



BERMUDA MERCHANT SHIPPING NOTICE

Servicing and Testing of Life-Saving Appliances, their release and retrieval systems
including On-load Release Hooks, Guidance on Free- fall Lifeboats
and Fall Preventer Devices
2022-16

Application

Owners, Managers, Masters and Officers of Bermuda registered ships.

References

IMO Resolution MSC.402(96)
IMO Resolution MSC.404(96)
IMO MSC.1/Circulars.1206, 1327, 1328 and 1392

Summary

The notice provides for:

- a. Requirements for Annual Inspection and testing of Life Saving Appliances and release and retrieval systems
- b. Authorised Service providers for Lifeboats, launching appliances and on-load release gear
- c. Five Yearly overhaul and 110% dynamic testing
- d. Servicing of Inflatable and davit launched Life-rafts, Inflatable Boats, Rescue Boats, Fast Rescue Boats, Inflatable Lifejackets and Hydrostatic Releases
- e. Guidance on Drills involving Free Fall Lifeboats
- f. Notes on Fall Preventer Devices and Testing Following Lifeboat and Rescue Boat Hook Replacement

This notice supersedes Bermuda Shipping Notice **2021-16** issued on 15th July 2021 which has now been withdrawn.

This Notice was issued on 04th October 2022.

1. Authorised Service Providers for Lifeboats, Launching Appliances and On-Load Release Gear

- (1) The conducting of Cargo Ship Safety Equipment surveys on Bermuda ships is delegated to the following Bermuda Shipping and Maritime Authority Recognised Organisations (RO):
 - a. Lloyd's Register
 - b. Bureau Veritas
 - c. DNV
 - d. American Bureau of Shipping
 - e. RINA
 - f. ClassNK
- (2) For the annual and five yearly examinations and testing of Safety Equipment for cargo and passenger ships as required by SOLAS/III.20 the authorised service provider should be a company which has been authorised by one of the Recognised Organisations detailed in 1.(1) above, as per the requirements of IMO Resolution MSC.402(96).
- (3) Both the shipping company and the company contracted by the shipping company to undertake the servicing on board its ships, are responsible for the establishment and implementation of health, safety and environmental (HSE) procedures covering all activities during servicing and maintenance.
- (4) Original equipment manufacturers may act as an authorised service provider when conducting the annual and five yearly examinations as required by SOLAS/III.20, on their own equipment. An in-depth risk assessment should be provided by the service provider covering all aspects of the inspection and testing, including the following key elements;
 - a. Dangers to personnel within the vicinity of the lifeboat while the test is carried out.
 - b. Possible free surface movement of water in the water-weight bags.
 - c. Possible failure of the equipment during the test and its effect on the equipment and personnel carrying out the test.
- (5) Original equipment manufacturers must be approved by a Bermuda authorised Recognised Organisation, when they are acting as authorised service providers for conducting the annual and five yearly examinations as required by SOLAS/III.20., on equipment other than their own.
- (6) In cases where a manufacturer is no longer in business, or no longer provides technical support, a BSMA authorised Recognised Organisation may accept the use of service providers for the equipment based on demonstrated experience as an authorised service provider holding a valid approval for servicing of life saving appliances by any of the Recognised Organisations

listed in 1.1 above. In such cases, the servicing and testing of the equipment shall only be carried out in the presence of the RO Surveyor.

- (7) The conducting of Passenger Ship Safety surveys remains the responsibility of the Bermuda Shipping and Maritime Authority.
- (8) Weekly and monthly inspections, and routine maintenance as defined by the manufacturer, should be conducted by the ship's crew under the direct supervision of a senior ship's officer in accordance with the instructions provided by the manufacturer.
- (9) Annual thorough inspections and operational tests, as described in MSC.402(96) section 6.2, shall be conducted by certified personnel of either the manufacturer or an authorised service provider in accordance with MSC.402(96) section 7 and section 8. The service provider may be the ship operator provided that they are authorised in accordance with MSC.402(96) section 3 and section 7.
- (10) Five yearly thorough examination, any overhaul, overload operational tests, as described in MSC.402(96) section 6.3, and repair shall be conducted by certified personnel of either the manufacturer or an authorised service provider in accordance with MSC.402(96) section 7 and section 8.

2. Requirements for Annual Inspection and Testing of Life Saving Appliances and Release and Retrieval Systems

- (1) Launching appliances are required by SOLAS Chapter III, regulation 20.11 to be maintained on board in accordance with the instructions for on-board maintenance. They are subjected to an annual thorough examination and every five years or when the release gear is overhauled, to a dynamic test at 110% of full load by a service provider authorised as per 1.(2) or 1.(3).
- (2) The requirement for the annual thorough examination includes a dynamic test of the brake mechanism at full lowering speed with the full weight of the survival craft and equipment but without persons.
- (3) The annual thorough examination and test should be completed at the annual Cargo Ship Safety Equipment survey or the Passenger Ship Safety survey as appropriate
- (4) The Bermuda Shipping and Maritime Authority (BSMA) will accept evidence of the examination and test having been completed within the 3 month "window" before the due date of the safety equipment survey. Provided servicing is always carried out within this window, the time between successive service attendances does not have to be less than 12 months. In principle, a maximum of 15 months may be accepted between service attendances. In each case, the records and reports of the examination and test should be available on board for the surveyor to review during the survey.
- (5) General Requirements
 - a. Any inspection, servicing and repair should be carried out according to the system for inspection and services developed by the manufacturer.

- b.** A full set of maintenance manuals and associated documentation issued by the manufacturer should be available on board for use in all operations involved in the inspection, maintenance, adjustment and re-setting of the lifeboat and associated equipment, such as davits and released gear.
- c.** The manufacturer's system for inspection and services should include the applicable items listed in 2(6) through 2.(19) as a minimum.
- d.** The inspections, testing and servicing required by 2.(6) through 2.(17) should be conducted by the service provider authorised as per 1.(2) and/or 1.(3), and all unnecessary personnel should be prohibited from entering the area of risk.
- e.** Evidence of service supplier authorization as per 1.(2) and/or 1.(3) is to be retained on board upon completion of examination and testing. This will be reviewed as part of the annual Passenger Ship Safety Certificate survey or Cargo Ship Safety Equipment Survey.

(6) Annual Thorough Examination

- a.** Items listed in checklists for the weekly and monthly inspections also form the first part of the annual thorough examination. When carrying out this examination, the inspection of these items should be performed by the ship's crew in the presence of the authorized service provider and any recommendations or new procedures are to be demonstrated at this time.
- b.** Records of inspections and routine on-board maintenance carried out by the ship's crew and the applicable certificates for the launching appliances and equipment should be available.
- c.** Repairs and replacement of parts should be carried out in accordance with the manufacturer's requirements and standards.
- d.** The general principles in these guidelines may also be applied to the periodic servicing and maintenance of life rafts, rescue boats and fast rescue boats, and their launching appliances and release gear.

(7) Lifeboats

- a.** The following items should be examined and checked for satisfactory condition and operation:
 - i. Condition of lifeboat structure including fixed and loose equipment; including a visual examination of the external boundaries of the void spaces (as practicable);
 - ii. engine and propulsion system;
 - iii. sprinkler system, where fitted;
 - iv. Air supply system, where fitted;
 - v. Manoeuvring system;
 - vi. Power supply system;
 - vii. Bailing system, and

- viii. It is also recommended that the fender/skate arrangements and rescue boat righting systems, where fitted, are examined and checked for satisfactory condition.

(8) Release Gear

- a. The following should be examined for satisfactory condition and operation after the annual winch brake test with the empty boat:
 - i. Operation of devices for activation of release gear;
 - ii. Excessive free play (tolerances);
 - iii. Hydrostatic or electronic interlock system, where fitted;
 - iv. Cables for control and release; and
 - v. Hook fastening including link plate, keel shoe, bolts etc.

Note: The setting and maintenance of release gear are critical operations with regard to maintaining the safe operation of the lifeboat and the safety of personnel in the lifeboat. All inspection and maintenance operations on this equipment should therefore be carried out with the utmost care.

Note: No maintenance or adjustment of the release gear should be undertaken while the hooks are under load.

Note: Hanging-off pendants may be used for this purpose but should not remain connected at other times, such as when the lifeboat is normally stowed and during training exercises. The crew needs to be assured that the structure is safe when loaded by hanging off pendants.

Note: The release gear is to be examined prior to its operational test. The release gear is to be re-examined after its operational test and the dynamic winch brake test. Special consideration should be given to ensure that no damage has occurred during the winch brake test, especially to the hook closure and its fastening.

- b. It is recommended that particular care be taken to verify that the master links are in accordance with the manufacturer's recommendations.

(9) Operational test of davit launched lifeboats' and rescue boats' on-load release function:

- a. Position the boat partially into 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.

(10) Operational test of davit launched lifeboats' and rescue boats' off-load release function:

- 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.

Note: Prior to hoisting, check that the release gear is completely and properly reset. The final turning-in of the lifeboat should be done without any persons on board.

(11) Operational test of free-fall lifeboat release function:

- a. Engage the arrangements for the test without launching the lifeboat required by paragraph 4.7.6.4 of the LSA Code (simulated launching), as specified in the manufacturer's operating instructions;
- b. The operator should be 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 procedures (b) to (d) above, using the back-up release mechanism, when applicable.
- f. Remove the arrangements for the test without launching the lifeboat required by paragraph 4.7.6.4 of the LSA Code (simulated launching); and
- g. Verify that the lifeboat is in the ready to launch stowed configuration.

(12) Davit

- a. The following items should be examined for satisfactory condition and operation:
 - i. Davit structure, in particular with regard to corrosion, misalignments, deformations and excessive free play;
 - ii. Wires and sheaves, possible damages such as kinks and corrosion;
 - iii. Lubrication of wires, sheaves and moving parts;
 - iv. Functioning of limit switches;
 - v. Stored power systems;
 - vi. Hydraulic systems,
 - vii. Inspection for correct termination of fall wire ends

- viii. Verification of fall wire replacement and suitability of installed wire SWL,
 - ix. Condition and reeving of remote control wires, pulleys etc
- (13) Stored power systems utilizing seamless steel pressurized nitrogen gas bottles and accumulators are to be thoroughly inspected for coating breakdown, corrosion or damage to cylinders, valves, accumulators and associated pipework.

Note: Particular care is to be taken when inspecting areas normally covered by bottle restraining arrangements or that are otherwise out of sight.

Note: Every 10 years all such Nitrogen bottles are to be internally inspected and hydrostatically tested, or replaced. Refer to Bermuda Guidance Notice 2019-06 for further information.

(14) Winch

- a. The following items should be examined for satisfactory condition and operation:-
 - i. Open and inspect brake mechanism where possible (some cannot be readily opened, in which case instructions should be sought from the OEM);
 - ii. Replace brake pads, if necessary;
 - iii. Remote control system;
 - iv. Power supply system;
 - v. Winch foundation;
 - vi. Winch crank handle interlocks;
 - vii. The angles / clearances of "dead man" brake levers to be checked upon reassembly; and,
 - viii. Functioning of all limit switches if fitted on the winch.

(15) Dynamic Winch Brake Test

- a. Annual operational testing should be done by lowering the empty boat. When the boat has reached its maximum lowering speed and before the boat enters the water, the brake should be abruptly applied.
- b. The five-yearly operational test should be completed through one of the following methods:
 - i. Using the boat filled with waterbags to load the davits to 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. The winch brake is released and when the boat has reached its maximum lowering speed (before the boat enters the water), the brake is abruptly applied.

Note: In loading the boat for this test precautions should be taken to ensure that the stability of the boat is not adversely affected by free surface effects or the raising of the centre of gravity.

Or,

- ii. Using waterbags to load the davits to a proof load corresponding to 1.1 times the weight of the survival craft or rescue boat and its full complement of persons and equipment. The winch brake is released and when the waterbags have reached their maximum lowering speed (before they enter the water), the brake is abruptly applied.
 - iii. In all cases each boat will need to be weighed prior to the overload testing to ensure that the correct proof load is used.
- c.** Following these tests, the brake pads and stressed structural parts should be re-inspected in accordance with manufacturers requirements.
- (16)** 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:
- i. Dismantling of hook release units;
 - ii. Examination with regard to tolerances and design requirements;
 - iii. Adjustment of release gear system after assembly;
 - iv. Operational test as above and 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
 - v. Examination of vital parts regarding defects and cracks.

Note: Non-destructive examination (NDE) techniques, such as dye penetrant examination (DPE), may be suitable. Alternative methods of testing the on load release function may be used in accordance with the requirements of 2.(12) and 2.(13).

- (17)** Every freefall lifeboat shall have the release function operationally tested every 5 years, without launching the lifeboat.
- a.** The release mechanism and back-up release mechanism (secondary means of launching) shall be loaded to a proof load equal to 1.1 times the weight of the freefall boat and its full complement of persons and equipment.
 - b.** The load for this test can either be obtained by filling the boat with water bags, or through use of specialist calibrated hydraulic equipment.
- (18)** 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; and

- c. examine the release hook and hook fastening to ensure that the hook is completely reset and no damage has occurred.
- d. If a raft is used for the test instead of a dummy weight, the automatic release function shall release the raft when waterborne.

(19) Reports and Record Keeping

- a. All reports and checklists shall be completed and signed by the person who carries out the inspection and maintenance work and countersigned by the company's representative or the ships master.
- b. Records of maintenance, thorough examination, operational testing, overhaul and repair shall be updated and filed on board the ship for the service life of the equipment.
- c. When thorough examination, operational testing, overhaul and repair are completed, a statement confirming that the lifeboat arrangements remain fit for purpose shall be promptly issued by the manufacturer or authorised service provider that conducted the work. A copy of valid documents of certification and authorization ad appropriate shall be included in the statement.

3. General Guidance on the Conduct of 5 Yearly Overload Tests

- (1) At least once every five years rescue boats and lifeboats shall be tested with weights to simulate 1.1 times the total mass of the lifeboat or rescue boat when loaded with its full complement of persons and equipment.
- (2) This test is to be applied to all lifeboat, liferaft and rescue boat davits. The procedure used must test the adequacy of all parts of the survival craft system – this includes the on-load release hook, davit, winch, and the winch and boat hook foundations. In the case of liferafts there is a separate test of the liferaft release hook carried out by the service provider. Load testing can be hazardous if not carried out correctly and therefore the role of all persons involved must be clear.
- (3) The test is to be carried out by the authorised service provider with a ship's officer in charge (OIC) and witnessed by a Bermuda surveyor or other person appointed by BSMA. The OIC is in charge of the test at all times and should brief those carrying out the test on what is required. The surveyor or other person appointed by BSMA should take no part in the test and should not be the OIC. The witnessing surveyor may be a BSMA surveyor, a Classification Society Surveyor appointed by BSMA, or other persons authorised by BSMA to witness such tests. If the authorised person is not a Bermuda surveyor, then the individual concerned will require formal instructions.
- (4) All such tests are to be planned in advance. All routine maintenance and records are to be updated before the test. The surveyor or authorised service provider must check this. It may be necessary to have a rolling programme for vessels with a large number of appliances. The boat, launching appliance and all relevant components are to be inspected on the day of the test by the OIC or Authorized Service Provider to ensure that all is in order.

- (5) Lifeboats must be weighed before testing to confirm that the test is conducted using the verified boat weight. Any increase in weight from the certificated weight should be recorded and investigated and is to be reported to BSMA so that trends in overweight lifeboats may be monitored.
- a. Water seepage into foam buoyancy is one possible cause, especially if benches have cracked or fittings have deteriorated.
- (6) If weight growth has occurred particular consideration is to be given to the safe working loads of all elements of the system and how they have been affected by the increased weight.
- a. Where it is identified that weight growth has occurred, all reasonable steps should be taken to return the lifeboat to its original approved weight.
- (7) The lifeboat test may be carried out in various ways, each of which tests the whole system from boat to davit foundation. It is most important that all involved agree the actual detailed procedure in advance of the test.
- (8) Before and after all load testing the boat, hook foundations, hooks, davits, fall wires, winch and sheaves must be thoroughly inspected for signs of any deterioration and or damage, with any findings being dealt with as appropriate.
- (9) Load testing equivalent to the 5 yearly requirement is also to be conducted to prove the system upon completion of the following tasks:
- a. Replacement of winch or davit holding down bolts
 - b. Reinstallation of davits
 - c. Renewal of any load bearing structure or upon completion of any modification work
- (10) All testing is to be witnessed by a BSMA surveyor, or a surveyor appointed by BSMA for this reason. Upon completion of all testing the approved service supplier should record the results on a test certificate which is to be signed by the witnessing surveyor.

The main methods for completing the 5 yearly overload testing are detailed more fully below.

- (11) Combined Boat and Launching Appliance Overload Testing:
- a. Boats should be loaded up at the embarkation position. Where this is not the stowed position then the boat should be brought alongside the ship with the bowing gear arranged for release from the ship. Tricing pendants should be removed before loading commences. The boat should then be loaded with weights or water bags, distributed around the boat, until the boat and weights amount to a load of 1.1 times the weight of the boat when fully loaded with persons, equipment and stores. On davit systems where the embarkation position is the stowed position, extreme caution should be taken when moving the lifeboat, particularly when carrying out overload testing. This element should form part of the risk assessment.

- b. Where the lifesaving capacity of the boat has been voluntarily reduced to a lower number of persons than that for which it was originally certified the full load weight may be calculated based on the lower number of persons, provided that the revised carrying capacity is marked on the boat and used on the passenger or safety equipment certificate. The weights may be either solid weights or water bags. The method of loading weights must be such that no-one enters the boat once the 70% load is reached.
- c. If this cannot be achieved then the weight of the boat must not be taken by the falls during loading but by a crane (of capacity at least 2.2 times the loaded weight of the boat) and a spreader bar. Once loaded, the OIC should agree the test procedure with the attending authorised person and this should subsequently be explained to the accredited service personnel prior to the test. The attending surveyor should take no further part in the proceedings until the test is complete.
- d. If a crane and spreader bar is used, this should then be lowered so the weight of the boat is taken on the falls. Under no circumstances should anyone enter the boat at this time. The boat is to then be eased out on the bousing tackles. The tricing lines should have been removed when the bousing tackle was fitted. This must all be done from the vessel – which may require the rigging of temporary lines. The OIC should now check the area under and around the boat is clear of persons and obstructions. Once ready, the boat is to be lowered by lifting the winch brake fully, to enable the boat to reach maximum lowering speed on the centrifugal brake. The mechanical brake is then applied suddenly and the test paused to ensure that the position of the boat is held at least 1 m above the water. The boat is then lowered until the keel of the boat is just touching the water.
- e. Boats fitted with on-load release mechanisms are to have these tested. The positioning of the boat is a matter of judgement, but the weight of the boat should still be on the falls, with the boat just touching the water's surface. On no account should the boat be dropped from above the water's surface. BSMA will also accept alternative methods of testing the on-load release function using mechanical or hydraulic load simulation approved by the OEM.
- f. Personnel can then enter the boat from another boat and operate the release mechanism to release the loaded boat and test that both hooks release simultaneously under load. Every care should be taken in this process. The personnel on the boat should wear protective clothing including safety helmets and life-jackets and should be sitting down when the boat is released. Davits should be visually checked at this stage. **Only the minimum operating crew should enter the boat to operate the release mechanism.**
- g. Once released the weights may be removed from the boat. **Under no circumstances should the ship's davits be used to lift the loaded boat.**
- h. If the unloaded boat is to be raised on the falls, the hooks should be reset and the falls attached. The boat should be raised just clear of the water and the hook and interlock mechanism double checked and the secure location of the falls confirmed prior to full recovery. No persons should be in the boat while it is being hoisted on the falls until the hook mechanisms have been thoroughly examined by a competent person. Where the boat is to be hoisted before thorough examination of the hooks then it should be stowed securely by gripes or hanging off pendants while the competent person

confirms that the boat, hook foundations and associated launching appliances (hooks, boat, davits, winches, etc.) have not been damaged during the test. Once the boat is stowed and secured on the vessel the boat and davit should be inspected by the authorised person for any signs of test damage or straining (Nondestructive examination is strongly recommended at this point). The results of the test should be recorded on a test certificate produced by the competent persons and signed by the witnessing authorised person.

(12) Separate Boat and Launching Appliance Overload Testing

- a. Alternatively the boat and davits may be tested separately.
- b. Separate dynamic tests are made of the davit and winch using water bags or weights in conjunction with a spreader bar suspended from the falls. A load equivalent to 110% of the measured weight of the boat when fully loaded with persons, equipment and stores should be applied. Once fully loaded, the falls are to be lowered by lifting the winch brake fully, to enable the falls to reach their maximum lowering speed on the centrifugal brake. The mechanical brake is then applied suddenly and the test paused to ensure that the position of the weights is held.
 - i. The purpose of this test is to provide assurance that if the boat is required in an emergency, it can be used in its fully loaded condition without risk to those on board.
 - ii. The test should simulate the actual fully loaded condition (plus 10%), lowered and capable of stopping under the brake without damage. Further, with all physical tests of lifeboats/rescue boats and associated launching systems, the test duration should be as short as possible to avoid unnecessary damage.
 - iii. In all physical tests of lifeboats/rescue boats and associated launching systems; the boat, hook foundations, hooks, davits, fall wire, winch and sheaves must be thoroughly inspected for signs of any deterioration and or damage before the test, and any findings dealt with as appropriate. This thorough examination should be repeated following the test after removal of any test weights to ensure that no damage had occurred as a result of the physical test.
- c. The on-load simultaneous release of the hooks is to be separately tested using specialist calibrated hydraulic equipment. Such equipment allows a load equivalent to 110% of the measured weight of the boat when fully loaded with persons, equipment and stores to be applied to the hooks, which are then be opened in the usual manner. This testing has the advantage that it can be completed ashore minimising the potential for injury or damage. Use of such equipment is to be agreed with the witnessing surveyor and authorised service provider, and the correct calibration is to be verified before commencement of any testing.
- d. If, for operational reasons, the dynamic test is not practicable, the BSMA will accept the testing of lifeboats/rescue boats and davits separately, but this must be agreed with the witnessing surveyor and in accordance with the policy described below.

(13) Overload Testing – Alternative Method

- a. The alternative method acceptable to the BSMA is:
- i. The hook release is tested under a 110% static load using a hydraulic ram (not required on single hook systems used in combination with a painter).
 - ii. The lifeboat/rescue boat is statically load tested ashore by suspending the loaded boat momentarily from its hooks (using a static load representing the peak load that would have been experienced in a 110% dynamic test), and
 - iii. The davit, fall wire, sheaves and winch are tested to 110% dynamically with the use of a spreader-bar (only necessary on double-head davits) and weights (including a load cell, the use of which is described below).
 - iv. Ideally, to start this process, the in-service weight of the fully-loaded and equipped boat must be measured for every individual lifeboat/rescue boat because certified prototype weights have proved to be unreliable (there is also the likelihood for weight-growth with age due in part to the ingress of water to voids in the craft structure). However, it may not be possible to do this in every case and so surveyors should make a judgement based on the age and condition of the lifeboat/rescue boat prior to the test. Any significant deviation from the certificated weight should be notified to the manufacturer and the BSMA.
 - v. When a ship operator requests the use of a static overload test, then the additional load applied during the test must be determined by the ship operator and agreed in advance with the witnessing surveyor, but in any case, the weight inserted into the lifeboat/rescue boat must not load it to greater than 200% of the in-service weight of the fully loaded and equipped lifeboat/rescue boat. The overload applied should be based upon the maximum weight of the boat plus equipment plus persons and this must be checked during tests.
 - vi. Simply applying a standard overload of 200% may not be appropriate and could cause unnecessary damage. Evidence supporting the equivalent static load must be demonstrated by the ship operator to the witnessing surveyor's satisfaction. It should be determined from the maximum (peak) load measured using the load cell in an initial 110% dynamic test on the davit (using waterbags for example). In this way, the static overload can be shown to be equivalent to that which the components would be subjected to during the prescribed 110% dynamic test. The initial dynamic test to determine equivalent static load should be conducted for each different launching system so that only like-for-like systems may apply the same determined equivalent static load. This is because of the variations in loading that may be experienced with differences in launching systems.
 - vii. Static tests must not be carried out using loads in excess of 200%

- (14) The alternate testing arrangements as outlined above are separate to the 110% mechanical hook release testing required following hook replacement as per the requirements of MSC.1/Circ1392, which is not affected by these policy decisions and is addressed in more detail in part 6.(2) of this shipping notice.

3. Servicing of Inflatable Life-rafts, Inflatable Boats, Rescue Boats, Fast Rescue Boats, Inflatable Lifejackets, Non-Disposable Hydrostatic Release Units and Marine Evacuation Systems (MES)

(1) General

- a. The following equipment is required to be serviced at an approved servicing station at intervals not exceeding 12 months:
 - i. Inflatable life rafts and open reversible life rafts
 - ii. Inflated boats
 - iii. Inflated rescue boats
 - iv. Rigid inflated rescue boats
 - v. Inflatable Lifejackets
 - vi. Non disposable hydrostatic release units
 - vii. Marine Evacuation System rafts and overcapacity rafts
- b. In addition to, or in conjunction with the 12 monthly marine evacuation system raft servicing as detailed above, each marine evacuation system should be deployed from the ship on a rotational basis such that each system is deployed at least once every 6 years.

(2) Approved Service Stations

- a. The equipment listed in paragraph 3.(1)(a) above should be serviced annually by an approved service station, and every effort should be made to ensure that it is carried out within 12 months. In circumstances where it is impracticable to comply with the annual servicing requirement, the servicing may be deferred for a period not exceeding 5 months, as per SOLAS Chapter III, Regulation 20.8.1. In such cases, Masters or Owners should apply in writing for an extension to the BSMA explaining the reason for seeking deferment.
- b. An 'approved service station' is formally appointed by the manufacturer of a Life-raft, boat or inflatable lifejacket and has been accepted by the BSMA. It must have certificated personnel who have been trained to undertake servicing and repairs, and also to repack inflatable life-rafts ready for operational use. It must stock and use genuine spares and be fully informed of the current servicing procedures stated by the approved manufacturer.
- c. At every biennial servicing, or servicing referred to in paragraph 3.(3)(b) of a davit launched inflatable life-raft, inflatable boat or inflatable rescue boat, a 10% overload static load test is to be carried out with the life-raft or boat suspended from its lifting hook or bridle, in accordance with the manufacturer's approved servicing instructions.

(3) Service Intervals

- a. On board inspections by personnel qualified and trained by the equipment manufacturer are completed at 12 month intervals, with the exception of (3)(b)
- b. Bermuda Shipping and Maritime Authority has exempted certain inflatable liferafts in accordance with IMO MSC.1/Circ.1328 to allow servicing at 30 month intervals when specially packed to allow for extended service intervals, provided;
 - i. The equipment is specially packed,
 - ii. Special packing systems have been designed and developed by the relevant manufacturers, and these ensure that the life-rafts can;
 - 1. Be operated using the normal control lines, and,
 - 2. Remain protected throughout the extended servicing interval within a hermetically sealed membrane which resists water vapour transmission.
- c. Under the provisions of SOLAS 1974 Chapter III, regulations 20.8.3 and 20.8.5, the BSMA has notified IMO of the arrangements accepted on Bermuda Registered ships.

(4) Hydrostatic Release Units (HRUs)

- a. There have been incidences of incorrectly installed HRUs resulting in a compromise of the float-free arrangements of the life-raft. After servicing of the life-raft and HRUs, they should be installed strictly in accordance with the approved manufacturer's instructions. Details of the correct installation procedure of the HRU to the life-raft should be provided with each unit supplied. Requirements for onboard stowage of inflatable life-rafts together with hydrostatic release units are contained in the UK Marine Guidance Note MGN 343 (M+F).

(5) Marking of Stowage of LSA

- a. Containers, brackets, racks, and other similar stowage locations for life-saving equipment, shall be marked with symbols in accordance with the recommendations of the Organization indicating the devices stowed in that location for that purpose. If more than one device is stowed in that location, the number of devices shall also be indicated.

(6) Other Information

- a. Internationally, through the provisions of SOLAS 1974, National Administrations are responsible for the approval of servicing stations for inflatable LSA located within their jurisdictions irrespective of whether or not that particular administration has approved the subject product.

4. Guidance on Drills Involving Free-Fall Lifeboats

(1) Each Month

- a. Abandon ship drills shall be conducted in accordance with the equipment manufacturer's instructions so that all persons are trained to embark the boat, to take their seats in the correct way, to use the safety belts and are instructed on how to act during launching into the sea. The lifeboat does not need to be dynamically, free-fall launched at this time.

(2) Every 3 Months

- a. Every 3 months during an abandon ship drill the crew shall board the lifeboat, properly secure themselves in their seats and commence the launch procedure up to but not including the actual release of the lifeboat (i.e., the release hook shall not be released). The lifeboat shall then either be:
 - i. Free-fall launched with only the required operating crew on board, or
 - ii. lowered into the water by means of the secondary means of launching without the operating crew on board.

Note: The lifeboat does not have to be dynamically, free-fall released at this time. SOLAS III/19.3.3.4 allows for simulated launching or lowering of the boat to the water by secondary means in all circumstances.

- b. In both cases the lifeboat shall thereafter be maneuvered in the water by the operating crew.
- c. The recovery operation should be carried out with special attention, bearing in mind the high risk level of this operation.

(3) Every 6 Months

- a. At intervals of not more than six months, the lifeboat shall either be launched by free-fall with only the operating crew on board, or simulated launching shall be carried out in accordance with the guidelines of 5 (4) below. This is in addition to the requirements of 5 (2).

Note: There is no requirement for the lifeboat to be dynamically, free-fall released at this time. SOLAS III/19.3.3.4 allows for simulated launching or lowering of the boat to the water by secondary means in all circumstances.

- b. Free-fall Lifeboats NOT equipped for simulated launching should every 3 months be lowered to the water without personnel on board, then manned by the operating crew and maneuvered in the water.

(4) Guidelines for Simulated Launching of Free Fall Boats

- a. Simulated launching is a means of training the crew in the free-fall release procedure for free-fall lifeboats and in verifying the satisfactory function of the free-fall release system without allowing the lifeboat to fall into the sea
- b. The purpose of these Guidelines is to provide a basic outline of essential steps necessary to safely carry out simulated launching. These Guidelines are general; the lifeboat manufacturer's instruction manual should always be

consulted before conducting simulated launching. Simulated launching should only be carried out with lifeboats and launching appliances designed to accommodate it, and for which the manufacturer has provided instructions. Simulated launching should be carried out under the supervision of a responsible person who should be an officer experienced in such procedures.

c. Typical Simulated Launching Sequence

- i. Check equipment and documentation to ensure that all components of the lifeboat and launching appliance are in good operational condition.
- ii. Ensure that the restraining device(s) provided by the manufacturer for simulated launching are installed and secure and that the free-fall release mechanism is fully and correctly engaged.
- iii. Establish and maintain good communication between the assigned operating crew and the responsible person.
- iv. Disengage lashings, gripes, etc. installed to secure the lifeboat for sea or for maintenance, except those required for simulated free-fall.
- v. Participating crew board the lifeboat and fasten their seatbelts under the supervision of the responsible person.
- vi. All crew, except the assigned operating crew, disembark the lifeboat. The assigned operating crew fully prepares the lifeboat for free-fall launch and secures themselves in their seats for the release operation.
- vii. The assigned operating crew activates the release mechanism when instructed by the responsible person. Ensure that the release mechanism operates satisfactorily and, if applicable, the lifeboat travels down the ramp to the distance specified in the manufacturer's instructions.
- viii. Re-secure the lifeboat to its stowed position, using the means provided by the manufacturer and ensure that the free-fall release mechanism is fully and correctly engaged.
- ix. Repeat procedures from 5 (2) (c) vii above, using the back-up release mechanism when applicable.
- x. The assigned operating crew disembarks the lifeboat.
- xi. Ensure that the lifeboat is returned to its normal stowed condition. Remove any restraining and/or recovery devices used only for the simulated launch procedure.
- xii. the lifeboat should then be verified ready for launching in an emergency.

Table 1: Freefall Launched Lifeboat Activity Intervals

Freefall Lifeboat			
	Monthly	Every 3 months	Every 6 months
The Crew shall:			
- be shown how to embark the boat	X		
- be shown how to take their seats in the correct way,	X		
- be shown how to use the safety belts	X		
- be instructed on how to act during launching into the sea	X		
- commence launch procedures up to but not including release of the boat		X	
- carry out a simulated launch using operating crew			X ^{b,c}
- lower the boat to the water without anyone onboard then the operating crew shall man and manoeuvre the boat in the water		X ^a	
- release the boat by free fall with minimum operating crew onboard and manoeuvred in water		X ^a	X ^c

Notes:

- Only one of these actions is required at 3 months – it is recommended that the boat be lowered to the water without anyone on board whenever possible
- Only for freefall lifeboats equipped to allow this
- Only one of these actions is required at 6 months – it is recommended that the simulated launch be carried out whenever possible

Table 2: Falls Launched Lifeboat Activity Intervals

Lifeboats launched by Falls			
	Weekly	Monthly	Every 3 months
Lifeboat turned out from stowed position, without persons onboard to demonstrate satisfactory operation (Cargo ships)	X		
Lifeboat turned out from stowed position, without persons onboard to demonstrate satisfactory operation (All ships)		X	
Lifeboat launched and maneuvered in water with operating crew (All ships)			X

6. Fall Preventer Devices (FPD'S) And Lifeboat Hook Replacement Test Requirements

(1) Fall Preventer Devices (FPD's)

- a. For guidance on FPD's please refer to the UK Marine Guidance Note MGN 540 (M+F), a summary of which is contained below.
- b. New requirements from the International Maritime Organization (IMO), have introduced standards for all Lifeboat Release and Retrieval Systems (LRRS), including those installed on existing ships.
- c. Existing systems that do not comply with the revised LSA Code as per SOLAS III/1.5, as elaborated in MSC.1/Circ.1392 must be replaced by the first scheduled dry-docking after 1 July 2014, and not later than 1 July 2019.
- d. The BSMA strongly urges that all Bermuda vessels fitted with lifeboat on-load release systems be fitted with fall preventer devices pending the evaluation of the systems for compliance with the requirements of the revised LSA Code.
- e. Prior to the fitting FPD's, the original approving authority of the launching gear should be consulted to ascertain whether the fitting of FPD's to the approved launching gear is acceptable.
- f. This notice is only applicable to davit-launched lifeboats fitted with on-load release hooks. FPDs should be fitted in accordance with MSC.1/Circ.1327 'Guidelines for the fitting and use of fall preventer devices (FPDs)'.

(2) Lifeboat and Rescue Boat Hook Replacement Test Requirements

- a. The requirements of MSC.Circ/1392 are to be adhered to when evaluating or replacing any lifeboat or rescue boat hooks.
- b. However the following paragraphs are intended to address common questions regarding the testing of new lifeboat hooks following replacement or upgrade.
- c. Post installation testing should comprise the following:
 - i. If the hook foundation (connection to the boat) has been modified in any way the connection of each release gear which is fixed to the boat should be subjected to a load equal to the weight of the boat with its full complement of persons and equipment (200% static load test).
 - 1. Single fall systems should be loaded to two times the weight of the boat.
 - 2. There should be no damage to the release gear or its connection to the boat.
 - ii. In all cases the simultaneous opening of the hooks is to be tested under a load corresponding to 110% of the weight of the boat with its full complement of persons and equipment. The BSMA will allow this to be completed using specialist hydraulic equipment, as per part 3.11.3.

- iii. If the lifeboat is also a rescue boat and/or is installed on a cargo ship of 20,000 gross tons or more it should be demonstrated that the fully equipped boat can be launched from a ship proceeding ahead at a speed of not less than 5 knots in calm water and on an even keel. There should be no damage to the lifeboat or the rescue boat or their equipment as a result of this test.