ST KITTS & NEVIS INTERNATIONAL SHIP REGISTRY

FSI GUIDELINES

Flag State Inspections for SKAN Registered Vessels

Introduction

In accordance with the Saint Kitts & Nevis Merchant Shipping Act and the Maritime Regulations, all vessels sailing under the SKAN flag are subject to Flag State Inspections (FSIs). These inspections are conducted to determine whether the vessels comply with the international conventions and regulations to which SKAN is a member. Certain ships may be subject to special or additional inspections, as well as more frequent ones, depending on the circumstances. The owners, operators, charterers, and other parties responsible for the operation of a SKAN-flagged vessel, along with their agents or representatives, and the Master of the vessel, are obligated to admit Flag State Inspectors on board, cooperate with them, assist them with local transportation to and from the vessel, and allow them to fully carry out the inspection. This includes ensuring that inspectors have safe access to all areas of the ship that require inspection. Inspections should be conducted in a suitable, convenient, and safe port.

The Technical Department of the Saint Kitts & Nevis International Ship Registry is responsible for the following aspects of the Flag Safety Inspection scheme for SKAN registered vessels:

- Granting authorizations for inspections
- Issuing letters of appointment to Flag State Inspectors
- Reviewing inspection reports
- Revising inspection report forms in line with new requirements
- Monitoring vessels that have been inspected and found to have deficiencies that need to be rectified

References

The following references are pertinent to these guidelines:

- Saint Kitts & Nevis Merchant Shipping Act 2005, as amended
- United Nations Convention on the Law of the Sea (UNCLOS)
- International Safety Management (ISM) Code, adopted by IMO Resolution A.741(18)
- Maritime Labour Convention (MLC), 2006

Flag State Inspections

Flag State Inspections are conducted to ensure that ships comply with the international conventions and regulations to which SKAN is a member. This includes verifying the following:

- The vessel has all required valid certificates on board.
- The vessel is properly manned and equipped for its intended trade.
- The crew has proper credentials and is well-versed in the correct procedures during drills.

- The vessel reflects acceptable safety conditions in all spaces and gear.

It is important to note that Flag State Inspections are not intended to replace surveys for the issuance of technical statutory certificates. Such activities will continue to be performed by duly authorized Recognized Organizations.

Vessels will be inspected in accordance with the provisions of the Marine Circulars related to the vessels' inspection schemes, as amended. The owners, operators, charterers, and other parties responsible for the operation of a SKAN-flagged vessel, along with their agents or representatives, and the Master of the vessel, are obligated to admit Flag State Inspectors on board, cooperate with them, assist them with local transportation to and from the vessel, and allow them to fully carry out the inspection. This includes ensuring that inspectors have safe access to all areas of the ship that require inspection. Inspections should be conducted in a suitable, convenient, and safe port.

Upon boarding a vessel, the Flag State Inspector will present the Master with their Appointment letter issued by SKAN, which can be substituted by an email from the Flag. The Flag State Inspector is advised to follow the sequence indicated in the inspection form. This involves first checking all documents and technical certificates of the vessel, followed by safety plans, manuals, records, and the official logbook, charts, and publications.

The Flag State Inspector will then check the navigational equipment (as per SOLAS 74/88 C: V) and its operational condition, as well as the licensing of the officers and crew (as per STCW 95. CODE). It is suggested that all this equipment be checked before performing the fire and boat drills.

The Flag State Inspector will witness a fire and boat drill, as well as an enclosed entry drill. The drill may be scheduled at the convenience of the Master during the inspection, but it can only be partially waived in cases where it is clearly impractical to conduct the drill as required. The FSI should note on the inspection form if a partial drill was carried out and the reasons for it.

Additionally, the Flag State Inspector will check that the sanitary conditions of the passenger and crew quarters, galley, mess rooms, food storerooms, refrigerators, and freezers are up to reasonable standards. They will also assess the conduct and performance of food handling personnel. Finally, a visual inspection of the rest of the ship will be conducted to determine the general safety conditions of the engine room, steering room, mooring and anchoring equipment, cargo handling devices, and the hull in general.

The primary responsibility of the Flag State Inspector is to gather and record factual information. It is also important for them to express their opinion and/or elaboration on the entries in the remarks section of the report form. The inspection report must be completed by the Flag State Inspector during the inspection, while they are on board.

Once the ship has been inspected and the form completed, it should be signed by both the Flag State Inspector and the Master. The Master's signature signifies that they acknowledge all the

deficiencies noted by the FSI and understand that necessary steps will be taken to correct them. The Master should also be reminded that they must inform SKAN when the deficiencies are closed. The original copy of the inspection form should be kept by the Master as one of the official documents of the vessel and included in the implemented Safety Management System (SMS), if applicable. A copy of the inspection form, along with other supporting documentation/data, should be sent to SKAN by the FSI via email. This includes:

- Crew list
- Photos from major areas of the vessel, as well as photos reflecting the deficiencies/observations
- Copies of RO/RSO certificates
- RO ISM audit report
- MLC report
- LRIT Conformance Test Report
- Endorsements
- SIRBs

Flag State Inspectors

Inspectors assigned by the Saint Kitts & Nevis International Ship Registry are authorized to board and inspect SKAN-registered ships at any time in accordance with the Administration's procedures. The Saint Kitts & Nevis International Ship Registry is responsible for selecting Flag State Inspectors worldwide and setting the professional standards required of inspectors. All Flag State Inspectors are subject to continuous monitoring and evaluation/training by the Saint Kitts & Nevis International Ship Registry.

Each Flag State Inspector is assigned to specific territories only. However, an inspector may inspect ships outside their territories if authorized by the Saint Kitts & Nevis International Ship Registry. When new revisions of the flag state inspection reports are received, Flag State Inspectors are obliged to use the new revised reports.

Conflict of Interest

The Saint Kitts & Nevis International Ship Registry follows a policy of not authorizing the inspection of a ship by Flag State Inspectors working for the same Recognized Organization that surveyed the ship and issued the relevant safety certificates. Under no circumstances should the same person who surveyed a ship for the issuance of statutory certificates also conduct its Flag Safety Inspection while those certificates are valid. Similarly, a Flag State Inspector who carries out a Flag State Inspection should not conduct surveys for statutory certificates within the yearly validity of the inspection.

Inspection Forms

Inspections must always be reported on the official forms supplied by the SKAN Technical Department. Sections that do not apply to the specific type of vessel should not be used.

Deficiencies and Closure of Them

Deficiencies have been categorized as follows:

- **Remarks:** Statements of fact made during the Flag State Inspection and substantiated by objective evidence.
- **Minor Deficiencies:** Deficiencies that would not justify a ship's detention by Port State Control or endanger the ship, its crew, or the environment.
- **Major Deficiencies:** Serious deficiencies that may lead to a ship's detention by Port State Control or endanger the ship, affecting its structural integrity or safe operation, its crew, or the environment.

Remarks: The Flag State Inspector will ask the Master to close the Remarks prior to the ship's departure or within an agreed time schedule.

Minor Deficiencies: The Master will be asked to `rectify the deficiencies and confirm to the Flag State Inspector, prior to departure, that all deficiencies have been rectified. The FSI may board the ship again before departure to check the correction of the deficiencies, if necessary. A follow-up inspection may also be carried out at the ship's next port(s) of call to ensure the correction of the deficiencies within the agreed due date.

Major Deficiencies: The SKAN International Ship Registry Administrator may ask the ship's RO to carry out an occasional survey to rectify the imposed deficiencies. An expanded examination of the ship's hull, machinery, and statutory surveys may be requested if deemed necessary. Upon completion of the RO surveys, additional deficiencies may be imposed by the RO that affect the structural integrity of the ship or pose a threat to the environment. The relevant report shall be provided to SKAN, and the ship's Statutory Certificates may be suspended.

The RO will have to perform a survey before re-issuing and/or endorsing the suspended Statutory Certificates, upon written consent by the SKAN Ship Registry Administrator. If the RO surveyor is not available at the port of inspection, the Flag State Inspector may authorize the vessel's departure (to his satisfaction for the correction of the major deficiencies) to the next port, where a survey by the RO's surveyor shall be performed.

Any deficiencies noted must be rectified by the Master, Owners, and/or the Managers/Operators of the ship within the agreed due date listed in the FSI report without undue delay. The SKAN Ship Registry Administrator should be informed by email of the proper rectification of the deficiencies. Photos and/or supporting documents reflecting the rectification of the deficiencies may also be requested to be submitted.

The SKAN International Ship Registry Administrator requests the cooperation and understanding of all port authorities. The open deficiencies listed in the FSI report are evidence of actions taken to

upgrade the ship's condition in all aspects and should not be recorded as deficiencies that may warrant detention of the ship.

If the Flag Inspector decides that the vessel shall not proceed to sea because it is deemed unseaworthy, the SKAN Ship Registry Administrator should be contacted immediately to review the report and provide the Flag Inspector with the necessary support, including official notification, to detain the vessel until the major deficiencies are rectified and the seaworthiness of the vessel is assessed and agreed upon for departure.

Reporting the Inspection

After the ship has been inspected and within a period of 24 hours, the ASI report must be sent via email to the following address: technical@skanregistry.com

Cooperation from the Master and Crew

The Master and crew of the ship subject to inspection must cooperate with the FSI during the inspection until its completion, ensuring that the inspector is provided with safe access to all areas of the ship that require inspection. The following steps should be followed:

- Documents, certificates, and publications referred to in Parts 9 to 12 of the Inspection Form must be readily available, preferably in a central location, for examination and verification by the FSI.
- The SKAN INTERNATIONAL SHIP REGISTRY may add, remove, or amend deficiencies following a review of the Flag State Inspection reports and the list of deficiencies issued by the ANI. All deficiencies must be closed out and evidence of rectification must be provided directly to the SKAN INTERNATIONAL SHIP REGISTRY by email to technical@skanregistry.com and by the due date given.
- Acceptable evidence to close out a deficiency may include, but is not limited to: Pictures, Classification Society or RO survey report, Certificate of maintenance, Invoice or delivery notes, Non-conformity reports or Corrective Action Plan (CAP).
- Failure to rectify a deficiency within the due dates is considered by the SKAN INTERNATIONAL SHIP REGISTRY as evidence of a failure of the safety management system of the vessel and company, hence as a Major Non-Conformity (MNC) under paragraphs 3 and 5 of the International Safety Management (ISM) Code, adopted by IMO Resolution A.741(18). An additional external DOC or SMS audit may be requested to address this.
- Persistent failure to rectify deficiencies by the due dates or repeat occurrence of deficiencies may result in the vessel being required to undergo an Additional Inspection, placed under the SIP, suspended (flag State detention), or deleted from the Registry.

Observations

Observations give the ANI the opportunity to bring to the SKAN INTERNATIONAL SHIP REGISTRY and shipowners/managers' attention items that are not considered deficiencies but that may be

worthy of further improvement (e.g., on-board procedures, training, etc.) or worthy of praise (e.g., certain on-board working practices, maintenance levels, etc.). Observations are recorded in the inspection report and may be considered as suggestions for improvement by the Company. Observations do not need to be formally closed out, but the Company may advise the SKAN INTERNATIONAL SHIP REGISTRY of any follow-up action taken.

Preparation for Inspection

The following should be made ready for the FSI:

- The official Minimum Safe Manning Certificate
- The original National Certificate of Competence (C.O.C), SKAN Certificate of Competency, Endorsement, or Certificate of Receipt of Application for same for each officer
- For each crew member: a SKAN Seafarer's Identification Record Book
- In the case of passenger ships, the certificates of all survival craft/rescue boat crewmen in particular
- A copy of the current crew list

Navigation records, publications, charts, log books, Oil Record Book, Cargo Record Book, training records (to include fire and abandon ship drills, weekly safety training exercises, and security drills), and all similar material must be available for inspection, preferably in one location, such as the chart room.

FSIs have the authority, and have been instructed accordingly, to make a spot check of lifesaving, fire-fighting, and general safety conditions covered by the SOLAS Certificates. The Master will be instructed to call in the Classification Society for examination and/or verification as may be necessary.

The Master should have lifeboats uncovered and the vessel's fire-fighting equipment and appliances in their normally stowed positions ready for the Nautical Inspector's examination. Sufficient crew should be on board and prepared to conduct such emergency drills as circumstances may dictate and permit.

The pilot ladder and associated gear, such as gunwale steps, lights, manropes, etc., should be accessible and in conformance with the regulations.

To facilitate the efficient conduct of safety inspections, one of the ship's staff should be available to accompany the FSI at all times during the safety inspection.

Fire Pumps and Fire Main Systems

General

Ships are equipped with main and emergency fire pumps, which are essential for the vessel's safety. Defective fire pumps, whether main or emergency, are considered a major deficiency. All necessary repairs must be carried out before the ship sails.

The emergency fire pump (as per SOLAS 74/88 Reg. II-2/4 & SOLAS 74/00 II-2/10.2) must always be located in a compartment separated from the engine room, often in the forecastle or aft in the steering flat. The emergency fire pump may be driven by an electric motor, fed from the emergency switchboard, or by a small auxiliary diesel engine.

Checks and Tests

- Check that the location of the emergency fire pump is in accordance with the fire plan.
- Conduct an external visual examination of the pumps, prime movers, pipes, valves, and pressure gauges, looking for damage, corrosion, leakage, or malfunctioning.
- Ensure that operating instructions are displayed.
- Verify that the access and pump room are neat and in order, with no obstructions and ready for use.
- Identify the sea chest valve and relevant control: local/remote pump driven by electric motor.
- Check the connection to the emergency switchboard, including the relevant breaker, is in order and labeled.
- Assess the condition of the starter panel for a motor-driven pump.
- Examine the fuel supply system: tank level gauge, quick closing valve/remote closing device, fuel distribution.
- Confirm the availability of an adequate amount of fuel for the requested autonomy of three hours, with additional fuel for 15 hours available on board.
- Check the starting system by compressed air: bottles, recharging system, and distribution line, including the air dryer if fitted.
- Alternatively, check the starting system by battery: record of battery check, battery charger, battery stowage.
- Ensure that the exhaust gas pipe is tight and properly insulated, with no gas leakage or hot spots.
- Verify that the priming system for low water column head on the suction line is properly fitted and in working condition.

Emergency Fire Pumps

- Test the pump, including the priming system, by connecting the foremost and highest hydrants with the relevant fire hoses and nozzles.

- Open the two hydrants mentioned above and check that the system can produce the required pressure (1) and that both jets reach a sufficient horizontal distance.
- Keep the pump functioning for at least 30 minutes.
- During the test of the emergency fire pump, the isolating valve from the engine room should be closed to test its operation and to prevent pumps in the engine room from being used to raise the pressure.
- Keep the line for anchor chain washing closed during the test.
- The emergency fire pump must be able to operate satisfactorily regardless of the draft or trim of the ship.
- When assessing the performance of an emergency fire pump in full load condition, consider that it could be tested in lightship condition during a port State control inspection.

(1) The SOLAS Convention requires the following minimum pressures to be reached:

- 0.27 N/mm² for ships with GT > 6000
- 0.25 N/mm² for ships with 1000 < GT < 6000

Fire Main

General

The integrity of the fire main (as per SOLAS 74/83 Reg. II-2/4 and 74/09 Reg. II-2/10) is essential for the ship's safety. A leaking or excessively corroded fire main is a major deficiency, and all necessary repairs must be carried out before the ship leaves the port. The test should be carried out in conjunction with the test of the main fire pump(s) and the emergency fire pump.

Checks and Tests

- Visually inspect the fire main, examining the piping and fittings on the exposed deck as well as within accommodations, the engine room, and service spaces.
- Cement boxes and other temporary repairs, clamps, plaster, or metallic filler, are not acceptable, except as emergency repairs at sea and only until the next port of call.
- Check and hammer test the fire main and hydrants under pressure, and request immediate and permanent repairs for any leaks .
- Ensure that the piping is fully bolted, with no leakages from pipes and hydrants.
- Verify that the insulation valve to the engine room is in order and clearly marked.
- For tankers, check that insulation valves on the main deck line are fitted at each 40-meter interval.

- The hydrants must be complete and operational . Missing or damaged hand-wheels, valves, etc., must be renewed.

Fire Hose Boxes

- All fire boxes (or "red boxes") should be marked on the ship's fire control plan and are normally positioned near hydrants.
- Fire hose boxes should be in good condition, well-supported, clearly coloured and marked, and complete with a proper set of hose, nozzle, and spanner key.
- They should be painted red for easy identification and be able to protect their contents from the marine environment.
- Check the integrity of the box. If the doors are roped shut or hanging off, request repairs.
- Ensure that the arrangement of the boxes matches the plan, and that each box contains a hose, a nozzle (of "dual type" where required), and a spanner.
- Check that the inventory is complete.
- Assess the condition of the hoses, which can deteriorate easily, particularly in the engine room, in the presence of heat and oil. Deteriorated or damaged hoses must be replaced.
- Verify the proper size [diameter and length] and integrity [material and end fittings] of the fire hoses. Generally, only one type of connection is allowed. Check the nozzle for the proper type and condition.
- Ensure that the international shore connection flange (as per SOLAS Reg. II-2/19) is available on board, complete with bolts and gaskets. The location should be clearly marked and in accordance with the fire plan.
- The number and location of hydrants and fire hoses should be in accordance with the fire plan and clearly marked with IMO signs.
- Verify that IMO signs are properly posted and that hydrants and hoses are promptly accessible and ready for use.
- Ensure that hydrants are clearly coloured and marked, complete with a spindle wheel or handle.
- Conduct a comprehensive working test, checking the jet from at least two hoses spread as far apart as possible.

Quick Closing Devices

General

In the event of an engine room fire, it is crucial to be able to shut off both air and oil. Fuel and lubricating oil are shut off using quick closing valves fitted directly on the tanks (as per SOLAS 74/88 Reg. II-2/15.2 & Reg. II-2/15.3 and SOLAS 74/00 Reg. II-2/4.2), capable of being closed from a control station located outside the engine room . Quick closing valves can be remotely operated by three different systems:

- Mechanical, using steel wires and pulleys to route the wires to the control station.
- Pneumatic, using compressed air to activate a small piston to trip the valve.
- Hydraulic, similar to pneumatic but using hydraulic fluid.

Checks and Tests

General Checks Applicable to All Types

- Verify that the location of the remote control is in accordance with the fire plan.
- Ensure that prompt and clear access to the release control station is assured, free from obstructions.
- Check that operating instructions are specific to the system and properly posted, including a legend for identification of each valve.
- Confirm that local control is fitted in place and in working condition.
- Ensure that the valve and closing device are free from obstructions, neither blocked nor tied, and ready for use.

Additional Checks for Mechanical Type

- Check that the wires are satisfactorily maintained without deterioration and properly adjusted.
- Ensure that relevant pulleys are free to rotate.
- Test the proper closing of each valve, where possible, by actuating the relevant handle, including the reset mechanism.

Additional Checks for Pneumatic Type

- Check that the system is satisfactorily maintained without leakages.
- Verify the proper availability and indication of air pressure.
- Ensure that valves are properly connected to the actuating system, with no air leakage.
- Test the proper closing of each valve (where possible), by actuating the relevant actuator, including the reset mechanism.

Additional Checks for Hydraulic Type

- Check that the system is properly filled with oil and without leakages.

- Ensure that valves are properly connected to the actuating system, with no oil leakage.
- Test the proper closing of each valve (where possible), by actuating the relevant actuator, including the reset mechanism.

Emergency Stops

General

In the event of an engine room fire, the power must be cut to the ventilation fans, draught fans, oil fuel pumps and purifiers, and lubricating oil pumps and purifiers (for ships whose keel was laid on or after 1 July 2002). Remote emergency stops are provided for this purpose (as per SOLAS 74/00 FIGreg. II-2/5.2 and SOLAS 74/88 regs. II-2/11). The emergency switches are usually contained in a red-painted cabinet close to that of the quick closing valves.

Checks and Tests

- Verify that the location of the emergency stops is in accordance with the fire plan (outside the engine room).
- Ensure that prompt and clear access to the release control box is assured. If the stops are inside a locked cabinet, check the availability of a key or a means to break the glass.
- Confirm that the cabinet is conspicuously marked and that switches are labeled in the working language, indicating the equipment concerned:
    - Ventilation
    - Supply pump (*)
    - Transfer pump (*)
    - Purifier (*)
    - Draught fan
    - Boiler burner
- Test that the power is cut to each piece of equipment by operating the relevant switch.

(*) For oil fuel and, for keels laid after 01/07/2002, also for lubricating and thermal oil.

Emergency Source of Electrical Power

General

In the event of a main electrical power failure, ships are fitted with an emergency source of electrical power (as per SOLAS 74/88 regs. II-1/43 and 44) to supply all essential services for safety in an emergency, such as:

- Lighting at muster and embarkation stations
- Lighting in service spaces, escape routes, stairways, machinery spaces, control stations, steering gear

- Lighting at firemen's outfits lockers
- Lighting at the emergency fire pump room
- Lighting at the navigation bridge
- Navigation lights
- Internal communication system
- Fire detection and fire alarm system
- All internal signals required in an emergency
- Radio installations
- Shipborne navigational equipment as required by SOLAS Reg. V/12
- The emergency fire pump (if driven by an electric motor)
- The steering gear, where applicable
- Emergency generator room
- GMDSS station

The emergency source of electrical power may be:

- A generator driven by a diesel engine.
- A set of accumulator batteries

Diesel Generator

Compartment Where the Generator is Located

- Check that the compartment is marked and access doors are in good working order.
- Ensure that the emergency generator room is neat and in order, with no obstructions or storage of equipment and spares.
- Check the cleanliness of the compartment (absence of oil, fuel, or water on the floor).
- Verify that lighting, ventilation, and relevant means of closure are in good order.
- Ensure that instructions for emergency generator operation and testing are duly posted.
- Confirm that the required fire extinguishers are fitted and duly serviced.
- Check the availability and test the telephone/means of communication.
- If fitted, check that the fixed firefighting system has been regularly serviced, is ready for use, and is provided with operating instructions.

Fuel Tank and Fuel Line

- Check that the tank is filled with an adequate quantity of fuel to grant the required operation.
- Ensure that the fuel tank is fitted with well-maintained means to check the level content (sight level to be fitted with an automatic self-closing device).
- Check that the manhole is fully bolted without any signs of leakage.
- Verify the proper working condition of the fuel supply valve fitted on the tank (if a quick closing valve is required, check the remote control's proper functioning).
- Check the good condition of the fuel line (no clamps, no leakage).
- Ensure that any flexible hoses are suitable for the use and are in good condition.

Emergency Switchboard

- Check the good condition of maintenance and cleanliness, with instrumentation and switches in working condition.
- Ensure that users' switches are labeled.
- Check the presence of a suitable insulating mat in front of the switchboard.
- Verify the proper working of lighting in front of the switchboard.

Diesel Engine

- Check for the absence of leakage (oil, fuel, and water).
- Ensure proper insulation and tightness of the exhaust gas pipe (no leakage, no hot spots).
- Check the good condition and proper maintenance of means for starting the generator:
    - Starting by batteries: Check that they are properly secured in a containment box, check the record of inspection and control, and check the battery charger operation.
    - Starting by compressed air: Check bottles, recharging system, distribution line, and air dryer if fitted.
- Check the second means of starting when fitted (manual, hydraulic, or battery).
- Verify the air intake and relevant damper.

Batteries

Battery Compartment

- Check that access to the compartment is marked and an appropriate warning sign is posted.

- Ensure that access doors are in good working order.
- Check the cleanliness of the compartment and that batteries are properly stowed and fixed.
- Verify the proper maintenance and working condition of lighting and ventilation.
- Ensure that instructions for maintenance and testing are duly posted.
- Check that lights and electrical apparatus fitted inside the room are of a suitable type and well-maintained (explosion-proof, complete, and tight). Ensure that the cover and cable penetration are secure.
- Verify that the exhaust vent is far from any ignition source.

Batteries

- Check that batteries are properly maintained and connected (condition, charge status, storage of batteries).
- Ensure that cables are properly secured (no loose or adrift wires).
- Verify the proper maintenance and good working condition of the charging device.
- Test the proper working condition of batteries according to the instruction procedures.

Running Test

- Check the record of routine inspection, maintenance, and running tests by ship personnel.
- Conduct the starting of the diesel engine with all means provided.
- Verify automatic starting.
- Check automatic connection to the bus bar and automatic feeding of the users listed under items 1 to 9.
- Conduct a prolonged running test according to the instruction procedures, checking in particular that the above-mentioned users are properly fed.

Flag State Inspection Guidelines for SKAN Registered Vessels

Oil Filtering Equipment

1. General

Bilge oily water separators (as per MARPOL Annex I Reg. 14 and Reg. 15) use various methods to separate oil residues from water, allowing the latter to be discharged overboard. These methods rely on two fundamental principles:

- The tendency of oil to "coalesce," meaning oil droplets are mutually attracted.
- The lower density of oil compared to fresh or salt water (hence oil floats on water).

For vessels with 400 < GT < 10,000, the minimum required equipment consists of a filtering unit, which reduces the oil content of bilge water to below 15 ppm. The filter unit draws the oily-water mixture either directly from the bilge or from a holding tank via a designated pump. The separated oil is discharged into sludge tanks, while clean water can be discharged overboard only when the ship is outside special areas.

For vessels with GT > 10,000, as well as vessels with 400 < GT < 10,000 that intend to discharge cleaned water in special areas, the equipment must be mandatorily fitted with an oil content meter with a 15 ppm alarm and an automatic stopping device. The water effluent passes through a sampling apparatus, which measures the ppm of oil in the water. If the ppm of oil rises to 15 or more, the alarm sounds, and the system automatically stops the discharge overboard, either by stopping the pump or by switching to recirculation mode.

2. Checks and Tests

- Identify the equipment and check the approval standard as described in the relevant Type Approval/MED certificate and recorded under item 2.3.1 of the Supplement to the IOPP Certificate.
- Identify the oil content meter and approval standard as described in the relevant Type Approval/MED certificate and recorded under item 2.3.3 of the Supplement to the IOPP Certificate.
- Check that the calibration certificate since the last IOPP renewal survey is available on board (for equipment installed after 01/01/2005 in accordance with Res. MEPC 107(49)).
- Check the capacity of the equipment as recorded under item 2.4 of the Supplement to the IOPP Certificate.
- Visually inspect the oily water separator (cleanliness, tightness, outer casing, instrumentation, etc.).
- Check the piping system and connections, including:

- Cross-check of bilge tank position and volume towards the capacity plan and Oil Record Book - Part I.
- Absence of physical modifications/alterations.
- Absence of signs of corrosion and/or leaks.
- Operation of pressure gauges and level switches.
- Connection of the suction pipe to bilge tanks and/or bilge wells only.
- Absence of connection to sludge tanks.
- Sampling line for the oil content meter.
- Compressed service air piping for pneumatic control.
- Discharge line of separated oil to sludge tanks.
- No flexible hoses in place.

- Check the absence of unauthorized connections on both the suction and discharge sides.
- Run a test of the oily water separator and check the operating condition of valves and pressure gauges.
- Conduct a working test of the automatic stopping device (where fitted) and relevant alarm through simulation of oil content in excess of 15 ppm.
- Verify that the alarm can be heard by personnel working in the engine room or engine control room and, in the case of unattended machinery spaces, that it is acknowledged and transferred by the automation system.
- Check that the present quantity of sludge and oily water in tanks is consistent with the amount indicated in the Oil Record Book Part I.
- Verify that the Oil Record Book is correctly filled in, paying particular attention to the code (letter) and item (number) to be included in the Table of Part I.

Sludge Tank (Illegal Overboard Connections)

1. General

Every ship of 400 GT and above must have a tank or tanks of adequate capacity for oil residues (sludge) generated by fuel or lubricating oil purifiers and engine room bilge separators (as per MARPOL Annex I Reg. 12). The required capacity of the tank is calculated based on the type of machinery, the fuel used, and the likely length of any voyage. Most ships retain the sludge in tanks and discharge it via the standard discharge connection (MARPOL Annex I Reg. 13) to reception facilities ashore. The capacity of the sludge tank can be calculated considering other

acceptable means of disposal, such as auxiliary boilers or incinerators. The sludge tank(s) must have no discharge connections to the bilge system, oily bilge water holding tanks, tank top, or oily water separators, except for drains with manually operated self-closing valves and arrangements for subsequent visual monitoring of settled water.

2. Checks and Tests

- Review the capacity plan/stability booklet and check the location and capacity of the sludge tank(s).
- Verify the correspondence of the location and capacity of the sludge tank(s) as recorded under item 3.1 of the IOPP Certificate.
- Check the correspondence of the location of the sludge tank(s) as recorded in the Oil Record Book.
- Identify and check the general condition of the sludge tank(s) and associated piping, including the presence of a manhole and its condition.
- Check the sounding pipe with the relevant closing device.
- Verify the absence of unauthorized connections and penetrations from and to the tank, including the absence of flexible hoses.
- Check the absence of discharge connections to overboard.
- Verify the absence of discharge connections to the bilge system, oily bilge water holding tanks, tank top, or oily water separators.
- Check the fitting of a dedicated pump and relevant piping arrangement for:
    - An ashore discharge line leading to the main deck, fitted to accommodate the international shore connection flange.
    - Mixing tanks for auxiliary boilers or incinerators, if any.
- Verify that the discharge line to shore is provided with an international flange connection.

Lifeboats

1. General

Lifeboats (as per SOLAS 74/97 Reg. 26.1.1.1 - SOLAS 74/98 Reg. III/31.1 and LSA Code) may be:

- Open boats: motor or oar propelled.
- Partially enclosed boats: only for ships whose keel was laid before 1 July 1988 and only with permission from the Administration.
- Totally enclosed boats: motor propelled, which may also be fire-protected.

The construction material for lifeboats may be:

- Wood: only for ships whose keel was laid before 1 July 1986.
- Steel or aluminum alloy.
- Glass-reinforced plastic (GRP). GRP boats are typically single-skin construction, except for some larger free-fall boats, which may use sandwich construction (i.e., two smaller layers of GRP separated by a core of foam or balsa wood).

2. Hull

2.1 Structural Condition of the Hull

Check that the structure, both inboard and outboard, has not suffered any damage or deterioration. If damage has occurred, immediate repair is required.

2.2 Support Foundation

Lifeboats launched by gravity are suspended from davit fall blocks by a device, which could be either a hook (for ships whose keel was laid before 1 July 1986) or a release mechanism (for ships whose keel was laid on or after 1 July 1986). The foundation of the suspension, which generally consists of steel flat bars bolted to a reinforced plate included in the keel construction, should be thoroughly checked, particularly for:

- Wasted or thinned flat bars and connecting brackets.
- Corroded or loose bolts.

2.3 Release Mechanism

Lifeboats fitted on ships whose keel was laid on or after 1 July 1986 must be equipped with a release mechanism that:

- Releases all hooks simultaneously.
- Releases the lifeboat once it is waterborne (Off-Load).
- Can release the lifeboat while it is still suspended (On-Load).

The On-Load release capability must be adequately protected against accidental or premature use, typically achieved through mechanical protection (Interlock). Operating instructions and a suitable warning notice should be provided.

2.4 Drain Valves

Lifeboats fitted on ships whose keel was laid on or after 1 July 1986 must be equipped with at least one drain valve capable of automatically draining water out of the hull when the lifeboat is not waterborne and preventing water ingress when the lifeboat is floating. The valve should be provided with a cap or plug to close it. Other lifeboats should have at least two plugs or caps for any drain.

2.5 Handholds

Handholds should be fitted and adequately fastened on the underside of the hull in the area of the bilge turn. Wooden handholds resemble small bilge keels, while others may consist of galvanized steel tubes fixed at intervals with pipe clips or similar.

2.6 Lifeline

All lifeboats should have a buoyant lifeline, becketed around the outside of the hull, except in the area of the propeller.

2.7 Retro-Reflective Tapes

Retro-reflective tapes should be fitted on the outer shell and canopy.

2.8 Marking

Lifeboats should be clearly marked on each side with:

- The name and port of registry of the ship to which the lifeboat belongs, on each side of the lifeboat's bow.
- The name of the ship and the number of the lifeboat, visible from above.
- The dimensions of the boat.
- The maximum number of persons accommodated.

3. Propulsion and Steering

3.1 Engine

Engines are usually hand-started, except in totally enclosed lifeboats, whose engines are started by battery. Engines started manually are provided with a device to open the cylinder valve and reduce internal pressure to make cranking softer. The engine should be protected by a fire-retardant casing..

3.2 Steering Gear

The steering mechanism may consist of a simple rudder and tiller arrangement (open boat) or a system with a wheel (enclosed boat). Emergency steering will consist of a steering oar for open type lifeboats and an emergency manual tiller for other types of steering.

3.3 Propeller and Stern Tube

The shaft should be tightly connected and fully bolted to the Gear Box.

4. Equipment and Inventory

4.1 Equipment Inventory

Lifeboat equipment is listed in the Record of Approved Cargo Ship Safety Equipment, depending on the type of lifeboat. Equipment should be stowed on board at all times, with most items kept inside watertight containers to prevent deterioration. This includes food and water ratios, distress signals, user and maintenance manuals, etc.

4.2 Bilge Pump

The bilge pump should be type-approved and may be either fixed to the boat or portable. It can be hand-operated (open type lifeboat) or electric, fed by a battery. It should be fitted with suitable suction and discharge pipes of adequate length.

4.3 Canvas Cover

In open lifeboats, occupants are protected from the elements by a canvas cover supported by a structure of steel tubes.

4.4 Skates/Fenders

At least two skates or fenders should be fitted to prevent damage during launching and recovery.

5. Checks and Tests

The following should be checked and confirmed:

- Availability of instructions for on-board manuals and training manuals specific to the type of crafts fitted on board.
- Number and type in accordance with Record E (SE).
- Number of rescue boats included in the number of lifeboats.
- Lifeboats properly stowed, lashed, and in neat order.
- Lifeboats properly marked: dimensions, capacity, name & port of registry, call sign (on top only for partially enclosed and closed types).
- General external examination: hull, drain valves, grab line, handrail lifeline, skates, propeller, rudder, hook or suspension eye, rigid cover, painters.
- Condition and test of bilge pump: suction and delivery pipes connected.
- Thorough examination of support of suspension hook/eye or release mechanism and relevant connection to the hull: wastage, corroded or loose bolt, thinned or deformed brackets.
- Release mechanism, including relevant remote control system: Offload/On Load Type.
- Release mechanism operating instructions and warning notice posted, including on-load release activation and interlock.
- Release mechanism reset properly and ready for use.
- Availability and maintenance condition of oars and crutches, including spares.
- Completeness and good maintenance condition of lifeboat equipment.
- Canopy and relevant stanchion for open type lifeboat.
- Date of food rations, water, and distress signals.

- Lifeboat engine and relevant casing, including spares and tools for minor adjustments.
- Starting device: manual crank or battery.
- Fuel tank and supply line.
- Availability of a suitable amount of fuel for the requested autonomy (24 hours).
- Test of engine and transmission ahead and astern.
- Exhaust gas pipe on board and insulated as necessary.
- Steering gear and relevant control transmission, including emergency steering oar or emergency tiller as applicable.
- Breathing air bottles in good condition and charged: pressure gauge indication (for tankers only).
- Water spray system in order: pump condition, pump clutch, sea chest valve, spray piping and nozzles (for tankers only).
- Operating instructions and signs.
- Battery charger for starting and service batteries.

Recording of Drills, On-Board Inspections, and Maintenance

Ensure that abandon ship drills, drills of life-saving appliances, and on-board training are properly recorded in the log-book. Ensure that the reports of the prescribed monthly inspections of life-saving appliances are recorded in the log-book. An up-to-date service report for the annual thorough examination pursuant to Reg. III/20.11 should be available on board. Tests foreseen by the aforementioned rule should be witnessed by a Classification Society Surveyor. During abandon ship drills requested by SOLAS, during which lifeboats are to be lowered to the water (at least once every three months for davit-launched lifeboats), the lifeboat should be released from the lifting hooks and maneuvered in the water.

Life Rafts

1. General

Life rafts (as per SOLAS 74/83 Reg. III/26.1, SOLAS 74/98 Reg. III/31.1, and LSA Code) can be divided into two basic types: rigid and inflatable. The rigid type is very rare nowadays. Both rigid and inflatable life rafts are either manually or davit launched. Ships where the bow or stern is more than 100 meters from the survival craft must carry an additional 6-man life raft, forward or aft as required, in case there are crew members working in that area. Except for the additional 6-man life raft, all life rafts must be secured with a hydrostatic release unit (SOLAS 74/83 Reg. III/29, SOLAS 74/98 Reg. III/13) that will automatically release if the ship sinks . Inflatable life rafts and hydrostatic release units must be serviced every 12 months by a servicing station approved in compliance

with the "Classification Society Rules for the certification of Service Suppliers." Disposable hydrostatic release units should be replaced every 2 years.

2. Checks and Tests

- Check the validity of the certificates issued by the last approved servicing station (SOLAS Reg. III/20.8.1).
- Check the general condition of the containers , particularly in the area where the containers lean on the supports.
- Check the expiration date or last service date of the hydrostatic release unit.
- Check the marking of the container: Maker's name; Serial number; Approval authority; SOLAS; Type of emergency pack; Date of last service; Length of painter; Max. permitted height of stowage.
- Check the condition of the stowage and securing arrangements.
- Check the condition and connection of the hydrostatic release unit.
- Check the condition and connection of the slip hook.
- Check that the life raft painter is attached to the ship by means of a weak link.
- Check that launching instructions are displayed.
- Check that nothing prevents the life raft from floating free if the ship sinks.
- Check that the stowage area is within the reach of the launching appliance.
- Check that the embarkation ladder is placed and ready to use close to the launching station.
- Check that the light at the launching station, fed by the emergency source, is in working condition.

Launching Appliances

1. General

Launching arrangements for survival crafts (as per SOLAS 74/83 Reg. III/48, SOLAS 74/98 Reg. 16, and LSA Code) may include:

- Twin arms davit systems for side-launched lifeboats.
- Single davit systems for rescue boats or davit-launched life rafts.
- The "structure" required for launching a free-fall lifeboat.

The primary requirement of all these systems is to provide a safe means of launching the survival craft in all conditions; the secondary requirement is to provide a means of recovery when used for drills.

2. Checks and Tests

2.1 Davit Structure and Foundations

Check the davit structure, its foundations, and relevant connections to the deck, the arms , and the pivoting system to swing the boat outboard from the stowage position. Perform a visual examination, hammer testing, and, if deemed necessary, ultrasonic gauging. Pay particular attention to the area of the davit behind the sheaves .

2.2 Sheaves

Check that the sheaves are well-maintained, greased, free to rotate, and not worn out or cracked.

2.3 Falls

The falls of any survival craft must be changed every 5 years, or sooner if they show signs of deterioration. Check the date of the last renewal. Ensure that the falls are satisfactorily maintained and without deterioration, including broken wires, oxidation, loose wires, or distortion. Verify that the wire is properly wound on the winch drum.

2.4 Blocks

Ensure that all blocks, pad eyes, links, and fastenings are maintained in good condition. Check that the plates of the block are not corroded or thinned . Verify that the pin and bush are not worn out or loose.

2.5 Winches and Brakes

The launching and recovery of davit-launched survival craft are controlled through a winch and a manual brake (operated from the deck and/or from the survival craft. Check the condition of the winch: casing, connection to the deck, wire drum, brake lever, self-lowering device (if fitted). Verify that the dock for the air motor is in order and that the handle for manual operation is available. Ensure that the annual thorough examination has been duly and timely carried out, with the service report available on board. Note: Tests foreseen by Reg. III/20.11 for the annual thorough examination and quinquennial overload test should be witnessed by a Classification Society surveyor.

2.6 Recovery Arrangement

In addition to lowering the survival craft, the launching devices must incorporate a means of recovery. On older ships, this may be a manually operated winch, but more modern installations incorporate a powered winch. The power may be supplied either by an electric motor or an air motor. The system must incorporate limit switches, which cut off the power supply to the motor before the davit arms reach the stops, to avoid overstressing falls or davits. Recovery to the

stowage position is then completed by hand cranking the recovery winch. Test the proper working of the limit switches.

2.7 Miscellaneous

- Fall Preventer Devices: All ships fitted with on-load release systems for lifeboats are equipped with fall preventer devices. The use of FPDs should be considered as an interim risk mitigation measure, only to be used in connection with existing on-load release hooks, at the discretion of the master, pending the wide implementation of improved hook designs with enhanced safety features.
- Tracing in Blocks: Suitable tracing in blocks should be fitted between davit arms and lifeboat hooks or release mechanisms to keep the lifeboat close to the side shell while it is swung out ready to be boarded. The length of the blocks should be such that the boat remains tied to the ship's side at the level of the embarkation station.
- Embarkation Ladders: Check the overall condition of the ladders, their connection to the deck, and that they are long enough to reach the water when the ship is in light condition, with 10° trim and 20° list. Pay particular attention to the condition of the side ropes and ladder.
- Emergency Lighting: Check the maintenance condition and functioning of the emergency lighting for the stowage and launching positions of survival craft.
- Launching Instructions: Verify the availability of launching instructions for the recovery arrangement, lifeboats, and life rafts, usually in the form of posters affixed near the stowage positions and under the emergency lighting.
- Means to Prevent Discharge of Water: Check that proper measures are in place to prevent the discharge of water onto the crafts.
- IMO Posters and Signs: Ensure that the IMO Posters and Signs (Green and Blue series) are displayed.
- Lighting: Verify that lighting is supplied by the emergency source of power at muster stations, embarkation stations, and areas of water onto which the crafts will be launched, and that it is in working condition (no missing bulbs, no missing caps, light enclosure red-colored).

Load Line Appliances

1. General

The following load line appliances are considered:

- Load line marks
- Cargo hatch coamings and hatch covers

- Hatchways
- Air pipes
- Ventilators
- Bulwarks and guardrails
- Doors
- Windows

2. Load Line Marks

Check that the load line marks are permanently marked, duly painted, and plainly visible on both sides of the ship . Verify the general condition of the side shell plating from the pier.

3. Cargo Hatch Coamings & Covers

Check the overall condition and weather tightness of the hatch covers: no holes on top and side plating, no wasted areas, no buckling, no notch damage, no pitting . Verify the structural condition of the internal: no detachment/deformation, no thinned edge. Check the structural condition of the hatch coamings with relevant stays: neither deformed nor thinned plating, stays tip not detached or cracked.

Load Line Appliances

Cargo Hatch Coamings and Covers

- Inspect the condition of compression bars, gaskets, and relevant retaining channels, both longitudinal and transversal.
- Verify that all closing and securing devices (cleats) are in place and in order.
- Check wheels and their supports: ensure pins and bushes are in order and greased, wheels are neither cracked nor deformed, and wheels are not loose.
- For hatch covers operated by hydraulic pistons, check the tightness of hydraulic pistons and piping for any leakage, and ensure a sound connection of the pistons with both the ship structure and hatch cover, with no cracks, wastage, or deformation.
- Inspect hinges and supports between hatch cover panels.
- For hatch covers operated by chain, check the condition of chain links for excessive wear or deformation, and the condition of the air/hydraulic capstan.
- Test the opening/closing system, paying particular attention to oil leakages in hydraulic systems.

Cargo Hold Ventilators

- Ensure cargo hold ventilators are fitted with weather-tight covers that are not deformed, with gaskets in place and in good condition, and hinges and dogs in working condition and greased.

Air Pipes

- Inspect the structural condition of air pipes for corrosion, wastage, or damage.
- Check the condition of closing devices, which may include:
    - A plug (rubber or wood) attached to the pipe by a chain.
    - Flaps with seals and dogs.
    - Float ball type (dismantling may be necessary to check the float ball and the condition of the float chamber).
- Verify that each air pipe is properly labeled with the indication of the tank it serves.
- Check the condition of the flame screen for corrosion, damage, or obstructions where required.
- For air vents fitted on tanks intended for flammable liquids, check the spill containment box and flame net.

- Inspect and test P/V valves fitted on cargo tanks to ensure both pressure and vacuum devices are not stuck and are free to move.

Ventilators

- Check the structural condition of coamings for corrosion, wastage, or damage.
- Inspect the condition of closing devices (covers, hinges, gaskets, and dogs).

Bulwarks and Guardrails

- Inspect the structural condition of bulwarks and relevant stanchions for corrosion, wastage, damage, or deformation.
- Ensure fairleads and rollers are in order, free to rotate, and greased.

Doors

- Check the condition of doors and relevant sills for corrosion or damage, ensuring doors close properly, are not deformed, and are weather-tight.
- Inspect the condition of gaskets and relevant retaining channels.
- Verify the condition of closing devices (toggles, dogs, hinges, wedges), ensuring they are all in place and well-greased.

Windows

- Ensure all windows are in place and weather-tight, with no cracks or patches.
- Verify the availability of shields as requested.
- For tankers, check closed-type windows on the superstructure front bulkhead and within three meters from the cargo area.

Access Hatchways

- Inspect the overall condition and weather-tightness of access hatchways, including covers and coamings in good order, with no wastage, deformation, or thinned edges.
- Ensure gaskets are in place and effective.
- Verify hinges, rods, and dogs are all in place and greased.
- Check the connection to the deck is in sound condition.

Outfitting and Cleanliness of Engine Room and Steering Gear Room

Engine Room Cleanliness

- Ensure the engine room is neat and in order, with no obstructions on passageways, and spares and tools properly stowed.
- Verify flooring, platforms, and ladders are clean and free from oily and slippery residues.

- Check for oil leakages (combustible and lubricating oil) and oily traces from machinery and piping, particularly under flooring.
- Inspect the bilge for dryness and cleanliness, with no rags or abandoned spool pipes.
- Ensure drip trays in way of fuel oil tanks are dry and clean.
- Verify main and auxiliary engines are free from leakages, including casing ports, cylinder heads, injectors, fuel oil supply pipes, lube oil supply pipes, scavenging air boxes, oil distributors, fuel oil/lube oil-driven pumps, and filters.
- Check the jacketed pipe for high-pressure fuel injectors/fuel pumps is in place and tight.
- Inspect the viscometer and F.O. supply module, including heat exchangers, for neatness and absence of leakages.
- Ensure the boiler/auxiliary boiler burner, purifiers, and drip trays are in order, clean, and free from leakages.
- Verify insulation mats (fire and/or thermal) are properly wrapped, not soaked, and free from oil residues.

Engine Room Fittings

- Ensure bilge wells and bilge suction are free from obstruction.
- Verify bilge alarm sensors are in place and operational.
- Check fuel oil and lube oil tanks are fitted with level indicators with non-cylindrical glass and guards, and automatic spill valves.
- Ensure electrical panels and distribution boxes are properly supported and complete with covers and closing devices.
- Verify ceiling lights are in place with bulbs and covers.
- Check ventilation ducts are in order and fitted with relevant grating and flaps.
- Ensure unauthorized flexible hoses are not connected and in use.
- Verify hydrants are in proper condition with no leakage and free from obstruction.
- Ensure fire hoses with nozzles and spanner keys are in place.
- Verify posters and signs (IMO series Red and Green) are displayed.
- Ensure quick-closing valves are neither blocked (wood chock) nor tied.

- Verify tank access manholes are fully bolted with gaskets and tight, with no trace of leakage.
- Ensure control instruments of engines are fitted and in working condition, including pressure gauges, thermometers, and RPM counters.
- Verify the boiler is fitted with control instruments in working condition, including steam pressure gauges, fuel oil pressure gauges, steam temperature, and water level indicators.
- Ensure pressure gauges are fitted on suction and delivery pipes of pumps.
- Verify electrical starter panels are fitted with ammeters and voltmeters in working condition.

Engine Room Structure

- Inspect bottom plating or double bottom plating for pitting corrosion.
- Verify the foundations of engines, boilers, and pumps are properly connected, with no wastage or deformation.
- Check side shell frames are in order, not wasted, not holed, and properly connected to plating, paying special attention to frame edges and areas under flooring.
- Ensure structural ventilation ducts are in order and free from wastage, considering that hidden portions of the side shell may suffer worse deterioration.

Steering Gear Room

- Ensure the steering gear room is neat and in order, with no obstructions, and spares, tools, and ropes properly stowed.
- Verify the floor is free from oily residues.
- Check for hydraulic oil leakages from the steering gear and hydraulic oil storage tank.
- Ensure the hydraulic oil tank is fitted with a low-level alarm.
- Verify anti-slippery floors or gratings and handrails are fitted I.W.O. steering gear.
- Ensure instructions for emergency and local control are displayed.
- Verify means of communication with the bridge are available.
- Ensure availability of heading information (for ships with keel laid > 01/02/1992).
- Test emergency steering gear, including the communication system.

Sounding Pipes

- Verify sounding pipes are fitted with closing devices.
- Ensure sounding pipes for oil fuel are identified with indications of the tank served.

- For ships with keel laid > 01/02/1992, check that sounding pipes outside the engine room are fitted with threaded plugs.
- Verify sounding pipes are fitted with small diameter self-closing control cocks (oil fuel tanks only) for ships with keel laid > 01/02/1992.
- Ensure sounding pipes are fitted with closing devices, such as caps.
- Verify self-closing devices are fitted and properly working (not seized) and that plugs are in place.

Nautical Charts and Publications

Nautical Publications

- Ensure all ships carry adequate and updated nautical publications necessary for the intended voyage, including charts, sailing directions, lists of lights and fog signals, lists of radio signals, tide tables, notices to mariners, and other relevant publications.
- Verify that the required nautical publications are adequate for the intended voyage and updated/renewed as appropriate.
- Ensure the publications listed in the annual catalogue, such as the "Catalogue of Admiralty Chart and Publication," are available on board.

Charts

- Ensure all ships carry updated charts necessary for the intended voyage.
- As an alternative, an Electronic Chart Display and Information System (ECDIS) is also accepted as meeting the chart carriage requirements.
- Starting from 1 July 2012, ECDIS has become mandatory for new ships and existing ships with retroactive requirements to be applied depending on the type and gross tonnage of the ship, not later than 1 July 2018.
- A back-up system must be provided for the equipment.

Corrections and Updates

- Revisions and corrections are contained in the "Notices to Mariners," published weekly.
- The "Cumulative List of Notices to Mariners," published every six months, and the "Annual Summary of Admiralty Notices to Mariners," published annually, provide a summary of corrections for each chart, the relevant date of issue, and subsequent amendments.
- Corrections of paper charts and publications are made by hand or through the use of small "tracings" in accordance with the instructions contained in the "Notices to Mariners."

- For ECDIS systems, corrections are made through electronic files distributed by authorized hydrographic offices.

Control and Verification

- Verify that the latest edition of the annual catalogue of charts and publications is available on board.
- Ensure that the requested charts and publications detailed in the catalogue are available on board.
- Verify that Notices to Mariners are available on board.
- Ensure that the six-month publication "Cumulative List of Notices to Mariners" is available on board.
- Verify that the yearly publication "Annual Summary of Admiralty Notices to Mariners" is available on board.
- Ensure that corrections and updates of charts and publications are duly and timely done and properly recorded in the correction logbook.
- Verify that corrections are made in accordance with Notices to Mariners instructions for electronic charts intended for ECDIS Equipment.
- Ensure that electronic charts and publications are from authorized hydrographic offices and are suitable for the ECDIS system and relevant electronic back-up system.
- Verify that an adequate selection of ENC – Electronic Navigational Charts – for the intended voyage are installed or stored on board.
- Ensure that officers in charge of navigational watch (OOW) using the ECDIS system are provided with a certificate of training and, for apparatus different from that used to obtain the certificate, with familiarization records.
- Verify that chart updates are issued by authorized hydrographic offices and are stored separately, applied automatically, and recorded and logged with the date of application.
- Ensure the voyage plan is filled in properly, including waypoints, chart numbers, sailing restrictions, and warnings.
- Verify that charts and publications for the intended voyage are updated with the latest release of Notices to Mariners.
- Ensure position fixes and separation zones are traced on the charts.

Leakage from Sloping Plate of Topside Ballast Tanks

General

Bulk carriers are fitted with topside ballast tanks prone to corrosion. A corrosion prevention system typically includes a full hard coating or a combination of a full hard coating and anodes. The coating condition is defined as follows:

- **Good Condition:** Minor spot rusting only.
- **Fair Condition:** Local breakdown at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than defined for poor condition.
- **Poor Condition:** General breakdown of coating over 20% or more of areas or hard scale over 10% or more of areas under consideration.

According to Classification Society Rules, the requirements for surveys of topside ballast tanks depend on the age of the ship and the relevant survey interval depends on the recorded coating condition. When the coating condition is recorded as good or fair, topside ballast tanks are to be internally inspected at class intermediate and renewal surveys. When the coating condition is recorded as poor, topside ballast tanks are to be internally examined at class annual surveys. Pressure tests of topside ballast tanks are normally required at class renewal surveys and may be required at other surveys if deemed necessary by the attending surveyor.

Checks and Tests

During annual and intermediate surveys, particular attention should be paid to the sloping plate of topside ballast tanks to identify signs of leakage (e.g., rusty marks, dripping). This check should be carried out independently of the recorded condition of the internal coating and may help identify local defects difficult to detect from the inside (e.g., small cracks in welded seams of the sloping plate). If marks or signs are detected that question the condition of the sloping plate, an internal examination and pressure test should be required and carried out.

Main Deck, Exposed Deck, and Superstructure

General

At the time of annual surveys, the ship should undergo a general examination, including a visual inspection of the hull, equipment, and machinery, as well as some tests to verify that the ship is in a satisfactory and efficient general condition and is properly maintained. The freeboard deck and exposed decks are among the items to be inspected.

Checks and Tests

The main and exposed decks should be completely inspected by visual examination. If some areas are not examinable due to material laid on deck plating (e.g., mooring ropes, garbage containers, oil drums, spare steel plating), the removal of the material should be requested and the area carefully investigated. Particular attention should be paid to areas where cement boxes are found (structures, pipes, etc.); removal should be requested in all cases to carefully inspect the area concerned (from both sides where possible). Sometimes, thin cement layers rather than

boxes are found on deck, appearing as a protective "coating" but often hiding structural defects. The corresponding area should be investigated from the under-deck side (thickness measurements may be required). If the investigation raises doubts about the condition of the deck plating, the removal of the concrete layer should be required to carry out a careful inspection from both sides. The removal of the concrete layer should also be required if the under-deck side is not accessible. The main deck and superstructure deck should be kept neat and in order, with piping and accessories in good condition, free from leakages, and properly connected to the deck. Deck plating and ladders should be free from slippery and oily residues. Ladders should have all steps and handrails in order. No material should be stowed on passageways or in the way of control stations, service areas, mooring stations, firefighting systems, and equipment.

On Load/Off Load Lifeboat Release Gear

General

The on-load/off-load release arrangement was introduced by the 1983 SOLAS amendments, which entered into force on 1 July 1986. This device allows the lifeboat or rescue boat to be released in both floating (off-load) and suspended (on-load) conditions. To prevent accidental or premature release, the on-load capability must be adequately protected, including a special mechanical protection not normally required for off-load release. The protection against accidental release commonly used by manufacturers is a hydrostatic lock, which does not permit the activation of the release handle until the boat is fully floating. To release the boat when suspended, this hydrostatic lock must be bypassed by breaking a protection and freeing the lock, but this operation must be intentional. In recent years, several accidents have occurred during lifeboat drills and inspections, often due to failure of the on-load release mechanism caused by lack of maintenance, insufficient crew training, improper reset, or inadvertent operation.

Checks and Tests

According to SOLAS Reg. III/20.11.2, as amended, on-load/off-load release gear should be:

1. Serviced at recommended intervals in accordance with instructions for onboard maintenance.

2. Subjected to a thorough examination and test during annual surveys by "properly trained personnel familiar with the system."

3. Operationally tested under a load of 1.1 times the total mass of the boat when loaded with its full complement of persons and equipment whenever the release gear is overhauled. Such overhauling and testing should be carried out at least once every five years.

Note 1:

"Properly trained personnel familiar with the system" can include:

a) Manufacturer's representatives. b) Persons or companies certified by the manufacturer. c) Persons or companies approved by the Flag Administration for the specific purpose.
The following checks and examinations should be performed by the attending surveyor:

1. Review the ship's records of inspection and maintenance, which are part of the "instructions for onboard maintenance" required by Reg. III/36 of SOLAS 74, as amended. A report for the following inspections should be entered in the logbook: a) For all ships, a visual inspection of the hooks, their attachment to the lifeboat, and the setting of the on-load release gear should be conducted weekly (Reg. III/20.6.1). b) In addition, for cargo ships, all lifeboats except free-fall lifeboats should be moved from stowed to outboard position weekly if weather and sea conditions permit (Reg. III/20.6.3). c) For all ships, all lifeboats except free-fall lifeboats should be turned out from their stowed position monthly, without any persons on board, if weather and sea conditions permit (Reg. III/20.7.2).

2. Examine records and checklists filled out by "properly trained personnel" previously defined and signed by the ship's master or company representative.

3. Conduct a visual inspection of each on-load release arrangement, paying particular attention to: a. The operating cables should be properly adjusted for simultaneous release of the lifeboat, appearing in good condition and evenly tensioned in the release handle unit. b. The hydrostatic lock lever should be in the safe position when the boat is in the stowed position, according to the manufacturer's instructions in the operating manual. c. The protection for access to the on-load release capability should be in place. d. The connection between the hook's side plates to the keel should be free of significant signs of corrosion. e. Instructions for operating the system should be posted near the operating lever and clearly visible. f. A clear indication showing that the hook is properly reset should be provided on each hook side plate, along with proper instructions on how to reset it.

Any instructions issued by the concerned Flag Administration, which can be found in the "Instructions to Surveyors," should also be taken into account.

PSC DEFICIENCY CARDS (CARGO SHIPS)

SHIP CERTIFICATES AND DOCUMENTS

1. SHIPS CERTIFICATES AND DOCUMENTS

In order to demonstrate their compliance with International conventions mandatorily applicable to ships depending on their type, size, tonnage, deadweight, service, and navigation, ships shall be provided with Certificates, Manuals, and Record Books.

1.1 VERIFICATION AND CONTROL

- Check that original and valid certificates are available on board.
- Check that a copy of the Document of Compliance (DOC) updated with endorsement for the annual audit is available on board.
- Check that certificates are endorsed for periodic surveys within the specified date ranges.
- Check the consistency of data and figures between certificates.
- Check that manuals and instruction books are specific to the ship.
- Check that log books/record books are properly filled in with data in accordance with relevant instructions.
- Check that the log book format is in accordance with Administration requirements.
- Check that, when required, manuals are approved on behalf of the current Flag Administration.
- Check the consistency of data and figures in different documents, e.g., tank capacity and location [capacity plan/stability booklet/certificates' supplement/record books].
- Check that the required copies of manuals are available on board and distributed as necessary (e.g., training manuals in the crew mess room or recreation room).
- Check that the ship's working language is recorded in the log book.
- Check that mandatory entries are regularly made: Steering gear drill, Fire drill, Man Overboard drill, Onboard training, Oil Record Book Part I, Oil Record Book Part II, Cargo Record Book.

OFFICERS AND RATINGS CERTIFICATION

The crew must carry valid certificates of competency issued according to the STCW convention, depending on the type of ship, the ranking, and function assigned. To receive such certification,

crew members must undergo training courses, which should be documented with relevant certificates or attestations. The Flag Administration will determine the minimum safe manning criteria for each vessel and will issue the relevant certificate detailing the minimum crew composition and certification required. The muster list, prepared on a specific format approved by the Flag Administration, details the assignment of duties to each seafarer in case of emergency.

2.1 VERIFICATION AND CONTROL

- Check that the Minimum Safe Manning Certificate and Muster List are available on board.
- Check that the Muster List is displayed in accommodation areas.
- Check that original and valid Certificates of Competency (COC) for Officers and Officers in Charge of a Navigational Watch (OOW) are available on board.
- Check that COC endorsements for certificates issued by an Administration other than the Flag Administration or a three-month validity application letter for obtaining such endorsement are available on board.
- Check the General Operator Certificate (GOC) for GMDSS Operators.
- Check Certificates of Proficiency in survival craft, rescue boats, and fast rescue boats for officers and ratings.
- Check certificates or attestations for Training courses: basic – advanced – specialized.
    - Basic: Personal survival techniques, fire protection and fire-fighting, elementary first aid, personal safety and social responsibility.
    - Advanced: Advanced fire-fighting for tankers.
    - Specialized (depending on the type of ship):
        - Tanker: Tanker familiarization, Ro-Ro Pax, Crowd management, Familiarization & Safety Familiarization, Passenger safety, Cargo safety and hull integrity, Crisis Management.
        - Passenger: Crowd management, Familiarization & Safety Familiarization, Passenger safety, Crisis Management.
- Check Medical examination certificates.

PSC DEFICIENCY CARDS (CARGO SHIPS) SHIP CERTIFICATES AND DOCUMENTS

Table

Copy

No.	Document	All	BCA	Oil	Che	Gas	Gen
1	Class X	X					
2	International Load Line Certificate	X					
3	International Load Line Exemption Certificate	X					
4	Cargo Ship Safety Construction Certificate	X					
5	Cargo Ship Safety Equipment Certificate	X					
6	Cargo Ship Safety Radio Certificate	X					
7	Safety Management Certificate (ISM Code)	X					
8	International Ship Security Certificate (ISSC – ISPS Code)	X					
9	Copy of Document of Compliance (ISM Code) updated with endorsement for last Company audit	X					
10	International Oil Pollution Prevention Certificate (IOPPC- MARPOL Annex I)	X					
11	International Pollution Prevention Certificate (NLS/IPPC- MARPOL Annex II)	X					
12	International Sewage Prevention Pollution (ISPPC – MARPOL Annex IV)	X					
13	International Air Pollution Prevention Certificate	X					
14	Engine International Air Pollution Prevention Certificate (EIAPP – MARPOL Annex VI) (1)	X					
15	International Energy Efficiency Certificate (IEEC – MARPOL Annex VI) (2)	X					
16	International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk (ICOF Chem - IBC Code)	X					

No.	Document	All	BCA	Oil	Che	Gas	Gen
17	International Certificate of Fitness for the Carriage of Liquified Gases in Bulk (ICOF Gas - IGC Code (3))	X					
18	Certificate of Fitness for the Carriage of Liquified Gases in Bulk (COF Gas - GC Code) (4)	X					
19	International Tonnage Measurement Certificate	X					
20	Cargo Gear Register Book and Certificate (ILO 152)	X					
21	Document of Compliance for the Carriage of Grain	X	X				
22	Document of Compliance for ships carrying Dangerous Goods (5)	X	X				
23	Statement of the carriage in bulk of cargo listed in	X	X				
24	International Anti-Fouling System Certificate (IAFSC – AFC Convention)	X					
25	Safe Manning Document (SOLAS Ch.V)	X					
26	Certificates for Master, Chief Mate, Watch Officers and Ratings	X					
27	Rating certificates of proficiency in survival craft	X					
28	Certificates for Chief Engineer, 2nd Engineer, Watch	X					
29	Endorsements for tankers	X	X	X			
30	Radio Officers/Operators certificates of competency	X					
31	Medical examination certificates for all crew	X					

(*) when the oil tanker is carrying products that are listed in the Ch. 18 of the IBC Code.
(**) when the gas carrier is carrying products that are listed also in the Ch. 17 of the IBC Code.
(1) For internal combustion engines of 130 kW power and above not intended for emergency services and lifeboats and rescue boats.
(2) For ships:
a. Whose building contract is placed on or after 01/01/2013 or;
b. Whose keel is laid on or after 01/07/2013 or;
c. Delivered on or after 01/07/2015 and;
d. For existing ships not included in the above at the first intermediate or renewal survey, whichever is first, on or after 01/01/2013.
(3) For ships whose keel was laid on or after 01/07/1986.
(4) For ships whose construction contract has been signed after 31/10/1976 and whose keel has been laid before 01/07/1986.
(5) Carriage in compliance with SOLAS 74/88 Reg. II-2/54 or SOLAS 74/00 Reg. II-2/19 for ships whose keel was laid on or after 01/07/1986.
(6) Carriage in compliance with IMSBC Code of cargo listed in this Code:
a. All cargoes, including dangerous ones, for ships whose keel was laid before 01/07/1986.
b. Cargo other than dangerous goods for ships whose keel was laid on or after 01/07/1986.
all = all ships
che = chemical tankers
bca = bulk carriers
gas = gas tankers
oil = oil tankers
gen = general cargo

PSC DEFICIENCY CARDS (CARGO SHIPS)

MANUALS, BOOKLETS AND PUBLICATIONS

Table

Copy

No.	Document	All	BCA	Oil	Che	Gas	Gen
1	Loading manual	X					
2	Approved trim and stability booklet	X					
3	Approved damage stability booklet	X	X	X	X		
4	Approved grain loading stability booklet	X	X				

No.	Document	All	BCA	Oil	Che	Gas	Gen
5	Approved SOPE Plan	X					
6	Approved SMPEP	X					
7	Approved SEEMP (Ship Energy Efficiency Management Plan)	X					
8	Approved Oil Discharge Monitoring and Control System (ODMS)	X					
9	Approved Dedicated Clean Ballast Tank (CBT) operational manual	X					
10	Approved Crude Oil Washing (COW) operation and equipment manual	X					
11	Approved P&A Manual	X	X				
12	Approved Cargo Securing Manual (if cargo units are carried)	X	X				
13	Approved NOx technical file for internal combustion engines	X					
14	Safety Management Manual	X					
15	Oil Record Book Part I (machinery spaces operation)	X					
16	Oil Record Book Part II (cargo-ballast operation)	X					
17	Cargo Record Book	X					
18	Inert Gas System (IGS) instruction manual	X					
19	Cargo information/operation	X					
20	Operational procedures for special ballast arrangements	X					
21	International Bulk Chemical (IBC) Code (for ships built on or after 1.7.86)	X					
22	International Gas Carrier (IGC) Code (for ships built on or after 1.7.86)	X					

No.	Document	All	BCA	Oil	Che	Gas	Gen
23	Manoeuvring booklet and information (for ships built on or after 01.09.84)	X					
24	General catalogue for the nautical publications	X					
25	Charts and publications for the intended voyage	X					
26	Notices to Mariner and chart correction logbook	X					
27	International Code of Signals	X					
28	Radio license	X					
29	Radio logbook	X					
30	Operating manuals for radio equipment	X					
31	ITU publications	X					
32	Enhanced Survey Program Report File	X	X	X			
33	Bunker delivery note for Low Sulfur oil fuel	X					
34	Deck logbook	X					
35	Engine room logbook	X					
36	Fire plans	X					
37	Muster lists	X					
38	IMO Posters/Signs: Red (Fire and Lifesaving) – Green (Escape) – Blue (Survival crafts and launching appliances)	X					
39	Lifesaving appliances training manual	X					
40	Instructions for on-board maintenance of lifesaving appliances	X					
41	Instructions for on-board maintenance of fire-fighting appliances	X					

No.	Document	All	BCA	Oil	Che	Gas	Gen
42	Operational instructions for emergency steering change-over procedure	X					
43	Operational instruction for fixed firefighting system	X					

NOTES:

(*) when the gas carrier is carrying products that are listed also in the Ch. 17 of the IBC Code:

all = all ships

che = chemical tankers

bca = bulk carriers

gas = gas tankers

oil = oil tankers

gen = general cargo

PSC DEFICIENCY CARDS (CARGO SHIPS)

LOGBOOK ENTRIES

Table

No.	Item	Frequency
1	Working Language	
2	Steering gear Operational test and change-over procedures	12 hours before
	Emergency steering gear test (direct control from steering gear compartment, communication, alternative power supply)	Three-monthly
3	Lifesaving appliances Inspection of lifesaving appliances and lifeboat equipment using the checklist given in the "Instructions for On-board Maintenance" (see Appendix 2, item 6)	Monthly
	On-board training in the use of lifesaving and fire-fighting appliances	2 weeks after embarkation
4	Lifeboats and rescue boats Operation of lifeboat and rescue boat engines ahead and astern (for at least 3 minutes)	Weekly
	Launching of each lifeboat and rescue boat	Three-monthly
	Launching of free-fall lifeboat (if fitted)	Six-monthly
	On-board training in the use of davit launched life rafts	Interval of 4 months
5	Launching appliances Annual thorough examination	Annual
	Dynamic test with load of the winch rake upon completion of the annual thorough examination	Annually
	Dynamic test with 1.1 overload of the winch brake upon completion of the annual thorough examination	Quinquennial
6	Lifeboat on-load release gear Annual thorough examination and test	Annual
	Operational test with 1.1 overload of the release gear upon completion of the annual thorough examination and whenever the release gear is overhauled	Quinquennial
7	General alarm Test of general emergency alarm	Weekly
8	Drills Abandon ship drill	Monthly

No.	Item	Frequency
	Fire drill	Monthly
9	Fire-fighting appliances Inspection of breathing apparatus	Monthly
	Renewal of liquid foam	At each renewal

NOTES:

Additional entries may be specifically requested as per Flag Administration requirements.

PSC DEFICIENCY CARDS (CARGO SHIPS)

STERN DOOR

1. GENERAL

The stern door is a typical outfitting of RO-RO cargo ships, allowing cargo to be loaded and discharged in a horizontal direction. It protects the main garage, which is generally the bulkhead deck, from water ingress. Therefore, its ability to remain weather-tight is of paramount importance. The stern door is also part of the ship's aft-end structure, and its structural condition must be maintained to ensure proper strength. Depending on the size and service needs of the vessel, the stern opening can be protected by one or two doors. The door itself can be quite large in terms of both dimensions and weight. Thus, the condition of the door and its accessories, as well as that of the stern frame, door supporting devices, door closing, and securing devices, must remain adequate. Stern doors are operated by wire or hydraulic pistons or combined systems. Improper operation of the door can cause uneven stress distribution and transmission, leading to door deformation and depletion of the ship's supporting structure (winch foundation, pulley support, piston eye pads).

2. CHECKS AND TESTS

- Check that the Operational and Maintenance Manual (OMM) is available on board, specific to the ship, and approved (Keel Laid > 01/01/1997).
- Check that operating instructions are displayed.
- Check the general structural condition of the stern door and stern frame: no deformation, stiffening system in sound condition, flap in place.
- Check the structural condition of the support and pad eyes of pulleys for lifting wire: pulleys aligned, pin not deformed, not loose, and greased, pin lock in place.
- Check that the wire is in good condition: no broken wires, no distortion.

- Check the condition of the rubber packing and relevant containment: gasket in place and continuous, particularly at door edges and corners.
- Check the condition of supporting devices: slots to accommodate securing devices, hinges, and stoppers to transmit load from the door to the ship structure. No cracks, no deformation, welding to ship structure in order, gap between securing device and supporting device, hinges clearance, connection of hinges' pad eyes to ship structure.
- Check the condition of securing devices to prevent movement and hold in a closed position: wedge and pins all in place, greased, and free to move.
- Check the condition of locking devices to block the securing device: hydraulic actuators all in place and connected, hydraulic system tight with no leakage.
- Check that the interlock for operating, securing, and locking the door is working to ensure proper sequence (Keel Laid > 01/01/1997).
- Check the door in the closed position to ensure weather-tightness: proper fitting within the structure frame with securing and locking devices in place, no gap, no deformation.
- Carry out a leak test by hose test if deemed necessary.
- Carry out the working test of the door in opening and closing mode.
- Check that the system for indication and monitoring the position of the door, securing, and locking devices at the remote control station, where fitted, is in working condition.
- Check that warning notices are displayed at each operating panel.

STERN DOOR

Condition and clearance of supporting hinges

- Hinge
- Pin worn out
- Pin renewed
- Hydraulic piston
- Missing sensor for locking device indication and monitoring

Securing device in place

- Hydraulic operated wedge
- Top portion of door structure wasted and holed

Hose test to confirm weather-tightness

PSC DEFICIENCY CARDS (CARGO SHIPS)

FIXED PRESSURE WATER SPRAY SYSTEM FOR SPECIAL CATEGORY SPACE

GENERAL

Special category spaces, such as enclosed vehicle spaces above and below the bulkhead deck, into and from which vehicles can be driven and to which passengers have access, shall be fitted with an approved fixed pressure water-spraying system (commonly called Drenching System) for manual operation. This system shall protect all parts of any deck and vehicle platform in such spaces (SOLAS 74/81 Reg. II-2/37 and SOLAS 74/09 Re. II-2/20).
The system is divided into sections along the length of the space, with each section controlled by a manually operated valve. The control station is located outside the protected space and above the bulkhead deck. The system must be capable of operating at least two contiguous sections simultaneously.
Water supply to the system should be provided by a pump or pumps other than the ship's required fire pumps. These pumps should be connected to the system by a lockable non-return valve to prevent back-flow from the system into the fire main.
The water nozzles are equally distributed to cover the protected area and are connected by galvanized steel pipes. Stainless steel or corrosion-resistant alloys are rarely used. If special category spaces are accommodated on more than one deck, provided that the total overall clear height for vehicles does not exceed 10m, portions of piping between platforms or movable decks are realized using steel-armored flexible hoses.
The most recurrent malfunctioning and deficiency of the system result in partial water supply to all nozzles with reduced pressure, making the spray inadequate. Nozzles and the piping itself can become obstructed by rust clogs forming inside the pipes. Although not required, it is recommended to blow the piping after any test using compressed air or fresh water. However, few systems are designed with this feature.
Based on the test results of all sections, the inspection aims to ensure that all nozzles are fed with the proper water pressure and to maintain those that are not spraying as required. Maintenance should not be limited to cleaning and freeing defective nozzles but should extend to the portion of piping serving them. Therefore, dismounting ceilings, where fitted, is recommended to check the condition of the pipes. In many cases, contiguous portions of piping become inoperative as a consequence of maintenance carried out (rust clogs detached). Therefore, after any repair and maintenance, the system should be tested again to ensure proper functionality.