems and fire-fighting systems and appliances shall be maintained ready for use; and
- (b) Fire protection systems and fire-fighting systems and appliances shall be properly tested and inspected.

[IMO MSC.1/Circ1432](#) requires a test of all fire dampers for remote operation by the crew on an annual basis, therefore the Ship Master should make sure that this maintenance is assured.

PPM ALARM ARRANGEMENTS (Pollution Prevention - MARPOL Annex I)

During the PSC Inspection, it was noted that *"Oil filter equipment has been found inoperative"*.

As per Annex I of MARPOL 73/78 Regulation 14.7, [MPC127](#) in force February 2016, the regulation reads: Oil filter equipment shall be provided with alarm arrangement to indicate when this level cannot be maintained. The system shall also be provided with arrangements to ensure that any discharge of oily mixtures is automatically stopped when the oil content of the effluent exceeds 15 parts per million. In considering the design of such equipment and approvals, the Administration shall have regard to the specification recommended by the Organization.

Act now

Ship Owners/ Managers/ Operators / Surveyors/ Auditors/ should take into consideration all the above and ensure compliance with the respective IMO Resolutions, MARPOL 73/78 Regulations and SOLAS.