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**REPORT TO THE MARITIME SAFETY COMMITTEE AND THE
MARINE ENVIRONMENT PROTECTION COMMITTEE**

Attached are annexes 1 to 8 to the report to the Maritime Safety Committee and the Marine Environment Protection Committee (FSI 19/19).

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ANNEX 1

LESSONS LEARNED FOR PRESENTATION TO SEAFARERS

1 FATALITY AND INJURY

Very serious casualty: fatality and injury caused by excessive rolling of a large container ship during a typhoon

What happened?

The about 95,000 gt, partially loaded, container ship rolled severely at sea during a typhoon. As a result, several crew members on the ship's bridge lost their footing, including the Master, the helmsman and the lookout. The helmsman managed to regain his footing, but the Master and lookout were thrown violently across the wheelhouse. The lookout subsequently died and the Master suffered serious injuries, necessitating in his medical evacuation. Four more seamen suffered minor injuries.

Why did it happen?

The vessel had to leave port rapidly due to an approaching typhoon. Consequently, it had not finished loading and had an exceptionally high GM (7.72 m). After departing the confines of the port, the ship encountered a violent wave from starboard just as it rolled to starboard. Due to the proximity of land, the Master was unable to take a heading which would have lessened the rolling effect of the swell. The vessel's design, coupled with its low speed at the time of the incident, resulted in poor roll damping. As a result, the ship rolled an estimated 44° over about 10 seconds. The size of the ship and the subsequent height of the wheelhouse contributed to the violent motions experienced in the wheelhouse. Furthermore, the wheelhouse was very large and there were few grab-rails or handholds for the crew to hang on to in the event of violent weather.

What can we learn?

- The dangers of operating a vessel with a high GM ("Stiff Ship"), specially in heavy weather conditions with limited sea room in which to navigate.
- Decreasing the vessel's speed below a critical value may lead to dangerous deterioration of the dynamic roll damping characteristics of the vessel.
- A risk assessment of working spaces and working areas, should take into account adverse weather conditions. Grab rails, lifelines and seat harnesses may need to be considered.
- Consider the use of hard hats and non-slip footwear, even in work areas such as wheelhouses which may be considered "safe" – especially in severe weather conditions.
- Be aware of the hazards in heavy swell particularly in spaces located high in the vessels structure, such as bridges on large container ships.

2 FATALITY

Very serious casualty: fatality to crew caused by accidental release of CO₂ gas into engine-room

What happened?

The about 35,000 gt container ship was in dry dock. A test of the fixed CO₂ extinguishing system for engine-room and holds was planned by the shipyard, but was delayed. The Chief Engineer assisted by the ship's electrician, decided to carry out the test of the CO₂ system himself. He did not inform anyone about the start of the test. He started blowing lines with air, but he forgot to disconnect the connection to the CO₂ bottles prior to opening the high pressure air valve. Shortly after starting the test, CO₂ bottles started discharging into the E/R. The Chief Engineer was unable to stop the discharge. He activated the CO₂ alarm and the electrician made an emergency announcement using the internal radio system. The Master, upon hearing the alarms and realizing the situation, announced emergency stations on the ship's public address system and ordered an evacuation of the engine-room. About 10 minutes after the accident, rescue operations were started and were conducted with the help of the shipyard rescue team. Several crew members and yard personnel were sent to the local hospital for medical treatment. Later, news of 3 crew member fatalities was received from the hospital.

Why did it happen?

Improper procedures were adopted to blow through the CO₂ system pipelines with air. Had the copper pipes connecting the selection valve to the CO₂ bottles been disconnected, CO₂ would not have been released. The work was planned in an improper way. Senior staff, such as the Engine Superintendents and the Master and Chief Officer, were unaware of the work being carried out by the Chief Engineer on the CO₂ system. The possible consequence of a CO₂ leak in the engine-room was not envisaged. Hence the personnel working in the engine-room were not asked to vacate the area during the testing. They were not even alerted to the operation.

The emergency escape route from the engine-room had been made inaccessible from the outside for security reasons. Had the escape route been made available to the rescue team, the rescue could have been still swifter.

What can we learn?

- Testing of fixed CO₂ systems should only be carried out by competent personnel.
- The procedure for testing of the fixed CO₂ system should be clearly detailed. Any testing of this system should ensure that the set of CO₂ cylinders is fully isolated from the cargo and machinery spaces.
- All jobs being undertaken must include a risk assessment/hazard identification system, where all hazards are identified and steps taken to eliminate, isolate or minimize the risks. These hazards must be further discussed at a meeting, before the job is carried out.
- The security benefits of locking of emergency escape routes must be carefully considered against the loss of the safety benefits that would have been available had the escape route not been locked.
- Senior staff should be well familiarized with fixed fire-fighting systems and of the dangers of accidental release.

3 FATALITY AND INJURY

Very serious casualty: fatality and injury to crew caused by hold cleaning rig

What happened?

The about 76,000 gt bulk carrier was at sea, the crew was cleaning cargo hold residues. The weather was good with light winds.

The crew was working with an unapproved, "home-made" lifting rig comprised of a portable boom with wooden blocks and nylon ropes to pick up cargo residues from hold.

After several hours of work, the makeshift davit's boom failed due to over-heaving of the hoist rope by the winch and the boom struck two crew members who were attending to it on deck. Due to the tension of the hoist rope, the boom gave way at the welding seam and thus caused serious injuries to attending crew.

First aid was administered on board. Medical help arrived on board by helicopter about 8 hours later. Fifteen hours after the accident, both the casualties were air lifted by naval helicopter to a naval hospital.

One of the crew died en route to hospital. The second crew member was successfully treated.

Why did it happen?

The gear and rigging used for the purpose of lifting cargo from the cargo hold was fabricated on board and unapproved. This made the job conditions unsafe and prone to accident. In addition, the davit was corroded. The winch operator lost attention momentarily and did not notice the marking on the rope. He over heaved the rope using the winch, resulting in the davit boom breaking from the weld and thus causing the casualty.

There was also a lack of attention on the part of the crew member giving signals by walkie-talkie to the winch operator, and the signal to stop heaving was not given in a timely manner. A qualified dedicated signal man was not assigned. There was lack of coordination on communication between the signalman at the lifting boom and the winch operator.

There was a poor situational awareness on the part of the crew who were making use of the unsafe lifting gear – not even knowing that they were working in unsafe conditions which could cause an accident. The risks involved in using the unapproved lifting gear were not identified or understood.

The lifting gear was not checked for any defects or damage prior bringing them into use.

What can we learn?

- Correct work procedures should be complied with.
- Appropriate and approved lifting gear should be used on board.
- Standard work practices involving proper safety regulations should be followed.
- In lifting operations, if the view is blocked, proper signal and communication between the operator and work should be provided.

4 FATALITY

Very serious casualty: serious injury and damage to ship/equipment

What happened?

The n° 1 crane of the 1997 built, about 200 m long 28,000 gt bulk carrier collapsed from its foundation, while the vessel was discharging steel scrap in port.

The estimated weight of the load lifted by the crane was 20 tonnes, including the grab.

The crane body suddenly collapsed onto the deck portside, damaging portside main deck railing and the crane house.

The ship's crew was not injured, but the crane operator was badly injured.

Why did it happen?

Due to improper/inadequate maintenance of the crane, over an unspecified period of time, the accumulated old grease was not "washed out" prior the lubrication. Due to this, and possibly influenced by the heavy grab duty, excessive wear of the outer ring of the slewing bearing occurred. The result was a violent separation of the slewing bearing under a heavy load operation.

The manufacturer's "washing procedure" was not followed by the crew.

What can we learn?

- There is a need to have a properly implemented and effective preventive maintenance plan.
- The importance of having in the vessel's ISM manual a specific procedure for all crew members involved in maintenance operations of cranes regarding the manufacturer's maintenance plan.
- Crane operators, preferably crew members, must be competent to safely perform their duties.
- All companies must implement a system of training of the operators.
- Also, port personnel should include properly certified individuals.

5 FATALITY AND INJURY

Very serious casualty: enclosed space entry causing death and personal injury

What happened?

An ordinary seaman (O/S) and a deck cadet serving on board an about 36,000 gt Panamax bulk carrier lost their lives inside a cargo-hold while undertaking routine cargo temperature measurements at sea. A third crew member, the bosun, seeing the two crew members were in trouble, lost consciousness when attempting to assist them. Shortly afterwards the Chief Officer discovered the three crewmen in the cargo hold and raised the alarm. Members of a rescue party wearing SCBAs recovered the three seamen, but only the bosun survived. The event occurred on a bulk carrier carrying a cargo of coal which was known to be oxygen-depleting and prone to self-heating.

Why did it happen?

The cargo-hold was oxygen depleted. [Carbon monoxide may also have been present in the air space above the cargo]. According to readings taken on arrival in port the oxygen content in the hold was 14.1%. The reason why the first person entered the cargo hold is unknown but it may be that the thermometer to measure the cargo temperature was dropped or became snagged and the seaman went into the hatch to retrieve it.

The three crew members who entered the space without SCBAs may have done so impulsively and possibly under the assumption that they could survive a brief presence in the cargo space.

The fact that the access hatch was open to enable the temperature readings to be taken must be considered a contributing factor.

What can we learn?

- When dangerous cargoes are loaded requiring specific knowledge for the crew, a safety meeting should be held prior to departure, at which all crew should be present, when appropriate advice and instructions should be given. Attendance of each crew member

should be acknowledged in writing. The dangers of enclosed spaces and the need for responding crew members to STOP, LOOK, LISTEN and EVALUATE the situation for existing dangerous conditions before taking emergency actions. Don't make the existing situation worse by becoming a casualty yourself!

- When intending to carry oxygen-depleting or noxious gas-producing cargoes which require temperature monitoring, provision should be made in advance to enable this to be done without opening personnel access hatches. Measurement of carbon monoxide levels may provide a faster and safer indication of a cargo self-heating than temperature monitoring.
- Prior to carrying out operations involving dangerous cargoes, crews must be informed and understand the proper procedures and preventative measures to be taken.

6 INJURY AND REPORTED MISSING

Very serious casualty: fire; after spill of highly flammable cargo causing multiple injury and people reported missing

What happened?

An about 4,000 gt chemical tanker in port was discharging highly flammable cargo when some of it leaked on deck. The leaked cargo, which could not be contained because there was also an overflow of ballast water on deck, spilled over the ship's side and was ignited by a launch moored alongside. The launch caught fire and drifted away. The fire spread to the chemical tanker before it was controlled by the ship's crew and a port tug. Several crew members of the launch and the chemical tanker suffered injuries. Three crew members on the launch were reported missing.

Why did it happen?

Crew without proper training and experience in chemical tanker operations resulted in non-compliance with safety regulations and industry best practice. Officers involved lacked competence in critical chemical tanker operations and carried out uncontrolled port operations. Insufficient on board pre-planning and communication of procedures between personnel involved in port operations, inhibited the detection and control of deviations from procedures during port operations.

What can we learn?

- Importance of cleaning/securing cargo spill without delay and of maintaining a "dry tank deck", and avoiding accumulation of water inside the gutter bar.
- Importance of a well pre-planned and well communicated cargo operation.
- Importance of proper competence of the crew when engaged in special trades.

7 INJURY

Serious casualty: personal injury with face and neck burns caused by auxiliary boiler explosion

What happened?

While exchanging the auxiliary boiler burner on board an about 39,000 gt bulk carrier at anchor there was a flashback from the boiler furnace. Flames engulfed the ship's engineer, burning his face and neck. The burner was being replaced to rectify misfires.

Why did it happen?

The ship's engineer was not aware of all the hazards associated with maintenance of the boiler burner, i.e. accumulated fuel oil at the furnace bottom resulting from burner misfiring and while disconnecting the fuel line from the burner.

The boiler furnace was not sufficiently purged to remove the residual heat and in avoiding ignition of any flammable mixtures.

The ship's crew was not aware of previous flashbacks involving similar burners and the company had not ensured that such safety information was disseminated to the ship's crew.

The boiler manufacturer failed to inform the operators that the boiler burner could be replaced by one fitted with a diesel pilot burner to avoid burner misfires.

What can we learn?

- It is important that all ship's crews involved in the maintenance of boiler burners are aware and have an adequate understanding of all the hazards associated with the maintenance of the boiler burner.
- Information on flashbacks involving similar burners must be brought to the attention of the ship's crew without delay.
- Precautions must be taken to minimize the accumulation of fuel oil at the furnace bottom by avoiding repeated restarts following a burner misfire; it is imperative to sufficiently purge the furnace to remove the flammable mixtures as well as the residual heat.
- All ship crews must be aware of the appropriate first aid treatment required for burn injuries.

8 INJURY

Serious casualty: personal injury with broken leg and injuries to the groin caused by windlass hydraulic motor explosion

What happened?

While heaving in the anchor chain of the about 58,000 gt oil tanker anchoring under adverse weather and sea conditions, the windlass' hydraulic motor exploded. Fragments of the hydraulic motor and its casing seriously injured the windlass operator. He was treated at hospital for a broken leg and injuries to his groin.

Why did it happen?

Gross over-pressurization of the windlass hydraulic cylinder block.

Ineffectiveness of the pressure relief valve, plus severely constricted pipes on the outlet side of the relief valve.

Main gear case and oil bath for splash lubrication of the gears had no oil change since installation.

The current industry requirements for windlass machinery failed to protect persons against injury in the event of failure.

The instruction from Master to heave in the anchor chain when it was slack was not followed.

Repeated attempts to heave in the anchor chain, despite its rendering.

Little guidance available on weighing anchor.

Seafarers are not aware of the limitations of the anchor windlass and the potential damage to the machinery when placed under excessive loads.

What can we learn?

- It is important that the pressure parts of the windlass are guarded against potential overpressure, under both instantaneous and continuous conditions.
- It is essential that the industry standards for windlasses are sufficient and adequate to protect persons against injury in the event of the equipment's design limitations being exceeded.
- It is important that clear guidance on weighing anchor is provided and seafarers be made aware of the limitations of anchor windlass systems and the risk of catastrophic failure of the machinery when it is placed under excessive loads.
- It is important that anchor chains are closely monitored when weighing, and that heaving in is stopped as soon as any significant tensioning is observed or any difficulty is experienced.
- It is important that technical data and information for windlass machinery be provided to allow it to be correctly maintained and operated.

9 INJURY

Serious casualty: personal injury following explosion

What happened?

There was an explosion in the steering gear compartment of an about 17.00 m fishing vessel. Shortly afterwards a deckhand appeared at the machinery space deck entrance. His overalls were burning. He jumped into the water and was later rescued. He was severely burned and had to be treated in a specialist burns clinic.

Why did it happen?

The deckhand had been preparing surfaces in the steering gear compartment for cleaning by wiping them down with a degreasing agent. Vapour from the cleaning agent was ignited when an automatic diesel oil heater started up.

Ventilation was inadequate for the work undertaken.

An unmarked open canister was found in the engine-room compartment. From the smell it appeared to have contained petrol. This was later confirmed by laboratory analysis. It was said to be used to assist the ignition of the diesel oil-fired heater. While it may not have contributed to the explosion it may well have done so.

Provisions laid down by the national Administration on the use of hazardous agents were not followed.

Personal protective equipment was not worn during the work, i.e. gloves, goggles or respirator.

What can we learn?

- Owners should declare intention to carry out structural changes and obtain approval from the relevant authorities/classification society.
- Personal protective equipment necessary for specific jobs should be provided, maintained and utilized.
- The particular hazards of flammable and noxious fumes generated while chemically cleaning should be identified and where possible eliminated, e.g., isolation of electrical sources of ignition and provision of adequate ventilation.
- Volatile liquids such as petroleum should never be left lying around in open containers. If they have to be carried aboard they should be stored securely in accordance with national regulations.

10 FATALITY

Very serious casualty: fatality, resulting in grounding

What happened?

A small about 50 gt coastal ferry was just clearing port at half ahead speed when the master, alone on the bridge, suffered a heart attack and collapsed. The helm became set hard to starboard, possibly by the master as he collapsed, and the ferry turned towards the shore and grounded hard. Passengers provided medical assistance until the emergency services arrived. The ferry suffered only minor damage, but the master could not be revived.

Why did it happen?

The vessel was licensed to operate with crew of two, but the master was alone. He had allowed the other crewman to leave the ferry earlier in the day to attend to personal business. As a consequence, there was no other trained mariner on board who could have detected that the ferry was not behaving as expected in time to take effective action.

What can we learn?

- Manning should not be reduced below approved levels.
- Single-handed operations carry an increased risk in that if the lone mariner is incapacitated for some reason, there is no one left to navigate the vessel or deal with emergencies.

11 GROUNDING

Serious casualty: grounding caused by the failure to alter course when required

What happened?

The about 37,000 gt container ship ran aground on an early morning in May. The ship was travelling in a south-easterly direction at the southern limit of the traffic separation scheme at the time. The officer on watch, the chief mate, took over the watch at 0400 and subsequently did not carry out two course alterations required to keep the ship in the scheme. By the time the chief mate realized that the speed of the ship was dropping, it was too late to take effective corrective action and the ship grounded.

Why did it happen?

The chief mate was distracted from his watch-keeping duties because he was reading e-mails. These e-mails were of a disturbing personal nature and he was so absorbed by their content that he did not hear the VHF calls from VTS warning him that his ship was leaving the TSS and running into danger. He was alone on the bridge at the time of the grounding, having earlier dismissed the bridge lookout so that he could clean the accommodation. Consequently there was no other crew member there to warn him of the dangers ahead or of the VHF calls.

The chief mate had a pre-existing medical condition which contributed to his state of mind at the time but no one on the ship was aware of it.

What can we learn?

- The importance of maintaining situational awareness while keeping a navigational watch.
- The dangers of using bridge equipment, especially computers, for non-work related issues.
- The importance of maintaining a look-out on the bridge.

12 GROUNDING

Serious casualty: grounding caused by lack of effective bridge team management

What happened?

The vessel was on her way on a scheduled crossing in severe weather. During this crossing the vessel was informed that the port of destination would be temporarily closed due to severe weather conditions and seas. Under the instructions of the Master the vessel proceeded to an area of safe open water and commenced "slow steaming" while waiting for the port to reopen.

The vessel had been in the area for about four hours and while approaching a turn at the northern extremity there was a fire alarm and a number of telephone calls to the bridge of a non-navigational nature. The electronic navigation system was not being used effectively, with the consequence that a wreck near the area was not detected. Because of the distractions the vessel overshot the northern limit of the safe area before the turn was even started and struck the wreck. The vessel was able to safely berth under her own power.

Why did it happen?

The bridge team was distracted several times, including a request from a driver of a refrigerated truck to run his engine so the truck could run its cooling plant. The exhaust from the truck led to the activation of the fire detection system, which then cascaded into further distractions to the bridge team, including discussions on starting up the ventilation system so that the truck's exhaust does not keep setting off the fire alarm. A series of telephone calls to the bridge took place and the Master himself took another four telephone calls to the bridge, before returning to the important aspect of navigating the vessel.

What can we learn?

- The lack of proper training in the use of the **Electronic Chart Display and Information System** (ECDIS) possibly led to the wreck being undetected, and the paper chart, which was marked with "no go" areas, was never re-assessed or amended. All OOWs must receive training on all bridge equipment related to vessel navigation.
- The Master influenced the OOW's actions even though the OOW had officially got the con. Therefore the OOW and the Master must communicate effectively as a part of the bridge team. Also the bridge team was never on standby or "red bridge" operating condition. During coastal manoeuvring or slow steaming the bridge team must be extra vigilant and be in stand by or red bridge condition and all other distractions kept to a minimum.
- No passage plan had been made after the vessel deviated. Any deviations from previous passage plans should be made in writing and communicated to bridge team members.

13 GROUNDING

Serious casualty: grounding caused by lack of effective bridge team management

What happened?

While moored at night, an about 78,000 gt bulk carrier broke away from the pier. At the time the vessel was almost fully laden and under the influence of a strong ebb tide. Despite the use of at least seven tugs under the guidance of a pilot and use of the vessel's main engine, it was not possible to manoeuvre the vessel back to the pier and bring her alongside.

Attempts to hold the vessel in the deepest part of the port's entrance channel also failed and the vessel grounded during morning hours. The vessel was subsequently refloated during the forenoon.

Why did it happen?

The Port Authority had not identified the risks of a vessel breaking free from its berth and its potential consequences. Similarly, the vessel's Master had not identified the risks of a vessel breaking free from its berth and its potential consequences.

The effective holding capacity of the vessel's mooring winch was reduced by (a) the number of layers of mooring line on the winch drum; and (b) poor condition of brakes. There is also the possibility that the brakes were not sufficiently tightened. In addition the mooring winches were not effectively monitored in the time leading up to the incident.

What can we learn?

- Safety Management System (SMS) of vessels must address procedures for mooring the ship, tending mooring lines and any of the associated risks. This includes assessing the vagaries of various ports including the tide or river current variances.
- Contingency Planning is very important. Ports and vessels should develop contingency planning procedures or manuals or training.
- Maintenance of the mooring winches, especially of items like brake drums and linings should be carefully carried out at regular intervals as prescribed by the manufacturer. Similarly
- If there are strong eddy currents in ports, especially at wharfs, then these should be reflected in the charts and port entry documents.
- Sufficient manpower on board to tend to mooring lines, especially in strong tide areas must be considered.
- There should be established means of monitoring winches when required.

14 GROUNDING

Serious casualty: grounding caused by lack of effective bridge team management

What happened?

The about 15,000 gt passenger vessel was port. Within 7 minutes she grounded briefly. She was refloated within 3 minutes and continued on her voyage. At the time of the incident the vessel was under the influence of a strong ebb tide and fresh water outflow. The vessel was equipped with a bow thruster and twin controllable pitch propellers and a single rudder. No tugs were used.

The master controlled the engines and bow thruster to move the vessel off the berth and under a pre-determined agreement the pilot took control of the vessel once it was off the berth. The passenger vessel narrowly avoided a collision with a berthed vessel and gained speed and steerage. However, due to an apparent miscommunication resulting from a foreign language being spoken on the bridge, the vessel grounded.

Why did it happen?

The lack of effective Bridge Team Management was a causal factor in the grounding. This is evidenced from the fact that the handling characteristics of the vessel were not discussed by the pilot and master during the pre-departure information exchange. These included the poor handling at low speed and the practice on board to use the engines independently during pilotages. The use of a foreign language on the bridge resulted in miscommunication and misunderstandings on the bridge.

What can we learn?

- Where there are strong tidal streams during both flooding and ebbing, Port Authorities must inform Pilots and Masters of the situation and these items should be discussed by the Bridge Management Team.
- Passage Plans must be followed.
- Contingency Planning must be done especially on vessels with poor handling characteristics at low speeds.
- Where the pilot and master do not both share a common mother tongue, then communications on the bridge must be carried out in English.
- Safety considerations should be paramount in the decision to use harbour tugs. Commercial conditions should come after safety.
- Master and pilot information exchange must ensure a safe passage.

15 COLLISION

Serious casualty: engine control failure leading to collision with quay and moored vessel

What happened?

When the about 8,000 gt container ship passed in a canal, the mate was about to switch the CPP from centre control to the bridge wing. To do that he had to press one button on a set out of five. The mate by mistake pressed the button for back up control instead of the button for response change. The CPP then turned to full astern and the ship collided with the quay and a moored ship (which started to drift) before the ship was under control again.

Why did it happen?

Since the press buttons looked the same (same design and colour, placed close to each other) it was possible to mix the buttons up without realizing that until it was too late. Also, a short circuit on bridge wing due to moisture made the electrical system to fail, causing the CPP to go astern. Confusion delayed the correct action to regain control.

What can we learn?

- It is very important to know the technical systems very well if you use them. When the time comes and you need to take correct action, it is too late to learn.
- Sometimes, the systems are not very well designed for operators and there might be reason to consider if it is possible for the crew to make arrangements to prevent unintentional use.
- Electrical systems may need good maintenance to work appropriately.

16 COLLISION

Very serious casualty: collision between a sport fishing vessel and a drifting pleasure craft

What happened?

An about 70 gt sport fishing vessel sailing for a deep sea fishing trip collided with a 8.4 m long pleasure craft which was stopped at the accident site for temporary repair work on a cooling water leak in the engine compartment. The skipper of the sport fishing vessel, who was alone on the bridge, did not notice the pleasure craft until it was too late to avoid the collision.

The crew of the pleasure craft saw the sport fishing vessel and tried to draw its attention by shouting, waving and sounding a signal horn, but were unsuccessful. They jumped overboard just before the support fishing vessel struck the craft causing the aft section to split apart. The crew of the pleasure craft were rescued by the sport fishing vessel.

Why did it happen?

The skipper of the sport fishing vessel decided to release the deckhand from his task of lookout despite visibility being restricted to 300 m.

The skipper of the sport fishing vessel was using a radar, but did not detect the pleasure craft.

The navigation lights of the pleasure craft were off.

The signal horn of the pleasure craft was barely audible.

What can we learn?

- Proper lookout, by all means available, specially under conditions of restricted visibility is essential for collision avoidance.
- That radar reflectors can enhance the radar echo of small craft.

17 COLLISION

Serious casualty: collision between disabled ship and salvage tug

What happened?

The about 2,000 gt salvage tug was attempting to connect a tow to the disabled 8,896 gt reefer carrier on a river estuary anchorage during heavy weather conditions. The reefer had regained limited use of its main engine shortly before the tow was to be connected. The ship dropped one anchor to slow its rate of drift and was still using its main engine when it was occasionally available to arrest the rate of drift.

The master of the salvage tug was unsure of the status of the reefer's main engine and was unaware that the ship was still steaming ahead in spite of having one anchor down. When the salvage tug made a second approach to establish the tow the bow of the ship collided with the port side stern region of the tug.

The tug sustained heavy damage to its bulwarks, and a fuel tank and a store room were breached. Thirty cubic metres of diesel oil were lost overboard and seawater entered the storeroom with the consequent loss of the automatic steering function. The reefer's forepeak tank was breached with consequent loss of ballast water. Two crew members on the salvage tug were injured by seas breaking over the deck while trying to establish the tow.

Why did it happen?

The master of the salvage tug was not aware that the reefer was steaming ahead on its engine while the salvage tug closed with its bow to establish the tow. The ship, the vessel traffic control, and salvage tug were not engaged in closed-loop communication and did not share the same mental concept of how the tow would be established.

The master of the salvage tug was operating from a second aft-facing bridge while trying to connect the tow, and had the use of only one VHF radio set, with most of the communications equipment being located on the main bridge. The officer-of-the-watch on the salvage tug had a high work load and was not able to relay to the master all information coming from the ship and vessel traffic control. The ergonomics of the communications system on the salvage tug made effective communication difficult.

The salvage tug was not ideally suited to manoeuvring close to a ship in the weather conditions at the time. The view of the aft deck from the salvage tug's aft facing bridge was restricted by the deck crane.

The deck crew members on the salvage tug not wearing protective helmets contributed to their injuries.

What can we learn?

- Effective planning for salvage operations, as well as any other highly operational task, is essential so that everyone involved shares the same mental concept of the plan.
- Good communications between all parties involved in salvage operations, or any other highly operational task, is essential for the successful implementation of the plan.
- The ergonomics of bridge design should be compatible with the purpose of the vessel.
- Personal safety equipment such as head protection should be worn at all times in designated work areas.

18 COLLISION

Serious casualty: collision between ro-ro passenger ship and fishing boat

What happened?

The about 24,000 gt ro-ro passenger ferry collided with the 16.7 m long fishing boat that, because of a failure of the main engine, had anchored 13 nm east of an island. The position of anchorage was close to a ferry route that was marked on a chart.

Why did it happen?

Watchkeeping personnel on both ships did not observe several COLREG '72 rules applicable to lookouts, use of anchor lights, appropriate use of the radar, and communication between vessels.

What can we learn?

- Even not when expecting to encounter traffic on a marked route, the need to maintain an effective lookout by all means available is of the utmost importance.
- The crew of the fishing boat was not aware of the situation that the position of their anchorage was close to the marked ferry route.
- It would be appropriate to attract the attention by flashing lights, radio communications (Aldis) and/or sounding the whistle.

19 COLLISION

Less serious casualty: Collision; between salvage tug and suction dredger

What happened?

The about 2,000 gt salvage tug was leaving port and about to enter the river fairway. The master of the tug held the con for casting off from its berth. A river pilot was on board for the river transit. At the time of the tug's departure, a 5,339 gt suction dredger was working the channel close downriver from the point of exit into the river heading slowly upstream towards the exit.

The pilot and master agreed on a plan to exit the harbour ahead of the dredger, turn upstream to maintain adequate distance to cross ahead of the dredger before turning downriver and passing the dredger port-to-port. The river pilot discussed the plan with the master of the dredger, who indicated that his dredger was working and travelling upriver at about 0.8 knots.

As the salvage tug entered the river she was affected by the river flow and did not achieve the rate of turn planned by the bridge team. The river pilot was surprised by the forward progress of the dredger, and all the bridge team soon realized that a collision was possible. From that point on there was a divergence of views between the pilot and the master of the tug as to the best course of action to take. As a result, the pilot's engine orders and the master's application of engine movements were dissimilar.

The bow of the dredger collided with the port stern area of the salvage tug. The dredger was holed above the waterline at the bow and the salvage tug sustained damage to its bulwarks. There were no injuries and no pollution.

Why did it happen?

The pilot made a decision to enter the river fairway ahead of the dredger without first discussing with the bridge team the manoeuvrability of the tug, the effect of the tide on turning performance and the speed of the dredger.

The members of the bridge team did not all have the same mental concept of the plan and did not challenge the pilot when the possibility of a collision became known.

The master of the tug made engine movements in an attempt to improve the turning performance without the knowledge of the pilot.

What have we learned?

- Effective crew resource management means the entire bridge team taking part in the planning and pre-departure briefing so that they all understand the plan and openly challenge any deviation from the plan using a closed-loop form of communication.
- The importance to ensure good communication of all activities among bridge team members.

20 LISTING AND SINKING

Very serious casualty: listing due to heavy weather, loss of steering capability and sinking of an anchor handling tug leading to the death of one crew member

What happened?

After departing port in fair weather the about 460 gt ocean going anchor handling/towing tug encountered increased wind, seas of approximately 4-5 metres and heavy swell. In the bad weather some of the cargo broke loose and the tug listed to starboard. The list increased as waves and swell continued to break over the deck.

The steering gear failed and the ship turned abeam on to the wind and swell worsening the situation considerably.

A distress call was made and answered by a large motor yacht in the area. The yacht immediately headed for the disabled ship.

Shortly after the broadcast the ship sank.

Three crew members managed to enter a liferaft and the other eight were scattered in the water by wind and swell.

The crew members in the liferaft were rescued by helicopter and the seven in the water were rescued by the large motor yacht under the most difficult conditions. The last of the crew members in the water was rescued by helicopter. He died subsequently.

Why did it happen?

The cargo (one container) on the deck broke loose due to ineffective securing arrangements, causing the cargo to shift and dislodging other deck cargo. The container was damaged and

filled with water adding a large weight on the deck. This reduced the stability. The integrity of the hull was breached, and due to the bad weather and the additional submersion, water ingressed into the ship causing a loss of stability and buoyancy, which resulted in the foundering and sinking of the vessel.

What can we learn?

- On ships not specially fitted for carrying deck cargo thorough assessment shall be made whenever carrying cargo on the deck.
- Emphasis on the route planning and taking meteorological information into account at both departure and continuously during the voyage.
- The importance of an early distress call.

21 FLOODING AND SINKING

Very serious casualty: flooding and sinking of a trawler

What happened?

An about 10 m long, wooden-built trawler departed with two persons on board to trawl for shellfish. After hauling in the trawl net, it was noticed that it had been damaged. As another trawl net was being deployed the master heard an unusual noise coming from the engine. An inspection of the engine compartment revealed that it was flooding. The master turned on the pump and alerted the authorities, who issued a MAYDAY RELAY. The master and crew member abandoned the vessel into the inflatable liferaft. They were rescued by another fishing vessel that was in the area. The vessel later sank.

Why did it happen?

To eliminate the nuisance alarms, the master turned off the bilge pump and water level alarm. The pump and alarm system was of a type used on pleasure craft and small fishing vessel. The position of the detector for the alarm was near to the floor of the compartment and would frequently sound.

The wooden-hull vessel was over thirty years old and subject to water ingress.

What can we learn?

- The importance of installing water level alarm systems that are appropriate for the type of vessel and that are set up to reduce the number of nuisance alarms and maximize the opportunity to detect impending dangers.
- The importance of carrying out adequate maintenance of the hull and through-hull fittings.
- The importance of an early distress call.

22 CAPSIZING AND SINKING

Very serious casualty: sinking of a fishing vessel caused by failure of the shipside

What happened?

The about 400 gt fishing vessel capsized and sank about 170 miles southwest of a group of isles.

Capsize occurred about one hour after flooding first started and about 30 minutes after flooding was first noticed by the crew.

Why did it happen?

All weathertight doors and hatches in the fishing station were not closed. Though capsizing would have eventually occurred, the time to capsizing would have been about 2 hours since water ingress was first discovered.

The owners and crew did not pay sufficient attention to the condition of the fish chute's shipside connection. Furthermore; the vessel left port with a negative freeboard, thus the main deck and the shipside connection of the fish chute were below water.

The abandon ship was incorrectly done. The crew had poor competency in the English language and therefore poor communication with rescuers.

What can we learn?

- Procedures for familiarization to a particular vessel need to be understood and followed.
- Emergency drills must be carried out prior to departure and periodically as outlined in Rules and Regulations for vessels.
- The importance of maintaining watertight integrity of the vessel and the importance of early detection of a flooding condition in order to afford the crew sufficient time to take early and appropriate action before a developing flooding situation becomes an emergency situation.
- The rescuers had difficulty in communicating with the crew since the crew had difficulty with the English language.

23 ENGINE FAILURE

Serious casualty: engine failure and subsequent collision with fairway buoy

What happened?

The about 9,000 gt reefer carrier had just departed port and was transiting the river fairway when it suffered a main engine failure. The bridge team carried out an emergency anchoring routine with the ship being brought up to a single anchor in the vicinity of a channel marker buoy. The engine was restarted about 20 minutes later and the anchor was recovered. During the recovery of the anchor, the ship, under the influence of the wind and tide, struck and moved the channel buoy about 120 metres.

The ship completed temporary repairs to its engine and under the guidance of one of the vessel traffic control authorities began making its approach to enter the river fairway again. The sea conditions meant it was not possible for tugs to put a towline onto the ship, and through a series of miscommunications the ship sailed under its own power into the river with virtually no means of tug assistance. The engine failed again and the ship was eventually towed to a safe haven.

Why did it happen?

The seriousness of the engine malfunction was either not understood or ignored by the crew. The ship continued its voyage in restricted waters and into deteriorating weather that was forecast to reach storm force.

Poor communication between the ship, pilot and vessel traffic control authorities resulted in a poor understanding of the serious nature of the main engine failure, and of the risks that the continued operation posed to the ship, its crew and other traffic.

Poor communication and a lack of formal handover of the disabled ship between the participating vessel traffic management services resulted in the ship re-entering enclosed waters without sufficient tug capability for the prevailing sea conditions.

What can we learn?

- Masters must fully understand the operating status of the ship's machinery so that a proper assessment of the risk to the ship can be made before continuing with the next phase of a voyage.
- Masters and harbour pilots should consider early use of tug assistance during a developing casualty sequence to allow more options for providing assistance.
- Consideration of the manoeuvring capabilities and environmental conditions when selecting tugs for marine casualty response is important.

ANNEX 2

DRAFT MSC CIRCULAR ON SAFETY OF PILOT TRANSFER ARRANGMENTS

1 The Maritime Safety Committee, at its eighty-eighth session (24 November to 3 December 2010), adopted the draft amendments to SOLAS regulation V/23 relating to pilot transfer arrangements.

2 The Committee also agreed to encourage Member Governments to formally include pilot transfer arrangement as part of the safety equipment that their port State control officers would be examining in the course of an initial port State control inspection with a view to minimizing the risk of injury and loss of life in pilot transfer arrangements.

3 Consequently, the Committee [at its eighty-ninth session (11 to 20 May 2011)] approved the issuance of this circular and invited Member Governments to bring this circular and the requirements of SOLAS 74 concerning the safety of pilot transfer arrangements to the attention of duly authorized officials exercising port State control and other parties, as appropriate.

ANNEX 3

**DRAFT ASSEMBLY RESOLUTION ON PROCEDURES FOR PORT STATE
CONTROL, 2011**

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO resolution A.787(19) by which it adopted Procedures for port State control and resolution A.882(21) by which it adopted amendments to Procedures for port State control as adopted by resolution A.787(19),

RECALLING FURTHER that, at its twenty-first session, when adopting resolution A.882(21), it requested the Maritime Safety Committee and the Marine Environment Protection Committee to keep the revised Procedures under review on the basis of experiences gained from the implementation of such procedures,

RECOGNIZING that efforts by port States have greatly contributed to enhanced maritime safety and security, and prevention of marine pollution,

RECOGNIZING FURTHER the need for the revised Procedures to be further revised to take account of the amendments to the IMO instruments which have entered into force or become effective since the adoption of resolutions A.787(19) and A.882(21),

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee at its [eighty-ninth] session and by the Marine Environment Protection Committee at its [sixty-second] session,

1. ADOPTS the port State control Procedures 2011 as set out in the annex to the present resolution;
2. INVITES Governments, when exercising port State control, to implement the aforementioned procedures;
3. REQUESTS the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Procedures under review and to amend them as necessary;
4. REVOKES resolutions A.787(19) and A.882(21).

* * *

ANNEX

PROCEDURES FOR PORT STATE CONTROL 2011

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CHAPTER 1 – GENERAL

1.1 PURPOSE

1.1.1 This document is intended to provide basic guidance on conduct of port State control inspections and afford consistency in the conduct of these inspections, the recognition of deficiencies of a ship, its equipment, or its crew, and the application of control procedures.

1.2 APPLICATION

1.2.1 The procedures apply to ships which come under the provisions of the:

- .1 International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS);
- .2 the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974 (SOLAS Protocol 1988);
- .3 the International Convention on Load Lines, 1966 (Load Lines);
- .4 the Protocol of 1988 relating to the International Convention on Load Lines;
- .5 the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocols of 1978 and 1997 relating thereto, as amended (MARPOL);
- .6 the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW);
- .7 the International Convention on Tonnage Measurement of Ships, 1969 (Tonnage); and
- .8 the International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS), hereafter referred to as the applicable conventions.

1.2.2 Ships of non-Parties or below convention size shall be given no more favourable treatment (see sections 1.5 and 1.6).

1.2.3 In exercising port State control, Parties will only apply those provisions of the conventions which are in force and which they have accepted.

1.2.4 If a port State exercises port State control based on International Labour Organization (ILO) No. 147, "Merchant Shipping (Minimum Standards) Convention, 1976", guidance on the conduct of such control inspections is given in ILO publication, "Inspection of Labour Conditions on board Ship: Guidelines for Procedure".

1.3 INTRODUCTION

1.3.1 Under the provisions of the applicable conventions noted in section 1.2 above the Administration (i.e. the Government of the flag State) is responsible for promulgating laws and regulations and for taking all other steps which may be necessary to give the applicable conventions full and complete effect so as to ensure that, from the point of view of safety of

life and pollution prevention, a ship is fit for the service for which it is intended and seafarers are qualified and fit for their duties.

1.3.2 In some cases it may be difficult for the Administration to exercise full and continuous control over some ships entitled to fly the flag of its State, for instance those ships which do not regularly call at a port of the flag State. The problem can be, and has been, partly overcome by appointing inspectors at foreign ports and/or authorizing recognized organizations to act on behalf of the flag State Administration.

1.3.3 The following control procedures should be regarded as complementary to national measures taken by Administrations of flag States in their countries and abroad and are intended to provide assistance to flag State Administrations in securing compliance with convention provisions in safeguarding the safety of crew, passengers and ships, and ensuring the prevention of pollution.

1.4 PROVISION FOR PORT STATE CONTROL

1.4.1 Regulation 19 of chapter I, regulation 6.2 of chapter IX, regulation 4 of chapter XI-1 and regulation 9 of chapter XI-2 of SOLAS, as modified by SOLAS Protocol 88; article 21 of Load Lines, as modified by Load Line Protocol 88; articles 5 and 6, regulation 11 of Annex I, regulation 16.9 of Annex II, regulation 8 of Annex III, regulation 13 of Annex IV, regulation 8 of Annex V and regulation 10 of Annex VI of MARPOL; article X of STCW; article 12 of Tonnage and article 11 of AFS provide for control procedures to be followed by a Party to a relevant convention with regard to foreign ships visiting their ports. The authorities of port States should make effective use of these provisions for the purposes of identifying deficiencies, if any, in such ship which may render them substandard (see section 3.1), and ensuring that remedial measures are taken.

1.5 SHIPS OF NON-PARTIES

1.5.1 Article I(3) of the Protocol of 1988 to SOLAS, article 5(4) of MARPOL, and article X(5) of STCW, provide that no more favourable treatment is to be given to the ships of countries which are not Party to the Convention. All Parties should as a matter of principle apply the procedures set out in this document to ships of non-Parties in order to ensure that equivalent surveys and inspections are conducted and an equivalent level of safety and protection of the marine environment are ensured.

1.5.2 As ships of non-Parties are not provided with SOLAS, Load Line or MARPOL certificates, as applicable, or the crew members may not hold STCW certificates, the Port State Control Officer (PSCO), taking into account the principles established in this document, should be satisfied that the ship and crew do not present a danger to those on board or an unreasonable threat of harm to the marine environment. If the ship or crew has some form of certification other than that required by a convention, the PSCO may take the form and content of this documentation into account in the evaluation of that ship. The conditions of and on such a ship and its equipment and the certification of the crew and the flag State's minimum manning standard shall be compatible with the aims of the provisions of the conventions; otherwise, the ship shall be subject to such restrictions as are necessary to obtain a comparable level of safety and protection of the marine environment.

1.6 SHIPS BELOW CONVENTION SIZE

1.6.1 In the exercise of their functions the port State control officers will be guided by any certificates and other documents issued by or on behalf of the flag State Administration. In such cases, the port State control officers will limit the scope of inspection to the verification of compliance with those certificates and documents.

1.6.2 To the extent a relevant instrument is not applicable to a ship below convention size, the port State control officer's task will be to assess whether the ship is of an acceptable standard in regard to safety and the environment. In making that assessment, the port State control officer will take due account of such factors as the length and nature of the intended voyage or service, the size and type of the ship, the equipment provided and the nature of the cargo.

1.7 DEFINITIONS

1.7.1 **Bulk carrier:** whilst noting the definitions in SOLAS regulations IX/1.6 and XII/1.1 and resolution MSC.277(85), for the purposes of port State control, PSCOs should be guided by the ship's type indicated in the ship's certificates in determining whether a ship is a bulk carrier and recognize that the ship, which is not designated as a bulk carrier as the ship type on the ship certificate, may carry certain bulk cargo as provided for in the above instruments.

1.7.2 **Clear grounds:** Evidence that the ship, its equipment, or its crew does not correspond substantially with the requirements of the relevant conventions or that the master or crew members are not familiar with essential shipboard procedures relating to the safety of ships or the prevention of pollution. Examples of clear grounds are included in section 2.4.

1.7.3 **Deficiency:** A condition found not to be in compliance with the requirements of the relevant convention.

1.7.4 **Detention:** Intervention action taken by the port State when the condition of the ship or its crew does not correspond substantially with the applicable conventions to ensure that the ship will not sail until it can proceed to sea without presenting a danger to the ship or persons on board, or without presenting an unreasonable threat of harm to the marine environment, whether or not such action will affect the normal schedule of the departure of the ship.

1.7.5 **Inspection:** A visit on board a ship to check both the validity of the relevant certificates and other documents, and the overall condition of the ship, its equipment, and its crew.

1.7.6 **More detailed inspection:** An inspection conducted when there are clear grounds for believing that the condition of the ship, its equipment, or its crew does not correspond substantially with the particulars of the certificates.

1.7.7 **Port State Control Officer (PSCO):** A person duly authorized by the competent authority of a Party to a relevant convention to carry out port State control inspections, and responsible exclusively to that Party.

1.7.8 **Recognized Organization:** An organization which meets the relevant conditions set forth by resolution A.739(18), as amended by resolution MSC.208(81), and has been delegated by the flag State Administration to provide the necessary statutory services and certification to ships entitled to fly its flag.

1.7.9 **Stoppage of an operation:** Formal prohibition against a ship to continue an operation due to an identified deficiency(ies) which, singly or together, render the continuation of such operation hazardous.

1.7.10 **Substandard ship:** A ship whose hull, machinery, equipment, or operational safety is substantially below the standards required by the relevant convention or whose crew is not in conformance with the safe manning document.

1.7.11 **Valid certificates:** A certificate that has been issued directly by a Party to a relevant convention or on its behalf by a recognized organization and contains: accurate and effective dates; meets the provisions of the relevant convention; and, with which the particulars of the ship, its crew and its equipment correspond.

1.8 PROFESSIONAL PROFILE OF PSCOs

1.8.1 Port State control should be carried out only by qualified PSCOs who fulfil the qualifications and training specified in section 1.9.

1.8.2 When the required professional expertise cannot be provided by the PSCO, the PSCO may be assisted by any person with the required expertise acceptable to the port State.

1.8.3 The PSCOs and the persons assisting them should have no commercial interest, either in the port of inspection, or in the ships inspected, nor should PSCOs be employed by or undertake work on behalf of recognized organizations.

1.8.4 A PSCO should carry a personal document in the form of an identity card issued by the port State and indicating that the PSCO is authorized to carry out the control.

1.9 QUALIFICATION AND TRAINING REQUIREMENTS OF PSCOs

1.9.1 The PSCO should be an experienced officer qualified as flag State surveyor.

1.9.2 The PSCO should be able to communicate in English with the key crew.

1.9.3 Training should be provided for PSCOs to give the necessary knowledge of the provisions of the applicable conventions which are relevant to the conduct of port State control, taking into account the latest IMO Model Courses for port State control.

1.9.4 In specifying the qualifications and training requirements for PSCOs, the Administration should take into account, as appropriate, which of the internationally agreed instruments are relevant for the control by the port State and the variety of types of ships which may enter its ports.

1.9.5 PSCOs carrying out inspections of operational requirements should be qualified as: a master or chief engineer and have appropriate seagoing experience, or have qualifications from an institution recognized by the Administration in a maritime related field and have specialized training to ensure adequate competence and skill, or be a qualified officer of the Administration with an equivalent level of experience and training, for performing inspections of the relevant operational requirements.

1.9.6 Periodical seminars for PSCOs should be held in order to update their knowledge with respect to instruments related to port State control.

CHAPTER 2 – PORT STATE INSPECTIONS

2.1 GENERAL

2.1.1 In accordance with the provisions of the applicable conventions, Parties may conduct inspections of foreign ships in their ports with PSCOs.

2.1.2 Such inspections may be undertaken on the basis of:

- .1 the initiative of the Party;
- .2 the request of, or on the basis of, information regarding a ship provided by another Party; or
- .3 information regarding a ship provided by a member of the crew, a professional body, an association, a trade union or any other individual with an interest in the safety of the ship, its crew and passengers, or the protection of the marine environment.

2.1.3 Whereas Parties may entrust surveys and inspections of ships entitled to fly their own flag either to inspectors nominated for this purpose or to recognized organizations, they should be made aware that under the applicable conventions, foreign ships are subject to port State control, including boarding, inspection, remedial action, and possible detention, only by officers duly authorized by the port State. This authorization of these PSCOs may be a general grant of authority or may be specific on a case-by-case basis.

2.1.4 All possible efforts shall be made to avoid a ship being unduly detained or delayed. If a ship is unduly detained or delayed, it shall be entitled to compensation for any loss or damage suffered.

2.2 INITIAL INSPECTIONS

2.2.1 In the pursuance of control procedures under the applicable conventions, which, for instance, may arise from information given to a port State regarding a ship, a PSCO may proceed to the ship and before boarding gain, from its appearance in the water, an impression of its standard of maintenance from such items as the condition of its paintwork, corrosion or pitting or unrepaired damage.

2.2.2 At the earliest possible opportunity the PSCO should ascertain the type of ship, year of build and size of the ship for the purpose of determining which provisions of the conventions are applicable.

2.2.3 On boarding and introduction to the master or the responsible ship's officer, the PSCO should examine the vessel's relevant certificates and documents, as listed in appendix 12. When examining 1969 International Tonnage Certificates, the PSCO should be guided by appendix 10.

2.2.4 If the certificates are valid and the PSCO's general impression and visual observations on board confirm a good standard of maintenance, the PSCO should generally confine the inspection to reported or observed deficiencies, if any.

2.2.5 In conducting an initial inspection, port State control officer should check both the validity of the relevant certificates and other documents, and the overall condition of the ship including its equipment, navigational bridge, decks including forecastle, cargo holds/areas, engine-room and pilot transfer arrangement.

2.2.6 In pursuance of control procedures under chapter IX of SOLAS on the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code), the PSCO should utilize the guidelines in appendix 8.

2.2.7 If, however, the PSCO from general impressions or observations on board has clear grounds for believing that the ship, its equipment or its crew do not substantially meet the requirements, the PSCO should proceed to a more detailed inspection, taking into consideration sections 2.4 and 2.5. In forming such an impression the PSCO should utilize the guidelines in relevant appendices.

2.3 GENERAL PROCEDURAL GUIDELINES FOR PSCOs

2.3.1 The PSCO should observe the Code of Good Practice for port State control officers (MSC-MEPC.4/Circ.2 as shown at appendix 1), use professional judgement in carrying out all duties, and consider consulting others as deemed appropriate.

2.3.2 When boarding a ship, the PSCO should present to the master or to the representative of the owner, if requested to do so, the PSCO identity card. This card should be accepted as documented evidence that the PSCO in question is duly authorized by the Administration to carry out port State control inspections.

2.3.3 If the PSCO has clear grounds for carrying out a more detailed inspection, the master should be immediately informed of these grounds and advised that, if so desired, the master may contact the Administration or, as appropriate, the recognized organization responsible for issuing the certificate and invite their presence on board.

2.3.4 In the case that an inspection is initiated based on a report or complaint, especially if it is from a crew member, the source of the information should not be disclosed.

2.3.5 When exercising control, all possible efforts should be made to avoid a ship being unduly detained or delayed. It should be borne in mind that the main purpose of port State control is to prevent a ship proceeding to sea if it is unsafe or presents an unreasonable threat of harm to the marine environment. The PSCO should exercise professional judgement to determine whether to detain a ship until the deficiencies are corrected or to allow it to sail with certain deficiencies, having regard to the particular circumstances of the intended voyage.

2.3.6 It should be recognized that all equipment is subject to failure and spares or replacement parts may not be readily available. In such cases, undue delay should not be caused if, in the opinion of the PSCO, safe alternative arrangements have been made.

2.3.7 Where the grounds for detention are the result of accidental damage suffered on the ship's voyage to a port, no detention order should be issued, provided that:

- .1 due account has been given to the Convention requirements regarding notification to the flag State Administration, the nominated surveyor or the recognized organization responsible for issuing the relevant certificate;

- .2 prior to entering a port, the master or company has submitted to the port State Authority details on the circumstances of the accident and the damage suffered and information about the required notification of the flag State Administration;
- .3 appropriate remedial action, to the satisfaction of the port State Authority, is being taken by the ship; and
- .4 the port State Authority has ensured, having been notified of the completion of the remedial action, that deficiencies which were clearly hazardous to safety, health or environment have been rectified.

2.3.8 Since detention of a ship is a serious matter involving many issues, it may be in the best interest of the PSCO to act with other interested parties[*]. For example, the officer may request the owner's representatives to provide proposals for correcting the situation. The PSCO should also consider co-operating with the flag State Administration's representatives or recognized organization responsible for issuing the relevant certificates, and consulting them regarding their acceptance of the owner's proposals and their possible additional requirements. Without limiting the PSCO's discretion in any way, the involvement of other parties could result in a safer ship, avoid subsequent arguments relating to the circumstances of the detention, and prove advantageous in the case of litigation involving "undue delay".

2.3.9 Where deficiencies cannot be remedied at the port of inspection, the PSCO may allow the ship to proceed to another port, subject to any appropriate conditions determined. In such circumstances, the PSCO should ensure that the competent authority of the next port of call and the flag State are notified.

2.3.10 Detention reports to the flag State should be in sufficient detail for an assessment to be made of the severity of the deficiencies giving rise to the detention.

2.3.11 The company or its representative have a right of appeal against a detention taken by the Authority of a port State. The appeal should not cause the detention to be suspended. The PSCO should properly inform the master of the right of appeal.

2.3.12 To ensure of consistent enforcement of port State control requirements, PSCOs should carry an extract of section 2.3 (General Procedural Guidelines for PSCOs) for ready reference when carrying out any port State control inspections.

2.3.13 PSCOs should also be familiar with the detailed guidelines given in the appendices to this resolution.

[* Refer to paragraph 4.1.3.]

2.4 CLEAR GROUNDS

2.4.1 When a PSCO inspects a foreign ship which is required to hold a convention certificate, and which is in a port or an offshore terminal under the jurisdiction of that State, any such inspection shall be limited to verifying that there are on board valid certificates and other relevant documentation, and the PSCO forming an impression of the overall condition of the ship, its equipment and its crew, unless there are "clear grounds" for believing that the condition of the ship or its equipment does not correspond substantially with the particulars of the certificates.

2.4.2 "Clear grounds" to conduct a more detailed inspection include:

- .1 the absence of principal equipment or arrangements required by the conventions;
- .2 evidence from a review of the ship's certificates that a certificate or certificates are clearly invalid;
- .3 evidence that documentation required by the Conventions and listed in appendix 12 is not on board, incomplete, not maintained or falsely maintained;
- .4 evidence from the PSCO's general impressions and observations that serious hull or structural deterioration or deficiencies exist that may place at risk the structural, watertight or weathertight integrity of the ship;
- .5 evidence from the PSCO's general impressions or observations that serious deficiencies exist in the safety, pollution prevention, or navigational equipment;
- .6 information or evidence that the master or crew is not familiar with essential shipboard operations relating to the safety of ships or the prevention of pollution, or that such operations have not been carried out;
- .7 indications that key crew members may not be able to communicate with each other or with other persons on board;
- .8 the emission of false distress alerts not followed by proper cancellation procedures; and
- .9 receipt of a report or complaint containing information that a ship appears to be substandard.

2.5 MORE DETAILED INSPECTIONS

2.5.1 If the ship does not carry valid certificates, or if the PSCO from general impressions or observations on board has clear grounds for believing that the condition of the ship or its equipment does not correspond substantially with the particulars of the certificates or that the master or crew is not familiar with essential shipboard procedures, a more detailed inspection as described in this chapter should be carried out utilizing relevant appendices.

2.5.2 It is not envisaged that all of the equipment and procedures outlined in this chapter would be checked during a single port State control inspection, unless the condition of the ship or the familiarity of the master or crew with essential shipboard procedures necessitates such a detailed inspection. In addition, these guidelines are not intended to impose the seafarer certification programme of the port State on a ship entitled to fly the flag of another Party to STCW or to impose control procedures on foreign ships in excess of those imposed on ships of the port State.

CHAPTER 3 – CONTRAVENTION AND DETENTION

3.1 IDENTIFICATION OF A SUBSTANDARD SHIP

3.1.1 In general, a ship is regarded as substandard if the hull, machinery, equipment, or operational safety, is substantially below the standards required by the relevant conventions or whose crew is not in conformance with the safe manning document, owing to, *inter alia*:

- .1 the absence of principal equipment or arrangement required by the conventions;
- .2 non-compliance of equipment or arrangement with relevant specifications of the conventions;
- .3 substantial deterioration of the ship or its equipment because of, for example, poor maintenance;
- .4 insufficiency of operational proficiency, or unfamiliarity of essential operational procedures by the crew; and
- .5 insufficiency of manning or insufficiency of certification of seafarers.

3.1.2 If these evident factors as a whole or individually make the ship unseaworthy and put at risk the ship or the life of persons on board or present an unreasonable threat of harm to the marine environment if it were allowed to proceed to sea, it should be regarded as a substandard ship. The PSCO should also take into account the guidelines in appendix 2.

3.2 SUBMISSION OF INFORMATION CONCERNING DEFICIENCIES

3.2.1 Information that a ship appears to be substandard should be submitted to the appropriate authorities of the port State (see section 3.3 below) by a member of the crew, a professional body, an association, a trade union or any other individual with an interest in the safety of the ship, its crew and passengers, or the protection of the marine environment.

3.2.2 This information should be submitted in writing to permit proper documentation of the case and of the alleged deficiencies. When the information is passed verbally, the filing of a written report should be required, identifying, for the purposes of the port State's records, the individual or body providing the information. The attending PSCO may collect this information and submit it as part of the PSCO's report if the originator is unable to do so.

3.2.3 Information which may cause an investigation to be made should be submitted as early as possible after the arrival of the ship giving adequate time to the authorities to act as necessary.

3.2.4 Each Party to the relevant convention should determine which authorities should receive information on substandard ships and initiate action. Measures should be taken to ensure that information submitted to the wrong department should be promptly passed on by such department to the appropriate authority for action.

3.3 PORT STATE ACTION IN RESPONSE TO ALLEGED SUBSTANDARD SHIPS

3.3.1 On receipt of information about an alleged substandard ship or alleged pollution risk, the authorities should immediately investigate the matter and take the action required by the circumstances in accordance with the preceding sections.

3.3.2 Authorities which receive information about a substandard ship that could give rise to detention should forthwith notify any maritime, consular and/or diplomatic representatives of the flag State in the area of the ship and request them to initiate or cooperate with investigations. Likewise, the recognized organization which has issued the relevant certificates on behalf of the flag State should be notified. These provisions will not, however, relieve the authorities of the port State, being a Party to a relevant convention, from the responsibility for taking appropriate action in accordance with its powers under the relevant conventions.

3.3.3 If the port State receiving information is unable to take action because there is insufficient time or no PSCOs can be made available before the ship sails, the information should be passed to the authorities of the country of the next appropriate port of call, to the flag State and also to the recognized organization in that port, where appropriate.

3.4 RESPONSIBILITIES OF PORT STATE TO TAKE REMEDIAL ACTION

3.4.1 When a PSCO determines that a ship can be regarded as substandard as specified in section 3.1 and appendix 2, the port State shall immediately ensure that corrective action is taken to safeguard the safety of the ship and passengers and/or crew and eliminate any threat of harm to the marine environment before permitting the ship to sail.

3.5 GUIDANCE FOR THE DETENTION OF SHIPS

3.5.1 Notwithstanding the fact that it is impracticable to define a ship as substandard solely by reference to a list of qualifying defects, guidance for the detention of ships is given in appendix 2.

3.6 SUSPENSION OF INSPECTION

3.6.1 In exceptional circumstances where, as a result of a more detailed inspection, the overall condition of a ship and its equipment, also taking into account the crew conditions, are found to be obviously substandard, the PSCO may suspend an inspection.

3.6.2 Prior to suspending an inspection, the PSCO should have recorded detainable deficiencies in the areas set out in appendix 2, as appropriate.

3.6.3 The suspension of the inspection may continue until the responsible parties have taken the steps necessary to ensure that the ship complies with the requirements of the relevant instruments.

3.6.4 In cases where the ship is detained and an inspection is suspended, the port State Authority should notify the responsible parties without delay. The notification should include information about the detention, and state that the inspection is suspended until that authority has been informed that the ship complies with all relevant requirements.

3.7 PROCEDURES FOR RECTIFICATION OF DEFICIENCIES AND RELEASE

3.7.1 The PSCO should endeavour to secure the rectification of all deficiencies detected.

3.7.2 In the case of deficiencies which are clearly hazardous to safety or the environment, the PSCO should, except as provided in paragraph 3.7.3, ensure that the hazard is removed before the ship is allowed to proceed to sea. For this purpose, appropriate action should be taken, which may include detention or a formal prohibition of a ship to continue an operation due to established deficiencies which, individually or together, would render the continued operation hazardous.

3.7.3 Where deficiencies which caused a detention as referred to in paragraph 3.7.2 cannot be remedied in the port of inspection, the port State Authority may allow the ship concerned to proceed to the nearest appropriate repair yard available, as chosen by the master and agreed to by that authority, provided that the conditions agreed between the port State Authority and the flag State are complied with. Such conditions will ensure that the ship shall not sail until it can proceed without risk to the safety of the passengers or crew, or risk to other ships, or without presenting an unreasonable threat of harm to the marine environment. Such conditions may include confirmation from the flag State that remedial action has been taken on the ship in question. In such circumstances the port State Authority will notify the authority of the ship's next port of call, the parties mentioned in paragraph 4.1.4 and any other authority as appropriate. Notification to authorities should be made in the form shown in appendix 14. The authority receiving such notification should inform the notifying authority of action taken and may use the form shown in appendix 15.

3.7.4 On the condition that all possible efforts have been made to rectify all other deficiencies, except those referred to in paragraphs 3.7.2 and 3.7.3, the ship may be allowed to proceed to a port where any such deficiencies can be rectified.

3.7.5 If a ship referred to in paragraph 3.7.3 proceeds to sea without complying with the conditions agreed to by the Authority of the port of inspection that port State Authority should immediately alert the next port, if known, the flag State and all other authorities it considers appropriate.

3.7.6 If a ship referred to in paragraph 3.7.3 does not call at the nominated repair port, the port State Authority of the repair port should immediately alert the flag State and detaining port State, which may take appropriate action, and notify any other authority it considers appropriate.

CHAPTER 4 – REPORTING REQUIREMENTS

4.1 PORT STATE REPORTING

4.1.1 Port State authorities should ensure that, on the conclusion of an inspection, the master of the ship is provided with a document giving the results of the inspection, details of any action taken by the PSCO, and a list of any corrective action to be initiated by the master and/or company. Such reports should be made in accordance with the format in appendix 13.

4.1.2 Where, in the exercise of port State control, a Party denies a foreign ship entry to the ports or offshore terminals under its jurisdiction, whether or not as a result of information about a substandard ship, it should forthwith provide the master and flag State with reasons for the denial of entry.

4.1.3 In the case of a detention, at least an initial notification should be made to the flag State Administration as soon as practicable[*]. If such notification is made verbally, it should be subsequently confirmed in writing. As a minimum, the notification should include details of ship's name, IMO number, copies of Form A and B as set out in appendix 13, time of detention and copies of any detention order. Likewise, the recognized organizations which have issued the relevant certificates on behalf of the flag State should be notified, where appropriate. The parties above should also be notified in writing of the release of detention. As a minimum, this information should include ship's name, IMO number, date and time of release and the copy of Form B as set out in appendix 13.

4.1.4 If the ship has been allowed to sail with known deficiencies, the authorities of the port State should communicate all the facts to the authorities of the country of the next appropriate port of call, to the flag State, and to the recognized organization, where appropriate.

4.1.5 Parties to a relevant convention when they have exercised control giving rise to detention, should submit to the Organization reports in accordance with of SOLAS regulation I/19, article 11 of MARPOL, article 21 of Load Lines, or article X(3) of STCW. Such deficiency reports should be made in accordance with the form given in appendix 13 or 16, as appropriate, or may be submitted electronically by the port State or a regional PSC regime.

4.1.6 Copies of such deficiency reports should, in addition to being forwarded to the Organization, be sent by the port State without delay to the authorities of the flag State and, where appropriate, to the recognized organization which had issued the relevant certificate. Deficiencies found which are not related to the applicable conventions, or which involve ships of non-convention countries or below convention size, should be submitted to flag States and/or to appropriate organizations but not to IMO.

4.1.7 Relevant telephone numbers and addresses of flag States headquarters to which reports should be sent as outlined above as well as addresses of flag State offices which provide inspection services should be provided to the Organization **.

4.2 FLAG STATE REPORTING

4.2.1 On receiving a report on detention, the flag State and, where appropriate, the recognized organization through the flag State Administration, should, as soon as possible, inform the Organization of its remedial action taken in respect of the detention which may be submitted electronically by the flag State into GISIS or in a format shown in appendix 17.

4.2.2 Relevant telephone numbers and addresses of port State control offices, headquarters and those who provide inspection services, should be provided to the Organization.

[* See paragraph 2.3.8.]

** Such addresses are available in MSC-MEPC.6/Circ.9, as amended, the IMO Internet Home Page and GISIS (<http://gisis.imo.org/Public>).

4.3 REPORTING OF ALLEGATIONS UNDER MARPOL

4.3.1 A report on alleged deficiencies or on alleged contravention of the discharge provisions relating to the provisions of MARPOL should be forwarded to the flag State as soon as possible, preferably no later than sixty days after the observation of the deficiencies or contravention. Such reports may be made in accordance with the format in appendix 13 or 16, as appropriate. If a contravention of the discharge provisions is suspected, then the information should be supplemented by evidence of violations which, as a minimum, should include the information specified in parts 2 and 3 of appendices 3 and 4 of these Procedures.

4.3.2 On receiving a report on alleged deficiencies or alleged contravention of the discharge provisions, the flag State and, where appropriate, the recognized organization through the flag State Administration, should, as soon as possible, inform the Party submitting the report of its immediate action taken in respect of the alleged deficiencies or contravention. That Party and IMO should, upon completion of such action, be informed of the outcome and details, where appropriate, be included in the mandatory annual report to IMO.

CHAPTER 5 – REVIEW PROCEDURES

5.1 REPORT OF COMMENTS

5.1.1 In the interest of making information regarding deficiencies and remedial measures generally available, a summary of such reports should be made by the Organization in a timely manner in order that the information can be disseminated in accordance with the Organization's procedures to all Parties to the applicable conventions. In the summary of deficiency reports, an indication should be given of flag State action or whether a comment by the flag State concerned is outstanding.

5.1.2 The appropriate Committee should periodically evaluate the summary of the deficiency reports in order to identify measures that may be necessary to ensure more consistent and effective application of IMO instruments paying close attention to the difficulties reported by Parties to the relevant conventions particularly in respect to developing countries in their capacity as port States.

5.1.3 Recommendations to rectify such difficulties when recognized by the appropriate Committee should, where appropriate, be incorporated into the applicable IMO instrument and any modifications relating to the procedures and obligations should be made in the port State documentation.

APPENDIX 1

CODE OF GOOD PRACTICE FOR PORT STATE CONTROL OFFICERS CONDUCTING INSPECTIONS WITHIN THE FRAMEWORK OF THE REGIONAL MEMORANDA OF UNDERSTANDING AND AGREEMENT ON PORT STATE CONTROL

Introduction

1 This document provides guidelines regarding the standards of integrity, professionalism and transparency that regional port State control (PSC) regimes expect of all port State control officers (PSCOs) who are involved in or associated with port State control inspections.

Objective

2 The object of this Code is to assist PSCOs in conducting their inspections to the highest professional level. PSCOs are central to achieving the aims of the regional PSC regime. They are the daily contact with the shipping world. They are expected to act within the law, within the rules of their Government and in a fair, open, impartial and consistent manner.

Fundamental principles of the Code

3 The Code of good practice encompasses three fundamental principles against which all actions of PSCOs are judged: integrity, professionalism and transparency. These are defined as follows:

- .1 integrity is the state of moral soundness, honesty and freedom from corrupting influences or motives;
- .2 professionalism is applying accepted professional standards of conduct and technical knowledge. For PSCOs standards of behaviour are established by the maritime Authority and the general consent of the port State members; and
- .3 transparency implies openness and accountability.

4 The list of the actions and behaviour expected of PSCOs in applying these principles are set out in the annex to this appendix.

5 Adhering to professional standards provides greater credibility to PSCOs and places more significance on their findings.

6 Nothing in the Code shall absolve the PSCOs from complying with the specific requirements of the PSC instruments and applicable national laws.

ANNEX

CODE OF GOOD PRACTICE FOR PORT STATE CONTROL OFFICERS

Actions and behaviour of PSCOs

The PSCOs should:

- 1 use their professional judgement in carrying out their duties;

Respect

- 2 remember that a ship is a home as well as a workplace for the ship's personnel and not unduly disturb their rest or privacy;
- 3 comply with any ship housekeeping rules such as removing dirty shoes or work clothes;
- 4 not be prejudiced by the race, gender, religion or nationality of the crew when making decisions and treat all personnel on board with respect;
- 5 respect the authority of the master or his deputy;
- 6 be polite but professional and firm as required;
- 7 never become threatening, abrasive or dictatorial or use language that may cause offence;
- 8 expect to be treated with courtesy and respect;

Conduct of inspections

- 9 comply with all health and safety requirements of the ship and their administration, e.g., wearing of personal protective clothing, and not take any action or cause any action to be taken which could compromise the safety of the PSCO or the ship's crew;
- 10 comply with all security requirements of the ship and wait to be escorted around the ship by a responsible person;
- 11 present their identity cards to the master or the representative of the owner at the start of the inspection;
- 12 explain the reason for the inspections. However, where the inspection is triggered by a report or complaint they must not reveal the identity of the person making the complaint;
- 13 apply the procedures of PSC and the convention requirements in a consistent and professional way and interpret them pragmatically when necessary;
- 14 not try to mislead the crew, for example by asking them to do things that are contrary to the Conventions;

- 15 request the crew to demonstrate the functioning of equipment and operational activities, such as drills and not make tests themselves;
- 16 seek advice when they are unsure of a requirement or of their findings rather than making an uninformed decision, for example by consulting colleagues, publications, the flag Administration, the recognized organization;
- 17 where it is safe to do so accommodate the operational needs of the port and the ship;
- 18 explain clearly to the master the findings of the inspection and the corrective action required and ensure that the report of inspection is clearly understood;
- 19 issue to the master a legible and comprehensible report of inspection before leaving the ship;

Disagreements

- 20 deal with any disagreement over the conduct or findings of the inspection calmly and patiently;
- 21 advise the master of the complaints procedure in place if the disagreement cannot be resolved within a reasonable time;
- 22 advise the master of the right of appeal and relevant procedures in the case of detention;

Integrity

- 23 be independent and not have any commercial interest in their ports and the ships they inspect or companies providing services in their ports. For example, the PSCOs should not be employed from time to time by companies which operate ships in their ports or the PSCOs should not have an interest in the repair companies in their ports;
- 24 be free to make decisions based on the findings of their inspections and not on any commercial considerations of the port;
- 25 always follow the rules of their administrations regarding the acceptance of gifts and favours, e.g., meals on board;
- 26 firmly refuse any attempts of bribery and report any blatant cases to the maritime Authority;
- 27 not misuse their authority for benefit, financial or otherwise; and

Updating knowledge

- 28 update their technical knowledge regularly.

APPENDIX 2

GUIDELINES FOR THE DETENTION OF SHIPS

1 Introduction

1.1 When deciding whether the deficiencies found in a ship are sufficiently serious to merit detention the PSCO should assess whether:

- .1 the ship has relevant, valid documentation; and
- .2 the ship has the crew required in the minimum Safe Manning Document.

1.2 During inspection the PSCO should further assess whether the ship and/or crew, throughout its forthcoming voyage, is able to:

- .1 navigate safely;
- .2 safely handle, carry and monitor the condition of the cargo;
- .3 operate the engine-room safely;
- .4 maintain proper propulsion and steering;
- .5 fight fires effectively in any part of the ship if necessary;
- .6 abandon ship speedily and safely and effect rescue if necessary;
- .7 prevent pollution of the environment;
- .8 maintain adequate stability;
- .9 maintain adequate watertight integrity;
- .10 communicate in distress situations if necessary; and
- .11 provide safe and healthy conditions on board.

1.3 If the result of any of these assessments is negative, taking into account all deficiencies found, the ship should be strongly considered for detention. A combination of deficiencies of a less serious nature may also warrant the detention of the ship. Ships which are unsafe to proceed to sea should be detained upon the first inspection irrespective of the time the ship will stay in port.

2 General

The lack of valid certificates as required by the relevant instruments may warrant the detention of ships. However, ships flying the flag of States not a Party to a convention or not having implemented another relevant instrument, are not entitled to carry the certificates provided for by the convention or other relevant instrument. Therefore, absence of the required certificates should not by itself constitute a reason to detain these ships; however, in applying the "no more favourable treatment" clause, substantial compliance with the provisions and criteria specified in this document must be required before the ship sails.

3 Detainable deficiencies

To assist the PSCO in the use of these guidelines, there follows a list of deficiencies, grouped under relevant conventions and/or codes, which are considered to be of such a serious nature that they may warrant the detention of the ship involved. This list is not considered exhaustive but is intended to give examples of relevant items.

Areas under the SOLAS Convention

- 1 Failure of proper operation of propulsion and other essential machinery, as well as electrical installations.
- 2 Insufficient cleanliness of engine-room, excess amount of oily-water mixture in bilges, insulation of piping including exhaust pipes in engine-room contaminated by oil, and improper operation of bilge pumping arrangements.
- 3 Failure of the proper operation of emergency generator, lighting, batteries and switches.
- 4 Failure of proper operation of the main and auxiliary steering gear.
- 5 Absence, insufficient capacity or serious deterioration of personal life-saving appliances, survival craft and launching and recovery arrangements.
- 6 Absence, non-compliance or substantial deterioration to the extent that it can not comply with its intended use of fire detection system, fire alarms, fire-fighting equipment, fixed fire-extinguishing installation, ventilation valves, fire dampers, and quick-closing devices.
- 7 Absence, substantial deterioration or failure of proper operation of the cargo deck area fire protection on tankers.
- 8 Absence, non-compliance or serious deterioration of lights, shapes or sound signals.
- 9 Absence or failure of the proper operation of the radio equipment for distress and safety communication.
- 10 Absence or failure of the proper operation of navigation equipment, taking the relevant provisions of SOLAS regulation V/16.2 into account.
- 11 Absence of corrected navigational charts, and/or all other relevant nautical publications necessary for the intended voyage, taking into account that electronic charts may be used as a substitute for the charts.
- 12 Absence of non-sparking exhaust ventilation for cargo pump-rooms.
- 13 Serious deficiency in the operational requirements listed in appendix 7.
- 14 Number, composition or certification of crew not corresponding with safe manning document.
- 15 Non-implementation or failure to carry out the enhanced survey programme in accordance with SOLAS regulation XI-1/2 and resolution A.744(18) as amended.
- 16 Absence or failure of a VDR, when its use is compulsory.

Areas under the IBC Code

- 1 Transport of a substance not mentioned in the Certificate of Fitness or missing cargo information.

- 2 Missing or damaged high pressure safety devices.
- 3 Electrical installations not intrinsically safe or not corresponding to the Code requirements.
- 4 Sources of ignition in hazardous locations.
- 5 Contravention of special requirements.
- 6 Exceeding of maximum allowable cargo quantity per tank.
- 7 Insufficient heat protection for sensitive products.
- 8 Pressure alarms for cargo tanks not operable.
- 9 Transport of substances to be inhibited without valid inhibitor certificate.

Areas under the IGC Code

- 1 Transport of a substance not mentioned in the Certificate of Fitness or missing cargo information.
- 2 Missing closing devices for accommodations or service spaces.
- 3 Bulkhead not gastight.
- 4 Defective air locks.
- 5 Missing or defective quick-closing valves.
- 6 Missing or defective safety valves.
- 7 Electrical installations not intrinsically safe or not corresponding to the Code requirements.
- 8 Ventilators in cargo area not operable.
- 9 Pressure alarms for cargo tanks not operable.
- 10 Gas detection plant and/or toxic gas detection plant defective.
- 11 Transport of substances to be inhibited without valid inhibitor certificate.

Areas under the Load Lines Convention

- 1 Significant areas of damage or corrosion, or pitting of plating and associated stiffening in decks and hull effecting seaworthiness or strength to take local loads, unless properly authorized temporary repairs for a voyage to a port for permanent repairs have been carried out.
- 2 A recognized case of insufficient stability.

- 3 The absence of sufficient and reliable information, in an approved form, which by rapid and simple means, enables the master to arrange for the loading and ballasting of the ship in such a way that a safe margin of stability is maintained at all stages and at varying conditions of the voyage, and that the creation of any unacceptable stresses in the ship's structure are avoided.
- 4 Absence, substantial deterioration or defective closing devices, hatch closing arrangements and watertight/weathertight doors.
- 5 Overloading.
- 6 Absence of, or impossibility to read, draught marks and/or Load Line marks.

Areas under the MARPOL Convention, Annex I

- 1 Absence, serious deterioration or failure of proper operation of the oily-water filtering equipment, the oil discharge monitoring and control system or the 15 ppm alarm arrangements.
- 2 Remaining capacity of slop and/or sludge tank insufficient for the intended voyage.
- 3 Oil Record Book not available.
- 4 Unauthorized discharge bypass fitted.
- 5 Failure to meet the requirements of regulation 20.4 or alternative requirements specified in regulation 20.7.

Areas under the MARPOL Convention, Annex II

- 1 Absence of P and A Manual.
- 2 Cargo is not categorized.
- 3 No Cargo Record Book available.
- 4 Unauthorized discharge bypass fitted.

Areas under the MARPOL Convention, Annex IV

To be developed.

Areas under the MARPOL Convention, Annex V

- 1 Absence of the garbage management plan.
- 2 No garbage record book available.
- 3 Ship's personnel not familiar with disposal/discharge requirements of garbage management plan.

Areas under the MARPOL Convention, Annex VI

- 1 Absence of valid IAPP Certificate and where relevant EIAPP Certificates and Technical Files.
- 2 A diesel engine, with a power output of more than 130 kW, which is installed on board a ship constructed on or after 1 January 2000, or a diesel engine having undergone a major conversion on or after 1 January 2000, which does not comply with the No_x Technical Code.
- 3 The sulphur content of any fuel oil used on board ships exceeds 4.5% m/m.
- 4 The sulphur content of any fuel used on board exceeds a maximum of 1.5% m/m while operating within a SO_x emission control area.
- 5 An incinerator installed on board the ship on or after 1 January 2000 does not comply with requirements contained in appendix IV to the Annex, or the standard specifications for shipboard incinerators developed by the Organization (resolutions MEPC.76(40) and MEPC.93(45)).
- 6 The master or crew are not familiar with essential procedures regarding the operation of air pollution prevention equipment.

Areas under the STCW Convention

- 1 Failure of seafarers to hold a certificate, to have an appropriate certificate, to have a valid dispensation or to provide documentary proof that an application for an endorsement has been submitted to the Administration.
- 2 Failure to comply with the applicable safe manning requirements of the Administration.
- 3 Failure of navigational or engineering watch arrangements to conform to the requirements specified for the ship by the Administration.
- 4 Absence in a watch of a person qualified to operate equipment essential to safe navigation, safety radiocommunications or the prevention of marine pollution.
- 5 Inability to provide for the first watch at the commencement of a voyage and for subsequent relieving watches persons who are sufficiently rested and otherwise fit for duty.
- 6 Failure to provide proof of professional proficiency for the duties assigned to seafarers for the safety of the ship and the prevention of pollution.

Areas which may not warrant a detention, but where, e.g., cargo operations have to be suspended

Failure of the proper operation (or maintenance) of inert gas system, cargo related gear or machinery will be considered sufficient grounds to stop cargo operation.

APPENDIX 3

GUIDELINES FOR INVESTIGATIONS AND INSPECTIONS CARRIED OUT UNDER ANNEX I OF MARPOL

PART 1

INSPECTION OF IOPP CERTIFICATE, SHIP AND EQUIPMENT

1 Ships required to carry an IOPP Certificate

1.1 On boarding and introduction to the master or responsible ship's officer, the PSCO should examine the IOPP Certificate, including the attached Record of Construction and Equipment, and the Oil Record Book.

1.2 The certificate carries the information on the type of ship and the dates of surveys and inspections. As a preliminary check it should be confirmed that the dates of surveys and inspections are still valid. Furthermore it should be established if the ship carries an oil cargo and whether the carriage of such oil cargo is in conformity with the certificate (see also paragraph 1.11 of the Record of Construction and Equipment for Oil Tankers).

1.3 Through examining the Record of Construction and Equipment, the PSCO may establish how the ship is equipped for the prevention of marine pollution.

1.4 If the certificate is valid and the general impression and visual observations on board confirm a good standard of maintenance, the PSCO should generally confine the inspection to reported deficiencies, if any.

1.5 If, however, the PSCO from general impressions or observations on board has clear grounds for believing that the condition of the ship or its equipment does not correspond substantially with the particulars of the certificate, a more detailed inspection should be initiated.

1.6 The inspection of the engine-room should begin with forming a general impression of the state of the engine-room, the presence of traces of oil in the engine-room bilges and the ship's routine for disposing of oil contaminated water from the engine-room spaces.

1.7 Next a closer examination of the ship's equipment as listed in the IOPP Certificate may take place. This examination should also confirm that no unapproved modifications have been made to the ship and its equipment.

1.8 Should any doubt arise as to the maintenance or the condition of the ship or its equipment, then further examination and testing may be conducted as considered necessary. In this respect reference is made to the IMO Guidelines for Surveys under Annex I of MARPOL (resolution A.[...](27)).

1.9 The PSCO should bear in mind that a ship may be equipped over and above the requirements of Annex I of MARPOL. If such equipment is malfunctioning the flag State should be informed. This alone however should not cause a ship to be detained unless the discrepancy presents an unreasonable threat of harm to the marine environment.

1.10 In cases of oil tankers, the inspection should include the cargo tank and pump-room area of the ship and should begin with forming a general impression of the layout of the tanks, the cargoes carried, and the routine of cargo slops disposal.

2 Ships of non-Parties to the Convention and other ships not required to carry an IOPP Certificate

2.1 As this category of ships is not provided with an IOPP Certificate, the PSCO should be satisfied with regard to the construction and equipment standards relevant to the ship on the basis of the requirements set out in Annex I of MARPOL.

2.2 In all other respects the PSCO should be guided by the procedures for ships referred to in section 1 above.

2.3 If the ship has some form of certification other than the IOPP Certificate, the PSCO may take the form and content of this documentation into account in the evaluation of that ship.

3 Control

In exercising the control functions the PSCO should use professional judgement to determine whether to detain the ship until any noted deficiencies are corrected or to allow it to sail with certain deficiencies which do not pose an unreasonable threat of harm to the marine environment. In doing this the PSCO should be guided by the principle that the requirements contained in Annex I of MARPOL, in respect of construction and equipment and the operation of ships, are essential for the protection of the marine environment and that departure from these requirements could constitute an unreasonable threat of harm to the marine environment.

PART 2

CONTRAVENTION OF DISCHARGE PROVISIONS

1 Experience has shown that information furnished to the flag State as envisaged in appendix 5 of the Procedures is often inadequate to enable the flag State to cause proceedings to be brought in respect of the alleged violation of the discharge requirements. This appendix is intended to identify information which is often needed by a flag State for the prosecution of such possible violations.

2 It is recommended that in preparing a port State report on deficiencies, where contravention of the discharge requirements is involved, the authorities of the coastal or port State be guided by the itemized list of possible evidence as shown in part 3 of this appendix. It should be borne in mind in this connection that:

- .1 the report aims to provide the optimal collation of obtainable data; however, even if all the information cannot be provided, as much information as possible should be submitted;
- .2 it is important for all the information included in the report to be supported by facts which, when considered as a whole, would lead the port or coastal State to believe a contravention had occurred.

3 In addition to the port State report on deficiencies, a report should be completed by a port or coastal State, on the basis of the itemized list of possible evidence. It is important that these reports are supplemented by documents such as:

- .1 a statement by the observer of the pollution. In addition to the information required under section 1 of part 3 of this appendix the statement should include considerations which lead the observer to conclude that none of any other possible pollution sources is in fact the source;
- .2 statements concerning the sampling procedures both of the slick and on board. These should include location of and time when samples were taken, identity of person(s) taking the samples and receipts identifying the persons having custody and receiving transfer of the samples;
- .3 reports of analyses of samples taken of the slick and on board; the reports should include the results of the analyses, a description of the method employed, reference to or copies of scientific documentation attesting to the accuracy and validity of the method employed and names of persons performing the analyses and their experience;
- .4 a statement by the PSCO on board together with the PSCO's rank and organization;
- .5 statements by persons being questioned;
- .6 statements by witnesses. All observations, photographs and documentation should be supported by a signed verification of their authenticity. All certifications, authentications or verifications shall be executed in accordance with the laws of the State which prepares them. All statements should be signed and dated by the person making the statement and, if possible, by a witness to the signing. The names of the persons signing statements should be printed in legible script above or below the signature;
- .7 photographs of the oil slick; and
- .8 copies of relevant recordings, etc., pages of Oil Record Books, log-books, discharge.

4 The report referred to under paragraphs 2 and 3 should be sent to the flag State. If the coastal State observing the pollution and the port State carrying out the investigation on board are not the same, the State carrying out the latter investigation should also send a copy of its findings to the State observing the pollution and requesting the investigation.

PART 3

ITEMIZED LIST OF POSSIBLE EVIDENCE ON ALLEGED CONTRAVENTION OF THE MARPOL ANNEX I DISCHARGE PROVISIONS

1 Action on sighting oil pollution

1.1 Particulars of ship or ships suspected of contravention

- .1 Name of ship
- .2 Reasons for suspecting the ship
- .3 Date and time (UTC) of observation or identification
- .4 Position of ship
- .5 Flag and port of registry
- .6 Type (e.g., tanker, cargo ship, passenger ship, fishing vessel), size (estimated tonnage) and other descriptive data (e.g., superstructure colour and funnel mark)
- .7 Draught condition (loaded or in ballast)
- .8 Approximate course and speed
- .9 Position of slick in relation to ship (e.g., astern, port, starboard)
- .10 Part of the ship from which side discharge was seen emanating
- .11 Whether discharge ceased when ship was observed or contacted by radio

1.2 Particulars of slick

- .1 Date and time (UTC) of observation if different from paragraph 1.1.3
- .2 Position of oil slick in longitude and latitude if different from paragraph 1.1.4
- .3 Approximate distance in nautical miles from the nearest landmark
- .4 Approximate overall dimension of oil slick (length, width and percentage thereof covered by oil)
- .5 Physical description of oil slick (direction and form, e.g., continuous, in patches or in windrows)
- .6 Appearance of oil slick (indicate categories)
 - Category A: Barely visible under most favourable light condition
 - Category B: Visible as silvery sheen on water surface
 - Category C: First trace of colour may be observed
 - Category D: Bright band of colour
 - Category E: Colours begin to turn dull
 - Category F: Colours are much darker
- .7 Sky conditions (bright sunshine, overcast, etc.), lightfall and visibility (kilometres) at the time of observation
- .8 Sea state
- .9 Direction and speed of surface wind
- .10 Direction and speed of current

1.3 Identification of the observer(s)

- .1 Name of the observer
- .2 Organization with which observer is affiliated (if any)
- .3 Observer's status within the organization
- .4 Observation made from aircraft/ship/shore/otherwise
- .5 Name or identity of ship or aircraft from which the observation was made
- .6 Specific location of ship, aircraft, place on shore or otherwise from which observation was made

- .7 Activity engaged in by observer when observation was made, for example: patrol, voyage, flight (en route from ... to ...), etc.

1.4 Method of observation and documentation

- .1 Visual
.2 Conventional photographs
.3 Remote sensing records and/or remote sensing photographs
.4 Samples taken from slick
.5 Any other form of observation (specify)

Note: A photograph of the discharge should preferably be in colour. Photographs can provide the following information: that a material on the sea surface is oil; that the quantity of oil discharged does constitute a violation of the Convention; that the oil is being, or has been discharged from a particular ship; and the identity of the ship.

Experience has shown that the aforementioned can be obtained with the following three photographs:

- details of the slick taken almost vertically down from an altitude of less than 300 metres with the sun behind the photographer;
- an overall view of the ship and "slick" showing oil emanating from a particular ship; and
- details of the ship for the purposes of identification.

1.5 Other information if radio contact can be established

- .1 Master informed of pollution
.2 Explanation of master
.3 Ship's last port of call
.4 Ship's next port of call
.5 Name of ship's master and owner
.6 Ship's call sign

2 Investigation on board

2.1 Inspection of IOPP Certificate

- .1 Name of ship
.2 Distinctive number or letters
.3 Port of registry
.4 Type of ship
.5 Date and place of issue
.6 Date and place of endorsement. **Note:** If the ship is not issued an IOPP Certificate, as much as possible of the requested information should be given.

2.2 Inspection of supplement of the IOPP Certificate

- .1 Applicable paragraphs of sections 2, 3, 4, 5 and 6 of the supplement (non-oil tankers)
.2 Applicable paragraphs of sections 2, 3, 4, 5, 6, 7, 8, 9 and 10 of the supplement (oil tankers)

Note: If the ship does not have an IOPP Certificate, a description should be given of the equipment and arrangements on board, designed to prevent marine pollution.

2.3 Inspection of Oil Record Book (O.R.B.)

- .1 Copy sufficient pages of the O.R.B. – part I to cover a period of 30 days prior to the reported incident.
- .2 Copy sufficient pages of the O.R.B. – part II (if on board) to cover a full loading/unloading/ballasting and tank cleaning cycle of the ship. Also copy the tank diagram.

2.4 Inspection of log-book

- .1 Last port, date of departure, draught forward and aft
- .2 Current port, date of arrival, draught forward and aft
- .3 Ship's position at or near the time the incident was reported
- .4 Spot check if positions mentioned in the log-book agree with positions noted in the O.R.B.

2.5 Inspection of other documentation on board

Other documentation relevant for evidence (if necessary make copies) such as:

- recent ullage sheets
- records of monitoring and control equipment.

2.6 Inspection of ship

- .1 Ship's equipment in accordance with the supplement of the IOPP Certificate
- .2 Samples taken. State location on board
- .3 Traces of oil in vicinity of overboard discharge outlets
- .4 Condition of engine-room and contents of bilges
- .5 Condition of oily water separator, filtering equipment and alarm, stopping or monitoring arrangements
- .6 Contents of sludge and/or holding tanks
- .7 Sources of considerable leakage on oil tankers.

The following additional evidence may be pertinent:

- .8 Oil on surface of segregated or dedicated clean ballast
- .9 Condition of pump-room bilges
- .10 Condition of COW system
- .11 Condition of IG system
- .12 Condition of monitoring and control system
- .13 Slop tank contents (estimate quantity of water and of oil).

2.7 Statements of persons concerned

If the O.R.B. – part I has not been properly completed, information on the following questions may be pertinent:

- .1 Was there a discharge (accidental or intentional) at the time indicated on the incident report?
- .2 Is the bilge discharge controlled automatically?
- .3 If so, at what time was this system last put into operation and at what time was this system last put on manual mode?
- .4 If not, what were date and time of the last bilge discharge?
- .5 What was the date of the last disposal of residue and how was disposal effected?
- .6 Is it usual to effect discharge of bilge water directly to the sea, or to store bilge water first in a collecting tank? Identify the collecting tank
- .7 Have oil fuel tanks recently been used as ballast tanks?

If the O.R.B. – part II has not been properly completed, information on the following questions may be pertinent:

- .8 What was the cargo/ballast distribution in the ship on departure from the last port?
- .9 What was the cargo/ballast distribution in the ship on arrival in the current port?
- .10 When and where was the last loading effected?
- .11 When and where was the last unloading effected?
- .12 When and where was the last discharge of dirty ballast?
- .13 When and where was the last cleaning of cargo tanks?
- .14 When and where was the last COW operation and which tanks were washed?
- .15 When and where was the last decanting of slop tanks?
- .16 What is the ullage in the slop tanks and the corresponding height of interface?
- .17 Which tanks contained the dirty ballast during the ballast voyage (if ship arrived in ballast)?
- .18 Which tanks contained the clean ballast during the ballast voyage (if ship arrived in ballast)?

In addition the following information may be pertinent:

- .19 Details of the present voyage of the ship (previous ports, next ports, trade)
- .20 Contents of oil fuel and ballast tanks
- .21 Previous and next bunkering, type of oil fuel
- .22 Availability or non-availability of reception facilities for oily wastes during the present voyage
- .23 Internal transfer of oil fuel during the present voyage.

In the case of oil tankers the following additional information may be pertinent:

- .24 The trade the ship is engaged in, such as short/long distance, crude or product or alternating crude/product, lightering service, oil/dry bulk
- .25 Which tanks clean and dirty
- .26 Repairs carried out or envisaged in cargo tanks.

Miscellaneous information:

- .27 Comments in respect of condition of ship's equipment
- .28 Comments in respect of pollution report
- .29 Other comments.

3 Investigation ashore

3.1 Analyses of oil samples

Indicate method and results of the samples' analyses.

3.2 Further information

Additional information on the ship, obtained from oil terminal staff, tank cleaning contractors or shore reception facilities may be pertinent.

Note: Any information under this heading is, if practicable, to be corroborated by documentation such as signed statements, invoices, receipts, etc.

4 Information not covered by the foregoing

5 Conclusion

5.1 Summing up of the investigator's technical conclusions

5.2 Indication of applicable provisions of Annex I of MARPOL which the ship is suspected of having contravened.

5.3 Did the results of the investigation warrant the filing of a deficiency report?

PART 4

GUIDELINES FOR IN-PORT INSPECTION OF CRUDE OIL WASHING PROCEDURES

1 Preamble

1.1 Guidelines for the in-port inspection of crude oil washing (COW) procedures, as called for by resolution 7 of the International Conference on Tanker Safety and Pollution Prevention, 1978, are required to provide a uniform and effective control of crude oil washing to ensure compliance of ships at all times with the provisions of MARPOL.

1.2 The design of the crude oil washing installation is subject to the approval of the flag Administration. However, although the operational aspect of crude oil washing is also subject to the approval of the same Administration, it might be necessary for a port State Authority to see to it that continuing compliance with agreed procedures and parameters is ensured.

1.3 The COW Operations and Equipment Manual has been so specified that it contains all the necessary information relating to the operation of crude oil washing on a particular tanker. The objectives of the inspection would then be to ensure that the provisions of the Manual dealing with safety procedures and with pollution prevention are being strictly adhered to.

1.4 The method of the inspection is at the discretion of the port State Authority and may cover the entire operation or only those parts of the operation which occur when the PSCO is on board.

1.5 Inspection will be governed by articles 5 and 6 of the Convention.

2 Inspections

2.1 A port State should make the appropriate arrangements so as to ensure compliance with requirements governing the crude oil washing of oil tankers. This is not, however, to be construed as relieving terminal operators and ship owners of their obligations to ensure that the operation is undertaken in accordance with the regulations.

2.2 The inspection may cover the entire operation of crude oil washing or only certain aspects of it. It is thus in the interest of all concerned that the ship's records with regard to the COW operations are maintained at all times so that an PSCO may verify those operations undertaken prior to the inspection.

3 Ship's personnel

3.1 The person in charge and the other nominated persons who have responsibility in respect of the crude oil washing operation should be identified. They must, if required, be able to show that their qualifications meet the requirements as appropriate of paragraphs 5.2 and 5.3 of the revised Specifications for the Design, Operation and Control of Crude Oil Washing Systems (resolution A.446(XI), as amended).

3.2 The verification may be accomplished by reference to the individual's discharge papers, testimonials issued by the ship's operator or by certificates issued by a training centre approved by an Administration. The numbers of such personnel should be at least as stated in the Manual.

4 Documentation

4.1 The following documents should be available for inspection:

- .1 The IOPP Certificate and the Record of Construction and Equipment, to determine:
 - .1.1 whether the ship is fitted with a crude oil washing system as required in regulation 33 of MARPOL Annex I;
 - .1.2 whether the crude oil washing system is according to and complying with the requirements of regulations 33 and 35 of MARPOL Annex I;
 - .1.3 the validity and date of the Operations and Equipment Manual; and
 - .1.4 the validity of the Certificate;
- .2 The approved Manual;
- .3 The Oil Record Book; and

- .4 The Cargo Ship Safety Equipment Certificate to confirm that the inert gas system conforms to regulations contained in chapter II-2 of SOLAS, as amended.

5 Inert gas system

5.1 Inert gas system regulations require that instrumentation shall be fitted for continuously indicating and permanently recording at all times when inert gas is being supplied, the pressure and the oxygen content of the gas in the inert gas supply main. Reference to the permanent recorder would indicate if the system had been operating before and during the cargo discharge in a satisfactory manner.

5.2 If conditions specified in the Manual are not being met then the washing must be stopped until satisfactory conditions are restored.

5.3 As a further precautionary measure, the oxygen level in each tank to be washed is to be determined at the tank. The meters used should be calibrated and inspected to ensure that they are in good working order. Readings from tanks already washed in port prior to inspection should be available for checking. Spot checks on readings may be instituted.

6 Electrostatic generation

It should be confirmed either from the cargo log or by questioning the person in charge that presence of water in the crude oil is being minimized as required by paragraph 6.7 of the revised Specifications (resolution A.446(XI) as amended).

7 Communication

It should be established that effective means of communication exist between the person in charge and the other persons concerned with the COW operation.

8 Leakage on deck

PSCOs should ensure that the COW piping system has been operationally tested for leakage before cargo discharge and that the test has been noted in the ship's Oil Record Book.

9 Exclusion of oil from engine-room

It should be ascertained that the method of excluding cargo oil from the machinery space is being maintained by inspecting the isolating arrangements of the tank washing heater (if fitted) or of any part of the tank washing system which enters the machinery space.

10 Suitability of the crude oil

In judging the suitability of the oil for crude oil washing, the guidance and criteria contained in section 9 of the COW Operations and Equipment Manual should be taken into account.

11 Checklist

It should be determined from the ship's records that the pre-crude oil wash operational checklist was carried out and all instruments functioned correctly. Spot checks on certain items may be instituted.

12 Wash programmes

12.1 Where the tanker is engaged in a multiple port discharge, the Oil Record Book would indicate if tanks were crude oil washed at previous discharge ports or at sea. It should be determined that all tanks which will, or may be, used to contain ballast on the forthcoming voyage will be crude oil washed before the ship departs from the port. There is no obligation to wash any tank other than ballast tanks at a discharge port except that each of these other tanks must be washed at least in accordance with paragraph 6.1 of the revised Specifications (resolution A.446(XI) as amended). The Oil Record Book should be inspected to check that this is being complied with.

12.2 All crude oil washing must be completed before a ship leaves its final port of discharge.

12.3 If tanks are not being washed in one of the preferred orders given in the Manual the PSCO should determine that the reason for this, and the proposed order of tank washing, are acceptable.

12.4 For each tank being washed it should be ensured that the operation is in accordance with the Manual in that:

- .1 the deck mounted machines and the submerged machines are operating either by reference to indicators, the sound patterns or other approved methods;
- .2 the deck mounted machines, where applicable, are programmed as stated;
- .3 the duration of the wash is as required; and
- .4 the number of tank washing machines being used simultaneously does not exceed that specified.

13 Stripping of tanks

13.1 The minimum trim conditions and the parameters of the stripping operations are to be stated in the Manual.

13.2 All tanks which have been crude oil washed are to be stripped. The adequacy of the stripping is to be checked by hand dipping at least in the after most hand dipping location in each tank or by such other means provided and described in the Manual. It should be ascertained that the adequacy of stripping has been checked or will be checked before the ship leaves its final port of discharge.

14 Ballasting

14.1 Tanks that were crude oil washed at sea will be recorded in the Oil Record Book. These tanks must be left empty between discharge ports for inspection at the next discharge port. Where these tanks are the designated departure ballast tanks they may be required to be ballasted at a very early stage of the discharge. This is for operational reasons and also because they must be ballasted during cargo discharge if hydrocarbon emission is to be contained on the ship. If these tanks are to be inspected when empty, then this must be done shortly after the tanker berths. If a PSCO arrives after the tanks have begun accepting ballast, then the sounding of the tank bottom would not be available. However, an examination of the surface of the ballast water is then possible. The thickness of the oil film

should not be greater than that specified in paragraph 4.2.10(b) of the revised Specifications (resolution A.446(XI) as amended).

14.2 The tanks that are designated ballast tanks will be listed in the Manual. It is, however, left to the discretion of the master or responsible officer to decide which tanks may be used for ballast on the forthcoming voyage. It should be determined from the Oil Record Book that all such tanks have been washed before the tanker leaves its last discharge port. It should be noted that where a tanker back-loads a cargo of crude oil at an intermediate port into tanks designated for ballast, then it should not be required to wash those tanks at that particular port but at a subsequent port.

14.3 It should be determined from the Oil Record Book that additional ballast water has not been put into tanks which had not been crude oil washed during previous voyages.

14.4 It should be verified that the departure ballast tanks are stripped as completely as possible. Where departure ballast is filled through cargo lines and pumps these must be stripped either into another cargo tank, or ashore by the special small diameter line provided for this purpose.

14.5 The methods to avoid vapour emission where locally required will be provided in the Manual and they must be adhered to. The PSCO should ensure that this is being complied with.

14.6 The typical procedures for ballasting listed in the Manual must be observed. The PSCO should ensure this is being complied with.

14.7 When departure ballast is to be shifted, the discharge into the sea must be in compliance with regulations 15 and 34 of Annex I of MARPOL. The Oil Record Book should be inspected to ensure that the ship is complying with this.

APPENDIX 4

GUIDELINES FOR INVESTIGATIONS AND INSPECTIONS CARRIED OUT UNDER ANNEX II OF MARPOL

PART 1

INSPECTION OF CERTIFICATE (COF OR NLS CERTIFICATE), SHIP AND EQUIPMENT

1 Ships required to hold a Certificate

1.1 On boarding and after introducing oneself to the master or responsible ship's officer, the PSCO should examine the Certificate of Fitness or NLS Certificate and Cargo Record Book.

1.2 The Certificate includes information on the type of ship, the dates of surveys and a list of the products which the ship is certified to carry.

1.3 As a preliminary check, the Certificate's validity should be confirmed by verifying that the Certificate is properly completed and signed and that required surveys have been performed. In reviewing the Certificate particular attention should be given to verifying that only those noxious liquid substances which are listed on the Certificate are carried and that these substances are in tanks approved for their carriage.

1.4 The Cargo Record Book should be inspected to ensure that the records are up to date. The PSCO should check whether the ship left the previous port(s) with residues of noxious liquid substances on board which could not be discharged into the sea. The book could also have relevant entries from the appropriate authorities in the previous ports. If the examination reveals that the ship was permitted to sail from its last unloading port under certain conditions, the PSCO should ascertain that such conditions have been or will be adhered to. If the PSCO discovers an operational violation in this respect, the flag State should be informed by means of a deficiency report.

1.5 If the Certificate is valid and the PSCO's general impressions and visual observations on board confirm a good standard of maintenance, the PSCO should, provided that the Cargo Record Book entries do not show any operational violations, confine the inspection to reported deficiencies, if any.

1.6 If, however, the PSCO's general impressions or observations on board show clear grounds for believing that the condition of the ship, its equipment, or its cargo and stowage handling operations do not correspond substantially with the particulars of the Certificate, the PSCO should proceed to a more detailed inspection:

- .1 initially this requires an examination of the ship's approved Procedures and Arrangements Manual (P and A Manual);
- .2 the more detailed inspection should include the cargo and pump-room areas of the ship and should begin with forming a general impression of the layout of the tanks, the cargoes carried, pumping and stripping conditions and cargo;

- .3 next a closer examination of the ship's equipment as shown in the P and A Manual may take place. This examination should also confirm that no unapproved modifications have been made to the ship and its equipment; and
- .4 should any doubt arise as to the maintenance or the condition of the ship or its equipment then further examination and testing may be conducted as may be necessary. In this respect reference is made to the IMO Guidelines for Surveys under the Harmonized System of Survey and Certification (resolution A.[...](27)), as appropriate.

1.7 The PSCO should bear in mind that a ship may be equipped over and above the requirements of Annex II of MARPOL. If such equipment is malfunctioning the flag State should be informed. This alone, however, should not cause a ship to be detained unless the malfunction presents an unreasonable threat of harm to the marine environment.

2 Ships of non-Parties to the Convention

2.1 As this category of ship is not provided with a COF or NLS Certificate as required by Annex II of MARPOL, the PSCO should be satisfied with regard to the construction and equipment standards relevant to the ship on the basis of the requirements set out in Annex II of MARPOL and the Standards for Procedures and Arrangements.

2.2 In all other respects the PSCO should be guided by the procedures for ships referred to in 1 above (i.e. Ships required to hold a Certificate).

2.3 If the ship has some form of certification other than the required Certificate, the PSCO may take the form and content of this document into account in the evaluation of that ship. Such a form of certification, however, is only of value to the PSCO if the ship has been provided with a P and A Manual.

3 Control

In exercising the control functions, the PSCO should use professional judgement to determine whether to detain the ship until any noted deficiencies are rectified or to allow it to sail with certain deficiencies which do not pose an unreasonable threat of harm to the marine environment. In doing this, the PSCO should be guided by the principle that the requirements contained in Annex II of MARPOL, in respect of construction and equipment and the operation of ships, are essential for the protection of the marine environment and that departure from these requirements could constitute an unreasonable threat of harm to the marine environment.

PART 2

CONTRAVENTION OF DISCHARGE PROVISIONS

1 With illegal discharges, past experience has shown that information furnished to the flag State is often inadequate to enable the flag State to cause proceedings to be brought in respect of the alleged violation of the discharge requirements. This appendix is intended to identify information which will be needed by a flag State for the prosecution of violations of the discharge provisions under Annex II of MARPOL.

2 It is recommended that in preparing a port State report on deficiencies, where contravention of the discharge requirements is involved, the authorities of a coastal or port State should be guided by the itemized list of possible evidence as shown in part 3 of this appendix. It should be borne in mind in this connection that:

- .1 the report aims to provide the optimal collation of obtainable data; however, even if all the information cannot be provided, as much information as possible should be submitted;
- .2 it is important for all the information included in the report to be supported by facts which, when considered as a whole, would lead the port or coastal State to believe a contravention has occurred; and
- .3 the discharge may have been oil, in which case part 2 to Appendix 3 of this resolution applies (Guidelines for Investigation and Inspections carried out under Annex I of MARPOL).

3 In addition to the port State report on deficiencies, a report should be completed by a port or coastal State, on the basis of the itemized list of possible evidence. It is important that these reports are supplemented by documents such as:

- .1 a statement by the observer of the pollution. In addition to the information required under section 1 of part 3 of this appendix, the statement should include considerations which have led the observer to conclude that none of any other possible pollution sources is in fact the source;
- .2 statements concerning the sampling procedures both of the slick and on board. These include location of and time when samples were taken, identity of person(s) taking the samples and receipts identifying the persons having custody and receiving transfer of the samples;
- .3 reports of analyses of samples taken of the slick and on board; the reports should include the results of the analyses, a description of the method employed, reference to or copies of scientific documentation attesting to the accuracy and validity of the method employed and names of persons performing the analyses and their experience;
- .4 a statement by the PSCO on board together with the PSCO's rank and organization;
- .5 statements by persons being questioned;
- .6 statements by witnesses;
- .7 photographs of the slick; and
- .8 copies of relevant pages of the Cargo Record Book, log-books, discharge recordings, etc.

All observations, photographs and documentation should be supported by a signed verification of their authenticity. All certifications, authentications or verifications shall be executed in accordance with the laws of the State which prepares them. All statements should be signed and dated by the person making the statement and, if possible, by a witness

to the signing. The names of the persons signing statements should be printed in legible script above or below the signature.

4 The report referred to under paragraphs 2 and 3 should be sent to the flag State. If the coastal State observing the pollution and the port State carrying out the investigation on board are not the same, the State carrying out the latter investigation should also send a copy of its findings to the State observing the pollution and requesting the investigation.

PART 3

ITEMIZED LIST OF POSSIBLE EVIDENCE ON ALLEGED CONTRAVENTION OF THE MARPOL ANNEX II DISCHARGE PROVISIONS

1 Action on sighting pollution

1.1 Particulars of ship or ships suspected of contravention

- .1 Name of ship and IMO Number
- .2 Reasons for suspecting the ship
- .3 Date and time (UTC) of observation or identification
- .4 Position of ship
- .5 Flag and port of registry
- .6 Type, size (estimated tonnage) and other descriptive data (e.g., superstructure, colour and funnel mark)
- .7 Draught condition (loaded or in ballast)
- .8 Approximate course and speed
- .9 Position of slick in relating to ship (e.g., astern, port, starboard)
- .10 Part of the ship from which discharge was seen emanating
- .11 Whether discharge ceased when ship was observed or contacted by radio

1.2 Particulars of slick

- .1 Date and time (UTC) of observation if different from item 1.1.3
- .2 Position of slick in longitude and latitude if different from item 1.1.4
- .3 Approximate distance in nautical miles from the nearest land
- .4 Depth of water according to sea chart
- .5 Approximate overall dimension of slick (length, width and percentage thereof covered)
- .6 Physical description of slick (direction and form, e.g., continuous, in patches or in windrows)
- .7 Colour of slick
- .8 Sky conditions (bright sunshine, overcast, etc.), lightfall and visibility (kms) at the time of observation
- .9 Sea state
- .10 Direction and speed of surface wind
- .11 Direction and speed of current

1.3 Identification of the observer(s)

- .1 Name of the observer
- .2 Organization with which observer is affiliated (if any)
- .3 Observer's status within the organization
- .4 Observation made from aircraft (ship) (shore) or otherwise

- .5 Name or identity of ship or aircraft from which the observation was made
- .6 Specific location of ship, aircraft, place on shore or otherwise from which observation was made
- .7 Activity engaged in by observer when observation was made, for example: patrol, voyage, flight (en route from ... to ...), etc.

1.4 Method of observation and documentation

- .1 Visual
- .2 Conventional photographs
- .3 Remote sensing records and/or remote sensing photographs
- .4 Samples taken from slick
- .5 Any other form of observation (specify)

Note: A photograph of the discharge should preferably be in colour. The best results may be obtained with the following three photographs:

- details of the slick taken almost vertically down from an altitude of less than 300 metres with the sun behind the photographer;
- an overall view of the ship and "slick" showing a substance emanating from the particular ship; and
- details of the ship for the purposes of identification

1.5 Other information if radio contact can be established

- .1 Master informed of pollution
- .2 Explanation of master
- .3 Ship's last port of call
- .4 Ship's next port of call
- .5 Name of ship's master and owner
- .6 Ship's call sign

2 Investigation on board

2.1 Inspection of the Certificate (COF or NLS Certificate)

- .1 Name of ship and IMO Number
- .2 Distinctive number or letters
- .3 Port of registry
- .4 Type of ship
- .5 Date and place of issue
- .6 Date and place of endorsement
- .7 List of Annex II substances the ship is certified to carry
- .8 Limitation as to tanks in which these substances may be carried

2.2 Inspection of P and A Manual

- .1 Ship equipped with an efficient stripping system
- .2 Residue quantities established at survey

2.3 Inspection of Cargo Record Book (CRB)

Copy sufficient pages of the CRB to cover a full loading/unloading/ballasting and tank cleaning cycle of the ship. Also copy the tank diagram

2.4 Inspection of log-book

- .1 Last port, date of departure, draught forward and aft
- .2 Current port, date of arrival, draught forward and aft
- .3 Ship's position at or near the time the incident was reported
- .4 Spot check if times entered in the Cargo Record Book in respect of discharges correspond with sufficient distance from the nearest land, the required ship's speed and with sufficient water depth

2.5 Inspection of other documentation on board

Other documentation relevant for evidence (if necessary make copies) such as:

- cargo documents of cargo presently or recently carried, together with relevant information on required unloading temperature, viscosity and/or melting point
- records of temperature of substances during unloading
- records of monitoring equipment if fitted

2.6 Inspection of ship

- .1 Ship's equipment in accordance with the P and A Manual
- .2 Samples taken; state location on board
- .3 Sources of considerable leakage
- .4 Cargo residues on surface of segregated or dedicated clean ballast
- .5 Condition of pump-room bilges
- .6 Condition of monitoring system
- .7 Slop tank contents (estimate quantity of water and residues)

2.7 Statements of persons concerned if the CRB has not been properly completed, information on the following questions may be pertinent:

- .1 Was there a discharge (accidental or intentional) at the time indicated on the incident report?
- .2 Which tanks are going to be loaded in the port?
- .3 Which tanks needed cleaning at sea? Had the tanks been prewashed?
- .4 When and where were these cleaned?
- .5 Residues of which substances were involved?
- .6 What was done with the tank washing slops?
- .7 Was the slop tank, or cargo tank used as a slop tank, discharged at sea?
- .8 When and where was the discharge effected?
- .9 What are the contents of the slop tank or cargo tank used as slop tank?
- .10 Which tanks contained the dirty ballast during the ballast voyage (if ship arrived in ballast)?
- .11 Which tanks contained the clean ballast during the ballast voyage (if ship arrived in ballast)?
- .12 Details of the present voyage of the ship (previous ports, next ports, trade)
- .13 Difficulties experienced with discharge to shore reception facilities

- .14 Difficulties experienced with efficient stripping operations
- .15 Which tanks are clean or dirty on arrival?
- .16 Repairs carried out or envisaged in cargo tanks

Miscellaneous information

- .17 Comments in respect of condition of ship's equipment
- .18 Comments in respect of pollution report
- .19 Other comments

3 Investigation ashore

3.1 Analyses of samples

Indicate method and results of the samples' analyses

3.2 Further information

Additional information on the ship, obtained from terminal staff, tank cleaning contractors or shore reception facilities may be pertinent

Note: Any information under this heading is, if practicable, to be corroborated by documentation such as signed statements, invoices, receipts, etc.

3.3 Information from previous unloading port terminal

- .1 Confirmation that the ship unloaded, stripped or prewashed in accordance with its P and A Manual
- .2 The nature of difficulties if any
- .3 Restrictions by authorities under which the ship was permitted to sail
- .4 Restrictions in respect of shore reception facilities

4 Information not covered by the foregoing

5 Conclusion

- .1 Summing up of the investigator's conclusions
- .2 Indication of applicable provisions of Annex II of MARPOL which the ship is suspected of having contravened
- .3 Did the results of the investigation warrant the filing of a deficiency report?

PART 4

PROCEDURES FOR INSPECTION OF UNLOADING, STRIPPING AND PREWASHING OPERATIONS (MAINLY IN UNLOADING PORTS)

1 Introduction

The PSCO or the surveyor authorized by the Administration exercising control in accordance with regulation 16 of MARPOL Annex II should be thoroughly acquainted with Annex II of MARPOL and the custom of the port as of relevance to cargo handling, tank washing, cleaning berths, prohibition of lighters alongside, etc.

2 Documentation

2.1 The documentation required for the inspection referred to in this appendix consists of:

- .1 COF or NLS Certificate;
- .2 cargo plan and shipping document;
- .3 Procedures and Arrangements (P and A) Manual; and
- .4 Cargo Record Book.

3 Information by ship's staff

3.1 Of relevance to the PSCO or the surveyor appointed or authorized by the Administration is the following:

- .1 the intended loading and unloading programme of the ship;
- .2 whether unloading and stripping operations can be effected in accordance with the P and A Manual and if not the reason why it cannot be done;
- .3 the constraints, if any, under which the efficient stripping system operates (i.e. back pressure, ambient air temperature, malfunctioning, etc.); and
- .4 whether the ship requests an exemption from the prewashing and the discharge of residues in the unloading port.

3.2 When tank washing is required without the use of water the PSCO or the surveyor appointed or authorized by the Administration is to be informed about the tank washing procedure and disposal of residues.

3.3 When the Cargo Record Book is not up to date, any information on prewash and residue disposal operations outstanding should be supplied.

4 Information from terminal staff

Terminal staff should supply information on limitations imposed upon the ship in respect of back pressure and/or reception facilities.

5 Control

5.1 On boarding and introduction to the master or responsible ship officers, the PSCO or the surveyor appointed or authorized by the Administration should examine the necessary documentation.

5.2 The documentation may be used to establish the following:

- .1 noxious liquid substances to be unloaded, their categories and stowage (cargo plan, P and A Manual);
- .2 details of efficient stripping system, if fitted (P and A Manual);
- .3 tanks which require prewashing with disposal of tank washings to reception facilities (shipping document and cargo temperature);
- .4 tanks which require prewashing with disposal of tank washings either to reception facilities or into the sea (P and A Manual, shipping document and cargo temperature);
- .5 prewash operations and/or residue disposal operations outstanding (Cargo Record Book); and
- .6 tanks which may not be washed with water due to the nature of substances involved (P and A Manual).

5.3 In respect of the prewash operations referred to under paragraph 5.2, the following information is of relevance (P and A Manual):

- .1 pressure required for tank washing machines;
- .2 duration of one cycle of the tank washing machine and quantity of water used;
- .3 washing programmes for the substances involved;
- .4 required temperature of washing water; and
- .5 special procedures.

5.4 The PSCO or the surveyor authorized by the Administration, in accordance with regulation 16 of MARPOL Annex II, should ascertain that unloading, stripping and/or prewash operations are carried out in conformance with the information obtained in accordance with paragraph 2 (Documentation) of this Part. If this cannot be achieved, alternative measures should be taken to ensure that the ship does not proceed to sea with more than the quantities of residue specified in regulation 12 of MARPOL Annex II, as applicable. If the residue quantities cannot be reduced by alternative measures the PSCO or the surveyor appointed or authorized by the Administration should inform the port State Administration.

5.5 Care should be taken to ensure that cargo hoses and piping systems of the terminal are not drained back to the ship.

5.6 If a ship is exempted from certain pumping efficiency requirements under regulation 4.4 of MARPOL Annex II or requests an exemption from certain stripping or prewashing procedures under regulation 13.4 of MARPOL Annex II the conditions for such exemption set out in the said regulations should be observed. These concern:

- .1 regulations 4.2 and 4.3: the ship is constructed before 1 July 1986 and is exempted from the requirement for reducing its residue quantities to specified limits of regulation 12 (i.e. category X or Y substances 300 litres and category Z substances 900 litres). This is subject to the conditions of regulation 4.3 that whenever a cargo tank is to be washed or ballasted, a prewash is required with disposal of prewash slops to shore reception facilities. The COF or NLS Certificate should have been endorsed to the effect that the ship is solely engaged in restricted voyages;

- .2 regulation 4.4: the ship is never required to ballast its cargo tanks and tank washing is only required for repair or dry-docking. The COF or NLS Certificate should indicate the particulars of the exemption. Each cargo tank should be certified for the carriage of only one named substance;
- .3 regulation 13.4.1: cargo tanks will not be washed or ballasted prior to the next loading;
- .4 regulation 13.4.2: cargo tanks will be washed and prewash slops will be discharged to reception facilities in another port. It should be confirmed in writing that an adequate reception facility is available at that port for such purpose; and
- .5 regulation 13.4.3: the cargo residues can be removed by ventilation.

5.7 The PSCO or the surveyor appointed or authorized by the Administration must endorse the Cargo Record Book under section J whenever an exemption under regulation 13.4 referred to under paragraph 5.6 above has been granted, or whenever a tank having unloaded category X substances has been prewashed in accordance with the P and A Manual.

5.8 Alternatively, for category X substances, regulation 13.6.1.1 of MARPOL Annex II, residual concentration should be measured by the procedures which each port State authorizes. In this case the PSCO or the surveyor authorized by the Administration must endorse in the Cargo Record Book under section K whenever the required residual concentration has been achieved.

5.9 In addition to paragraph 5.7 above, the PSCO or the surveyor authorized by the Administration shall endorse the Cargo Record Book whenever the unloading, stripping or prewash of category Y and Z substances, in accordance with the P and A Manual, has actually been witnessed.

APPENDIX 5

GUIDELINES FOR DISCHARGE REQUIREMENTS UNDER ANNEXES I AND II OF MARPOL

1 Introduction

1.1 Regulations 15 and 34 of MARPOL Annex I prohibit the discharge into the sea of oil and regulation II/13 prohibits the discharge into the sea of noxious liquid substances except under precisely defined conditions. A record of these operations shall be completed, where appropriate, in the form of an Oil or Cargo Record Book as applicable and shall be kept in such a place as to be readily available for inspection at all reasonable times.

1.2 The regulations referred to above provide that whenever visible traces of oil are observed on or below the surface of the water in the immediate vicinity of a ship or of its wake, a Party should, to the extent that it is reasonably able to do so, promptly investigate the facts bearing on the issue of whether or not there has been a violation of the discharge provisions.

1.3 The conditions under which noxious liquid substances are permitted to be discharged into the seas include quantity, quality, and position limitations, which depend on category of substance and sea area.

1.4 An investigation into an alleged contravention should therefore aim to establish whether a noxious liquid substance has been discharged and whether the operations leading to that discharge were in accordance with the ship's Procedures and Arrangements Manual (P and A Manual).

1.5 Recognizing the likelihood that many of the violations of the discharge provisions will take place outside the immediate control and knowledge of the flag State, Article 6 of MARPOL provides that Parties shall cooperate in the detection of violations and the enforcement of the provisions using all appropriate and practicable measures of detection and environmental monitoring, adequate procedures for reporting and gathering evidence. MARPOL also contains a number of more specific provisions designed to facilitate that cooperation.

1.6 Several sources of information about possible violations of the discharge provisions can be indicated. These include:

- .1 Reports by masters: Article 8 and Protocol I of MARPOL require, *inter alia*, a ship's master to report certain incidents involving the discharge or the probability of a discharge of oil or oily mixtures, or noxious liquid substances or mixtures containing such substances;
- .2 Reports by official bodies: Article 8 of MARPOL requires furthermore that a Party issue instructions to its maritime inspection vessels and aircraft and to other appropriate services to report to its authorities incidents involving the discharge or the probability of a discharge of oil or oily mixtures, or noxious liquid substances or mixtures containing such substances;
- .3 Reports by other Parties: Article 6 of MARPOL provides that a Party may request another Party to inspect a ship. The Party making the request shall supply sufficient evidence that the ship has discharged oil or oily mixtures,

noxious liquid substances or mixtures containing such substances, or that the ship has departed from the unloading port with residues of noxious liquid substances in excess of those permitted to be discharged into the sea; and

- .4 Reports by others: It is not possible to list exhaustively all sources of information concerning alleged contravention of the discharge provisions. Parties should take all circumstances into account when deciding upon investigating such reports.

1.7 Action which can be taken by States other than the flag or port States that have information on discharge violations (hereinafter referred to as coastal States):

- .1 Coastal States, Parties to MARPOL, upon receiving a report of pollution by oil or noxious liquid substances allegedly caused by a ship, may investigate the matter and collect such evidence as can be collected. For details of the desired evidence reference is made to appendices 3 and 4;
- .2 If the investigation referred to under subparagraph .1 above discloses that the next port of call of the ship in question lies within its jurisdiction, the coastal State should also take port State action as set out under paragraphs 2.1 to 2.6 below;
- .3 If the investigation referred to in subparagraph .1 above discloses that the next port of call of the ship in question lies within the jurisdiction of another Party, then the coastal State should in appropriate cases furnish the evidence to that other Party and request that Party to take port State action in accordance with paragraphs 2.1 to 2.6 below; and
- .4 In either case referred to in subparagraphs .2 and .3 above and if the next port of call of the ship in question cannot be ascertained, the coastal State shall inform the flag State of the incident and of the evidence obtained.

2 Port State action

2.1 Parties shall appoint or authorize officers to carry out investigations for the purpose of verifying whether a ship has discharged oil or noxious liquid substances in violation of the provisions of MARPOL.

2.2 Parties may undertake such investigations on the basis of reports received from sources indicated under paragraph 1.6 above.

2.3 These investigations should be directed toward the gathering of sufficient evidence to establish whether the ship has violated the discharge requirements. Guidelines for the optimal collation of evidence are given in appendices 3 and 4.

2.4 If the investigations provide evidence that a violation of the discharge requirements took place within the jurisdiction of the port State, that port State shall either cause proceedings to be taken in accordance with its law, or furnish to the flag State all information and evidence in its possession about the alleged violation. When the port State causes proceedings to be taken, it shall inform the flag State.

2.5 Details of the report to be submitted to the flag State are set out in appendix 16.

2.6 The investigation might provide evidence that pollution was caused through damage to the ship or its equipment. This might indicate that a ship is not guilty of a violation of the discharge requirements of Annex I or Annex II of MARPOL provided that:

- .1 all reasonable precautions have been taken after the occurrence of the damage or discovery of the discharge for the purpose of preventing or minimizing the discharge; and
- .2 the owner or the master did not act either with intent to cause damage or recklessly and with knowledge that damage would probably result.

2.7 However, action by the port State as set out in chapter 3 may be called for.

3 Inspection of crude oil washing (COW) operations

3.1 Regulations 18, 33 and 35 of MARPOL Annex I, *inter alia*, require that crude oil washing of cargo tanks be performed on certain categories of crude carriers. A sufficient number of tanks shall be washed in order that ballast water is put only in cargo tanks which have been crude oil washed. The remaining cargo tanks shall be washed on a rotational basis for sludge control.

3.2 Port State Authorities may carry out inspections to ensure that crude oil washing is performed by all crude carriers either required to have a COW system or where the owner or operator chooses to install a COW system in order to comply with regulation 18 of MARPOL Annex I. In addition compliance should be ensured with the operational requirements set out in the revised Specifications for the Design, Operation and Control of Crude Oil Washing Systems (resolution A.446(XI) as amended). This can best be done in the ports where the cargo is unloaded.

3.3 Parties should be aware that the inspection referred to in paragraph 3.2 may also lead to the identification of a pollution risk, necessitating additional action by the port State as set out in chapter 3.

3.4 Detailed guidelines for in-port inspections of crude oil washing procedures have been approved and published by IMO (Crude Oil Washing Systems, revised edition, 1983) and are set out in part 4 to appendix 3.

4 Inspection of unloading, stripping and prewash operations

4.1 Regulation 16 of MARPOL Annex II requires Parties to MARPOL to appoint or authorize surveyors for the purpose of implementing the regulation.

4.2 The provisions of regulation 16 are aimed at ensuring in principle that a ship having unloaded, to the maximum possible extent, noxious liquid substances of category X, Y or Z, proceeds to sea only if residues of such substances have been reduced to such quantities as may be discharged into the sea.

4.3 Compliance with these provisions is in principle ensured in the case of categories X, Y and Z substances through the application of a prewash in the unloading port and the discharge of prewash residue water mixtures to reception facilities, except that in the case of non-solidifying and low viscosity categories Y and Z substances, requirements for the efficient stripping of a tank to negligible quantities apply in lieu of the application of a prewash. Alternatively for a number of substances ventilation procedures may be employed for removing cargo residues from a tank.

4.4 Regulation 16.6 permits the Government of the receiving Party to exempt a ship proceeding to a port or terminal under the jurisdiction of another Party from the requirement to prewash cargo tanks and discharge residue/water mixtures to a reception facility.

4.5 Existing chemical tankers engaged on restricted voyages may by virtue of regulation 4.3 of MARPOL Annex II be exempted from the quantity limitation requirements of regulations 12.1 to 12.3. If a cargo tank is to be ballasted or washed, a prewash is required after unloading category Y or Z substances and prewash residue water mixtures must be discharged to shore reception facilities. The exemption should be indicated on the certificate.

4.6 A ship whose constructional and operational features are such that ballasting of cargo tanks is not required and cargo tank washing is only required for repairs or dry-docking may by virtue of regulation 4.4 be exempted from the provisions of regulation 12 of MARPOL Annex II provided that all conditions mentioned in regulation 4.4 are complied with. Consequentially, the certificate of the ship should indicate that each cargo tank is only certified for the carriage of one named substance. It should also indicate the particulars of the exemption granted by the Administration in respect of pumping, piping and discharge arrangements.

4.7 Detailed instructions on efficient stripping and prewash procedures are included in a ship's Procedures and Arrangements Manual. The Manual also contains alternative procedures to be followed in case of equipment failure.

4.8 Parties should be aware that the inspection referred to in paragraphs 1.3 and 1.4 above may lead to the identification of a pollution risk or of a contravention of the discharge provisions, necessitating port State action as set out in chapter 3.

4.9 For details in respect of inspections under this section reference is made to appendix 4.

APPENDIX 6

GUIDELINES FOR MORE DETAILED INSPECTIONS OF SHIP STRUCTURAL AND EQUIPMENT REQUIREMENTS

1 Introduction

If the PSCO from general impressions or observations on board has clear grounds for believing that the ship might be substandard, the PSCO should proceed to a more detailed inspection, taking the following considerations into account.

2 Structure

2.1 The PSCO's impression of hull maintenance and the general state on deck, the condition of such items as ladderways, guard rails, pipe coverings and areas of corrosion or pitting should influence the PSCO's decision as to whether it is necessary to make the fullest possible examination of the structure with the ship afloat. Significant areas of damage or corrosion, or pitting of plating and associated stiffening in decks and hull affecting seaworthiness or strength to take local loads, may justify detention. It may be necessary for the underwater portion of the ship to be checked. In reaching a decision, the PSCO should have regard to the seaworthiness and not the age of the ship, making an allowance for fair wear and tear over the minimum acceptable scantlings. Damage not affecting seaworthiness will not constitute grounds for judging that a ship should be detained, nor will damage that has been temporarily but effectively repaired for a voyage to a port for permanent repairs. However, in this assessment of the effect of damage, the PSCO should have regard to the location of crew accommodation and whether the damage substantially affects its habitability.

2.2 The PSCO should pay particular attention to the structural integrity and seaworthiness of bulk carriers and oil tankers and note that these ships must undergo the enhanced programme of inspection during surveys under the provision of regulation XI-1/2 of SOLAS.

2.3 The PSCO's assessment of the safety of the structure of those ships should be based on the Survey Report File carried on board. This file should contain reports of structural surveys, condition evaluation reports (translated into English and endorsed by or on behalf of the Administration), thickness measurement reports and a survey planning document. The PSCO should note that there may be a short delay in the update of the Survey Report File following survey. Where there is doubt that the required survey has taken place, the PSCO should seek confirmation from the recognized organization.

2.4 If the Survey Report File necessitates a more detailed inspection of the structure of the ship or if no such report is carried, special attention should be given by the PSCO, as appropriate, to hull structure, piping systems in way of cargo tanks or holds, pump-rooms, cofferdams, pipe tunnels, void spaces within the cargo area, and ballast tanks.

2.5 For bulk carriers, PSCOs should inspect holds' main structure for any obviously unauthorized repairs. For bulk carriers the port State control officer should verify that the bulk carrier booklet has been endorsed, the water level alarms in cargo holds are fitted, and where applicable, that any restrictions imposed on the carriage of solid bulk cargoes have been recorded in the booklet and the bulk carrier loading triangle is permanently marked.

3 Machinery spaces

3.1 The PSCO should assess the condition of the machinery and of the electrical installations such that they are capable of providing sufficient continuous power for propulsion and for auxiliary services.

3.2 During inspection of the machinery spaces, the PSCO should form an impression of the standard of maintenance. Frayed, disconnected or inoperative quick-closing valve wires, disconnected or inoperative extended control rods or machinery trip mechanisms, missing valve hand wheels, evidence of chronic steam, water and oil leaks, dirty tank tops and bilges or extensive corrosion of machinery foundations are pointers to an unsatisfactory organization of the systems' maintenance. A large number of temporary repairs, including pipe clips or cement boxes, will indicate reluctance to make permanent repairs.

3.3 While it is not possible to determine the condition of the machinery without performance trials, general deficiencies, such as leaking pump glands, dirty water gauge glasses, inoperable pressure gauges, rusted relief valves, inoperative or disconnected safety or control devices, evidence of repeated operation of diesel engine scavenge belt or crankcase relief valves, malfunctioning or inoperative automatic equipment and alarm systems, and leaking boiler casings or uptakes, would warrant inspection of the engine-room log-book and investigation into the record of machinery failures and accidents and a request for running tests of machinery.

3.4 If one electrical generator is out of commission, the PSCO should investigate whether power is available to maintain essential and emergency services and should conduct tests.

3.5 If evidence of neglect becomes evident, the PSCO should extend the scope of an investigation to include, for example, tests on the main and auxiliary steering gear arrangements, overspeed trips, circuit breakers, etc.

3.6 It must be stressed that while detection of one or more of the above deficiencies would afford guidance to a substandard condition, the actual combination is a matter for professional judgement in each case.

4 Conditions of assignment of Load lines

It may be that the PSCO has concluded that a hull inspection is unnecessary but, if dissatisfied on the basis of observations on deck, with items such as defective hatch closing arrangements, corroded air pipes and vent coamings, the PSCO should examine closely the conditions of assignment of load lines, paying particular attention to closing appliances, means of freeing water from the deck and arrangements concerned with the protection of the crew.

5 Life-saving appliances

5.1 The effectiveness of life-saving appliances depends heavily on good maintenance by the crew and their use in regular drills. The lapse of time since the last survey for a Safety Equipment Certificate can be a significant factor in the degree of deterioration of equipment if it has not been subject to regular inspection by the crew. Apart from failure to carry equipment required by a convention or obvious defects such as holed lifeboats, the PSCO should look for signs of disuse of, obstructions to, or defects with survival craft launching and recovery equipment which may include paint accumulation, seizing of pivot points, absence of greasing, condition of blocks and falls, condition of lifeboat lifting hook attachment to the lifeboat hull and improper lashing or stowing of deck cargo.

5.2 Should such signs be evident, the PSCO would be justified in making a detailed inspection of all life-saving appliances. Such an examination might include the lowering of survival craft, a check on the servicing of liferafts, the number and condition of lifejackets and lifebuoys and ensuring that the pyrotechnics are still within their period of validity. It would not normally be as detailed as that for a renewal of the Safety Equipment Certificate and would concentrate on essentials for safe abandonment of the ship, but in an extreme case could progress to a full Safety Equipment Certificate inspection. The provision and functioning of effective overside lighting, means of alerting the crew and passengers and provision of illuminated routes to assembly points and embarkation positions should be given importance in the inspection.

6 Fire safety

6.1 Ships in general: The poor condition of fire and wash deck lines and hydrants and the possible absence of fire hoses and extinguishers in accommodation spaces might be a guide to a need for a close inspection of all fire safety equipment. In addition to compliance with convention requirements, the PSCO should look for evidence of a higher than normal fire risk; this might be brought about by a poor standard of cleanliness in the machinery space, which together with significant deficiencies of fixed or portable fire-extinguishing equipment could lead to a judgement of the ship being substandard.

6.2 Passenger ships: The PSCO should initially form an opinion of the need for inspection of the fire safety arrangements on the basis of consideration of the ship under the previous headings and, in particular, that dealing with fire safety equipment. If the PSCO considers that a more detailed inspection of fire safety arrangements is necessary, the PSCO should examine the fire control plan on board in order to obtain a general picture of the fire safety measures provided in the ship and consider their compliance with convention requirements for the year of build. Queries on the method of structural protection should be addressed to the flag Administration and the PSCO should generally confine the inspection to the effectiveness of the arrangements provided.

6.3 The spread of fire could be accelerated if fire doors are not readily operable. The PSCO should inspect for the operability and securing arrangements of those doors in the main zone bulkheads and stairway enclosures and in boundaries of high fire risk spaces, such as main machinery rooms and galleys, giving particular attention to those retained in the open position. Attention should also be given to main vertical zones which may have been compromised through new construction. An additional hazard in the event of fire is the spread of smoke through ventilation systems. Spot checks might be made on dampers and smoke flaps to ascertain the standard of operability. The PSCO should also ensure that ventilation fans can be stopped from the master controls and that means are available for closing main inlets and outlets of ventilation systems.

6.4 Attention should be given to the effectiveness of escape routes by ensuring that vital doors are not maintained locked and that alleyways and stairways are not obstructed.

7 Regulations for preventing collisions at sea

A vital aspect of ensuring safety of life at sea is full compliance with the collision regulations. Based on observations on deck, the PSCO should consider the need for close inspection of lanterns and their screening and means of making sound and distress signals.

8 Cargo Ship Safety Construction Certificate

The general condition of the ship may lead the PSCO to consider matters other than those concerned with safety equipment and assignment of load lines, but nevertheless associated with the safety of the vessel, such as the effectiveness of items associated with the Cargo Ship Safety Construction Certificate, which can include pumping arrangements, means for shutting off air and oil supplies in the event of fire, alarm systems and emergency power supplies.

9 Cargo Ship Safety Radio Certificates

The validity of the Cargo Ship Safety Radio Certificates and associated Record of Equipment (Form R) may be accepted as proof of the provision and effectiveness of its associated equipment, but the PSCO should ensure that appropriate certificated personnel are carried for its operation and for listening periods. Requirements for maintenance of radio equipment are contained in SOLAS regulation IV/15. The radio log or radio records should be examined. Where considered necessary, operational checks may be carried out.

10 Means of Access to vessel

10.1 Prior to boarding a vessel the PSCO should assess the means of embarkation on and disembarkation from the ship. The PSCO should be guided by SOLAS regulation II-1/3-9 noting its application for ships constructed on or after 1 January 2010 but also noting that paragraph 3 of this regulation applies to all ships and requires that:

- a) ***the means of embarkation and disembarkation shall be inspected and maintained in suitable condition for their intended purpose, taking into account any restrictions related to safe loading; and***
- b) ***all wires used to support the means of embarkation and disembarkation shall be maintained as specified in SOLAS regulation III/20.4.***

10.2 In regard to the maintenance of the means of embarkation and disembarkation, the PSCO should refer to MSC.1/Circ.1331.

10.3 During the inspection the PSCO should also ensure that the pilot transfer arrangements comply with SOLAS regulation V/23 and its MSC resolution.*

11 Equipment in excess of convention or flag State requirements

Equipment on board which is expected to be relied on in situations affecting safety or pollution prevention must be in operating condition. If such equipment is inoperative and is in excess of the equipment required by an appropriate convention and/or the flag State, it should be repaired, removed or, if removal is not practicable, clearly marked as inoperative and secured.

* Refer to resolution MSC.308(88) and MSC.1/Circ.1375.

APPENDIX 7

GUIDELINES FOR CONTROL OF OPERATIONAL REQUIREMENTS

1 Introduction

1.1 When, during a port State control inspection, the PSCO has clear grounds according to section 2.4 of the present Procedures, the following onboard operational procedures may be checked in accordance with this resolution. However, in exercising controls recommended in these guidelines, the PSCO should not include any operational tests or impose physical demands which, in the judgement of the master, could jeopardize the safety of the ship, crew, passengers, control officers or cargo.

1.2 When carrying out operational control, the PSCO should ensure, as far as possible, no interference with normal shipboard operations, such as loading and unloading of cargo and ballasting, which is carried out under the responsibility of the master, nor should the PSCO require demonstration of operational aspects which would unnecessarily delay the ship.

1.3 Having assessed the extent to which operational requirements are complied with, the PSCO then has to exercise professional judgement to determine whether the operational proficiency of the crew as a whole is of a sufficient level to allow the ship to sail without danger to the ship or persons on board, or presenting an unreasonable threat of harm to the marine environment.

1.4 When assessing the crew's ability to conduct an operational drill, the mandatory minimum requirements for familiarization and basic safety training for seafarers, as stated in the Convention STCW, shall be used as a benchmark.

2 Muster list

2.1 The PSCO may determine if the crew members are aware of their duties indicated in the muster list.

2.2 The PSCO may ensure that muster lists are exhibited in conspicuous places throughout the ship, including the navigational bridge, the engine-room and the crew accommodation spaces. When determining if the muster list is in accordance with the regulations, the PSCO may verify whether:

- .1 the muster list shows the duties assigned to the different members of the crew;
- .2 the muster list specifies which officers are assigned to ensure that life-saving and fire appliances are maintained in good condition and are ready for immediate use;
- .3 the muster list specifies the substitutes for key persons who may become disabled, taking into account that different emergencies may call for different actions;
- .4 the muster list shows the duties assigned to crew members in relation to passengers in case of emergency; and

- .5 the format of the muster list used on passenger ships is approved and is drawn up in the language or languages required by the ship's flag State and in the English language.

2.3 To determine whether the muster list is up to date, the PSCO may require an up-to-date crew list, if available, to verify this.

2.4 The PSCO may determine whether the duties assigned to crew members manning the survival craft (lifeboats or liferafts) are in accordance with the regulations and verify that a deck officer or certificated person is placed in charge of each survival craft to be used. However, the Administration (of the flag State), having due regard to the nature of the voyage, the number of persons on board and the characteristics of the ship, may permit persons practised in the handling and operation of liferafts to be placed in charge of liferafts in lieu of persons qualified as above. A second-in-command shall also be nominated in the case of lifeboats.

2.5 The PSCO may determine whether the crew members are familiar with the duties assigned to them in the muster list and are aware of the locations where they should perform their duties.

3 Communication

3.1 The PSCO may determine if the key crew members are able to communicate with each other, and with passengers as appropriate, in such a way that the safe operation of the ship is not impaired, especially in emergency situations.

3.2 The PSCO may ask the master which languages are used as the working languages and may verify whether the language has been recorded in the log-book.

3.3 The PSCO may ensure that the key crew members are able to understand each other during the inspection or drills. The crew members assigned to assist passengers should be able to give the necessary information to the passengers in case of an emergency.

4 Search and Rescue Plan

For passenger ships, the port State control officer may verify that there is on board an approved plan for cooperation with appropriate search and rescue services in event of an emergency.

5 Fire and abandon ship drills

5.1 The PSCO witnessing a fire and abandon ship drill should ensure that the crew members are familiar with their duties and the proper use of the ship's installations and equipment.

5.2 When setting a drill scenario, witnessing the drill and finally assessing the standard of the drill, it is important to emphasize that the PSCO is not looking for an exceptional drill, particularly on cargo ships. The main points for the PSCO to be satisfied are:

- .1 In the event of a shipboard emergency can the crew organize themselves into an effective team to tackle the emergency?
- .2 Can the crew communicate effectively?

- .3 Is the master in control and is information flowing to/from the command centre? and
- .4 In the event of the situation getting out of hand can the crew safely abandon the ship?

5.3 It is important that when setting the scenario the PSCO clearly explains to the master exactly what is required and expected during the drill, bearing in mind there may be language difficulties. PSCOs should not be intimidating, not interfere during the drill nor offer advice. The PSCO should stand back and observe only, making appropriate notes. It is important to emphasize that the PSCO's role is not to teach or train but to witness.

5.4 Drills should be carried out at a safe speed. PSCOs should not expect to see operational drills conducted in real time. During drills, care should be taken to ensure that everybody familiarizes themselves with their duties and with the equipment. If necessary, drills should be stopped if the PSCO considers that the crew are carrying out unsafe practices or if there is a real emergency.

5.5 Language difficulty between the PSCO and non-English speaking crews can make it difficult to put across the intentions for the conduct of the exercise. Care needs to be exercised when an unsatisfactory drill takes place, this is to ensure differentiation between the crew possibly failing to understand the attending PSCO's intention and failure through lack of crew competence.

6 Fire drills

6.1 The PSCO may witness a fire drill carried out by the crew assigned to these duties on the muster list. After consultation with the master of the vessel, one or more specific locations of the ship may be selected for a simulated fire. A crew member may be sent to the location(s) and activate a fire alarm system or use other means to give alarm.

6.2 At the location the PSCO can describe the fire indication to the crew member and observe how the report of fire is relayed to the bridge or damage control centre. At this point most ships will sound the crew alarm to summon the fire-fighting parties to their stations. The PSCO should observe the fire-fighting party arriving on the scene, breaking out their equipment and fighting the simulated fire. Team leaders should be giving orders as appropriate to their crews and passing the word back to the bridge or damage control centre on the conditions. The fire-fighting crews should be observed for proper donning and the use of their equipment. The PSCO should make sure that all the gear is complete. Merely mustering the crew with their gear is not acceptable. Crew response to personnel injuries can be checked by selecting a crew member as a simulated casualty. The PSCO should observe how the word is passed and the response of stretcher and medical teams. Handling a stretcher properly through narrow passageways, doors and stairways is difficult and takes practice.

6.3 The drill should, as far as practicable, be conducted as if there were an actual emergency.

6.4 Those crew members assigned to other duties related to a fire drill, such as the manning of the emergency generators, the CO₂ room, the sprinkler and emergency fire pumps, should also be involved in the drill. The PSCO may ask these crew members to explain their duties and if possible to demonstrate their familiarity.

6.5 On passenger ships, special attention should be paid to the duties of those crew members assigned to the closing of manually operated doors and fire dampers. These closing devices should be operated by the responsible persons in the areas of the simulated fire(s) during the drill. Crew members not assigned to the fire-fighting teams are generally assigned to locations throughout the passenger accommodations to assist in passenger evacuation. These crew members should be asked to explain their duties and the meaning of the various emergency signals and asked to point out the two means of escape from the area, and where the passengers are to report. Crew members assigned to assist passengers should be able to communicate at least enough information to direct a passenger to the proper muster and embarkation stations.

7 Abandon ship drills

7.1 After consultation with the master, the PSCO may require an abandon ship drill for one or more survival craft. The essence of this drill is that the survival craft are manned and operated by the crew members assigned to them on the muster list. If possible the PSCO should include the rescue boat(s) in this drill. SOLAS, chapter III, gives specific requirements on abandon ship training and drills, of which the following principles are particularly relevant.

7.2 The drill should, as far as practicable, be conducted as if there was an actual emergency.

7.3 The abandon ship drill should include:

- .1 summoning of (passengers and) crew to the muster station(s) with the required alarm and ensuring that they are aware of the order to abandon ship as specified in the muster list;
- .2 reporting to the stations and preparing for the duties described in the muster list;
- .3 checking that (passengers and) crew are suitably dressed;
- .4 checking that lifejackets are correctly donned;
- .5 lowering of at least one lifeboat after the necessary preparation for launching;
- .6 starting and operating the lifeboat engine;
- .7 operation of the davits used for launching liferafts;
- .8 a mock search and rescue of passenger trapped in their staterooms (if applicable);
- .9 instructions in the use of radio life-saving appliances;
- .10 testing of emergency lighting for mustering and abandonment; and
- .11 if the ship is fitted with marine evacuation systems, exercising of the procedures required for the deployment of such systems up to the point immediately preceding actual deployment.

7.4 If the lifeboat lowered during the drill is not the rescue boat, the rescue boat should be lowered as well, taking into account that it is boarded and launched in the shortest possible time. The PSCO should ensure that crew members are familiar with the duties assigned to them during abandon ship operations and that the crew member in charge of the survival craft has complete knowledge of the operation and equipment of the survival craft. Care needs to be taken when requiring a ship to lower lifeboats. The number of persons inside the lifeboats during launching for the purpose of a drill should be at the master's discretion noting that SOLAS does not require persons in the lifeboat during lowering and recovery. The purpose of this is to reduce the risk of accidents during launching and recovery, however this must be balanced out with the risk of embarking/disembarking the boat whilst it is in the water, if the boat is to be taken away and run.

7.5 Each survival craft should be stowed in a state of continuous readiness so that two crew members can carry out preparations for embarking and launching in less than five minutes.

7.6 On passenger ships, it is required that lifeboats and davit-launched liferafts are capable of being launched within a period of 30 minutes after all persons have been assembled with lifejackets donned.

7.7 On cargo ships, it is required that lifeboats and davit launched liferafts are capable of being launched within a period of 10 minutes.

8 Assessment of drills

8.1 When witnessing a drill, the PSCO should seek:

- .1 confirmation that the crew follow what is required of them by the muster list;
- .2 confirmation that there are sufficient personnel assigned to the various parties to cope with the duties given to them;
- .3 confirmation that there is an effective means of communication between the party, the party leader and the bridge and that relevant information is being passed bi-directionally;
- .4 confirmation of the efficiency of the crew working as a team. This would be based on questioning of personnel and observation of their actions. The response times should be noted of the various parties in assembling at their stations. The reaction of the parties to unplanned events should also be noted;
- .5 confirmation that key members of the crew are able to understand each other;
- .6 confirmation of the efficiency of the equipment used, for example:
 - that the fire alarms are audible and efficient;
 - that the fire doors close as required; and
 - that items of personal fire-fighting equipment appear well maintained; and

- .7 confirmation that the response time was considered fast enough (taking into account safety of the drill as indicated in paragraph 5.4 of this appendix), considering the size of the ship and the locations of fire, personnel and fire-fighting equipment.

8.2 If the PSCO determines that the crew are unfamiliar with their duties or incapable of safely operating the life-saving and fire-fighting equipment, the PSCO should halt the drill, notify the master that the drill was unsuccessful and use their professional judgement to establish the next steps, noting the likelihood that this will establish "clear grounds" for a more detailed inspection.

9 Damage control plan and Shipboard Oil Pollution Emergency Plan (SOPEP) or Shipboard Marine Pollution Emergency Plans (SMPEP)

9.1 The PSCO may determine if a damage control plan is provided on a passenger ship and whether the crew members are familiar with their duties and the proper use of the ship's installations and equipment for damage control purposes. The same applies with regard to SOPEP on all ships and SMPEP where applicable.

9.2 The PSCO may determine if the officers of the ship are aware of the contents of the damage control booklet which should be available to them, or of the damage control plan.

9.3 The officers may be asked to explain the action to be taken in various damage conditions.

9.4 The officers may also be asked to explain about the boundaries of the watertight compartments, the openings therein with the means of closure and position of any controls thereof and the arrangements for the correction of any list due to flooding.

9.5 The officers should have a sound knowledge of the effect of trim and stability of their ship in the event of damage to and consequent flooding of a compartment and counter-measures to be taken.

10 Fire control plan

10.1 The PSCO may determine if a fire control plan or booklet is provided and whether the crew members are familiar with the information given in the fire control plan or booklet.

10.2 The PSCO may verify that fire control plans are permanently exhibited for the guidance of the ship's officers. Alternatively, booklets containing the information of the fire control plan may be supplied to each officer, and one copy should at all times be available on board in an accessible position. Plans and booklets should be kept up to date, any alterations being recorded thereon as soon as possible.

10.3 The PSCO may determine that the responsible officers, especially those who are assigned to related duties on the muster list, are aware of the information provided by the fire control plan or booklet and how to act in case of a fire.

10.4 The PSCO may ensure that the officers in charge of the ship are familiar with the principal structural members which form part of the various fire sections and the means of access to the different compartments.

11 Bridge operation

11.1 The PSCO may determine if officers in charge of a navigational watch are familiar with bridge control and navigational equipment, changing the steering mode from automatic to manual and vice versa, and the ship's manoeuvring characteristics.

11.2 The officer in charge of a navigational watch should have knowledge of the location and operation of all safety and navigational equipment. Moreover, this officer should be familiar with procedures which apply to the navigation of the ship in all circumstances and should be aware of all information available.

11.3 The PSCO may also verify the familiarity of the officers on all the information available to them such as manoeuvring characteristics of the ship, life-saving signals, up-to-date nautical publications, checklists concerning bridge procedures, instructions, manuals, etc.

11.4 The Permit to Operate High-Speed Craft (POHSC) includes limitations of the maximum significant wave height (and wind force for hovercraft) within which the craft may operate. When carrying out inspections of HSC, PSCOs may verify by the log-book and the weather records whether these limitations have been respected. PSCOs may find that a voyage had to be completed when worse weather conditions than permitted were encountered, but a new voyage should not commence in such conditions.

11.5 The PSCO may verify the familiarity of the officers with procedures such as periodical tests and checks of equipment, preparations for arrival and departure, change over of steering modes, signalling, communications, manoeuvring, emergencies and log-book entries.

12 Cargo operation

12.1 The PSCO may determine if ship's personnel assigned specific duties related to the cargo and cargo equipment are familiar with those duties, any dangers posed by the cargo and with the measures to be taken in such a context.

12.2 With respect to the carriage of solid bulk cargoes, the PSCO should verify, as appropriate, that cargo loading is performed in accordance with a ship's loading plan and unloading in accordance with a ship's unloading plan agreed by the ship and the terminal, taking into account the information provided by the loading instrument, where fitted.

12.3 The PSCO, when appropriate, may determine whether the responsible crew members are familiar with the relevant provisions of the Code of Safe Practice for Solid Bulk Cargoes, particularly those concerning moisture limits and trimming of the cargo, the Code of Safe Practice for Ships Carrying Timber Deck Cargoes and the Code of Safe Practice for Cargo Stowage and Securing.

12.4 Some solid materials transported in bulk can present a hazard during transport because of their chemical nature or physical properties. Section 2 of the Code of Safe Practice for Solid Bulk Cargoes gives general precautions. Section 4 of the Code of Safe Practice for Solid Bulk Cargoes contains the obligation imposed on the shipper to provide all necessary information to ensure a safe transport of the cargo. The PSCO may determine whether all relevant details, including all relevant certificates of tests, have been provided to the master from the shipper.

12.5 For some cargoes, such as cargoes which are subject to liquefaction, special precautions are given (see section 7 of the BC Code). The PSCO may determine whether all precautions are met with special attention for the stability of those vessels engaged in the transport of cargoes subject to liquefaction and solid hazardous waste in bulk.

12.6 Officers responsible for cargo handling and operation and key crew members of oil tankers, chemical tankers and liquefied gas carriers should be familiar with the cargo and cargo equipment and with the safety measures as stipulated in the relevant sections of the IBC and IGC Codes.

12.7 For the carriage of grain in bulk, reference is made to part C, chapter VI of SOLAS and the International Code for the Safe Carriage of Grain in Bulk (resolution MSC.23(59)).

12.8 The PSCO may determine whether the operations and loading manuals include all the relevant information for safe loading and unloading operations in port as well as in transit conditions.

13 Operation of the machinery

13.1 The PSCO may determine if responsible ship's personnel are familiar with their duties related to operating essential machinery, such as:

- .1 emergency and stand-by sources of electrical power;
- .2 auxiliary steering gear;
- .3 bilge and fire pumps; and
- .4 any other equipment essential in emergency situations.

13.2 The PSCO may verify whether the responsible ship's personnel are familiar with, *inter alia*:

- .1 Emergency generator:
 - .1.1 actions which are necessary before the engine can be started;
 - .1.2 different possibilities to start the engine in combination with the source of starting energy; and
 - .1.3 procedures when the first attempts to start the engine fail.
- .2 Stand-by generator engine:
 - .2.1 possibilities to start the stand-by engine, automatic or by hand;
 - .2.2 blackout procedures; and
 - .2.3 load-sharing system.

13.3 The PSCO may verify whether the responsible ship's personnel are familiar with, *inter alia*:

- .1 which type of auxiliary steering gear system applies to the ship;

- .2 how it is indicated which steering gear unit is in operation; and
- .3 what action is needed to bring the auxiliary steering gear into operation.

13.4 The PSCO may verify whether the responsible ship's personnel are familiar with, *inter alia*:

- .1 Bilge pumps:
 - .1.1 number and location of bilge pumps installed on board the ship (including emergency bilge pumps);
 - .1.2 starting procedures for all these bilge pumps;
 - .1.3 appropriate valves to operate; and
 - .1.4 most likely causes of failure of bilge pump operation and their possible remedies.
- .2 Fire pumps:
 - .2.1 number and location of fire pumps installed on board the ship (including the emergency fire pump);
 - .2.2 starting procedures for all these pumps; and
 - .2.3 appropriate valves to operate.

13.5 The PSCO may verify whether the responsible ship's personnel are familiar with, *inter alia*:

- .1 starting and maintenance of lifeboat engine and/or rescue boat engine;
- .2 local control procedures for those systems which are normally controlled from the navigating bridge;
- .3 use of the emergency and fully independent sources of electrical power of radio installations;
- .4 maintenance procedures for batteries;
- .5 emergency stops, fire detection system and alarm system operation of watertight and fire doors (stored energy systems); and
- .6 change of control from automatic to manual for cooling water and lube oil systems for main and auxiliary engines.

14 Manuals, instructions, etc.

14.1 The PSCO may determine if the appropriate crew members are able to understand the information given in manuals, instructions, etc., relevant to the safe condition and operation of the ship and its equipment and that they are aware of the requirements for maintenance, periodical testing, training, drills and recording of log-book entries.

14.2 The following information should, *inter alia*, be provided on board and PSCOs may determine whether it is in a language or languages understood by the crew and whether crew members concerned are aware of the contents and are able to respond accordingly:

- .1 instructions concerning the maintenance and operation of all the equipment and installations on board for the fighting and containment of fire should be kept under one cover, readily available in an accessible position;
- .2 clear instructions to be followed in the event of an emergency should be provided for every person on board;
- .3 illustrations and instructions in appropriate languages should be posted in passenger cabins and be conspicuously displayed at muster stations and other passenger spaces to inform passengers of their muster station, the essential action they must take in an emergency and the method of donning lifejackets;
- .4 posters and signs should be provided on or in the vicinity of survival craft and their launching controls and shall illustrate the purpose of controls and the procedures for operating the appliance and give relevant instructions or warnings;
- .5 instructions for onboard maintenance of life-saving appliances;
- .6 training manuals should be provided in each crew mess room and recreation room or in each crew cabin. The training manual, which may comprise several volumes, should contain instructions and information, in easily understood terms illustrated wherever possible, on the life-saving appliances provided in the ship and on the best method of survival;
- .7 Shipboard Oil Pollution Emergency Plan in accordance with regulation 37 of MARPOL Annex I, or Shipboard Marine Pollution Emergency Plan in accordance with regulation 17 of MARPOL Annex II, where applicable; and
- .8 stability booklet, associated stability plans and stability information.

15 Oil and oily mixtures from machinery spaces

15.1 The PSCO may determine if all operational requirements of Annex I of MARPOL have been met, taking into account:

- .1 the quantity of oil residues generated;
- .2 the capacity of sludge and bilge water holding tank; and
- .3 the capacity of the oily water separator.

15.2 An inspection of the Oil Record Book should be made. The PSCO may determine if reception facilities have been used and note any alleged inadequacy of such facilities.

15.3 The PSCO may determine whether the responsible officer is familiar with the handling of sludge and bilge water. The relevant items from the guidelines for systems for handling oily wastes in machinery spaces of ships may be used as guidance. Taking into account the above, the PSCO may determine if the ullage of the sludge tank is sufficient for

the expected generated sludge during the next intended voyage. The PSCO may verify that, in respect of ships for which the Administration has waived the requirements of regulations 14(1) and (2) of MARPOL Annex I, all oily bilge water is retained on board for subsequent discharge to a reception facility.

15.4 When reception facilities in other ports have not been used because of inadequacy, the PSCO should advise the master to report the inadequacy of the reception facility to the ship's flag State, in conformity with MEPC/Circ.349 (November 1998).

16 Loading, unloading and cleaning procedures for cargo spaces of tankers

16.1 The PSCO may determine if all operational requirements of Annexes I or II of MARPOL have been met taking into account the type of tanker and the type of cargo carried, including the inspection of the Oil Record Book and/or Cargo Record Book. The PSCO may determine if the reception facilities have been used and note any alleged inadequacy of such facilities.

16.2 For the control on loading, unloading and cleaning procedures for tankers carrying oil, reference is made to paragraphs 3.1 to 3.4 in appendix 5 where guidance is given for the inspection of crude oil washing (COW) operations. In appendix 3, the PSCO may find detailed guidelines for in-port inspection of crude oil washing procedures.

16.3 For the control on loading, unloading and cleaning procedures for tankers carrying noxious liquid substances, reference is made to paragraphs 4.1 to 4.9 in appendix 5 where guidance is given for the inspection of unloading, stripping and prewash operations. In appendix 4 more detailed guidelines for these inspections are given.

16.4 When reception facilities in other ports have not been used because of inadequacy, the PSCO should advise the master to report the inadequacy of the reception facility to the ship's flag State, in conformity with MEPC/Circ.349 (November 1998).

16.5 When a vessel is permitted to proceed to the next port with residues of noxious liquid substances on board in excess of those permitted to be discharged into the sea during the ship's passage, it should be ascertained that the residues can be received by that port. At the same time that port should be informed if practicable.

17 Dangerous goods and harmful substances in packaged form

17.1 The PSCO may determine if the required shipping documents for the carriage of dangerous goods and harmful substances carried in packaged form are provided on board and whether the dangerous goods and harmful substances are properly stowed and segregated and the crew members are familiar with the essential action to be taken in an emergency involving such packaged cargo (see SOLAS regulation VII/3).

17.2 Ships types and cargo spaces of ships over 500 gross tonnage built on, or after, 1 September 1984 and ships types and cargo spaces of ships less than 500 gross tonnage built on, or after, 1 February 1992 are to fully comply with the requirements of SOLAS chapter II-2. Administrations may reduce the requirements for vessels of less than 500 gross tonnage but such reductions shall be recorded in the document of compliance. A document of compliance is not required for vessels which only carry class 6.2, class 7 or dangerous goods in limited quantities.

17.3 Annex III of MARPOL contains requirements for the carriage of harmful substances in packaged form which are identified in the IMDG Code as marine pollutants. Cargoes which are determined to be marine pollutants should be labelled and stowed in accordance with Annex III of MARPOL.

17.4 The PSCO may determine whether a Document of Compliance is on board and whether the ship's personnel are familiar with this document provided by the Administration as evidence of compliance of construction and equipment with the requirements. Additional control may consist of:

- .1 whether the dangerous goods have been stowed on board in conformity with the Document of Compliance, using the dangerous goods manifest or the stowage plan, required by SOLAS chapter VII. This manifest or stowage plan may be combined with the one required under Annex III of MARPOL;
- .2 whether inadvertent pumping of leaking flammable or toxic liquids is not possible in case these substances are carried in under-deck cargo spaces; or
- .3 determining whether the ship's personnel are familiar with the relevant provisions of the Medical First Aid Guide and Emergency Procedures for Ships Carrying Dangerous Goods.

18 Garbage

18.1 The PSCO may determine if all operational requirements of Annex V of MARPOL have been met. The PSCO may determine if the reception facilities have been used and note any alleged inadequacy of such facilities.

18.2 Guidelines for the implementation of Annex V of MARPOL were approved at the MEPC at its twenty-ninth session and have been amended on numerous occasions. The guidelines can be found within the consolidated text of MARPOL Annex V. One of the objectives of these guidelines is: "to assist vessel operators complying with the requirements set forth in Annex V and domestic laws".

18.3 The PSCO may determine whether:

- .1 ship's personnel are aware of these Guidelines, in particular section 3 "Minimizing the amount of potential garbage" and section 4 "Shipboard garbage handling and storage procedures"; and
- .2 ship's personnel are familiar with the disposal and discharge requirements under Annex V of MARPOL inside and outside a special area and are aware of the areas determined as special areas under Annex V of MARPOL.

18.4 When reception facilities in other ports have not been used because of inadequacy, the PSCO should advise the master to report the inadequacy of the reception facility to the ship's flag State, in conformity with MEPC/Circ.349 (November 1998).

19 Sewage

19.1 The PSCO may determine:

- .1 if all operational requirements of Annex IV of MARPOL have been met. The PSCO may determine if the sewage treatment system, comminuting and disinfecting system or holding tank has been used and note any alleged inadequacy of the system or holding tank; and
- .2 that appropriate ship's personnel are familiar with the correct operation of the sewage treatment system, comminuting and disinfecting system or holding tank.

19.2 The PSCO may determine whether appropriate ship's personnel are familiar with the discharge requirements under regulation 11 of MARPOL Annex IV.

19.3 When reception facilities in other ports have not been used because of inadequacy, the PSCO should advise the master to report the inadequacy of the reception facility to the ship's flag State, in conformity with MEPC/Circ.470 of 27 July 2005.

20 Air pollution prevention

The PSCO may determine whether:

- .1 the master or crew is familiar with the procedures to prevent emissions of ozone-depleting substances;
- .2 the master or crew is familiar with the proper operation and maintenance of diesel engines, in accordance with their Technical Files;
- .3 the master or crew has undertaken the necessary fuel changeover procedures or equivalent, associated with demonstrating compliance within a SO_x emission control area;
- .4 the master or crew is familiar with the garbage screening procedure to ensure that prohibited garbage is not incinerated;
- .5 the master or crew is familiar with the operation of the shipboard incinerator, as required by regulation 16(2) of MARPOL Annex VI, within the limit provided in appendix IV to the Annex, in accordance with the operational manual;
- .6 the master or crew recognizes the regulation of emissions of volatile organic compounds (VOCs), when the ship is in ports or terminals under the jurisdiction of a Party to the 1997 Protocol to MARPOL in which VOCs emissions are to be regulated, and is familiar with the proper operation of a vapour collection system approved by the Administration (in case the ship is a tanker as defined in regulation 2(12) of MARPOL Annex VI); and
- .7 the master or crew is familiar with bunker delivery procedures in respect of bunker delivery notes and retained samples as required by regulation 18 of MARPOL Annex VI.

APPENDIX 8

GUIDELINES FOR PORT STATE CONTROL RELATED TO THE ISM CODE

1 To the extent applicable, the PSCO should examine the copy of the Document of Compliance (DOC), issued to the company, and the Safety Management Certificate (SMC), issued to the ship. An SMC is not valid unless the company holds a valid DOC for that ship type. The PSCO should in particular verify that the type of ship is included in the DOC and that the company's particulars are the same on both the DOC and the SMC.

2 During the examination of on board documents and certificates, PSCOs should recognize:

- .1 the common practice of issuing, after successfully completing an audit, SMCs and DOCs valid for a period not exceeding 5 months, to cover the period between completion of the audit and issuance of the full term certificate by either the Administration or the recognized organization; and
- .2 that the current valid DOC with proper annual endorsements is normally only available in the company to which it has been issued and that the copy on board may not reflect the annual endorsements that exist on the valid DOC held by the company.

3 If a ship has on board Interim Certificates (DOC and/or SMC), the PSCO should check whether they have been issued in accordance with the provisions of ISM Code paragraphs 14.1 and 14.2. The PSCO should take into consideration the planned arrangements for the implementation of the Safety Management System as referred to in the ISM Code, paragraph 14.4, and should recognize that the full and effective functioning of the SMS has not been audited under an Interim SMC as per the ISM Code.

4 A more detailed inspection of the Safety Management System (SMS) should be carried out if clear grounds are established. Clear grounds may include absent or inaccurate ISM Code certification or detainable (or many non-detainable) deficiencies in other areas.

5 When carrying out a more detailed inspection, the PSCO may utilize, but not be limited to, the following questions to ascertain the extent of compliance with the ISM Code (references to the relevant paragraphs of the ISM Code are given in *italic print in brackets*).

- .1 Is there a company safety and environmental protection policy and is the appropriate ship's personnel familiar with it? (*paragraph 2.2*)
- .2 Is safety management documentation (e.g., manual) readily available on board? (*paragraph 11.3*)
- .3 Is relevant documentation on the SMS in a working language or language understood by the ship's personnel? (*paragraph 6.6*)
- .4 Can senior ship officers identify the company responsible for the operation of the ship and does this correspond with the entity specified on the ISM Code certificates? (*paragraph 3*)
- .5 Can senior ship officers identify the "designated person"? (*paragraph 4*)

- .6 Are procedures in place for establishing and maintaining contact with shore management in an emergency? (*paragraph 8.3*)
- .7 Are programmes for drills and exercises to prepare for emergency actions available on board? (*paragraph 8.2*)
- .8 How have new crew members been made familiar with their duties if they have recently joined the ship and are instructions which are essential prior to sailing available? (*paragraph 6.3*)
- .9 Can the master provide documented proof of his responsibilities and authority, which must include his overriding authority? (*paragraph 5*)
- .10 Have non-conformities been reported to the company and has corrective action been taken by the company? PSCOs should not normally scrutinize the contents of any Non Conformity Note (NCN) resulting from internal audits. (*paragraphs 9.1 and 9.2*)
- .11 Does the ship have a maintenance routine and are records available? (*paragraph 10.2*)

6 Deficiencies in the Safety Management System should be recorded in the PSCO's inspection report. The port State Authority should, if necessary, inform the flag State of deficiencies found in the SMS. Those deficiencies identified in the SMS, which are defined as major non-conformities in resolution A.913(22) on the ISM Code, have to be rectified by removing the immediate threat or hazard before sailing. Whenever the deficiencies identified during the inspection are indicative of the existence of a major non-conformity resulting in the vessel's detention, an additional audit shall be carried out by the flag State or the recognized organization acting on its behalf to determine compliance or non-compliance in accordance with the procedures for safety management audits. The procedures set out in chapter 3 are applicable.

APPENDIX 9

GUIDELINES FOR PORT STATE CONTROL OFFICERS RELATED TO LRIT

1 PURPOSE

This document is intended to provide basic guidance to PSCOs to verify compliance with the requirements of SOLAS for Long Range Identification and Tracking (LRIT).

2 APPLICATION

2.1 LRIT equipment is implemented through SOLAS regulation V/19-1, and resolution MSC.263(84) requires all passenger ships, cargo ships (including high-speed craft) over 300 tons and Mobile Offshore Drilling Units (MODU) to send LRIT position information at least every 6 hours. Ships fitted with Automatic Identification System (AIS) and operated exclusively within sea area A1 are not required to comply with LRIT. Sea area A1 is defined by SOLAS regulation IV/2.1.12 as "an area within the radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government".

2.2 SOLAS Contracting Governments are expected to maintain a LRIT Data Centre, either on a national basis, or on a regional or cooperative basis with other flag States, and notify the IMO of it. In turn, these [LRIT] Data Centres will forward[, upon request,] LRIT [information] from ships entitled to fly their flag, to [other SOLAS Contracting Governments through] the International LRIT Data Exchange. Port States are entitled to request the LRIT information from foreign ships that have indicated their intention to enter a port[, port facility or place under its jurisdiction.]

2.3 In most cases a stand-alone Inmarsat C or Inmarsat Mini-C terminal used for GMDSS or Ship Security Alert System will function as the LRIT terminal, but other equipment may be employed for the LRIT function (example Inmarsat D+ or Iridium).

3 INSPECTION OF SHIPS REQUIRED TO CARRY LRIT

3.1 Initial inspection

3.1.1 The PSCO should first establish the sea area the ship is certified to operate in. This verification shall ensure that the ship is subject to the LRIT regulation in relation to its ship type and tonnage. After the certificate check, the PSCO shall verify that:

- .1 the Record of Equipment (Form E, P or C) indicates LRIT as required, if applicable¹;
- .2 a Statement of Conformity/Conformance Test Report (see MSC.1/Circ.1307) is on board; and
- .3 the equipment identified by ship's representative as the designated LRIT terminal is switched on and operational.²

¹ Noting that record of equipment is required for cargo ships greater than 500 gross tonnage and passenger ships.

² Note: In exceptional circumstances and for shortest duration possible LRIT is capable of being switched off or may transmit less frequently (SOLAS regulation V/19-1.7.2) and [resolution MSC.263(84), paragraph 4.4.1].

3.1.2 In case of recent transfer of flag, the PSCO may further ensure that:

- .1 A conformance test report has been re-issued if the new flag State does not recognize the issuing body of the existing conformance test report; or
- .2 A new conformance test has been carried out by the Application Service Provider (ASP) on behalf of the Administration before issuance of a new test report and certificate.

3.2 Clear grounds

3.2.1 Conditions which may warrant a more detailed inspection of equipment used for LRIT may comprise the following:

- .1 defective main or emergency source of energy;
- .2 information or indication that LRIT equipment is not functioning properly;
- .3 vessel does not hold conformance test report; and
- .4 the "record of navigational activities" indicates that the LRIT installation has been switched off and that this has not been reported to the flag Administration as required by SOLAS [regulation V/19-1.7.2].

3.3 More detailed inspection

3.3.1 In case of doubt or reports of malfunctioning of the LRIT installation, the flag Administration may be contacted to determine if the ship's LRIT information has been reliably relayed to the LRIT Data Centre.

3.3.2 If any issues are identified at the initial inspection, a more detailed inspection of equipment used for LRIT may comprise the following:

- .1 verification of the power supply which should be connected to the main source of energy and the emergency source of energy, there is no requirement for an uninterrupted power source. If the LRIT is part of the GMDSS radio-installation, the power supply should conform to GMDSS regulations;
- .2 inspection of the "record of navigational activities" log to establish if and when the installation has been switched off and if this has been reported to the flag Administration (SOLAS regulation V/19-1.7.2 and resolution MSC.263(84), paragraph 4.4.1); and
- .3 ensuring that any conformance test report is issued on behalf of the flag State[, even by itself or by an authorized Application Service Provider (see MSC.1/Circ.1377/Rev.2, as may be updated),], available for a ship that has installation of LRIT.

4 Deficiencies warranting detention

4.1 A PSCO should use his/her professional judgment to determine whether to detain the ship until any noted deficiencies are corrected or to permit a vessel to sail with deficiencies³.

4.2 In order to assist the PSCO in the use of these guidelines, the following deficiencies should be considered to be of such nature that they may warrant the detention of a ship:

- .1 absence of a valid LRIT Conformance test report; and
- .2 the master or the responsible officer are not familiar with essential shipboard operational procedures relating to LRIT.

4.3 PSCOs are also advised that ships should not be detained if the LRIT installation on board works, but the shore-side installation or organization is not able to receive, relay or process the information.

4.4 PSCOs are advised that a flag State may issue a short-term certificate. This could happen if, following a successful inspection for the issuance of a Conformity Test report, the ASP has not been able to issue a document yet, or if the ASP is not able to perform a conformance test in due time upon request of the shipowner.

³ SOLAS regulation V/16: whilst all reasonable steps shall be taken to maintain the equipment required by this chapter in efficient working order, malfunctions of that equipment shall not be considered as making the ship unseaworthy or as a reason for delaying the ship in ports where repair facilities are not readily available, provided suitable arrangements are made by the master to take the inoperative equipment or unavailable information into account in planning and executing a safe voyage to a port where repairs can take place.

APPENDIX 10

GUIDELINES FOR PORT STATE CONTROL UNDER THE 1969 TONNAGE CONVENTION

1 The International Convention on Tonnage Measurement of Ships, 1969, which came into force on 18 July 1982, applies to:

- 1.1 new ships, i.e. ships the keels of which were laid on or after 18 July 1982; and
- 1.2 existing ships, i.e. ships the keels of which were laid before 18 July 1982, as from 18 July 1994,

except that for the purpose of application of SOLAS, MARPOL and STCW Conventions, the following interim schemes indicated in paragraph 2 may apply.

2 In accordance with the interim schemes adopted by IMO¹, the Administration may, at the request of the shipowner, use the gross tonnage determined in accordance with national rules prior to the coming into force of the 1969 Tonnage Convention, for the following ships:

- 2.1 for the purpose of SOLAS:
 - .1 ships the keels of which were laid before 1 January 1986;
 - .2 in respect of SOLAS regulation IV/3, ships the keels of which were laid on or after 1 January 1986 but before 18 July 1994; and
 - .3 cargo ships of less than 1,600 tons gross tonnage (as determined under the national tonnage rules) the keels of which were laid on or after 1 January 1986 but before 18 July 1994;
- 2.2 for the purpose of STCW, ships falling under the categories of paragraphs 2.1.1 and 2.1.3 above, except that for the purpose of 1995 amendments to STCW the interim scheme does not apply (see regulation I/15.3 of the 1995 STCW amendments); and
- 2.3 for the purpose of MARPOL ships of less than 400 tons gross tonnage (as determined under the national tonnage rules) the keel of which were laid before 18 July 1994.

3 For ships to which the above interim schemes apply, the statement to the effect that gross tonnage has been measured in accordance with the national tonnage rules should be included in the "REMARKS" column of the International Tonnage Certificate (1969) and in the footnote to the figure of the gross tonnage in the relevant SOLAS, MARPOL and STCW certificates.

4 The PSCO should take the following actions as appropriate when deficiencies are found in relation to the 1969 Tonnage Convention:

- 4.1 if a ship does not hold a valid International Tonnage Certificate (1969), the ship loses all privileges of the 1969 Tonnage Convention, and the flag State should be informed without delay;

¹ Resolutions A.494(XII) in respect to SOLAS, A.540(13) in respect to STCW 78, and A.541(13) in respect to MARPOL.

- 4.2 if the required remarks and footnote are not included in the relevant certificates on ships to which the interim schemes apply, this deficiency should be notified to the master; and
- 4.3 if the main characteristics of the ship differ from those entered on the International Tonnage Certificate (1969), so as to lead to an increase in the gross tonnage or net tonnage, the flag State should be informed without delay.
- 5 The control provisions of article 12 of the 1969 Tonnage Convention do not include the provision for detention of a ship holding a valid International Tonnage Certificate (1969).

APPENDIX 11

MINIMUM MANNING STANDARDS AND CERTIFICATION

1 Introduction

The guiding principles for port State control of the manning of a foreign ship should be to establish conformity with:

- .1 the flag State's safe manning requirements. Where this is in doubt the flag State should be consulted; and
- .2 the international provisions as laid down in SOLAS, STCW and resolution A.[...](27).

2 Manning control

2.1 If a ship is manned in accordance with a safe manning document or equivalent document issued by the flag State, the PSCO should accept that the ship is safely manned unless the document has clearly been issued without regard to the principles contained in the relevant instruments in which case the PSCO should act according to the procedures defined in paragraph 2.3.

2.2 If the actual crew number or composition does not conform to the manning document, the port State should request the flag State for advice as to whether or not the ship should be allowed to sail with the actual number of crew and its composition. Such a request and response should be by expedient means and either Party may request this communication in writing. If the actual crew number or composition is not brought into accordance with the safe manning document or the flag State does not advise that the ship could sail, the ship may be considered for detention after the criteria set out in paragraph 4.1 have been taken into proper account.

2.3 If the ship does not carry a safe manning document or equivalent, the port State should request the flag State to specify the required number of crew and its composition and to issue a document as quickly as possible.

2.4 In case the actual number or composition of the crew does not conform to the specifications received from the flag State the procedure as contained in paragraph 2.2 applies.

2.5 If the flag State does not respond to the request this will be considered as clear grounds for a more detailed inspection to ensure that the number and composition of the crew is in accordance with the principles laid down in 1 above. The ship shall only be allowed to proceed to sea if it is safe to do so, taking into account the criteria for detention indicated in paragraph 4.1. In any such case the minimum standards to be applied shall be no more stringent than those applied to ships flying the flag of the port State.

3 Control under the provisions of STCW

3.1 Control exercised by the PSCO should be limited to the following:

- .1 verification that all seafarers serving on board, who are required to be certificated, hold an appropriate certificate or a valid dispensation, or provide documentary proof that an application for an endorsement has been submitted to the Administration;
- .2 verification that the numbers and certificates of the seafarers serving on board are in conformity with the applicable safe manning requirements of the Administration; and
- .3 assessment of the ability of the seafarers of the ship to maintain watchkeeping standards as required by the Convention if there are clear grounds for believing that such standards are not being maintained because any of the following have occurred:
 - .3.1 the ship has been involved in a collision, grounding or stranding, or
 - .3.2 there has been a discharge of substances from the ship when underway, at anchor or at berth which is illegal under any international convention, or
 - .3.3 the ship has been manoeuvred in an erratic or unsafe manner whereby routing measures adopted by the Organization or safe navigation practices and procedures have not been followed, or
 - .3.4 the ship is otherwise being operated in such a manner as to pose a danger to persons, property or the environment.

4 Detention related to minimum manning standards and certification

4.1 Before detaining a ship, the following should be considered:

- .1 length and nature of the intended voyage or service;
- .2 whether or not the deficiency poses a danger to ships, persons on board or the environment;
- .3 whether or not appropriate rest periods of the crew can be observed;
- .4 size and type of ship and equipment provided; and
- .5 nature of cargo.

APPENDIX 12

LIST OF CERTIFICATES AND DOCUMENTS

List of certificates and documents which to the extent applicable should be checked during the inspection referred to in paragraph 2.2.3 (as appropriate):

- 1 International Tonnage Certificate (1969);
- 2 Reports of previous port State control inspections;
- 3 Passenger Ship Safety Certificate (SOLAS reg.I/12);
- 4 Cargo Ship Safety Construction Certificate (SOLAS reg.I/12);
- 5 Cargo Ship Safety Equipment Certificate (SOLAS reg.I/12);
- 6 Cargo Ship Safety Radio Certificate (SOLAS reg.I/12);
- 7 Cargo Ship Safety Certificate (SOLAS reg.I/12);
- 8 Special Purpose Ship Safety Certificate (SOLAS reg.I/12, SPS Code reg.1.7.12 and res.A.791(19));
- 9 For ro-ro passenger ships, information on the A/A-max ratio (SOLAS reg.II-1/8-1*);
- 10 Damage control plans and booklets (SOLAS reg.II-1/19);
- 11 Stability information (SOLAS reg.II-1/5-1 and LLC66/88 reg.10);
- 12 Manoeuvring Booklet & information (SOLAS reg.II-1/28.2);
- 13 Unattended Machinery spaces (UMS) evidence (SOLAS reg.II-1/46.3);
- 14 Exemption Certificate and any list of cargoes (SOLAS reg.II-2/10.7.1.4);
- 15 Fire control plan (SOLAS reg.II-2/15.2.4);
- 16 Fire safety operational booklet (SOLAS reg.II-2/16,3,1);
- 17 Dangerous goods special list or manifest, or detailed stowage plan (SOLAS reg.II-2/19 and ILO Convention No. 134 art.4.3(h));
- 18 Doc. of compliance Dangerous Goods (SOLAS reg.II-2/19.4);
- 19 Ship's log-book with respect to the records of drills, including security drills, and the log for records of inspection and maintenance of life-saving appliances and arrangements and fire-fighting appliances and arrangements (SOLAS regs.III/19.5 and 20.6);
- 20 Minimum Safe Manning Document (SOLAS reg.V/14.2);

* Refer to Resolution 1 of the 1995 SOLAS Conference.

- 21 SAR coordination plan for passenger ships trading on fixed routes (SOLAS reg.V/7.3);
- 22 LRIT Conformance Test Report
- 23 Copy of the Document of compliance issued by the testing facility, stating the date of compliance and the applicable performance standards of VDR (voyage data recorder) (SOLAS reg.V/18.8);
- 24 For passenger ships, List of operational limitations (SOLAS reg.V/30.2);
- 25 Cargo Securing Manual (SOLAS reg.VI/5.6);
- 26 Bulk Carrier Booklet (SOLAS reg.VI/7.2);
- 27 Loading/Unloading Plan for bulk carriers (SOLAS reg.VI/7.3);
- 28 Document of authorization for the carriage of grain (SOLAS reg.VI/9);
- 29 INF (International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships) Certificate of Fitness (SOLAS reg.VII/16 and INF Code reg.1.3);
- 30 Copy of Document of Compliance issued in accordance with the International Management Code for the Safe Operation of Ships and for Pollution Prevention (DoC) ISM Code (SOLAS reg.IX/4.2);
- 31 Safety Management Certificate issued in accordance with the International Management Code for the Safe Operation of Ships and for Pollution Prevention (SMC) (SOLAS reg.IX/4.3);
- 32 High-Speed Craft Safety Certificate and Permit to Operate High-Speed Craft (SOLAS reg.X/3.2 and HSC Code 94/00 reg.1.8.1);
- 33 Continuous Synopsis Record (SOLAS reg.XI-1/5)
- 34 International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, or the Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, whichever is appropriate (IGC Code reg.1.5.4);
- 35 International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, whichever is appropriate (IBC Code reg.1.5.4 and BCH Code reg.1.6.3);
- 36 International Oil Pollution Prevention Certificate (MARPOL Annex I reg.7.1);
- 37 Survey Report Files (in case of bulk carriers or oil tankers) (SOLAS reg.XI/2);
- 38 Oil Record Book, parts I and II (MARPOL Annex I regs.17 and 36);
- 39 Shipboard Marine pollution emergency plan for Noxious Liquid Substances (MARPOL Annex II reg.17);

- 40 (Interim) Statement of compliance Condition Assessment Scheme (CAS) (MARPOL Annex I regs.20.6 and 21.6.1);
- 41 For oil tankers, the record of oil discharge monitoring and control system for the last ballast voyage (MARPOL Annex I reg.31.2);
- 42 Shipboard Oil Pollution Emergency Plan (MARPOL Annex I reg.37.1);
- 43 International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk (NLS) (MARPOL Annex II reg.9.1);
- 44 Cargo Record Book (MARPOL Annex II reg.15);
- 45 Procedures and Arrangements Manual (chemical tankers) (MARPOL Annex II reg.14.1);
- 46 International Sewage Pollution Prevention Certificate (ISPPC) (MARPOL Annex IV reg.5.1);
- 47 Garbage Management Plan (MARPOL Annex V reg.9.2);
- 48 Garbage Record Book (MARPOL Annex V reg.9.3);
- 49 International Air Pollution Prevention Certificate (IAPPC) (MARPOL Annex VI reg.6.1);
- 50 Log-book for fuel oil change-over (MARPOL Annex VI reg.14.6);
- 51 Type approval certificate of incinerator (MARPOL Annex VI reg.16.6);
- 52 Bunker delivery notes (MARPOL Annex VI reg.18.3);
- 53 Engine International Air Pollution Prevention Certificate (EIAPPC) (Nox Technical Code 2008 reg.2.1.1.1);
- 54 Technical files (Nox Technical Code 2008 reg.2.3.6);
- 55 Record book of engine parameters (Nox Technical Code reg.6.2.2.7.1);
- 56 International Load Line Certificate (1966) (LLC66/88 art.16.1);
- 57 International Load Line Exemption Certificate (LLC66/88 art.16.2);
- 58 Certificates issued in accordance with STCW Convention (STCW art.VI, reg.I/2 and STCW Code Section A-I/2);
- 59 Table of shipboard working arrangements (STCW Code Section A-VIII/1.5 and ILO Convention No. 180 art. 5.7);
- 60 Mobile Offshore Drilling Unit Safety Certificate (MODU Code chapter I section 6);

- 61 Certificate of insurance or any other financial security in respect of civil liability for oil pollution damage (CLC69/92 art.VII.2);
- 62 Certificate of insurance or any other financial security in respect of civil liability for Bunker oil pollution damage (BUNKERS 2001 art.7.2);
- 63 International Ship Security Certificate (ISSC) (ISPS Code part A/19.2);
- 64 Record of AFS (AFS 2001 Annex 4 reg.2);
- 65 International Anti-Fouling System Certificate (IAFS Certificate) (AFS 2001 Annex 4 reg.2); and
- 66 Declaration on AFS (AFS 2001 Annex 4 reg.5).

For reference:

- 1 Certificate of Registry or other document of nationality (UNCLOS art.9.1.2);
- 2 Certificates as to the ship's hull strength and machinery installations issued by the classification society in question (only to be required if the ship maintains its class with a classification society);
- 3 Cargo Gear Record Book (ILO Convention No. 32 art.9.2(4) and ILO Convention No. 152 art.25);
- 4 Certificates loading and unloading equipment (ILO Convention No. 134 art.4.3(e) and ILO Convention No. 32 art.9(4));
- 5 Medical certificates (ILO Convention No. 73); and
- 6 Records of hours of work or rest of seafarers (ILO Convention No.180 part II art. 8.1).

APPENDIX 13

REPORT OF INSPECTION IN ACCORDANCE WITH IMO PORT STATE CONTROL PROCEDURES*

FORM A

(Reporting authority)
(Address)
(Telephone)
(Telefax)

Copy to: Master
Head office
PSCO

If ship is detained, copy to:
Flag State
IMO
Recognized organization, if applicable

- | | |
|---|---------------------------------------|
| 1 Name of reporting authority | 2 Name of ship |
| 3 Flag of ship | 4 Type of ship |
| 5 Call sign | 6 IMO number |
| 7 Gross tonnage | 8 Deadweight (where applicable) |
| 9 Year of build | 10 Date of inspection |
| 11 Place of inspection | 12 Classification society |
| 13 Date of release from detention** | |
| 14 Particulars of ISM company (details or IMO Company Number)** | |

15 Relevant certificate(s)**

	a) Title	b) Issuing authority	c) Dates of issue and expiry
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APPENDIX 14

**REPORT OF DEFICIENCIES
NOT FULLY RECTIFIED OR ONLY PROVISIONALLY REPAIRED**

**In accordance with the provision of paragraph 3.7.3 of IMO Port State Control Procedures
(resolution A.[...](27))**

**(Copy to maritime Authority of next port of call, flag Administration, or other certifying
authority as appropriate)**

1 From (Country/region)	2 Port
3 To (Country/region)	4 Port
5 Name of ship	6 Date departed
7 Estimated place and time of arrival	
8 IMO number	9 Flag of ship and POR
10 Type of ship	11 Call sign
12 Gross tonnage	13 Year of build
14 Issuing authority of relevant certificate(s)	
15 Nature of deficiencies to be rectified	16 Suggested action
.....	(including action at next port of call)
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17 Action taken

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Reporting Authority Office

Name Telefax

(duly authorized PSCO of reporting authority)

Signature Date

APPENDIX 15

REPORT OF ACTION TAKEN TO THE NOTIFYING AUTHORITY

**In accordance with the provision of paragraph 3.7.3 of IMO Port State Control Procedures
(resolution A.[...](27))**

(by Telefax and/or Mail)

1 To: (Name)
(Position)
(Authority)
Telephone Telefax
Date:

2 From: (Name)
(Position)
(Authority)
Telephone Telefax

3 Name of ship

4 Call sign **5** IMO Number

6 Port of inspection

7 Date of inspection

8 Action taken

a) Deficiencies

b) Action taken

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9 Next port (Date)

10 Supporting documentation No Yes (See attached)

Signature

APPENDIX 16

FORMAT FOR THE REPORT OF CONTRAVENTION OF MARPOL (article 6)

IMO PORT STATE CONTROL PROCEDURES

(resolution A.[...](27))

(Issuing authority)
(Address)
(Telephone)
(Telefax)

Copy to: Master

- 1** Reporting country
- 2** Name of ship
- 3** Flag of ship
- 4** Type of ship
- 5** Call sign **6** IMO number
- 7** Gross tonnage **8** Deadweight
(where appropriate)
- 9** Year of build **10** Classification society
- 11** Date of incident **12** Place of incident
- 13** Date of investigation

14 In case of contravention of discharge provisions, a report may be completed in addition to port State report on deficiencies. This report should be in accordance with parts 2 and 3 of appendix 3 and/or parts 2 and 3 of appendix 4, as applicable, and should be supplemented by documents, such as:

- .1 a statement by the observer of the pollution;
- .2 the appropriate information listed under section 1 of part 3 of appendices 3 and 4 to the Procedures, the statement should include considerations which lead the observer to conclude that none of any other possible pollution sources is in fact the source;
- .3 statements concerning the sampling procedures both of the slick and on board. These should include location of and time when samples were taken, identity of person(s) taking the samples and receipts identifying the persons having custody and receiving transfer of the samples;

- .4 reports of analyses of samples taken of the slick and on board; the reports should include the results of the analyses, a description of the method employed, reference to or copies of scientific documentation attesting to the accuracy and validity of the method employed and names of persons performing the analyses and their experience;
- .5 if applicable, a statement by the PSCO on board together with the PSCO's rank and organization;
- .6 statements by persons being questioned;
- .7 statements by witnesses;
- .8 photographs of the slick; and
- .9 copies of relevant pages of Oil/Cargo Record Books, log-books, discharge recordings, etc.

Name and Title (duly authorized contravention investigation official)

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.....
.....

Signature

APPENDIX 17

COMMENTS BY FLAG STATE ON DETENTION REPORT

Name of ship:

IMO number/call sign:

Flag State:

Gross tonnage:

Deadweight (where appropriate):

Date of report:

Report by:

Classification Society

Recognized Organization involved:

.....

Did you receive the notification of detention? (tick the box if the answer is 'yes')

Action taken

a) Deficiencies	b) Cause	c) Action taken
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Additional Information:

APPENDIX 18

LIST OF INSTRUMENTS RELEVANT TO PORT STATE CONTROL PROCEDURES

Instrument	Name	IMO body	Remark
A.797(19)	Safety of ships carrying solid bulk cargoes	DSC	
A.[...](27)	Principles of minimum safe manning	MSC/STW	
MSC.159(78)	Interim guidance on control and compliance measures to enhance maritime security	MSC/FSI	
MSC.286(86)	Recommendations for material safety data sheets (MSDS) for MARPOL Annex I	BLG	
MSC/Circ.447	Control under SOLAS regulation I/19 – Recommendation on radar reflectors for liferafts and on training manuals	DE	
MSC/Circ.592	Carriage of dangerous goods	DSC	
MSC/Circ.606	Port State concurrence with SOLAS exemptions	FSI	
MSC/Circ.635	Tonnage measurement of certain ships relevant to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978	SLF	
MSC/Circ.656	Safety of ships carrying solid bulk cargoes	DSC	
MSC/Circ.811	Identification of float-free arrangements for liferafts	DE	
MSC/Circ.887	Interpretation of the term "other strategic points" in SOLAS regulation III/50 and LSA Code section VII/7.2	DE	
MSC/Circ.890 MEPC/Circ.354	Interim guidelines for Port State Control related to the ISM Code	FSI	
MSC/Circ.907	Application of SOLAS regulation III/28.2 concerning helicopter landing areas on non ro-ro passenger ships	DE	
MSC/Circ.918	Guidance for port State control officers in respect of certificates of competency issued under the provision of the STCW Convention	FSI/STW	

Instrument	Name	IMO body	Remark
MSC/Circ.955	Servicing of life-saving appliances and radiocommunication equipment under the harmonized system of survey and certification (HSSC)	FSI	
MSC/Circ.1011, MEPC/Circ.383	Measures to improve port State control procedures	FSI	
MSC/Circ.1012	Endorsement of certificates with the date of completion of the survey on which they are based	FSI	
MSC/Circ.1016	Application of SOLAS regulation III/26 concerning fast rescue boats and means of rescue systems on ro-ro passenger ships	DE	
MSC/Circ.1030	Guidance for port State control officers on issues related to certificates of competency	FSI/STW	
MSC/Circ.1032	Guidance for port State control officers on references to STCW 95 in certificates, endorsements and documentary evidence	FSI/STW	
MSC/Circ.1089	Guidance on recommended anti-fraud measures and forgery prevention measures for seafarers' certificate	FSI/STW	
MSC/Circ.1097	Guidance relating to the implementation of SOLAS chapter XI-2 and the ISPS Code	MSC	
MSC/Circ.1107	Application of SOLAS regulation II-1/3-6 on access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers and application of the technical provisions for means of access for inspections	DE	
MSC/Circ.1111	Guidance relating to the implementation of SOLAS chapter XI-2 and the ISPS Code	MSC	
MSC/Circ.1112	Shore leave and access to ships under the ISPS Code	MSC	
MSC/Circ.1113	Guidance to port State control officers on the non-security related elements of the 2002 SOLAS amendment	MSC	
MSC/Circ.1117	Guidance for checking the structure of bulk carriers	DE	
MSC/Circ.1133	Reminder of the obligation to notify flag States when exercising control and compliance measures	FSI	
MSC/Circ.1059 MEPC/Circ.401	Procedures concerning observed ISM Code major non-conformities	FSI	

Instrument	Name	IMO body	Remark
MSC/Circ.1151 MEPC/Circ.426 FAL.2/Circ.87	Revised list of certificates and documents required to be carried on board ships	FAL	
MSC/Circ.1156	Guidance on the access of public authorities, emergency response services and pilots on board ships to which SOLAS chapter XI-2 and the ISPS Code apply	MSC	
MSC/Circ.1176	Unified interpretations to SOLAS chapters II-1 and XII and to the technical provisions for means of access for inspections	DE	
MSC/Circ.1191	Further reminder of the obligation to notify flag States when exercising control and compliance measures	MSC/FSI	
MSC.1/Circ.1196	Means of embarkation on and disembarkation from ships	DE	
MSC.1/Circ.1197	Amendments to the unified interpretations to SOLAS chapters II-1 and XII approved by MSC/Circ.1176	DE	
MSC.1/Circ.1198	Application of SOLAS regulation XII/6.3 on corrosion prevention of dedicated seawater ballast tanks in all types of ships and double-sided skin spaces of bulk carriers and application of the performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers	DE	
MSC.1/Circ.1199	Interim guidance on compliance of ships carrying dry cargoes in bulk with requirements of SOLAS chapters II-1, III, IX, XI-1 and XII	DE	
MSC.1/Circ.1208	Promoting and verifying continued familiarization of GMDSS operators on board ships	STW	
MSC.1/Circ.1221	Validity of type approval certification for marine products	FSI	
MSC.1/Circ.1235	Guidelines on security-related training and familiarization for shipboard personnel	STW	
MSC.1/Circ.1326	Clarification of SOLAS regulation III/19	DE	
MSC.1/Circ.1331	Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation	DE	
MEPC.104(49)	Guidelines for brief sampling of anti-fouling systems on ships	FSI	

Instrument	Name	IMO body	Remark
MEPC.[...](62)	2011 Guidelines for inspection of anti-fouling systems on ships	FSI	
MEPC.129(53) MEPC/Circ.472	Guidelines for port State control under MARPOL Annex VI	FSI	
MEPC.173(58)	Guidelines for ballast water sampling (G2)	MEPC/BLG	
MEPC.174(58)	Guidelines for approval of ballast water management systems (G8)	MEPC	
MEPC.181(59)	2009 Guidelines for port State control under the revised MARPOL Annex VI	MEPC/BLG	
MEPC.184(59)	2009 Guidelines for exhaust gas cleaning system	MEPC/BLG	
MEPC/Circ.411	Guidance for port State control officers on issues related to the Form of the Oil Record Book Part I	MEPC	
MEPC/Circ.479	Guidelines for port State control officers whilst checking compliance with the Condition Assessment Scheme(CAS)	MEPC/FSI	
MEPC/Circ.479/ Corr.1	Guidelines for port State control officers whilst checking compliance with the Condition Assessment Scheme(CAS)	MEPC/FSI	
MEPC/Circ.508	Bunker delivery note and fuel oil sampling	MEPC/FSI	
MEPC/Circ.513	Validity of the IOPP Certificate and Supplements issued under the current MARPOL Annex I after 1 January 2007	MEPC	
MEPC.1/Circ.516	Public access to the condition assessment scheme (CAS) database	MEPC	
MEPC.1/Circ.637	Fuel oil availability and quality	MEPC	
MEPC.1/Circ.640	Interim guidance on the use of the oil record book concerning voluntary declaration of quantities retained on board in oily bilge water holding tanks and heating of oil residue (sludge)	DE	
MEPC.1/Circ.675	Discharge of cargo hold washing water in the Gulfs area and Mediterranean Sea area under MARPOL Annex V	MEPC	

Instrument	Name	IMO body	Remark
MSC- MEPC.2/Circ.2	IMO requirements on carriage of publication on board ships	FSI/NAV	
MSC- MEPC.4/Circ.1	Retention of original records/documents on board ships	FSI	
MSC- MEPC.4/Circ.2	Code of good practice for port State control officers	MSC/MEPC	
MSC- MEPC.4/Circ.3	Blanking of bilge discharge piping systems in port	MSC/MEPC	
MSC- MEPC.5/Circ.6	Guidance on the timing of replacement of existing certificates by the certificates issued after the entry into force of amendments to certificates in IMO instruments	FSI	
STCW.7/Circ.12	Advice for port State control officers and recognized organizations on action to be taken in cases where not all seafarers carry certificates and endorsements meeting STCW 95	STW	
	Guidelines on port State control under the 2004 BWM Convention	MEPC/FSI	Under development

ANNEX 4

**DRAFT MEPC RESOLUTION ON 2011 GUIDELINES FOR INSPECTION OF
ANTI-FOULING SYSTEMS ON SHIPS**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the International Conference on the Control of Harmful Anti-fouling Systems for Ships, 2001, held in October 2001, adopted the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (the AFS Convention) together with four Conference resolutions,

RECALLING FURTHER that Article 11 of the AFS Convention prescribes that ships to which this Convention applies may, in any port, shipyard, or offshore terminal of a Party, be inspected by officers authorized by that Party for the purpose of determining whether the ship is in compliance with this Convention,

NOTING that Article 3(3) of the AFS Convention prescribes that Parties to this Convention shall apply the requirements of this Convention as may be necessary to ensure that no more favourable treatment is given to ships of non-Parties to this Convention,

NOTING ALSO resolution MEPC.105(49) by which the Committee adopted the Guidelines for inspection of anti-fouling systems on ship on 18 July 2003,

NOTING FURTHER that by resolution MEPC.105(49), the Committee resolved to keep the 2003 Guidelines under review in the light of experience gained,

HAVING CONSIDERED, at its sixty-second session, the draft 2011 Guidelines for inspection of anti-fouling systems on ships prepared by the Sub-Committee on Flag State Implementation at its nineteenth session,

1. ADOPTS the 2011 Guidelines for inspection of anti-fouling systems on ships, as set out in the Annex to this resolution;
2. INVITES Governments to apply the 2011 Guidelines when exercising port State control inspections;
3. RECOMMENDS that the 2011 Guidelines be adopted as amendments to resolution A.787(19) on Procedures for port State control, as amended;
4. AGREES to keep the 2011 Guidelines under review in the light of experience gained; and
5. REVOKES the Guidelines adopted by resolution MEPC.105(49).

* * *

ANNEX

2011 GUIDELINES FOR INSPECTION OF ANTI-FOULING SYSTEMS ON SHIPS

1 INTRODUCTION

1.1 The right of the port State to conduct inspections of anti-fouling systems on ships is in Article 11 of the AFS Convention. The guidelines for conducting these inspections are described below.

1.2 Ships of 400 gross tonnage and above engaged in international voyages (excluding fixed or floating platforms, FSUs and FPSOs) will be required to undergo an initial survey before the ship is put into service or before the International Anti-fouling System Certificate (IAFS) is issued for the first time; and a survey should be carried out when the anti-fouling systems are changed or replaced.

1.3 Ships of 24 metres in length or more but less than 400 gross tonnage engaged in international voyages (excluding fixed or floating platforms, FSUs and FPSOs) will have to carry a Declaration on Anti-fouling Systems signed by the owner or authorized agent. Such declaration shall be accompanied by appropriate documentation (such as a paint receipt or a contractor invoice) or contain appropriate endorsement.

2 INITIAL INSPECTION

2.1 Ships required to carry an IAFS Certificate or Declaration on Anti-Fouling Systems (Parties of the AFS Convention)

2.1.1 The PSCO should check the validity of the IAFS Certificate or Declaration on Anti-Fouling Systems, and the attached Record of Anti-Fouling Systems, if appropriate.

2.1.2 The only practical way to apply paint to the ship's bottom (underwater part) is in a dry dock. This means that the date of application of paint on the IAFS Certificate should be checked by comparing the period of dry-docking with the date on the certificate.

2.1.3 If the paint has been applied during a scheduled dry-dock period, it has to be registered in the ship's logbook (in order to be legal). Furthermore, this scheduled dry-docking can be verified by the endorsement date on the (statutory) Safety Construction Certificate (SOLAS, regulation I/10).

2.1.4 In case of an unscheduled dry-dock period, it could be verified by the registration in the ship's logbook (in order to be legal).

2.1.5 It can be additionally verified by the endorsement date on the (Class) Hull Certificate, the dates on the Manufacturer's Declaration or by confirmation of the shipyard.

2.1.6 The IAFS Certificate includes a series of tick boxes indicating:

- .1 if an anti-fouling system controlled under Annex I of the AFS Convention has or has not been applied, removed or been covered with a sealer coat;

- .2 if an anti-fouling system controlled under Annex I of the AFS Convention was applied on the ship prior to 1 January 2003 or a later date if specified by the Administration; and
- .3 if an anti-fouling system controlled under Annex I of the AFS Convention was applied on the ship on/after 1 January 2003 or a later date if specified by the Administration.

2.1.7 Particular attention should be given to verifying that the survey for issuance of the current IAFS Certificate matches the dry-dock period listed in the ship's log(s) and that only one tick box is marked.

2.1.8 The Record of Anti-Fouling Systems should be attached to the IAFS Certificate and be up to date. The most recent record should agree with the tick box on the front of the IAFS Certificate.

2.2 Ships of non-Parties to the AFS Convention

2.2.1 Ships of non-Parties to the AFS Convention are not entitled to be issued with an IAFS Certificate. Therefore the PSCO should ask for documentation that contains the same information as in an IAFS Certificate and take this into account in determining compliance with the requirements.

2.2.2 If the existing anti-fouling system is declared not to be controlled under Annex 1 of the Convention, without being documented by an International Anti-Fouling System Certificate, verification should be carried out to confirm that the anti-fouling system complies with the requirements of the Convention. This verification may be based on sampling and/or testing and/or reliable documentation, as deemed necessary, based on experience gained and the existing circumstances. Documentation for verification could be, e.g., MSDSs (Material Safety Data Sheets), or similar, a declaration of compliance from the anti-fouling system manufacturer, invoices from the shipyard and/or the anti-fouling system manufacturer.

2.2.3 Ships of non-Parties may have Statements of Compliance issued in order to comply with regional requirements, for example, Regulation (EC) 782/2003 as amended by Regulation (EC) 536/2008, which could be considered as providing sufficient evidence of compliance.

2.2.4 In all other aspects the PSCO should be guided by the procedures for ships required to carry an IAFS Certificate.

2.2.5 The PSCO should ensure that no more favourable treatment is applied to ships of non-Parties to the AFS Convention.

3 MORE DETAILED INSPECTION

3.1 Clear ground

3.1.1 A more detailed inspection may be carried out when there has been clear grounds to believe that the ship does not substantially meet the requirements of the AFS Convention. Clear grounds for a more detailed inspection may be when:

- .1 the ship is from a flag of a non-Party to the Convention and there is no AFS documentation;

- .2 the ship is from a flag of a Party to the Convention but there is no valid IAFS Certificate;
- .3 the painting date shown on the IAFS Certificate does not match the dry-dock period of the ship;
- .4 the ship's hull shows excessive patches of different paints; and
- .5 the IAFS Certificate is not properly completed.

3.1.2 If the IAFS Certificate is not properly completed, the following questions may be pertinent:

- .1 "When was the ship's anti-fouling system last applied?";
- .2 "If the anti-fouling system is controlled under Annex 1 to the AFS Convention and was removed, what was the name of the facility and date of the work performed?";
- .3 "If the anti-fouling system is controlled under Annex 1 of the AFS Convention and has been covered by a sealer coat, what was the name of the facility and date applied?";
- .4 "What is the name of the anti-fouling/sealer products and the manufacturer or distributor for the existing anti-fouling system?"; and
- .5 "If the current anti-fouling system was changed from the previous system, what was the type of anti-fouling system and name of the previous manufacturer or distributor?".

3.2 Sampling

3.2.1 A more detailed inspection may include sampling and analysis of the ship's anti-fouling system, if necessary, to establish whether or not the ship complies with the AFS Convention. Such sampling and analysis may involve the use of laboratories and detailed scientific testing procedures.

3.2.2 If sampling is carried out, the time to process the samples cannot be used as a reason to delay the ship.

3.2.3 Any decision to carry out sampling should be subject to practical feasibility or to constraints relating to the safety of persons, the ship or the port. (see annex 1 for sampling procedures; an AFS Inspection Report template for sampling and analysis is attached to the Guidelines).

3.3 Action taken under the AFS Convention

Detention

3.3.1 The port State could decide to detain the ship following detection of deficiencies during an inspection on board.

3.3.2 Detention could be appropriate in any of the following cases:

- .1 certification is invalid or missing;
- .2 the ship admits it does not comply (thereby removing the need to prove by sampling); and
- .3 sampling proves it is non-compliant within the ports jurisdiction.

3.3.3 Further action would depend on whether the problem is with the certification or the anti-fouling system itself.

3.3.4 If there are no facilities in the port of detention to bring the ship into compliance, the port State could allow the ship to sail to another port to bring the anti-fouling system into compliance. This would require an agreement of that port.

Dismissal

3.3.5 The port State could dismiss the ship, meaning that the port State demands that the ship leaves port – for example if the ship chooses not to bring the AFS into compliance but the port State is concerned that the ship is leaching tributyltin (TBTs) into its waters.

3.3.6 Dismissal could be appropriate if the ship admits it does not comply or sampling proves it is non-compliant while the ship is still in port. Since this would also be a detainable deficiency the PSCO can detain first and require rectification before release. However, there may not be available facilities for rectification in the port of detention. In this case the port State could allow the ship to sail to another port to bring the anti-fouling system into compliance. This could require agreement of that port.

3.3.7 Dismissal could be appropriate in any of the following cases:

- .1 certification is invalid or missing;
- .2 the ship admits it does not comply (thereby removing the need to collect proof by sampling); and
- .3 sampling proves that the ship is non-compliant within the ports jurisdiction.

3.3.8 In these cases the ship will probably already have been detained. However, detention does not force the ship to bring the AFS into compliance (only if it wants to depart). In such a situation the port State may be concerned that the ship is leaching TBTs while it remains in its waters.

Exclusion

3.3.9 The port State could decide to exclude the ship to prevent it entering its waters. Exclusion could be appropriate if sampling proves that the ship is non-compliant but the results have been obtained after it has sailed or after it has been dismissed.

3.3.10 Exclusion could be appropriate if sampling proves that the ship is non-compliant but the results have been obtained after it has sailed or after it has been dismissed. Article 11(3) of the AFS Convention only mentions that the "party carrying out the inspection" may take such steps. This means that, if a port State excludes a ship, the exclusion cannot be automatically applied by other port States.

3.3.11 In accordance with Procedures for Port State Control (resolution A.787(19), as amended), where deficiencies cannot be remedied at the port of inspection, the PSCO may allow the ship to proceed to another port, subject to any appropriate conditions determined. In such circumstances, the PSCO should ensure that the competent authority of the next port of call and the flag State are notified.

Reporting to flag State

3.3.12 Article 11(3) of the AFS Convention requires that when a ship is detained, dismissed or excluded from a port for violation of the Convention, the Party taking such action shall immediately inform the flag Administration of the ship and any Recognized Organization which has issued a relevant certificate.

4 AFS REPORT TO FLAG STATE IN RESPONSE TO ALLEGED CONTRAVENTIONS

4.1 Article 11(4) of the AFS Convention allows Parties to inspect ships at the request of another Party, if sufficient evidence that the ship is operating or has operated in violation of the Convention is provided. Article 12(2) permits port States conducting the inspection to send the Administration (flag State) of the ship concerned any information and evidence it has that a violation has occurred. Information sent to the flag State is often inadequate for a prosecution. The following paragraphs detail the sort of information needed.

4.2 The report to the authorities of the port or coastal State should include as much as possible the information listed in section 3. The information in the report should be supported by facts which, when considered as a whole, would lead the port or coastal State to believe a contravention had occurred.

4.3 The report should be supplemented by documents such as:

- .1 the port State report on deficiencies;
- .2 a statement by the PSCO, including his rank and organization, about the suspected non-conforming anti-fouling system. In addition to the information required in section 3, the statement should include the grounds the PSCO had for carrying out a more detailed inspection;
- .3 a statement about any sampling of the anti-fouling system including:
 - .1 the ship's location;
 - .2 where the sample was taken from the hull, including the vertical distance from the boot topping;
 - .3 the time of sampling;
 - .4 person(s) taking the samples; and
 - .5 receipts identifying the persons having custody and receiving transfer of the samples;
- .4 reports of the analyses of any samples including:
 - .1 the results of the analyses;

- .2 the method employed;
- .3 reference to or copies of scientific documentation attesting the accuracy and validity of the method employed;
- .4 the names of persons performing the analyses and their experience; and
- .5 a description of the quality assurance measures of the analyses;
- .5 statements of persons questioned;
- .6 statements of witnesses;
- .7 photographs of the hull and sample areas; and
- .8 a copy of the IAFS Certificate, including copies of relevant pages of the Record of Anti-fouling Systems, log books, MSDS or similar, declaration of compliance from the anti-fouling system manufacturer, invoices from the shipyard and other dry dock records pertaining to the anti-fouling system.

4.4 All observations, photographs and documentation should be supported by a signed verification of their authenticity. All certifications, authentications or verifications should be in accordance with the laws of the State preparing them. All statements should be signed and dated by the person making them, with their name printed clearly above or below the signature.

4.5 The reports referred to under paragraphs 2 and 3 of this section should be sent to the flag State. If the coastal State observing the contravention and the port State carrying out the investigation on board are not the same, the port State carrying out the investigation should also send a copy of its findings to the coastal State.

* * *

APPENDIX 1

SAMPLING

Considerations related to brief sampling may be found in section 2.1 of Guidelines for brief sampling of anti-fouling systems on ships (resolution MEPC.104(49)).

Any obligation to take a sample should be subject to practical feasibility or to constraints relating to the safety of persons, the ship or the port.

The PSCO should consider the following:

- liaise with the ship on the location and time needed to take samples; the PSCO should verify that the time required will not unduly prevent the loading/unloading, movement or departure of the ship;
- do not expect the ship to arrange safe access but liaise with the ship over the arrangements that the port State competent authority has made, for example boat, cherry-picker, staging, etc.;
- select sampling points covering representative areas;
- take photographs of the hull, sample areas and sampling process;
- avoid making judgements on the quality of the paint (e.g., surface, condition, thickness, application);
- the need of inviting the ship representative's presence during brief sampling to ensure that the evidence is legally obtained;
- complete and sign the inspection report form together with the included sampling record sheets (to be filled in by the sampler), as far as possible, and leave a copy with the ship as a proof of inspection/sampling;
- inform the next port State where the inspected ship is to call;
- agree with or advise the ship on to whom the ship's copy of the finalized inspection report will be sent in cases when it cannot be completed in the course of the inspection; and
- ensure that receipts identifying the persons having custody and receiving transfer of the samples accompany the samples are filled in to reflect the transfer chain of the samples. PSCOs are reminded that the procedures set in national legislation regarding custody of evidence are not affected by the regulation. These guidelines therefore do not address this issue in detail.

1 Sampling methodologies

It is to the discretion of the port State to choose the sampling methodology. The Guidelines for brief sampling of anti-fouling systems on ships adopted by resolution MEPC.104(49) allow that any other scientifically recognized method of sampling and analysis of AFS controlled by the Convention than those described in the appendix to the Guidelines may be used (subject to the satisfaction of the Administration or the port State). The sampling methodology will

depend, *inter alia*, on the surface hardness of the paint, which may vary considerably. The amount of paint mass removed may vary correspondingly.

Sampling procedures, based on the removal of paint material from the hull, require the determination of paint mass. It is important that procedures used are validated, produce unambiguous results and contain an adequate control.

The competent port State authority can decide to contract specialist companies to carry out sampling. In this case the PSCO should attend the ship during the sampling procedure to ensure the liaison and arrangements mentioned above are in place.

If a specialist company is not used, the port State competent authority should provide appropriate training to the PSCO in the available sampling methods and procedures and ensure that agreed procedures are followed.

The following general terms should be observed:

- the PSCO should choose a number of sample points preferably covering all the representative areas of the hull, but it is desirable to have at least eight (8) sample points equally spaced down and over the length of the hull, if possible divided over PS and SB (keeping in mind that different parts of the hull may be treated with different anti-fouling systems);
- triplicate specimens of paint at each sampling point should be taken in close proximity to each other on the hull (e.g., within 10 cm of each other);
- contamination of the samples should be avoided, which normally includes the wearing of non-sterilized non-powdered disposable gloves of suitable impervious material – e.g., nitrile rubber;
- the samples should be collected and stored in an inert container (e.g., containers should not consist of materials containing organotins or have the capacity to absorb organotins);
- samples should be taken from an area where the surface of the anti-fouling system is intact, clean and free of fouling;
- loose paint chips coming from detached, peeled or blistered hull areas should not be used for sampling;
- samples should not be taken from a heated or area where the paint is otherwise softened (e.g., heavy fuel tanks); and
- the underlying layers (primers, sealers, TBT containing AFS) should not be sampled if there is no clear evidence of exposure of extended areas.

2 Validity of the sampling

In order to safeguard the validity of the sampling as evidence of non-compliance, the following should be considered:

- only samples taken directly from the hull and free of possible contamination should be used;

- all samples should be stored in containers, marked and annotated on the record sheet. This record sheet should be submitted to the Administration;
- the receipts identifying the persons having custody and receiving transfer of the samples should be filled in and accompany the samples to reflect the transfer chain of the samples;
- the PSCO should verify the validity of the instrument's calibration validity date (according to the manufacturer instruction);
- in cases when a contracted specialist company is used for carrying out sampling, the PSCO should accompany its representative to verify sampling; and
- photographs of the hull, sample areas and sampling process could serve as additional proof.

It is also the case that sampling companies and/or procedures can be certified.

3 Health and safety when sampling

Any obligation to take a sample should be subject to practical feasibility or any constraints relating to the safety of persons, the ship or the port.

The PSCO is advised to ensure their safety taking the following points into account:

- general requirements enforced by the terminal or port authority and national health, safety and environmental policy;
- condition of the ship (ballast condition, ship's operations, mooring, anchorage, etc.);
- surroundings (position of ship, traffic, ships movement, quay operations, barges or other floating vessels alongside);
- safety measures for the use of access equipment (platforms, cherry picker, staging, ladders, railings, climbing harness, etc.), e.g., ISO 18001;
- weather (sea state, wind, rain, temperature, etc.); and
- precautions to avoid falling into the water between the quay and the ship. If in doubt, a lifejacket and if possible a safety line, should be worn when sampling.

Any adverse situation encountered during sampling that could endanger the safety of personnel, shall be reported to the safety coordinator.

Care should be taken to avoid contact of the removed paint with the skin and the eyes, and no particles should be swallowed or come into contact with foodstuffs. Eating or drinking during sampling is prohibited and hands should be cleaned afterwards. Persons carrying out sampling should be aware that the AFS and solvents or other materials used for sampling may be harmful and appropriate precautions should be taken. Personal protection should be considered by using long sleeve solvent-resistant gloves, dust mask, safety glasses, etc.

Standard (and specific, if applicable) laboratory safety procedures should be followed at all times when undertaking the sampling procedures and subsequent analysis.

4 Conducting analyses

The Guidelines for brief sampling of anti-fouling systems on ships envisage a two-stage analysis of samples for both methods presented in the appendix to the Guidelines. The first stage is a basic test, which can be carried out on site as in the case of Method 2. The second stage is carried out when the first stage results are positive. It is noted that in the IMO Guidelines, these stages are referred to as Steps 1 and 2 as in the case of Method 1. It is to the discretion of the port State competent authorities to choose which analysis methods are used.

The following points are presented for port State consideration:

- approval procedure for the recognition of laboratories meeting ISO 17025 standards or other appropriate facilities should be set up by the port State competent authorities. These procedures should define the recognition criteria. Exchange of information between port States on these procedures, criteria and laboratories/facilities would be beneficial, i.e. for the purposes of exchange of best practices and possible cross-border recognition and provision of services;
- the company that undertakes the analysis and/or samples should comply with national regulations and be independent from paint manufacturers;
- the PSCO carrying out the AFS inspection of a ship should verify the validity of the ISO 17025 certificate and/or the recognition of the laboratory;
- if more time is needed for analysis than available considering the ship's scheduled time of departure, the PSCO shall inform the ship and report the situation to the port State competent authority. However, the time needed for analysis does not warrant undue delay of the ship; and
- PSCOs should ensure completion of the record sheets for the sampling procedure as proof of analysis. In cases when the laboratory procedures prescribe presentation of the analyses' results in a different format, this technical report could be added to the record sheets.

5 The first-stage analysis

The first-stage analysis serves to detect the total amount of tin in the AFS applied.

It is to the discretion of the port State competent authority to choose the first-stage analysis methodology. However, the use of a portable X-ray fluorescence analyser (mentioned under Method 2) or any other scientifically justified method allowing the conduction of first-stage analyses on site could be considered best practice.

The port State competent authority has to decide whether the first-stage analysis should be carried out by PSCOs or by contracted companies.

The port State competent authority could provide PSCOs with this equipment (e.g., portable X-ray fluorescence analyser) and provide the appropriate training.

6 The second-stage analysis

The second-stage (final) analysis is used to verify whether or not the AFS system complies with the Convention requirements, i.e. whether organotin compounds are present in the AFS at a level which would act as a biocide.

The port State could consider implementing only a second-stage analysis.

It is to the discretion of the Authority to choose the second-stage analysis methodology. In this respect it is hereby noted that the second-stage analysis methodology for sampling Method 2 provided in the Guidelines is only tentative and "should be thoroughly reviewed by experts based on scientific evidence" (section 5.1 of Method 2).

7 Conclusions on compliance

The Authority should only make conclusions on compliance based on the second-stage analysis of the sample (organotin). In case the results indicate non-compliance at that stage, there are clear grounds to take further steps.

If considered necessary, more thorough sampling can be also carried out in addition or instead of brief sampling.

Sampling results should be communicated as soon as possible to the vessel (as part of the inspection report) and in the case of non-compliance also to the flag State and Recognized Organization acting on behalf of the flag State if relevant.

Authorities should, in accordance with section 5.2 of the Guidelines for brief sampling of anti-fouling systems on ships, develop and adopt procedures to be followed for those cases where compliance with acceptable limits or lack thereof, is unclear, considering additional sampling or other methodologies for sampling.

FORM S/1

REPORT OF INSPECTION of a ship's anti-fouling system (AFS)

SHIP PARTICULARS

1. Name of ship : _____ 2. IMO number : _____
3. Type of ship : _____ 4. Call sign : _____
5. Flag of ship : _____ 6. Gross tonnage : _____
7. Date keel laid / major conversion commenced : _____

INSPECTION PARTICULARS

8. Date & time : _____
9. Name of facility:
(dry-dock, quay, location) _____
Place & country: _____
10. Areas inspected Ship's logbook Certificates Ship's hull
11. Relevant certificate(s) _____

(c) dates of issue

1. _____	<i>IAFS Cert.</i>	_____	_____	_____
2. _____	<i>Record of AFS</i>	_____	_____	_____
3. _____	<i>Declaration of AFS</i>	_____	_____	_____
4. _____		_____	_____	_____

12. Dry-dock period AFS applied : _____
13. Name of facility AFS applied : _____
14. Place & country AFS applied : _____
15. AFS samples taken : _____
16. Reason for sampling of AFS: _____

17. Record sheet attached :
(country-code / IMO number / dd-mm-yy) _____
18. Copy to: Head office PSCO Master Other: _____ Flag State Recognized Organization

PORT STATE PARTICULARS

Reporting authority: _____

District office: _____

Address: _____

**Telephone/Fax/
Mobile:** _____

E-mail: _____

Name:
(duly authorized inspector of reporting authority) _____

Date: _____

Signature: _____

FORM S/2

Record sheet for the sampling procedure for compliance with the convention in terms of the presence of organotin acting as a biocide in anti-fouling systems on ship hulls

RECORD NUMBER		(country-code / IMO number / dd-mm-yy)
---------------	--	--

Name of ship : _____ IMO number : _____

SAMPLING PARTICULARS

1. Date & time initiated: _____ 2. Date & time completed: _____

3. Name of paint manufacturer: _____

4. AFS product name & colour: _____

5. Reason for Sampling: Port State Control Survey & Certification Other flag State compliance inspection

6. Sampling Method: _____

7. Hull areas sampled: Port Side Starboard Side Bottom

Number of sampling points: _____

8. Back-up samples' storage location:
(e.g., Port State inspection office)

9. Photos taken of the sample points Comments: _____

10. Paint samples (wet) Comments: _____

11. First-stage analysis Comments: _____

12. Second-stage analysis Comments: _____

13. Comments concerning sampling procedure

14. Sampling company Name
Date
Signature

PORT STATE PARTICULARS

Reporting authority: _____ **District office:** _____

Address: _____

Telephone/ Fax/ Mobile: _____

E-mail: _____

Name:
(duly authorized inspector of reporting authority) _____

Date: _____ **Signature:** _____

FORM S/3

RECORD NUMBER	
----------------------	--

Name of ship: _____ IMO number: _____

METHOD 1 ANALYSIS

1.	Instrument I.D. :	Calibration Expire Date :																																																						
2.	Specimens "A" results total number of specimens "A" analysed:																																																							
3.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">No.</th> <th style="width: 35%;">Sample location <i>(Frame & Distance from boot topping)</i></th> <th style="width: 15%;">mg Sn/ kg</th> <th style="width: 5%;">No.</th> <th style="width: 35%;">Sample location <i>(Frame & distance from boot topping)</i></th> <th style="width: 15%;">mg Sn/ kg</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">1</td><td></td><td></td><td style="text-align: center;">9</td><td></td><td></td></tr> <tr><td style="text-align: center;">2</td><td></td><td></td><td style="text-align: center;">10</td><td></td><td></td></tr> <tr><td style="text-align: center;">3</td><td></td><td></td><td style="text-align: center;">11</td><td></td><td></td></tr> <tr><td style="text-align: center;">4</td><td></td><td></td><td style="text-align: center;">12</td><td></td><td></td></tr> <tr><td style="text-align: center;">5</td><td></td><td></td><td style="text-align: center;">13</td><td></td><td></td></tr> <tr><td style="text-align: center;">6</td><td></td><td></td><td style="text-align: center;">14</td><td></td><td></td></tr> <tr><td style="text-align: center;">7</td><td></td><td></td><td style="text-align: center;">15</td><td></td><td></td></tr> <tr><td style="text-align: center;">8</td><td></td><td></td><td style="text-align: center;">16</td><td></td><td></td></tr> </tbody> </table>	No.	Sample location <i>(Frame & Distance from boot topping)</i>	mg Sn/ kg	No.	Sample location <i>(Frame & distance from boot topping)</i>	mg Sn/ kg	1			9			2			10			3			11			4			12			5			13			6			14			7			15			8			16			
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6			14																																																					
7			15																																																					
8			16																																																					
4.	Results Number of specimens exceeding 2,500 mg/kg: 1 or more specimens exceeding 3,000 mg/kg <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> <u>Step 2 required</u> <input type="checkbox"/> Compliance, NO further analysis																																																						
5.	Additional comments concerning analysis of results from Specimens "A"																																																							
6.		Name Date Signature																																																						

7. Instrument I.D.:		Calibration Expire Date:						
8.	Specimens "B" results			total number of specimens "B" analysed :				
9.	No.	organotin (mg Sn/ kg) as Sn	No.	organotin (mg Sn/ kg) as Sn	No.	organotin (mg Sn/ kg) as Sn	No.	organotin (mg Sn/ kg) as Sn
	1		5		9		13	
	2		6		10		14	
	3		7		11		15	
	4		8		12		16	
10.	Results					<input type="checkbox"/> Non- compliance assumed <input type="checkbox"/> Compliance assumed		
		Number of specimens exceeding 2,500 mg/kg:						
		1 or more specimens exceeding 3,000 mg/kg			<input type="checkbox"/> Yes <input type="checkbox"/> No			
11.	Additional comments concerning analysis of results from Specimens "B"							
12.	Company				Name Date Signature			

FORM S/4

RECORD NUMBER	
----------------------	--

Name of ship : _____ IMO number : _____

METHOD 2 FIRST-STAGE ANALYSIS

1. Instrument I.D.:	Calibration Expire Date:
---------------------	--------------------------

2.	Sample location <i>(Frame & distance from boot topping)</i>	Specimen I.D.	Sample Disc	Content of Tin (mg/ kg)	max	mi n	Average
A		A1	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	
		A2	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	
		A3	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	Average
		A4	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	
		A5	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	mg/kg
		A6	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> >2,500 mg/kg
		A7	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> >3,000 mg/kg
		A8	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	
		A9	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	
B		B1	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	
		B2	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	
		B3	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	Average
		B4	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	
		B5	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	mg/kg
		B6	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> >2,500 mg/kg
		B7	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> >3,000 mg/kg
		B8	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	
		B9	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	
C		C1	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	
		C2	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	
		C3	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	Average
		C4	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	
		C5	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	mg/kg
		C6	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> >2,500 mg/kg
		C7	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> >3,000 mg/kg
		C8	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	
		C9	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	

D	D1	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	
	D2	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	
	D3	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	Average
	D4	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	
	D5	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	mg/kg
	D6	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> >2,500 mg/kg
	D7	<input type="checkbox"/> abrasive		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> >3,000 mg/kg
	D8	<input type="checkbox"/> metal		<input type="checkbox"/>	<input type="checkbox"/>	
	D9	<input type="checkbox"/> others		<input type="checkbox"/>	<input type="checkbox"/>	

3. Results First-Stage Analysis are above 2,500 mg/kg (are) above 3,000 mg/kg		<input type="checkbox"/> <u>Second-stage required</u>
4. Comments 		
5. Company	Name Date Signature	

FORM S/5

RECORD NUMBER	
----------------------	--

Name of ship : _____ IMO number : _____

METHOD 2 SECOND-STAGE ANALYSIS

1.	Calibration Expire Date:
----	---------------------------------

2.	Content of Tin First-Stage (XRF Analysis) (mg Sn / kg)	Content of Tin Second-Stage (as organotin) (mg Sn / kg)	Compliance
A			<input type="checkbox"/> >2,500mg/kg
			<input type="checkbox"/> >3,000mg/kg
B			<input type="checkbox"/> >2,500mg/kg
			<input type="checkbox"/> >3,000mg/kg
C			<input type="checkbox"/> >2,500mg/kg
			<input type="checkbox"/> >3,000mg/kg
D			<input type="checkbox"/> >2,500mg/kg
			<input type="checkbox"/> >3,000mg/kg

3.	Results Second-Stage Analysis	<input type="checkbox"/> Samples out of _____ are above 2,500mg (Sn)/kg (dry paint) <input type="checkbox"/> Sample(s) _____ is (are) above 3,000mg(Sn)/kg (dry paint)
----	--	---

4.	Comments
----	-----------------

5.	Laboratory	Name Date Signature
----	-------------------	--

PORT STATE PARTICULARS

Reporting authority: _____ **District office:** _____

Address: _____

**Telephone/Fax/
Mobile:** _____

E-mail: _____

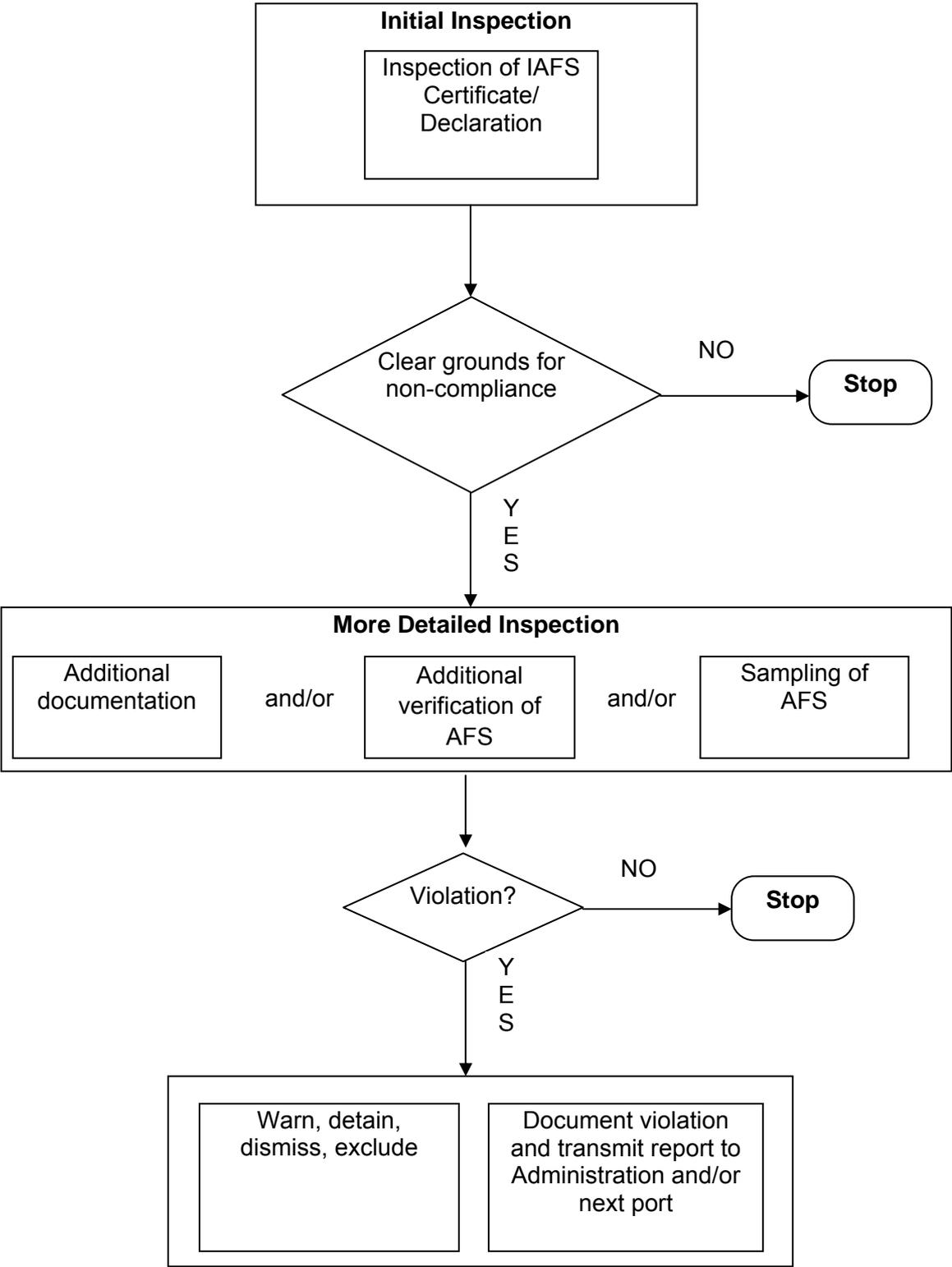
Name:
(duly authorized inspector of reporting authority) _____

Date: _____ **Signature:** _____

* * *

APPENDIX 2

AFS INSPECTION PROCESS



ANNEX 5

DRAFT MEPC CIRCULAR ON THE REVISED FORM OF SUPPLEMENT TO INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE

1 The Marine Environment Protection Committee, at its fifty-eighth session (October 2008), adopted the revised MARPOL Annex VI, by resolution MEPC.176(58), and the NO_x Technical Code 2008, by resolution MEPC.177(58). The two revised instruments entered into force on 1 July 2010.

2 The Marine Environment Protection Committee, at its sixty-first session (27 September to 1 October 2010), adopted the amendments to MARPOL Annex VI, by resolution MEPC.194(61), to revise the form of Supplement to the International Air Pollution Prevention (IAPP) Certificate to clearly and precisely document the ship's compliance with regulations 4 and 14 of the revised MARPOL Annex VI. The amendments are expected to enter into force on 1 February 2012 in accordance with the amendment procedure as prescribed in article 16(2)(g)(ii) of the MARPOL Convention.

3 The Marine Environment Protection Committee, at its sixtieth session, agreed to circulate the revised form of Supplement to the IAPP Certificate, and urged Member Governments to take early action before the revised form comes into force and for this purpose released circular MEPC.1/Circ.718.

4 The Marine Environment Protection Committee, [at its sixty-second session (11 to 15 July 2011)], recognizing that there is necessity to update MEPC.1/Circ.718, approved this circular, as recommended by Flag State Implementation Sub-Committee at its nineteenth session.

5 Member Governments are invited to use the revised form of Supplement to the IAPP Certificate when issuing the Supplement in accordance with the revised MARPOL Annex VI in line with the provisions of MSC-MEPC.5/Circ.6 on the Guidance on the timing of replacement of existing certificates by the certificates issued after the entry into force of amendments to certificates in IMO instruments, as appropriate*.

6 This circular supersedes MEPC.1/Circ.718.

* In this context the wording, "date of entry into force of the amendments", in paragraph 3.2 of MSC-MEPC.5/Circ.6 should be read as the date of entry into force of the amendments to regulations 4 and 14 of the revised MARPOL Annex VI.

ANNEX

**AMENDMENTS TO APPENDIX I OF THE REVISED MARPOL ANNEX VI
(REVISED FORM OF SUPPLEMENT TO THE INTERNATIONAL AIR POLLUTION
PREVENTION CERTIFICATE)**

Paragraph 2.3 of the form of Supplement to the International Air Pollution Prevention Certificate is amended as follows:

"2.3 Sulphur oxides (SO_x) and particulate matter (regulation 14)

2.3.1 When the ship operates outside of an Emission Control Area specified in regulation 14.3, the ship uses:

- .1 fuel oil with a sulphur content as documented by bunker delivery notes that does not exceed the limit value of:
 - 4.50% m/m (not applicable on or after 1 January 2012); or ..
 - 3.50% m/m (not applicable on or after 1 January 2020); or ..
 - 0.50% m/m, and/or

- .2 an equivalent arrangement approved in accordance with regulation 4.1 as listed in 2.6 that is at least as effective in terms of SO_x emission reductions as compared to using a fuel oil with a sulphur content limit value of:
 - 4.50% m/m (not applicable on or after 1 January 2012); or ..
 - 3.50% m/m (not applicable on or after 1 January 2020); or ..
 - 0.50% m/m

2.3.2 When the ship operates inside an Emission Control Area specified in regulation 14.3, the ship uses:

- .1 fuel oil with a sulphur content as documented by bunker delivery notes that does not exceed the limit value of:
 - 1.00% m/m (not applicable on or after 1 January 2015); or ..
 - 0.10% m/m, and/or

- .2 an equivalent arrangement approved in accordance with regulation 4.1 as listed in 2.6 that is at least as effective in terms of SO_x emission reductions as compared to using a fuel oil with a sulphur content limit value of:
 - 1.00% m/m (not applicable on or after 1 January 2015); or ..
 - 0.10% m/m

"

ANNEX 6

DRAFT ASSEMBLY RESOLUTION ON SURVEY GUIDELINES UNDER THE HARMONIZED SYSTEM OF SURVEY AND CERTIFICATION (HSSC), 2011

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO the adoption by:

- (a) the International Conference on the Harmonized System of Survey and Certification, 1988, of the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974, and the Protocol of 1988 relating to the International Convention on Load Lines, 1966, which, *inter alia*, introduced the harmonized system of survey and certification under the International Convention for the Safety of Life at Sea, 1974 and the International Convention on Load Lines, 1966, respectively;
- (b) resolution MEPC.39(29), of amendments to introduce the harmonized system of survey and certification into the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol relating thereto (MARPOL 73/78);
- (c) resolution MEPC.132(53), of amendments to introduce the harmonized system of survey and certification to the MARPOL Annex VI; and
- (d) the resolutions given below, of amendments to introduce the harmonized system of survey and certification into:
 - (i) the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) (resolutions MEPC.40(29) and MSC.16(58));
 - (ii) the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) (resolution MSC.17(58)); and
 - (iii) the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code) (resolutions MEPC.41(29) and MSC.18(58)),

RECALLING FURTHER that, by resolution A.1020(26), it adopted amendments to the Survey Guidelines under the Harmonized System of Survey and Certification, 2007, as adopted by resolution A.997(25), with a view to assisting Governments in the implementation of the requirements of the aforementioned instruments,

RECOGNIZING the need for the Survey Guidelines to be further revised to take into account the amendments to the IMO instruments referred to above, which have entered into force or become effective since the adoption of resolution A.1020(26),

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee, [at its eighty-ninth] session, and the Marine Environment Protection Committee, [at its sixty-second] session,

1. ADOPTS the Survey Guidelines under the Harmonized System of Survey and Certification, 2011, set out in the annex to the present resolution;
2. INVITES Governments carrying out surveys required by the relevant IMO instruments to follow the provisions of the annexed Survey Guidelines;
3. REQUESTS the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Survey Guidelines under review and amend them as necessary;
4. REVOKES resolutions A.997(25), A.1020(26) and MEPC.180(59).

* * *

ANNEX

**DRAFT SURVEY GUIDELINES UNDER THE HARMONIZED
SYSTEM OF SURVEY AND CERTIFICATION, 2011**

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GENERAL

1 INTRODUCTION

1.1 These Guidelines supersede the guidelines adopted by resolution A.997(25), as amended by resolution A.1020(26) and resolution MEPC.180(59), and take account of the Harmonized System of Survey and Certification in the following instruments:

- .1 International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974), as modified by its 1988 Protocol and as amended (SOLAS 74/88);
- .2 International Convention on Load Lines, 1966 (LLC 1966) and as modified by its 1988 Protocol, as amended (LL 66/88);
- .3 International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (MARPOL 73/78);
- .4 Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (MARPOL PROT 1997);
- .5 International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, as amended (IBC Code);
- .6 International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, as amended (IGC Code);
- .7 Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, as amended (BCH Code).

1.2 These Guidelines contain amendments to statutory instruments which have entered into force up to and including 31 December 2011 (see appendix 1):

- .1 Survey Guidelines under the 1974 SOLAS Convention, as modified by the 1988 Protocol relating thereto (annex 1);
- .2 Survey Guidelines under the 1966 Load Line Convention, as modified by the 1988 Protocol relating thereto (annex 2);
- .3 Survey Guidelines under the MARPOL Convention (annex 3); and
- .4 Survey Guidelines under the mandatory Codes (annex 4).

1.3 The harmonized system, a diagrammatic arrangement of which is given in the appendix 2, provides for:

- .1 a one-year standard interval between surveys, based on initial, annual, intermediate, periodical and renewal surveys, as appropriate, except for MARPOL Annex IV which is based on initial and renewal surveys;
- .2 a scheme providing the necessary flexibility to execute each survey, with provision for:

- completion of the renewal survey within 3 months before the expiry date of the existing certificate with no loss of its period of validity;
 - a "time window" of 6 months – from 3 months before to 3 months after the anniversary date of the certificate for annual, intermediate and periodical surveys;
- .3 a maximum period of validity of five years for all cargo ship certificates;
- .4 a maximum period of validity of 12 months for the Passenger Ship Safety Certificate;
- .5 a system for the extension of certificates limited to three months, enabling a ship to complete its voyage, or one month for ships engaged on short voyages;
- .6 when an extension has been granted, the period of validity of the new certificate starting from the expiry date of the existing certificate before its extension;
- .7 a flexible system for inspection of the outside of the ship's bottom on the following conditions:
- a minimum of two inspections during any five-year period of validity of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - the interval between any two such inspections shall not exceed 36 months;
- .8 a Cargo Ship Safety Certificate under SOLAS 74/88, as an alternative to separate Cargo Ship Safety Construction, Cargo Ship Safety Equipment and Cargo Ship Safety Radio Certificates;
- .9 a flexible system concerning the frequency and the period of validity of certificates, subject to the minimum pattern of surveys being maintained.
- 1.4 In implementing the harmonized system, the following principal changes have been made to the survey and certification requirements of SOLAS 74/88:
- .1 unscheduled inspections are no longer included and annual surveys are mandatory for cargo ships;
 - .2 intervals between the periodical surveys of equipment covered by the Cargo Ship Safety Equipment Certificate are alternately two and three years instead of two years;
 - .3 intermediate surveys are required for all ships under the Cargo Ship Safety Construction Certificate;
 - .4 inspection of the outside of the ship's bottom is required for all cargo ships;
 - .5 intermediate surveys for the Cargo Ship Safety Construction Certificate are held within three months of either the second or third anniversary date;

- .6 all cargo ship certificates may be issued for any period of validity up to and including five years;
 - .7 there is provision for a Cargo Ship Safety Certificate;
 - .8 the extension provisions have been reduced from five months to three months to enable a ship to complete its voyage and the extension for one month for a period of grace is limited to ships engaged on short voyages.
- 1.5 With regard to LLC 66/88, the principal changes to the requirements for survey and certification are the introduction of similar extension provisions (see 1.4.8) and linking of the period of validity of the new certificate to the expiry date of the previous certificate (see 1.3.6).
- 1.6 With regard to MARPOL and IBC Code, IGC Code and BCH Code, the main changes are the linking of the period of validity of the new certificate to the expiry date of the previous certificate (see 1.3.6), the holding of the intermediate survey within three months of the second or third anniversary date and the introduction of the same extension provisions (see 1.4.8).

2 TYPES OF SURVEY

The types of survey used in the harmonized system are as follows:

- (I) 2.1 *An initial survey* is a complete inspection before a ship is put into service of all the items relating to a particular certificate, to ensure that the relevant requirements are complied with and that these items are satisfactory for the service for which the ship is intended.
- (P) 2.2 *A periodical survey* is an inspection of the items relating to the particular certificate to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.
- (R) 2.3 *A renewal survey* is the same as a periodical survey but also leads to the issue of a new certificate.
- (In) 2.4 *An intermediate survey* is an inspection of specified items relevant to the particular certificate to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.
- (A) 2.5 *An annual survey* is a general inspection of the items relating to the particular certificate to ensure that they have been maintained and remain satisfactory for the service for which the ship is intended.
- (B) 2.6 *An inspection of the outside of the ship's bottom* is an inspection of the underwater part of the ship and related items to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.
- (Ad) 2.7 *An additional survey* is an inspection, either general or partial according to the circumstances, to be made after a repair resulting from investigations or whenever any important repairs or renewals are made.
- 2.8 List of types of survey in Conventions and Codes

(I) 2.8.1 *Initial surveys*

SOLAS 74/88 chapter I regulation 7(a)(i)
chapter I regulation 8(a)(i)
chapter I regulation 9(a)(i)
chapter I regulation 10(a)(i)
LLC 66/88 article 14(1)(a)
MARPOL Annex I regulation 6.1.1
MARPOL Annex II regulation 8.1.1
MARPOL Annex IV regulation 4.1.1
MARPOL Annex VI regulation 5.1.1
IBC Code regulation 1.5.2.1.1
IGC Code regulation 1.5.2.1.1
BCH Code regulation 1.6.2.1.1

(P) 2.8.2 *Periodical surveys*

SOLAS 74/88 chapter I regulation 8(a)(iii)
chapter I regulation 9(a)(iii)

(R) 2.8.3 *Renewal surveys*

SOLAS 74/88 chapter I regulation 7(a)(ii)
chapter I regulation 8(a)(ii)
chapter I regulation 9(a)(ii)
chapter I regulation 10(a)(ii)
LLC 66/88 article 14(1)(b)
MARPOL Annex I regulation 6.1.2
MARPOL Annex II regulation 8.1.2
MARPOL Annex IV regulation 4.1.2
MARPOL Annex VI regulation 5.1.2
IBC Code regulation 1.5.2.1.2
IGC Code regulation 1.5.2.1.2
BCH Code regulation 1.6.2.1.2

(In) 2.8.4 *Intermediate surveys*

SOLAS 74/88 chapter I regulation 10(a)(iii)
MARPOL Annex I regulation 6.1.3
MARPOL Annex II regulation 8.1.3
MARPOL Annex VI regulation 5.1.3
IBC Code regulation 1.5.2.1.3
IGC Code regulation 1.5.2.1.3
BCH Code regulation 1.6.2.1.3

(A) 2.8.5 *Annual surveys*

SOLAS 74/88 chapter I regulations 8(a)(iv) and 10(a)(iv)
LLC 66/88 article 14(1)(c)
MARPOL Annex I regulation 6.1.4
MARPOL Annex II regulation 8.1.4
MARPOL Annex VI regulation 5.1.4
IBC Code regulation 1.5.2.1.4
IGC Code regulation 1.5.2.1.4
BCH Code regulation 1.6.2.1.4

(B) 2.8.6 *Inspection of the outside of the ship's bottom*

SOLAS 74/88 chapter I regulation 10(a)(v)

(Ad) 2.8.7 *Additional surveys*

SOLAS 74/88 chapter I regulation 7(a)(iii)
chapter I regulation 7(b)(iii)
chapter I regulation 8(a)(iv)
chapter I regulation 10(a)(iv)

LLC 66/88 article 14(1)(c)

MARPOL Annex I regulation 6.1.5

MARPOL Annex II regulation 8.1.5

MARPOL Annex IV regulation 4.1.3

MARPOL Annex VI regulation 5.1.5

IBC Code regulation 1.5.2.1.4

IGC Code regulation 1.5.2.1.4

BCH Code regulation 1.6.2.1.4

3 APPLICATION AND ARRANGEMENT OF THE GUIDELINES

3.1 The Guidelines provide a general framework upon which Administrations will be able to base their arrangements for carrying out surveys. It is recognized that survey provisions contained in the Guidelines are not necessarily applicable to all types and sizes of ship.

3.2 Whilst the Guidelines are intended to cover instruments listed in 1.1, they should be applied, as appropriate, to drilling rigs and other platforms covered by MARPOL Annex I regulation 39 and Annex VI regulation 5.

3.3 A description of the various types of survey is given in section 4 and, as shown on the contents page, this is followed by the detailed requirements for the various surveys for each of the certificates.

3.4 When appropriate, the detailed requirements for the various surveys contain a section that is applicable to all cargo ships followed by a section that only applies to oil tankers.

3.5 Whilst the Convention or Code references are included, when possible, it should be noted that, in general, it has not been possible to indicate where there are differing requirements dependent upon the ship's year of build. Consequently, care should be taken in applying specific requirements, particularly where there have been amendments that are only applicable to ships built after a certain date.

3.6 Although also part of the requirements for the Cargo Ship Safety Construction Certificate, a separate section is provided for inspection of the outside of the ship's bottom.

3.7 SOLAS 74/88 regulation 1/12(v) provides for a Cargo Ship Safety Certificate to be issued as an alternative to the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Construction Certificate and the Cargo Ship Safety Radio Certificate. Consequently, the surveys for the issue and renewal of the Cargo Ship Safety Certificate should be in accordance with the certificates it replaces and, similarly, the

annual and intermediate surveys should be the same as those required for the replaced certificates and the appropriate sections of the Cargo Ship Safety Certificate, endorsed accordingly.

3.8 On the left-hand side of each item to be surveyed may be found two letters in brackets, the first indicating the certificate to which the survey relates, as follows:

- (E) for the Cargo Ship Safety *Equipment* Certificate;
- (C) for the Cargo Ship Safety *Construction* Certificate;
- (R) for the Cargo Ship Safety *Radio* Certificate;
- (L) for the International *Load Line* Certificate;
- (O) for the International *Oil Pollution* Prevention Certificate;
- (N) for the International Pollution Prevention Certificate for Carriage of *Noxious Liquid Substances* in Bulk;
- (S) for the International Sewage Pollution Prevention Certificate;
- (A) for the International Air Pollution Prevention Certificate;
- (D) for the International Certificate of Fitness for the Carriage of *Dangerous Chemicals* in Bulk or the Certificate of Fitness for the Carriage of *Dangerous Chemicals* in Bulk;
- (G) for the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (P) for the *Passenger Ship* Safety Certificate;

and the second for the type of survey, as follows:

- (I) for the *initial* survey;
- (A) for the *annual* survey;
- (In) for the *intermediate* survey;
- (P) for the *periodical* survey;
- (R) for the *renewal* survey;
- (B) for inspection of the outside of the *ship's bottom*;
- (Ad) for *additional* survey.

Consequently, for example, "(EI)", "(OIn)" and "(PR)" indicate the initial survey for the Cargo Ship Safety Equipment Certificate, the intermediate survey for the International Oil Pollution Prevention Certificate and the renewal survey for the Passenger Ship Safety Certificate respectively.

3.9 The amplification of various terms and conditions are given in section 5.

4 DESCRIPTION OF THE VARIOUS TYPES OF SURVEYS

(I) 4.1 Initial surveys

4.1.1 Frequency

4.1.1.1 The initial survey, as required by the relevant regulations (see 2.8.1), should be held before the ship is put in service, or when a new instrument applies to an existing ship, and the appropriate certificate is issued for the first time.

4.1.2 General

4.1.2.1 The initial survey should include a complete inspection, with tests when necessary, of the structure, machinery and equipment to ensure that the requirements relevant to the particular certificate are complied with and that the structure, machinery and equipment are fit for the service for which the ship is intended.

4.1.2.2 The initial survey should consist of:

- .1 an examination of the plans, diagrams, specifications, calculations and other technical documentation to verify that the structure, machinery and equipment comply with the requirements relevant to the particular certificate;
- .2 an inspection of the structure, machinery and equipment to ensure that the materials, scantlings, construction and arrangements, as appropriate, are in accordance with the approved plans, diagrams, specifications, calculations and other technical documentation and that the workmanship and installation are in all respects satisfactory;
- .3 a check that all the certificates, record books, operating manuals and other instructions and documentation specified in the requirements relevant to the particular certificate have been placed on board the ship.

4.1.3 Examination of plans and designs

4.1.3.1 An application for an initial survey should be accompanied by plans and designs referred to in sections 1, 2, 4 and 5 of Annex 1 and in Annexes 2, 3 and 4, as appropriate, together with:

- .1 the particulars of the ship;
- .2 any exemptions sought;
- .3 any special conditions.

(A) **4.2 Annual surveys**

4.2.1 *Frequency*

4.2.1.1 The annual survey, as required by the relevant regulations (see 2.8.5) and as shown diagrammatically in the appendix 2, should be held within three months before or after each anniversary date of the certificate.

4.2.2 *General*

4.2.2.1 An annual survey should enable the Administration to verify that the condition of the ship, its machinery and equipment is being maintained in accordance with the relevant requirements.

4.2.2.2 In general, the scope of the annual survey should be as follows:

- .1 it should consist of a certificate examination, a visual examination of a sufficient extent of the ship and its equipment, and certain tests to confirm that their condition is being properly maintained;
- .2 it should also include a visual examination to confirm that no unapproved modifications have been made to the ship and its equipment;
- .3 the content of each annual survey is given in the respective guidelines. The thoroughness and stringency of the survey should depend upon the condition of the ship and its equipment;
- .4 should any doubt arise as to the maintenance of the condition of the ship or its equipment, further examination and testing should be conducted as considered necessary.

4.2.3 Where an annual survey has not been carried out within the due dates, reference should be made to 5.6.

(In) **4.3 Intermediate surveys**

4.3.1 *Frequency*

4.3.1.1 The intermediate survey, as required by the relevant regulations (see 2.8.4) and as shown diagrammatically in the appendix 2, should be held within three months before or after the second anniversary date or within three months before or after the third anniversary date of the appropriate certificate and should take the place of one of the annual surveys.

4.3.2 *General*

4.3.2.1 The intermediate survey should be an inspection of items relevant to the particular certificate to ensure that they are in a satisfactory condition and are fit for the service for which the ship is intended.

4.3.2.2 When specifying items of hull and machinery for detailed examination, due account should be taken of any continuous survey schemes that may be applied by classification societies.

4.3.2.3 Where an intermediate survey has not been carried out within the due dates, reference should be made to 5.6.

(P) **4.4 Periodical surveys**

4.4.1 *Frequency*

4.4.1.1 The periodical survey, as required by the relevant regulations (see 2.8.2) and as shown diagrammatically in the appendix 2, should be held within three months before or after the second anniversary date or within three months before or after the third anniversary date in the case of the cargo ship safety equipment certificate and should take the place of one of the annual surveys and within three months before or after each anniversary date in the case of the cargo ship safety radio certificate.

4.4.2 *General*

4.4.2.1 The periodical survey should consist of an inspection, with tests when necessary, of the equipment to ensure that requirements relevant to the particular certificate are complied with and that they are in a satisfactory condition and are fit for the service for which the ship is intended.

4.4.2.2 The periodical survey should also consist of a check that all the certificates, record books, operating manuals and other instructions and documentation specified in the requirements relevant to the particular certificate are on board the ship.

4.4.2.3 Where a periodical survey has not been carried out within the due dates, reference should be made to 5.6.

(R) **4.5 Renewal surveys**

4.5.1 *Frequency*

4.5.1.1 The renewal survey, as required by the relevant regulations (see 2.8.3) and as shown diagrammatically in the appendix 2, should be held before the appropriate certificate is renewed.

4.5.2 *General*

4.5.2.1 The renewal survey should consist of an inspection, with tests when necessary, of the structure, machinery and equipment to ensure that the requirements relevant to the particular certificate are complied with and that they are in a satisfactory condition and are fit for the service for which the ship is intended.

4.5.2.2 The renewal survey should also consist of a check that all the certificates, record books, operating manuals and other instructions and documentation specified in the requirements relevant to the particular certificate are on board the ship.

(B) **4.6 Inspections of the outside of the ship's bottom of cargo ships**

4.6.1 *Frequency*

4.6.1.1 There should be a minimum of two inspections of the outside of the ship's bottom during any five year period (see 5.7), except where SOLAS 74/88 regulation I/14(e) or (f) is applicable. One such inspection should be carried out on or after the fourth annual survey in

conjunction with the renewal of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate. Where the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate has been extended under SOLAS 74/88 regulation 1/14(e) or (f), this five-year period may be extended to coincide with the validity of the certificate. In all cases the interval between any two such inspections should not exceed 36 months.

4.6.2 *General*

4.6.2.1 The inspection of the outside of the ship's bottom and the survey of related items (see 5.1) should include an inspection to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended¹.

4.6.2.2 Inspections of the outside of the ship's bottom should normally be carried out with the ship in a dry dock. However, consideration may be given to alternate inspections being carried out with the ship afloat. Special consideration should be given before ships of 15 years of age and over other than bulk carriers and oil tankers are permitted to have such surveys afloat. Inspection of the outside of the ship's bottom of bulk carriers and oil tankers of 15 years of age and over should be carried out with the ship in dry dock. Inspections with the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably trained staff are available. For ships subject to enhanced survey, the provisions of paragraph 2.2.2² of Annexes A or B, as applicable, of resolution A.744(18), as amended, should apply.

4.6.3 Where an inspection of the ships bottom has not been carried out before the due dates reference should be made to 5.6.

(Ad) **4.7 Additional surveys**

4.7.1 Whenever an accident occurs to a ship or a defect is discovered which affects the safety or integrity of the ship or the efficiency or completeness of its equipment, the master or owner should make a report at the earliest opportunity to the Administration, the nominated surveyor or recognized organization responsible for issuing the relevant certificate. The Administration, the nominated surveyor or recognized organization responsible for issuing the relevant certificate should then initiate an investigation to determine whether a survey, as required by the regulations applicable to the particular certificate, is necessary. This additional survey, which may be general or partial according to the circumstances, should be such as to ensure that the repairs and any renewals have been effectively made and that the ship and its equipment continue to be fit for the service for which the ship is intended.

4.8 Completion of surveys

4.8.1 If a survey shows that the condition of the ship or its equipment is unsatisfactory, the officer of the Administration, nominated surveyor or recognized organization should be guided by the requirements of SOLAS 74/88 regulation 1/6(c), MARPOL Annex I regulation 3.4, MARPOL Annex II regulation 8.2.5, MARPOL Annex IV regulation 4.5, MARPOL Annex VI regulation 5.3.3, IBC Code regulation 1.5.1.3, IGC Code regulation 1.5.1.3 and BCH Code regulation 1.6.1.3. These instruments require that

¹ Refer to MSC.1/Circ.1223 on the Guidelines for pre-planning of surveys in dry dock of ships which are not subject to the enhanced programme of inspections.

² 2.2.2 For ships 15 years of age and over, inspection of the outside of the ship's bottom should be carried out with the ship in dry dock. For ships less than 15 years of age, alternate inspections of the ship's bottom not conducted in conjunction with the renewal survey may be carried out with the ship afloat. Inspections with the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably trained staff are available.

corrective action be taken immediately and the Administration notified in due course. In cases where the corrective action has not been undertaken the relevant certificate should be withdrawn and the Administration notified immediately. If the ship is in the port of another Party, the appropriate authorities of the port State should also be notified immediately.

4.8.2 Although LLC 66/88 does not contain specific requirements, if a load line survey shows the condition of the ship or its equipment is unsatisfactory, the officer of the Administration, nominated surveyor or recognized organization should, nevertheless, be guided by 4.8.1.

5 AMPLIFICATION OF TERMS AND CONDITIONS

5.1 Definition of related items

Reference: SOLAS 74/88 regulation I/10(b)(v).

Related items mean those items which may only be inspected when the ship is in dry dock or undergoing an in-water examination of the outside of its bottom. For oil tankers, chemical tankers and gas carriers, this may mean that the ship has to be specially prepared by, for example, being cleaned and gas-freed. Then the survey of items such as the internal examination of cargo tanks, as referred to in (CIn) 2.3.2 and (CIn) 2.3.3 in Annex 1 may be undertaken at the same time.

5.2 Extending to five years a certificate issued for less than five years

References: SOLAS 74/88 regulation I/14(c), LLC 66/88 article 19(3), MARPOL Annex I regulation 10.3, MARPOL 90/04 Annex II regulation 10.3, MARPOL Annex IV regulation 8.3, MARPOL Annex VI regulation 9.3, IBC Code regulation 1.5.6.3, IGC Code regulation 1.5.6.3, BCH Code regulation 1.6.6.3.

Where a certificate has been issued for a period of less than five years, it is permissible under these regulations or article to extend the certificate so that its maximum period of validity is five years provided that the pattern of surveys for a certificate with a five-year period of validity is maintained (see appendix 2). This means that, for example, if a request is made to extend a two-year Cargo Ship Safety Equipment Certificate to five years, then a periodical and two further annual surveys, as detailed in SOLAS 74/88 regulation I/8, would be required. Also, for example, if it was intended to extend a four-year Cargo Ship Safety Construction Certificate to five years, then an additional annual survey would be required, as detailed in SOLAS 74/88 regulation I/10. Where a certificate has been so extended, it is still permissible to also extend the certificate under SOLAS 74/88 regulations I/14(e) and (f), LLC 66/88 articles 19(5) and (6), MARPOL Annex I regulations 10.5 and .6, MARPOL Annex II regulations 10.5 and 6, MARPOL Annex IV regulations 8.5 and 8.6, MARPOL Annex VI regulations 9.5 and 9.6, IBC Code regulations 1.5.6.5 and 1.5.6.6, IGC Code, regulations 1.5.6.5 and 1.5.6.6, BCH Code regulations 1.6.6.5 and 1.6.6.6, when no additional surveys would be required but, of course, the new certificate issued after the renewal survey would date from the five-year expiry of the existing certificate, in accordance with SOLAS 74/88 regulation I/14(b)(ii), LLC 66/88 article 19(2)(b), MARPOL Annex I regulation 10.2.2, MARPOL Annex II regulation 10.2.2, MARPOL Annex IV regulation 8.2.2, MARPOL Annex VI regulation 9.2.2, IBC Code regulation 1.5.6.2.2, IGC Code regulation 1.5.6.2.2 and BCH Code regulation 1.6.6.2.2.

5.3 Extending the period between inspections of the outside of the ship's bottom

Reference: SOLAS 74/88 regulation I/10(a)(v).

This permits the period of five years in which two inspections of the ship's bottom are to be carried out to be extended when the Cargo Ship Safety Construction Certificate is extended under regulation I/14(e) and (f). However, no extension should be permitted on the period of 36 months between any two such inspections. If the first ship's bottom inspection is carried out between 24 and 27 months then the thirty-sixth-month limitation may prevent the certificate being extended by the periods permitted in regulation I/14(e) and (f).

5.4 Definition of "short voyage"

SOLAS 74/88 regulation I/14(f), LLC 66/88 article 19(6), MARPOL Annex I regulation 10.6, MARPOL Annex II regulation 10.6, MARPOL Annex IV regulation 8.6, MARPOL Annex VI regulation 9.6, IBC Code regulation 1.5.6.6, IGC Code regulation 1.5.6.6, BCH Code regulation 1.6.6.6.

For the purpose of these regulations or article, a "short voyage" means a voyage where neither the distance from the port in which the voyage begins and the final port of destination nor the return voyage exceeds 1,000 miles.

5.5 Application of "special circumstances"

References: SOLAS 74/88 regulation I/14(g), LLC 66/88 article 19(7), MARPOL Annex I, Regulation 10.7, MARPOL Annex II regulation 10.7, MARPOL Annex IV regulation 8.7, MARPOL Annex VI regulation 9.7, IBC Code regulation 1.5.6.7, IGC Code regulation 1.5.6.7 and the BCH Code regulation 1.6.6.7.

The purpose of these regulations or article is to permit Administrations to waive the requirement that a certificate issued following a renewal survey that is completed after the expiry of the existing certificate should be dated from the expiry date of the existing certificate. The special circumstances when this could be permitted are where the ship has been laid-up or has been out of service for a considerable period because of a major repair or modification. Whilst the renewal survey would be as extensive as if the ship had continued in service, the Administration should consider whether additional surveys or examinations are required depending on how long the ship was out of service and the measures taken to protect the hull and machinery during this period. Where this regulation is invoked, it is reasonable to expect an examination of the outside of the ship's bottom to be held at the same time as the renewal survey when it would not be necessary to include any special requirements for cargo ships for the continued application of SOLAS 74/88 regulation I/10(a)(v).

5.6 Revalidation of certificates

References: SOLAS 74/88 regulation I/14(i)(i), LLC 66/88 article 19(9)(c), MARPOL Annex I Regulation 10.9.1, MARPOL Annex II regulation 10.9.1, MARPOL Annex IV regulation 8.8.1, MARPOL Annex VI regulation 9.9.1, IBC Code regulation 1.5.6.9.1, IGC Code regulation 1.5.6.9.1 and BCH Code regulation 1.6.6.9.1.

A certificate ceases to be valid if the periodical, intermediate or annual survey, as appropriate, or the inspection of the outside of the ship's bottom is not completed within the periods specified in the relevant regulation or article. The validity of the certificate should be restored by carrying out the appropriate survey which, in such circumstances, should consist

of the requirements of the survey that was not carried out, but its thoroughness and stringency should have regard to the time this survey was allowed to lapse. The Administration concerned should then ascertain why the survey was allowed to lapse and consider further action.

5.7 Meaning of "any five-year period"

Reference: SOLAS 74/88 regulation I/10(a)(v).

Any five-year period is the five-year period of validity of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate.

5.8 Surveys required after transfer of the ship to the flag of another State

The certificates cease to be valid when a ship transfers to the flag of another State and it is required that the Government of the State to which the ship transfers shall not issue new certificates until it is fully satisfied that the ship is being properly maintained and that there have been no unauthorized changes made to the structure, machinery and equipment. When so requested, the Government of the State whose flag the ship was formerly entitled to fly is obliged to forward, as soon as possible, to the new Administration copies of certificates carried by the ship before the transfer and, if available, copies of the relevant survey reports and records, such as record of safety equipment and conditions of assignment for load line. When fully satisfied by an inspection that the ship is being properly maintained and that there have been no unauthorized changes, in order to maintain the harmonization of the surveys the new Administration may give due recognition to initial and subsequent surveys carried out by, or on behalf of, the former Administration and issue new certificates having the same expiry date as the certificates that ceased to be valid because of the change of flag.

5.9 Recommended conditions for extending the period of validity of a certificate

In SOLAS and other mandatory IMO instruments the following provision applies: "If a ship at the time when a certificate expires is not in a port in which it is to be surveyed, the Administration may extend the period of validity of a certificate but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases *where it appears proper and reasonable to do so*. No certificate shall be extended for a period longer than three months, and a ship to which an extension is granted shall not, on its arrival in the port in which is to be surveyed, be entitled by virtue of such extension to leave that port without having a new certificate."

If a ship is in a port where the required survey cannot be completed, and where the Convention allows the Administration to extend the certificate when it is proper and reasonable to do so, the Administration should be guided by the following:

- .1 an additional survey, equivalent to at least the same scope of an annual survey required by the relevant certificate(s) should be carried out;
- .2 the renewal survey should be carried out to the maximum extent possible;
- .3 in cases where a dry docking is required, but cannot be carried out, an underwater inspection of the ship's bottom should be carried out;

- .4 in cases where an underwater inspection is not possible (e.g., poor water visibility, draft restrictions, excessive current, refusal by the port Authority), an internal inspection of the ship's bottom structure, to the maximum extent practicable, should be carried out;
- .5 the ship should be allowed to sail directly to a named final agreed cargo discharge port and then directly to a named agreed port to complete the survey and/or dry docking;
- .6 the extension period should be for the minimum amount of time needed to complete the survey and/or dry docking under the relevant certificate(s);
- .7 the condition of the ship found by the surveys indicated above should be considered in determining the duration, distance and operational restrictions, if any, of the voyage needed to complete the survey and/or dry docking; and
- .8 the extension period of the relevant statutory certificate(s) should not exceed the period of validity of the certificate which may be issued to document compliance with the structural, mechanical and electrical requirements of the recognized classification society.

5.10 Inspection of the outside of the passenger ship's bottom

A minimum of two of the inspections of the outside of the ship's bottom during any five-year period should be conducted in dry-dock. In all cases, the maximum interval between any two dry-dock bottom inspections should not exceed 36 months.

Where acceptable to the Administration, the minimum number of inspections in dry-dock of the outside of the bottom of a passenger ship (which is not a ro-ro passenger ship) in any five-year period may be reduced from two to one³. In such cases the interval between consecutive inspections in dry-dock shall not exceed 60 months.

Note: The definition of "any five-year period" is the five-year period of validity of the International Load Line Certificate.

Inspections of the ship's bottom required for the renewal survey that are not conducted in dry-dock may be carried out with the ship afloat. The bottom inspection, regardless of method, should be carried out within the allowable time window for the Passenger Ship Safety Certificate renewal survey (i.e. within the 3 months time window before the expiry date of the certificate). Additionally, inspections of the outside of the ship's bottom conducted afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably qualified staff is available. Rudder bearing clearances specified in (PR) 5.2.2.1 need not be taken at the afloat inspections.

Special consideration should be given to ships 15 years of age or over before being permitted to credit inspections afloat.

³ Refer to MSC.1/Circ.1348 on the Guidelines for the assessment of technical provisions for the performance of an in-water survey in lieu of bottom inspection in dry-dock to permit one dry-dock examination in any five-year period for passenger ships other than ro-ro passenger ships.

If a survey in dry-dock is not completed within the maximum intervals referred to above, the Passenger Ship Safety Certificate shall cease to be valid until the survey in dry-dock is completed.

5.11 Survey of radio installations

The survey of the radio installations, including those used in life-saving appliances, should always be carried out by a qualified radio surveyor who has necessary knowledge of the requirements of the 1974 SOLAS Convention, the International Telecommunication Union's Radio Regulations and the associated performance standards for radio equipment. The radio survey should be carried out using suitable test equipment capable of performing all the relevant measurements required by these guidelines. On satisfactory completion of the survey, the radio surveyor should forward a report of the survey, which should also state the organization he represents, to the authorities responsible for the issue of the ship's Cargo Ship Safety Radio Certificate or Passenger Ship Safety Certificate.

5.12 Survey of the automatic identification system (AIS)

The survey of the automatic identification system should always be carried out by a qualified radio surveyor who has necessary knowledge of the requirements of the 1974 SOLAS Convention, the International Telecommunication Union's Radio Regulations and the associated performance standards for radio equipment. The survey of the automatic identification system should be carried out using suitable test equipment capable of performing all the relevant measurements required by and in accordance with the Guidelines on Annual Testing of the Automatic Identification System (AIS) MSC.1/Circ.1252.

ANNEX 1

**SURVEY GUIDELINES UNDER THE 1974 SOLAS CONVENTION,
AS MODIFIED BY THE 1988 PROTOCOL RELATING THERETO**

- (E) 1 **GUIDELINES FOR SURVEYS FOR THE CARGO SHIP SAFETY EQUIPMENT CERTIFICATE**
- (EI) 1.1 **Initial surveys** – see part "General" section 4.1.
- (EI) 1.1.1 For the life-saving appliances and the other equipment of cargo ships the examination of plans and designs should consist of:
- (EI) 1.1.1.1 examining the plans for the fire pumps, fire mains, hydrants, hoses and nozzles and the international shore connection (SOLAS 74/00 regs.II-2/10.2 and 10.4.4 and FSSC chs.2 and 12);
- (EI) 1.1.1.2 checking the provision, specification and arrangements of the fire extinguishers (SOLAS 74/00 reg.II-2/10.3) (SOLAS 74/88 reg.II-2/6);
- (EI) 1.1.1.3 checking the provision, specification and arrangements of the fire fighters' outfits and emergency escape breathing devices (EEBDs) (SOLAS 74/00 regs.II-2/10.10, 13.3.4 and 13.4.3; FSSC ch.3) (SOLAS 74/88 reg.II-2/17) (BCH Code ch.III Part E);
- (EI) 1.1.1.4 examining the plans for the fire-extinguishing arrangements in the machinery spaces (SOLAS 74/00 regs.II-2/10.4 and 10.5 (except 10.5.5); FSSC chs.5, 6 and 7) (SOLAS 74/88 reg.II-2/7);
- (EI) 1.1.1.5 examining the plans for the special arrangements in the machinery spaces (SOLAS 74/00 regs.II-2/5.2, 8.3 and 9.5) (SOLAS 74/88 reg.II-2/11);
- (EI) 1.1.1.6 checking the provision of a fixed fire detection and fire alarm system for machinery spaces including periodically unattended machinery spaces (SOLAS 74/00 regs.II-2/7.2, 7.3 and 7.4) (SOLAS 74/88 regs.II-2/13 and 14);
- (EI) 1.1.1.7 checking the provision of a fixed fire detection and fire alarm system and/or a sprinkler, fire detection and fire alarm system in accommodation and service spaces and control stations (SOLAS 74/00 regs.II-2/7.2, 7.3, 7.5.5, 7.7 and 10.6.2; FSSC chs.8 and 9) (SOLAS 74/88 reg.II-2/52);
- (EI) 1.1.1.8 checking the provision of a fire-extinguishing system for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5 and 7) (SOLAS 74/88 regs.II-2/18.7) (BCH Code ch.III Part E);
- (EI) 1.1.1.9 examining the arrangements for remote closing of valves for oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.2.3.4) (SOLAS 74/88 reg.II-2/15.2.5);

- (E1) 1.1.1.10 examining the plans for the fire protection arrangements in cargo spaces for general cargo and dangerous goods (SOLAS 74/00 regs.II-2/10.7 and 19) (SOLAS 74/88 regs.II-2/53 and 54);
- (E1) 1.1.1.11 examining the plans for the fire protection arrangements in vehicle, special category and ro-ro spaces (SOLAS 74/00 reg.II-2/20 (except 20.2.2 and 20.5); FSSC chs.5, 6, 7, 9 and 10) (SOLAS 74/88 regs.II-2/37, 38 and 53);
- (E1) 1.1.1.12 checking navigation bridge visibility (SOLAS 74/00 reg.V/22);
- (E1) 1.1.1.13 examining the plans for the helicopter facilities (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 regs.II-2/18.8);
- (E1) 1.1.1.14 examining the plans for the special arrangements for the carriage of dangerous goods, when appropriate, including water supplies, electrical equipment and wiring, fire detection, ventilation, bilge pumping, personnel protection and any water spray system (SOLAS 74/00 reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4); FSSC chs.9 and 10) (SOLAS 74/88 reg.II-2/54);
- (E1) 1.1.1.15 examining the provision and disposition of the survival craft and rescue boats and, where applicable, marine evacuation systems (SOLAS 74/88 regs.III/11 to 16, 31 and 33);
- (E1) 1.1.1.16 examining, where applicable, the approved documentation for the alternative design and arrangements (SOLAS 06 reg.III/38);
- (E1) 1.1.1.17 examining the design of the survival craft, including their equipment, launching and recovery appliances and embarkation and launching arrangements (SOLAS 74/96/06 regs.III/4,16, 31, 32 to 33; LSAC sections. 3.2, 4.1 to 4.9, 6.1 and 6.2);
- (E1) 1.1.1.18 checking that the life-saving appliances are to be of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (E1) 1.1.1.19 examining the design of the rescue boats, including their equipment and launching and recovery appliances and arrangements (SOLAS 74/00 regs.III/17 and 31; LSAC sections 5.1 and 6.1);
- (E1) 1.1.1.20 examining the provision, specification and stowage of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 reg.III/6);
- (E1) 1.1.1.21 examining the provision, specification and stowage of the distress flares and the line-throwing appliance and the provision of onboard communications equipment and the general alarm system (SOLAS 74/00 reg.II-2/12.1 and 12.2, and regs.III/6 and 18; and LSAC sections 3.1, 7.1 and 7.2);
- (E1) 1.1.1.22 examining the provision, specification and stowage of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke

- signals and buoyant lines, lifejackets⁴, immersion suits and anti-exposure suits (SOLAS 74/00/06 regs.III/7 and 32; LSAC sections 2.1 to 2.5 and 3.1 to 3.3);
- (EI) 1.1.1.23 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSAC section 2.3.1);
- (EI) 1.1.1.24 examining the plans for the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including the supply from the emergency source of power (SOLAS 74/88 regs.II-1/43 and III/11);
- (EI) 1.1.1.25 examining the plans for the positioning of, and the specification for, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea (COLREG) in force, rules 20 to 24, 27 to 30 and 33);
- (EI) 1.1.1.26 examining the plans relating to the bridge design and arrangement of navigational systems and equipment and bridge procedures (SOLAS 74/00 regs.V/15 and 19);
- (EI) 1.1.1.27 checking the provision and specification of the following navigation equipment as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), automatic identification system, electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and distance measuring device(s), rudder angle indicator, propeller rate of revolution indicator, variable-pitch propeller pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, means of communication with emergency steering position, a pelorus or compass bearing device, means for correcting heading and bearings, a Bridge Navigational Watch Alarm System (BNWAS) as applicable and ECDIS including back-up arrangements as applicable (SOLAS 74/00/09 reg.V/19);
- (EI) 1.1.1.28 checking the provision and specification of voyage data recorder (SOLAS 74/00 reg.V/20);
- (EI) 1.1.1.29 checking the provision and specification of the long-range identification and tracking system (SOLAS 04 reg.V/19-1);
- (EI) 1.1.1.30 checking the provision and specification of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/88 reg.V/23);
- (EI) 1.1.1.31 checking the provision of means of embarkation and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders (SOLAS 08 reg.II-1/3-9).

⁴ Regulation III/7.2.1.5 should be considered.

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- (E1) 1.1.2 For the examination of plans and designs of the life-saving appliances and the other equipment of cargo ships the additional requirements for oil tankers should consist of:
- (E1) 1.1.2.1 examining the plans for the cargo tank protection (SOLAS 74/00 regs.II-2/4.5.3, 4.5.5, 4.5.6, 4.5.7 and 10.8; FSSC chs.14 and 15) (SOLAS 74/88 regs.II-2/60 and 62); and
- (E1) 1.1.2.2 examining the plans for protection of the cargo pump rooms (SOLAS 78/00 regs.II-2/4.5.10 and 10.9) (SOLAS 74/88 reg.II-2/63).
- (E1) 1.1.3 For the life-saving appliances and the other equipment of cargo ships the survey during construction and after installation should consist of:
- (E1) 1.1.3.1 examining the fire pumps and fire main and the disposition of the hydrants, hoses and nozzles and the international shore connection and checking that each fire pump, including the emergency fire pump, can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main (SOLAS 74/00 reg.II-2/10.2; FSSC chs.2 and 12) (SOLAS 74/88 regs.II-2/4 and 19);
- (E1) 1.1.3.2 examining the provision and disposition of the fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSSC ch.4) (SOLAS 74/88 reg.II-2/17);
- (E1) 1.1.3.3 examining the fire fighters' outfits and emergency escape breathing devices (EEBDs) (SOLAS 74/00 regs.II-2/10.10, 13.3.4 and 13.4.3; FSSC ch.3) (SOLAS 74/88 reg.II-2/17) (BCH Code ch.III Part E);
- (E1) 1.1.3.4 checking the operational readiness and maintenance of fire-fighting systems (SOLAS 74/00 reg.II-2/14.1) (SOLAS 74/88 reg.II-2/21);
- (E1) 1.1.3.5 examining the fixed fire-fighting system for the machinery, cargo, vehicle, special category and ro-ro spaces, as appropriate, and confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/00/08 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSSC chs.5 to 7) (SOLAS 74/88 regs.II-2/7 and 53);
- (E1) 1.1.3.6 checking that fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces and cargo pump-rooms, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space (SOLAS 08 reg.II-2/10.4.1.5);
- (E1) 1.1.3.7 examining the fire-extinguishing and special arrangements in the machinery spaces and confirming, as far as practicable and as appropriate, the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power-operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00 regs.II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88 regs.II-2/7 and 11);

- (EI) 1.1.3.8 examining any fire detection and alarm system and any automatic sprinkler, fire detection and fire alarm system and confirming that installation tests have been satisfactorily completed (SOLAS 74/00 regs.II-2/7.2, 7.3, 7.4, 7.5.1, 7.5.5, 19.3.3 and 20.4; FSSC ch.9) (SOLAS 74/88 regs.II-2/11, 13, 14, 53 and 54);
- (EI) 1.1.3.9 examining the fire-extinguishing system for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces and confirming that installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.4 to 7) (SOLAS 74/88 reg.II-2/18.7) (BCH Code ch.III Part E);
- (EI) 1.1.3.10 examining the arrangements for remote closing of valves for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.2.3.4) (SOLAS 74/88 reg.II-2/15.2.5);
- (EI) 1.1.3.11 examining the fire protection arrangements in cargo vehicle and ro-ro spaces and confirming, as far as practicable and as appropriate, the operation of the means for closing the various openings (SOLAS 74/00 regs.II-2/10.7, 20.2.1, 20.3 and 20.6.2) (SOLAS 74/88 reg.II-2/53);
- (EI) 1.1.3.12 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring, the ventilation, the provision of protective clothing and portable appliances and the testing of the water supply, bilge pumping and any water spray system (SOLAS 74/00/08 reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4); FSSC chs.9 and 10) (SOLAS 74/88 reg.II-2/54);
- (EI) 1.1.3.13 checking that the life-saving appliances are of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (EI) 1.1.3.14 checking the provision and disposition of the survival craft, where applicable, marine evacuation systems and rescue boats (SOLAS 74/88 regs.III/11 to 16 and 31; LSAC section 6.2);
- (EI) 1.1.3.15 deployment of 50% of the MES after installation (LSAC paragraph 6.2.2.2);
- (EI) 1.1.3.16 examining each survival craft, including its equipment. For liferafts provided for easy side to side transfer, verifying that they are less than 185 kg (SOLAS 74/88 reg.III/31; LSAC sections 2.5, 3.1 to 3.3 and 4.1 to 4.9) (SOLAS 74/00 reg.III/31.1);
- (EI) 1.1.3.17 examining the embarkation arrangements for each survival craft and the testing of each launching appliance, including overload tests, tests to establish the lowering speed and the lowering of each survival craft to the water with the ship at its lightest sea-going draught, and, where applicable, launching underway at 5 knots, checking the recovery of

- each lifeboat (SOLAS 74/00 regs.III/11, 12, 13, 16, 31 and 33; LSAC section 6.1);
- (E) 1.1.3.18 examining the embarkation arrangements for each marine evacuation device, where applicable, and the launching arrangements, including inspection for lack of side shell opening between the embarkation station and waterline, review of distance to the propeller and other life-saving appliances and ensuring that the stowed position is protected from heavy weather damage, as much as practicable (SOLAS 74/00 reg.III/15; LSAC section 6.2);
- (E) 1.1.3.19 examining each rescue boat, including its equipment. For inflatable rescue boats, confirming that they are stowed in a fully inflated condition (SOLAS 74/88 regs.III/14 and 31; LSAC sections 2.5, 5.1 and 6.1);
- (E) 1.1.3.20 examining the embarkation and recovery arrangements for each rescue boat and testing each launching and recovery appliance, including overload tests, tests to establish the lowering and recovery speeds and ensuring that each rescue boat can be lowered to the water and recovered with the ship at its lightest sea-going draught, launching underway at 5 knots (SOLAS 74/88 regs.III/14, 17 and 31; LSAC section 6.1);
- (E) 1.1.3.21 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern (SOLAS 74/00 reg.III/19);
- (E) 1.1.3.22 confirming that there are posters or signs in the vicinity of survival craft and their launching stations and containers, brackets, racks and other similar stowage locations for life-saving equipment (SOLAS 74/88 regs.III/9 and 20);
- (E) 1.1.3.23 examining the provision and stowage and checking the operation of portable on board communications equipment, if provided, and two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 regs.II-2/12.2 and III/6);
- (E) 1.1.3.24 examining the provision and stowage of the distress flares and the line-throwing appliance, checking the provision and operation of fixed on board communications equipment, if provided, and testing the means of operation of the general alarm system (SOLAS 74/00 regs.III/6 and 18; LSAC sections 3.1, 7.1 and 7.2);
- (E) 1.1.3.25 examining the provision, disposition and stowage of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets⁵, immersion suits and anti-exposure suits (SOLAS 74/00/06 regs.III/7 and 32; LSAC sections 2.1 to 2.5 and 3.1 to 3.3);

⁵ Regulation III/7.2.1.5 should be considered.

- (E1) 1.1.3.26 checking the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including when supplied from the emergency source of power (SOLAS 74/88 regs.II-1/43 and III/11);
- (E1) 1.1.3.27 examining the provision and positioning and checking the operation of, as appropriate, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea (COLREG) in force, rules 20 to 24, 27 to 30 and 33);
- (E1) 1.1.3.28 checking that the minimum safe distances from the steering and standard magnetic compasses for all electrical equipment are complied with (SOLAS 74/00 regs.V/17 and 19);
- (E1) 1.1.3.29 checking the electromagnetic compatibility of electrical and electronic equipment on or in the vicinity of the bridge (SOLAS 74/00 reg.V/17);
- (E1) 1.1.3.30 checking, as appropriate, the provision and operation of the following shipborne navigational systems equipment (SOLAS 74/00 reg.V/19):
 - (E1) 1.1.3.30.1 the magnetic compass, including examining the siting, movement, illumination and a pelorus or compass bearing device (SOLAS 74/00 reg.V/19);
 - (E1) 1.1.3.30.2 nautical charts and nautical publications necessary for the intended voyage are available and have been updated, and, where an electronic chart display and information systems (ECDIS) is used, the electronic charts have been updated and the required back-up system is provided and updated (SOLAS 74/00/09 reg.V/19);
 - (E1) 1.1.3.30.3 global navigation satellite system receiver or terrestrial radionavigation system;
 - (E1) 1.1.3.30.4 sound-reception system, when bridge is totally enclosed;
 - (E1) 1.1.3.30.5 means of communication to emergency steering position, where provided;
 - (E1) 1.1.3.30.6 spare magnetic compass;
 - (E1) 1.1.3.30.7 daylight signalling lamp;
 - (E1) 1.1.3.30.8 echo sounding device;
 - (E1) 1.1.3.30.9 radar(s), including examining the waveguide and cable runs for routing and protection and the display unit confirming lighting, correct operation of all controls, and functions;
 - (E1) 1.1.3.30.10 electronic plotting aid, automatic tracking aid or automatic radar plotting aid as appropriate, using the appropriate test facilities;
 - (E1) 1.1.3.30.11 speed and distance measuring devices "through the water" and "over the ground";

- (EI) 1.1.3.30.12 transmitting heading device providing heading information to radar, plotting aids and automatic identification system equipment;
- (EI) 1.1.3.30.13 automatic identification system;
- (EI) 1.1.3.30.14 gyrocompass, including examining the alignment of the master and all repeaters;
- (EI) 1.1.3.30.15 rudder angle indicator;
- (EI) 1.1.3.30.16 propeller rate of revolution indicator;
- (EI) 1.1.3.30.17 propeller, operational mode, thrust, and pitch indicator;
- (EI) 1.1.3.30.18 rate-of-turn indicator;
- (EI) 1.1.3.30.19 heading or track control system;
- (EI) 1.1.3.30.20 BNWAS;
- (EI) 1.1.3.31 checking for the provision and operation of the voyage data recorder (SOLAS 74/00 reg.V/20);
- (EI) 1.1.3.32 checking the record of the voyage data recorder annual performance test (SOLAS 74/00 reg.V/18);
- (EI) 1.1.3.33 checking navigation bridge visibility (SOLAS 74/00 reg.V/22);
- (EI) 1.1.3.34 checking that a valid conformance test report of the long-range identification and tracking system is available on board (SOLAS 04 reg.V/19-1);
- (EI) 1.1.3.35 checking the provision and, as appropriate, the deployment or operation of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00 reg.V/23);
- (EI) 1.1.3.36 checking the provision of means of embarkation and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders (SOLAS 08 reg.II-1/3-9);
- (EI) 1.1.3.37 checking, when appropriate, the provision of an appropriate instrument for measuring the concentration of gas or oxygen in the air together with detailed instructions for its use (SOLAS 08 reg.VI/3).
- (EI) 1.1.4 For the life-saving appliances and the other equipment of cargo ships for the additional requirements for oil tankers the survey during construction and after installation should consist of:
 - (EI) 1.1.4.1 checking the deck foam system, including the supplies of foam concentrate, and testing that the minimum number of jets of water at the required pressure in the fire main is obtained (see (EI) 1.1.3.1) when the system is in operation (SOLAS 74/00 reg.II-2/10.8; FSSC ch.15) (SOLAS 74/88 reg.II-2/61);

- (EI) 1.1.4.2 examining the inert gas system (SOLAS 74/00 reg.II-2/4.5.5; FSSC ch.15) (SOLAS 74/88 reg.II-2/62) and in particular:
 - (EI) 1.1.4.2.1 examining externally for any sign of gas or effluent leakage;
 - (EI) 1.1.4.2.2 confirming the proper operation of both inert gas blowers;
 - (EI) 1.1.4.2.3 observing the operation of the scrubber-room ventilation system;
 - (EI) 1.1.4.2.4 checking the deck water seal for automatic filling and draining;
 - (EI) 1.1.4.2.5 examining the operation of all remotely operated or automatically controlled valves and, in particular, the flue gas isolating valves;
 - (EI) 1.1.4.2.6 observing a test of the interlocking feature of soot blowers;
 - (EI) 1.1.4.2.7 observing that the gas pressure-regulating valve automatically closes when the inert gas blowers are secured;
 - (EI) 1.1.4.2.8 checking, as far as practicable, the following alarms and safety devices of the inert gas system using simulated conditions where necessary:
 - (EI) 1.1.4.2.8.1 high oxygen content of gas in the inert gas main;
 - (EI) 1.1.4.2.8.2 low gas pressure in the inert gas main;
 - (EI) 1.1.4.2.8.3 low pressure in the supply to the deck water seal;
 - (EI) 1.1.4.2.8.4 high temperature of gas in the inert gas main;
 - (EI) 1.1.4.2.8.5 low water pressure or low water-flow rate;
 - (EI) 1.1.4.2.8.6 accuracy of portable and fixed oxygen-measuring equipment by means of calibration gas;
 - (EI) 1.1.4.2.8.7 high water level in the scrubber;
 - (EI) 1.1.4.2.8.8 failure of the inert gas blowers;
 - (EI) 1.1.4.2.8.9 failure of the power supply to the automatic control system for the gas regulating valve and to the instrumentation for continuous indication and permanent recording of pressure and oxygen content in the inert gas main;
 - (EI) 1.1.4.2.8.10 high pressure of gas in the inert gas main;
 - (EI) 1.1.4.2.9 checking the proper operation of the inert gas system on completion of the checks listed above;
- (EI) 1.1.4.3 examining the fixed fire-fighting system for the cargo pump room, confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/00 reg.II-2/10.9; FSSC chs.5, 6, 7 and 8, as applicable) and, when

- appropriate, checking the operation of the remote means for closing the various openings;
- (EI) 1.1.4.4 examining the protection of the cargo pump-rooms and confirming that the installation tests have been satisfactorily completed (SOLAS 74/00 reg.II-2/4.5.10) (SOLAS 74/88 regs.II-2/55 to 58).
- (EI) 1.1.5 For the life-saving appliances and the other equipment of cargo ships the check that the required documentation has been placed on board should consist of:
- (EI) 1.1.5.1 confirming that the fire control plans are permanently exhibited or, alternatively, emergency booklets have been provided and that a duplicate of the plans or the emergency booklet are available in a prominently marked enclosure external to the ship's deckhouse (SOLAS 74/00 reg.II-2/15.2.4) (SOLAS 74/88 reg.II-2/20);
- (EI) 1.1.5.2 confirming that maintenance plans have been provided (SOLAS 74/00 regs.II-2/14.2.2 and 14.4);
- (EI) 1.1.5.3 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/00 regs.II-2/15.2.3, 16.2 and 16.3);
- (EI) 1.1.5.4 confirming, where appropriate, that the ship is provided with a document indicating compliance with the special requirement for carrying dangerous goods (SOLAS 74/00, reg.II-2/19.4) (SOLAS 74/88/08 reg.II-2/54(3));
- (EI) 1.1.5.5 confirming that emergency instructions are available for each person on board, that the muster list is posted in conspicuous places and they are in a language understood by the persons on board (SOLAS 74/00 regs.III/8 and 37);
- (EI) 1.1.5.6 confirming that the training manual and training aids for the life-saving appliances have been provided and are available in the working language of the ship (SOLAS 74/00 reg.III/35);
- (EI) 1.1.5.7 confirming that the instructions for onboard maintenance of the life-saving appliances have been provided (SOLAS 74/88 reg.III/36);
- (EI) 1.1.5.8 confirming that a table or curve of residual deviations for the magnetic compass has been provided, and that a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00 reg.V/19);
- (EI) 1.1.5.9 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (EI) 1.1.5.10 checking that the charts and nautical publications necessary for the intended voyage are available and have been updated (SOLAS 74/88 reg.V/27);

- (EI) 1.1.5.11 checking that the International Code of Signals and a copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02 reg.V/21);
- (EI) 1.1.5.12 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg.V/28);
- (EI) 1.1.5.13 checking that the life-saving signals to be used by ships, aircraft or persons in distress are available (SOLAS 74/00 reg.V/29);
- (EI) 1.1.5.14 confirming that continuous synopsis record is provided (SOLAS 74/02 reg.XI-1/5).
- (EI) 1.1.6 For the life-saving appliances and the other equipment of cargo ships, concerning the additional requirements for oil tankers the check that the required documentation has been placed on board should consist of:
 - (EI) 1.1.6.1 confirming, when appropriate, that the instruction manuals for the inert gas system have been provided (FSSC ch.15 paragraph 2.4.4) (SOLAS 74/88 reg.II-2/62.21).
- (EI) 1.1.7 For the life-saving appliances and the other equipment of cargo ships the completion of the initial survey should consist of:
 - (EI) 1.1.7.1 after a satisfactory survey, the Cargo Ship Safety Equipment Certificate and its associated Record of Equipment (Form E) should be issued.
- (EA) **1.2 Annual surveys** – see part "General" section 4.2.
- (EA) 1.2.1 For the life-saving appliances and the other equipment of cargo ships the examination of current certificates and other records should consist of:
 - (EA) 1.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - (EA) 1.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
 - (EA) 1.2.1.3 checking the validity of the International Ship Security Certificate;
 - (EA) 1.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (EA) 1.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;
 - (EA) 1.2.1.6 checking the certificates of class, if the ship is classed with a classification society;

- (EA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (EA) 1.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (EA) 1.2.1.9 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (EA) 1.2.1.10 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (EA) 1.2.1.11 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (EA) 1.2.1.12 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00 reg.V/14);
- (EA) 1.2.1.13 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (EA) 1.2.1.14 checking the manning and supervision of survival craft (SOLAS 74/00 reg.III/10);
- (EA) 1.2.1.15 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 06 reg.III/38);
- (EA) 1.2.1.16 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (EA) 1.2.1.17 confirming that the fire control plans are permanently exhibited or, alternatively, that emergency booklets have been provided and that a duplicate of the plans or the emergency booklet are available in a prominently marked enclosure external to the ship's deckhouse (SOLAS 74/00 reg.II-2/15.2.4) (SOLAS 74/88 reg.II-2/20);
- (EA) 1.2.1.18 confirming that the maintenance plans have been provided (SOLAS 74/00 regs.II-2/14.2.2 and 14.4);
- (EA) 1.2.1.19 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/00 regs.II-2/15.2.3, 16.2 and 16.3);
- (EA) 1.2.1.20 checking whether any fire has occurred on board necessitating the operation of the fixed fire-extinguishing systems or the portable fire extinguishers since the last survey;
- (EA) 1.2.1.21 checking, when appropriate, that the ship is provided with a document indicating compliance with the special requirements for carrying

- dangerous goods (SOLAS 74/00/08 reg.II-2/19.4) (SOLAS 74/88 reg.II-2/54(3));
- (EA) 1.2.1.22 confirming, when appropriate, that there is a special list, manifest or stowage plan for the carriage of dangerous goods (SOLAS 74/88 reg.VII/5(3));
- (EA) 1.2.1.23 confirming, when appropriate, that the instruction manuals for the inert gas system have been provided and checking from the records of the pressure and oxygen content that the inert gas system is being operated correctly (FSSC ch.15) (SOLAS 74/88 reg.II-2/62);
- (EA) 1.2.1.24 checking that log-book entries are being made (SOLAS 74/00 regs.III/19 and 20) and in particular:
- (EA) 1.2.1.24.1 the date when the last full muster of the crew for boat and fire drill took place;
- (EA) 1.2.1.24.2 the records indicating that the lifeboat equipment was examined at that time and found to be complete;
- (EA) 1.2.1.24.3 the last occasion when the lifeboats were swung out and when each one was lowered into the water;
- (EA) 1.2.1.24.4 the records indicating that crew members have received the appropriate onboard training;
- (EA) 1.2.1.25 confirming that the training manual and training aids for the life-saving appliances are available on board in the working language of the ship (SOLAS 74/00 reg.III/35);
- (EA) 1.2.1.26 confirming that the checklist and instructions for on board maintenance of the life-saving appliances are on board (SOLAS 74/00 reg.III/36);
- (EA) 1.2.1.27 confirming that a table or curve of residual deviations for the magnetic compass has been provided, the compass deviation book has been properly maintained and a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00 reg.V/19);
- (EA) 1.2.1.28 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (EA) 1.2.1.29 checking that nautical charts and nautical publications necessary for the intended voyage are available and have been updated, and, where electronic systems are used, the required back-up system is provided (SOLAS 74/00 regs.V/19 and 27);
- (EA) 1.2.1.30 checking that the International Code of Signals and a copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02 reg.V/21);
- (EA) 1.2.1.31 checking that the life-saving signals to be used by ships, aircraft or persons in distress are available (SOLAS 74/00 reg.V/29).

- (EA) 1.2.1.32 checking that records of navigational activities and daily reporting have been maintained (SOLAS 74/00/04 reg.V/28);
- (EA) 1.2.1.33 confirming that continuous synopsis record is provided (SOLAS74/02 reg.XI-1/5);
- (EA) 1.2.1.34 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable.
- (EA) 1.2.2 For the life-saving appliances and the other equipment of cargo ships the annual survey should consist of:
 - (EA) 1.2.2.1 examining the fire pumps, fire main, hydrants, hoses and nozzles and the international shore connection and checking that each fire pump, including the emergency fire pump, can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main (SOLAS 74/00 reg.II-2/10.2; FSSC chs.2 and 12) (SOLAS 74/88 regs.II-2/4 and 19);
 - (EA) 1.2.2.2 checking the provision and randomly examining the condition of the portable and non-portable fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSSC ch.4) (SOLAS 74/88 reg.II-2/6);
 - (EA) 1.2.2.3 confirming that the fire fighters' outfits and emergency escape breathing devices (EEBDs) are complete and in good condition and that the cylinders, including the spare cylinders, of any required self-contained breathing apparatus are suitably charged (SOLAS 74/00 regs.II-2/10.10, 13.3.4 and 13.4.3; FSSC ch.3) (SOLAS 74/88 reg.II-2/17) (BCH Code ch.III Part E);
 - (EA) 1.2.2.4 checking the operational readiness and maintenance of fire-fighting systems (SOLAS 74/00 reg.II-2/14) (SOLAS 74/88/91 reg.II-2/21);
 - (EA) 1.2.2.5 examining the fixed fire-fighting system for the machinery, cargo, vehicle, special category and ro-ro spaces, as appropriate, and confirming that its means of operation is clearly marked (SOLAS 74/00 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSSC chs.5 to 7) (SOLAS 74/88 regs.II-2/7 and 53);
 - (EA) 1.2.2.6 examining the fire-extinguishing and special arrangements in the machinery spaces and confirming, as far as practicable and as appropriate, the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00 regs.II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88 regs.II-2/7 and 11);
 - (EA) 1.2.2.7 checking that fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces and cargo pump-rooms, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage

- container, each of them located in a release box clearly identified for the particular space (SOLAS 08 reg.II-2/10.4.1.5);
- (EA) 1.2.2.8 examining, as far as possible, and testing, as feasible, any fire detection and alarm system (SOLAS 74/00 regs.II-2/7.2, 7.3, 7.4, 7.5.1, 7.5.5, 19.3.3 and 20.4; FSSC ch.9) (SOLAS 74/88 regs.II-2/11, 13, 14, 53 and 54);
- (EA) 1.2.2.9 examining the fire-extinguishing systems for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5 to 7) (SOLAS 74/88 reg.II-2/18.7) (BCH Code ch.III Part E);
- (EA) 1.2.2.10 examining the helicopter facilities (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8);
- (EA) 1.2.2.11 examining the arrangements for remote closing of valves for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.2.3.4) (SOLAS 74/88 reg.II-2/15.2.5);
- (EA) 1.2.2.12 examining and testing of the general emergency alarm system (SOLAS 74/88 reg.III/20);
- (EA) 1.2.2.13 examining the fire protection arrangements in cargo, vehicle and ro-ro spaces and confirming, as far as practicable and as appropriate, the operation of the means of control provided for closing the various openings (SOLAS 74/00 regs.II-2/10.7, 20.2.1, 20.3 and 20.6.2) (SOLAS 74/88 reg.II-2/53);
- (EA) 1.2.2.14 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring, the ventilation, the provision of protective clothing and portable appliances and the testing of the water supply, bilge pumping and any water spray system (SOLAS 74/00/08 reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4)) (SOLAS 74/88 reg.II-2/54);
- (EA) 1.2.2.15 checking that emergency instructions are available for each person on board and that copies of the suitably updated muster list are posted in conspicuous places and that they are in a language understood by all persons on board and confirming that there are posters or signs in the vicinity of survival craft and their launching stations (SOLAS 74/00 regs.III/8, 9 and 37);
- (EA) 1.2.2.16 checking that the life-saving appliances are of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (EA) 1.2.2.17 examining each survival craft, including its equipment and, when fitted, the on-load release and hydrostatic lock and, for inflatable liferafts, the hydrostatic release unit and float-free arrangements. Checking that the

- hand-held flares are not out of date (SOLAS 74/00 regs.III/20 and 31; LSAC sections 2.5, 3.1 to 3.3);
- (EA) 1.2.2.18 for liferafts provided for easy side to side transfer, verifying that they are less than 185 kg (SOLAS 74/00 reg.III/31.1);
- (EA) 1.2.2.19 checking that the falls used in launching appliances have been periodically inspected and have been renewed as necessary in the past 5 years (SOLAS 74/00 reg.III/20);
- (EA) 1.2.2.20 examining the embarkation arrangements and launching appliances for each survival craft. Each lifeboat should be lowered to the embarkation position or, if the stowage position is the embarkation position, lowered a short distance and, if practicable, one of the survival craft should be lowered to the water. The operation of the launching appliances for davit-launched liferafts should be demonstrated. Checking that a thorough examination of launching appliances, including the dynamic testing of the winch brake, and servicing of lifeboat and rescue boat on-load release gear, including free-fall lifeboat release systems and davit-launched liferaft automatic release hooks, has been carried out (SOLAS 74/00 regs.III/11, 12, 13, 16, 20 and 31; LSAC section 6.1);
- (EA) 1.2.2.21 examining each rescue boat, including its equipment. For inflatable rescue boats, confirming that they are stowed in a fully inflated condition (SOLAS 74/88 reg.III/14 and 31; LSAC sections 2.5 and 5.1);
- (EA) 1.2.2.22 confirming that there are posters or signs in the vicinity of the survival craft, their launching stations and containers, brackets, racks and other similar stowage locations for life-saving equipment (SOLAS 74/00 regs.III/9 and 20);
- (EA) 1.2.2.23 examining the embarkation and recovery arrangements for each rescue boat. If practicable, the rescue boat(s) should be lowered to the water and its recovery demonstrated (SOLAS 74/00 regs.III/14, 17 and 31; LSAC section 6.1);
- (EA) 1.2.2.24 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern;
- (EA) 1.2.2.25 examining and checking the operation of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 reg.III/6);
- (EA) 1.2.2.26 examining the line-throwing appliance and checking that its rockets and the ship's distress signals are not out of date, and examining and checking the operation of on board communications equipment and the general emergency alarm system (SOLAS 74/00 regs.II-2/12.2 and III/6 and 18; LSAC sections 3.1, 7.1 and 7.2);
- (EA) 1.2.2.27 examining the provision, disposition, stowage and the condition of the lifebuoys, including those fitted with self-igniting lights, self-activating

- smoke signals and buoyant lines, lifejacket⁶ and their whistles and lights, immersion suits and anti-exposure suits and that their associated batteries are not out of date (SOLAS 74/88/06 regs.III/7 and 32, LSAC sections 2.1 to 2.5);
- (EA) 1.2.2.28 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSAC section 2.3.1);
- (EA) 1.2.2.29 checking the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including when supplied from the emergency source of power (SOLAS 74/88 regs.II-1/42 or 43 and III/11);
- (EA) 1.2.2.30 checking that the required the navigation lights, shapes and sound signalling equipment are in order (International Regulations for Preventing Collisions at Sea (COLREG) in force, rules 20 to 24, 27 to 30 and 33);
- (EA) 1.2.2.31 checking that the following items of navigation equipment are in working order, as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and distance measuring device(s), rudder angle indicator, propeller rate of revolution indicator, variable-pitch propeller pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, means of communication with emergency steering position, a pelorus or compass bearing device, means for correcting heading and bearings, a BNWAS as applicable and ECDIS including back-up arrangements, as applicable. Items that cannot be checked with the ship in port should be verified from records (SOLAS 74/00/09 reg.V/19);
- (EA) 1.2.2.32 checking that the International Code of Signals is available (SOLAS 74/00 reg.V/21);
- (EA) 1.2.2.33 checking the rotational deployment of MES (SOLAS 74/88 reg.III/20.8.2; LSAC section 6.2.2.2);
- (EA) 1.2.2.34 checking the provision, specification, operation and annual performance test of the voyage data recorder, where fitted (SOLAS 74/00/04 reg.V/20);
- (EA) 1.2.2.35 checking the provision, operation and the annual test has been carried out for the automatic identification system, where fitted (SOLAS 74/00/04 reg.V/19);
- (EA) 1.2.2.36 checking that a valid conformance test report of the long-range identification and tracking system is available on board, where fitted (SOLAS 04 reg.V/19-1);

⁶ Regulation III/7.2.1.5 should be considered.

- (EA) 1.2.2.37 checking the provision and specification of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00 reg.V/23);
- (EA) 1.2.2.38 checking that the means of embarkation and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders, are in satisfactory condition, as applicable (SOLAS 08 reg.II-1/3-9);
- (EA) 1.2.2.39 checking, when appropriate, the provision of an appropriate instrument for measuring the concentration of gas or oxygen in the air together with detailed instructions for its use (SOLAS 08 reg.VI/3).
- (EA) 1.2.3 For the life-saving appliances and the other equipment of cargo ships, concerning the additional requirements for oil tankers the annual survey should consist of:
 - (EA) 1.2.3.1 checking the deck foam system, including the supplies of foam concentrate and testing that the minimum number of jets of water at the required pressure in the fire main is obtained (see (EA) 1.2.2.1) when the system is in operation (SOLAS 74/00 reg.II-2/10.8; FSSC ch.14) (SOLAS 74/88 reg.II-2/61);
 - (EA) 1.2.3.2 examining the inert gas system (SOLAS 74/00 reg.II-2/4.5.5; FSSC ch.15) (SOLAS 74/88 reg.II-2/62), and in particular:
 - (EA) 1.2.3.2.1 examining externally for any sign of gas or effluent leakage;
 - (EA) 1.2.3.2.2 confirming the proper operation of both inert gas blowers;
 - (EA) 1.2.3.2.3 observing the operation of the scrubber-room ventilation system;
 - (EA) 1.2.3.2.4 checking the deck water seal for automatic filling and draining;
 - (EA) 1.2.3.2.5 examining the operation of all remotely operated or automatically controlled valves and, in particular, the flue gas isolating valves;
 - (EA) 1.2.3.2.6 observing a test of the interlocking feature of soot blowers;
 - (EA) 1.2.3.2.7 observing that the gas pressure regulating valve automatically closes when the inert gas blowers are secured;
 - (EA) 1.2.3.2.8 checking, as far as practicable, the following alarms and safety devices of the inert gas system using simulated conditions where necessary:
 - (EA) 1.2.3.2.8.1 high oxygen content of gas in the inert gas main;
 - (EA) 1.2.3.2.8.2 low gas pressure in the inert gas main;
 - (EA) 1.2.3.2.8.3 low pressure in the supply to the deck water seal;
 - (EA) 1.2.3.2.8.4 high temperature of gas in the inert gas main;
 - (EA) 1.2.3.2.8.5 low water pressure or low water-flow rate;

- (EA) 1.2.3.2.8.6 accuracy of portable and fixed oxygen-measuring equipment by means of calibration gas;
- (EA) 1.2.3.2.8.7 high water level in the scrubber;
- (EA) 1.2.3.2.8.8 failure of the inert gas blowers;
- (EA) 1.2.3.2.8.9 failure of the power supply to the automatic control system for the gas regulating valve and to the instrumentation for continuous indication and permanent recording of pressure and oxygen content in the inert gas main;
- (EA) 1.2.3.2.8.10 high pressure of gas in the inert gas main;
- (EA) 1.2.3.3 checking, when practicable, the proper operation of the inert gas system on completion of the checks listed above (FSSC ch.15) (SOLAS 74/88 reg.II-2/62);
- (EA) 1.2.3.4 examining the fixed fire-fighting system for the cargo pump rooms (SOLAS 74/00 reg.II-2/10.9) (SOLAS 74/88 reg.II-2/63) and confirming, as far as practicable and when appropriate, the operation of the remote means for closing the various openings;
- (EA) 1.2.3.5 checking condition and operation of water spray and air supply systems that are in totally enclosed lifeboats and have self-contained air support systems (LSAC sections 4.4 and 4.6 to 4.9);
- (EA) 1.2.3.6 checking protection of cargo pump room (SOLAS 74/00 reg.II-2/4.5.10), and in particular:
 - (EA) 1.2.3.6.1 checking temperature sensing devices for bulkhead glands and alarms;
 - (EA) 1.2.3.6.2 checking interlock between lighting and ventilation;
 - (EA) 1.2.3.6.3 checking gas detection system;
 - (EA) 1.2.3.6.4 checking bilge level monitoring devices and alarms.
- (EA) 1.2.4 For the life-saving appliances and the other equipment of cargo ships the completion of the annual survey should consist of:
 - (EA) 1.2.4.1 after a satisfactory survey, the Cargo Ship Safety Equipment Certificate should be endorsed;
 - (EA) 1.2.4.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (EP) **1.3 Periodical surveys** – see part "General" section 4.4.
 - (EP) 1.3.1 For the life-saving appliances and the other equipment of cargo ships the examination of current certificates and other records should consist of:
 - (EP) 1.3.1.1 the provisions of (EA) 1.2.1.

- (EP) 1.3.2 For the life-saving appliances and the other equipment of cargo ships the periodical survey should consist of:
- (EP) 1.3.2.1 the provisions of (EA) 1.2.2;
- (EP) 1.3.2.2 confirming, during the examination of the fixed fire-fighting system for the machinery, cargo, vehicle, special category and ro-ro spaces, that, as appropriate, any foam compounds and the CO₂ capacity have been checked and that the distribution pipework has been proved clear (SOLAS 74/00 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSSC chs.5 to 7) (SOLAS 74/88 regs.II-2/7 and 53);
- (EP) 1.3.2.3 testing the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00 regs.II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88 reg.II-2/11);
- (EP) 1.3.2.4 testing any fire detection and alarm system (SOLAS 74/00 regs.II-2/7.2, 7.3, 7.4, 7.5.5, 19.3.3 and 20.4; FSSC ch.9) (SOLAS 74/88 regs.II-2/11, 13, 14, 53 and 54);
- (EP) 1.3.2.5 testing, as feasible, the fire-extinguishing system for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5 to 7) (SOLAS 74/88 reg.II-2/18.7);
- (EP) 1.3.2.6 testing the remote closing of valves for oil fuel, lubricating oil and other flammable oils and the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.2.3.4) (SOLAS 74/88 reg.II-2/15.2.5);
- (EP) 1.3.2.7 testing the operation of the means of control provided for closing the various openings for the cargo, vehicle, special category and ro-ro spaces (SOLAS 74/00 regs.II-2/5.2 and 20.3) (SOLAS 74/88 reg.II-2/53);
- (EP) 1.3.2.8 testing, as feasible, the helicopter facilities (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8).
- (EP) 1.3.3 For the life-saving appliances and the other equipment for the additional requirements for oil tankers the periodical survey should consist of:
- (EP) 1.3.3.1 the provisions of (EA) 1.2.3;
- (EP) 1.3.3.2 confirming during the examination of the fixed fire-fighting system for the cargo pump rooms that, as appropriate, any foam compounds have been checked and that the distribution pipework has been proved clear (SOLAS 74/00 reg.II-2/10.9; FSSC chs.5 to 7) (SOLAS 74/88

- reg.II-2/63) and checking the operation of the remote means for closing the various openings.
- (EP) 1.3.4 For the life-saving appliances and the other equipment of cargo ships the completion of the periodical survey should consist of:
- (EP) 1.3.4.1 after a satisfactory survey, the cargo Ship Safety Equipment Certificate should be endorsed;
- (EP) 1.3.4.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (ER) **1.4** **Renewal surveys** – see part "General" section 4.5
- (ER) 1.4.1 For the life-saving appliances and the other equipment of cargo ships the examination of current certificates and other records should consist of:
- (ER) 1.4.1.1 the provisions of (EA) 1.2.1, except for the validity of the Cargo Ship Safety Equipment Certificate.
- (ER) 1.4.2 For the life-saving appliances and the other equipment of cargo ships the renewal survey should consist of:
- (ER) 1.4.2.1 the provisions of (EP) 1.3.2.
- (ER) 1.4.3 For the life-saving appliances and the other equipment of cargo ships, concerning the additional requirements for oil tankers the renewal survey should consist of:
- (ER) 1.4.3.1 the provisions of (EP) 1.3.3;
- (ER) 1.4.3.2 examining the deck water seal for the inert gas system internally and checking the condition of the non-return valve (FSSC ch.15, paragraphs 2.2.4 and 2.3.1.4) (SOLAS 74/88 reg.II-2/62).
- (ER) 1.4.4 For the life-saving appliances and the other equipment of cargo ships the completion of the renewal survey should consist of:
- (ER) 1.4.4.1 after a satisfactory survey, the Cargo Ship Safety Equipment Certificate should be issued.
- (C) **2** **GUIDELINES FOR SURVEYS FOR THE CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE**
- (CI) **2.1** **Initial surveys** – see part "General", section 4.1.
- (CI) 2.1.1 For the hull, machinery and equipment of cargo ships the examination of plans and designs should consist of:
- (CI) 2.1.1.1 examining the plans for the hull (SOLAS 74/88 regs.II-1/11, 12-1, 14, 18 and 19) (SOLAS 06 regs.II-1/9, 10, 11, 12, 13-1, 15, 15-1, 16 and 16-1);

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- (CI) 2.1.1.2 examining the plans for the bilge pumping and drainage systems (SOLAS 74/88 reg.II-1/21) (SOLAS 05/08/09 regs.II-1/35-1 and II-2/20.6.1.4);
- (CI) 2.1.1.3 examining the stability information and the damage control plans (SOLAS 74/88/00 regs.II-1/22, 23-1 and 25) (SOLAS 06/08 regs.II-1/5, 5-1 and 19; IS Code chs.1, 2 and 3);
- (CI) 2.1.1.4 examining the plans for the machinery installation (SOLAS 74/88 regs.II-1/26 to 36);
- (CI) 2.1.1.5 examining the plans for the electrical installation (SOLAS 74/88 regs.II-1/40, 41, 43, 44 and 45);
- (CI) 2.1.1.6 examining, where applicable, the approved documentation for the alternative design and arrangements (SOLAS 06 reg.II-1/55);
- (CI) 2.1.1.7 examining the plans for the periodically unattended machinery spaces (SOLAS 74/00 reg.II-2/4.2.5) (SOLAS 74/88 regs.II-1/46 to 53);
- (CI) 2.1.1.8 examining the plans for the structural fire protection, including ventilation systems, in accommodation and service spaces, control stations and machinery spaces and oil fuel and lubricating oil systems (SOLAS 74/00 regs.II-2/4.2.2, 4.2.2.3, 4.2.2.4, 4.2.2.5, 4.4, 5.2, 5.3.1, 5.3.2, 6.2, 6.3, 7.5.5, 7.7, 8.2, 8.4, 9.2.1, 9.2.2, 9.3, 9.5, 9.7.1, 9.7.2, 9.7.3, 9.7.5.2, 11.2, 11.3, 11.4, 11.5 and 17) (SOLAS 74/88 regs.II-2/42 to 52 (except 45 and 51));
- (CI) 2.1.1.9 examining the plans for the structural fire protection, including ventilation systems, in cargo spaces (SOLAS 74/00 regs.II-2/5.2, 11.2, 11.3, 11.5, 19.3.8, 19.3.10, 20.2.1 and 20.3) (SOLAS 74/88 regs.II-2/42 to 54);
- (CI) 2.1.1.10 examining the plans for the means of escape (SOLAS 74/00 regs.II-2/13.2, 13.3.1, 13.3.3, 13.4.2 and 13.6; FSSC ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45);
- (CI) 2.1.1.11 examining the plans for the arrangements for gaseous fuel for domestic purposes (SOLAS 74/00 reg.II-2/4.3) (SOLAS 74/88 reg.II-2/51);
- (CI) 2.1.1.12 examining the arrangements for the openings in the shell plating below the freeboard deck, (SOLAS 06 reg.II-1/15);
- (CI) 2.1.1.13 examining the plans for helicopter facilities for ships fitted with such facilities (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8);
- (CI) 2.1.1.14 examining the Cargo Securing Manual for ships carrying cargo units including containers (SOLAS 74/98 reg.VI/5.6);
- (CI) 2.1.1.15 checking for the loading booklet for carriage of cargoes in bulk (SOLAS 74/00 reg.VI/7);

- (CI) 2.1.1.16 examining the loading instrument for bulk carriers of 150 m in length and upwards (SOLAS 74/97/04 reg.XII/11);
- (CI) 2.1.1.17 confirming that bulk carriers, when appropriate, meet the requirements of damage stability and structural strength with its cargo hold(s) flooded, including other structural requirements(SOLAS 74/97/04 regs.XII/3, 4, 5 and 6);
- (CI) 2.1.1.18 examining the functionality of bilge well alarms to all cargo holds and conveyor tunnels (SOLAS 74/97/04 reg.XII/9);
- (CI) 2.1.1.19 confirming that the ship is constructed in accordance with the requirements of a recognized classification society, or one with equivalent national standards (SOLAS 74/00 reg.II-1/3-1);
- (CI) 2.1.1.20 confirming that a corrosion prevention system is fitted, when appropriate, in dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of 150 m in length and upwards (SOLAS 74/04/06 reg.II-1/3-2);
- (CI) 2.1.1.21 examining, for oil tankers and bulk carriers when appropriate, the Ship Structure Access Manual (SOLAS 74/00/02/04 reg.II-1/3-6(4));
- (CI) 2.1.1.22 for bulk carriers, checking the arrangements for hold, ballast and dry space water level detectors and their audible and visual alarms (SOLAS 74/02 reg.XII/12);
- (CI) 2.1.1.23 for bulk carriers, checking the arrangements for availability of draining and pumping systems forward of the collision bulkhead (SOLAS 74/02 reg.XII/13);
- (CI) 2.1.1.24 examining the calculation and drawings for the sufficient safe working load of towing and mooring equipment to enable the safe conduct of all towing and mooring operation in normal operation of the ship (SOLAS 74/04 reg.II-1/3-8);
- (CI) 2.1.1.25 checking the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 08 reg.II-2/20.6.1.5).
- (CI) 2.1.2 For the hull, machinery and equipment of cargo ships, concerning the examination of plans and designs the additional requirements for oil tankers, chemical tankers and gas carriers should consist of:
 - (CI) 2.1.2.1 examining the plans for the steering gear (SOLAS 74/88 reg.II-1/29);
 - (CI) 2.1.2.2 examining the plans for the electrical installation (SOLAS 74/00 reg.II-1/43) (SOLAS 74/88 reg.II-1/45);
 - (CI) 2.1.2.3 examining the plans for the structural fire protection (SOLAS 74/00 regs.II-2/1.6, 4.5.1, 4.5.2, 4.5.9, 9.2.4, 9.3, 9.4, 9.5, 9.6.5 and 11.6) (SOLAS 74/88 regs.II-2/55 to 58);

- (CI) 2.1.2.4 examining the plans for the cargo tank venting, cargo tank purging and gas-freeing and other ventilation arrangements and protection of the cargo tank structure against pressure or vacuum (SOLAS 74/00 regs.II-2/4.5.3, 4.5.4, 4.5.6, 4.5.8, 11.6 and 16.3) (SOLAS 74/88 reg.II-2/59);
- (CI) 2.1.2.5 examining the plans of access to bow (SOLAS 74/00/04 reg.II-1/3-3);
- (CI) 2.1.2.6 examining the plans for emergency towing, for tankers of not less than 20,000 tonnes deadweight (SOLAS 74/00/04 reg.II-1/3-4);
- (CI) 2.1.2.7 checking the access to spaces in the cargo area of oil tankers (SOLAS 74/88/92/00 reg.II-1/12-2) (SOLAS 04 reg.II-1/3-6).
- (CI) 2.1.3 For the hull, machinery and equipment of cargo ships the survey during construction and after installation should consist of:
 - (CI) 2.1.3.1 confirming that the collision bulkhead is watertight up to the freeboard deck, that the valves fitted on the pipes piercing the collision bulkhead are operable from above the freeboard deck and that there are no doors, manholes, ventilation ducts or any other openings (SOLAS 74/88 reg.II-1/11) (SOLAS 06 reg.II-1/12);
 - (CI) 2.1.3.2 confirming that the subdivision bulkheads are constructed and tested as watertight up to the freeboard deck or margin line, as applicable (SOLAS 74/88 reg.II-1/14) (SOLAS 06 reg.II-1/10 and 11);
 - (CI) 2.1.3.3 confirming that each watertight door has been tested (SOLAS 74/88 reg.II-1/18) (SOLAS 06 reg.II-1/16);
 - (CI) 2.1.3.4 confirming that the arrangements for operating any watertight doors are generally in accordance with the requirements for passenger ships and carrying out similar tests, (see (PI) 5.1.2.6 to (PI) 5.1.2.8) (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13-1);
 - (CI) 2.1.3.5 confirming by a hose or flooding test the watertightness of watertight decks and trunks, tunnels and ventilators (SOLAS 74/88 reg.II-1/19) (SOLAS 06 reg.II-1/16-1);
 - (CI) 2.1.3.6 confirming that each bilge pump and the bilge pumping system provided for each watertight compartment is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 05 reg.II-1/35-1);
 - (CI) 2.1.3.7 confirming that the drainage system of enclosed cargo spaces situated on the freeboard deck is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 05 reg.II-1/35-1);
 - (CI) 2.1.3.7.1 examining visually the drainage facilities for blockage or other damage and confirming the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 08 reg.II-2/20.6.1.5);

- (CI) 2.1.3.8 conducting an inclining test, when this is required (SOLAS 74/88 reg.II-1/22) (SOLAS 06 reg.II-1/5);
- (CI) 2.1.3.9 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are installed and protected so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/00 reg.II-2/4.2 (except 4.2.2.3.4 relating to remote closing of valves included in safety equipment)) (SOLAS 74/88 regs.II-1/26, 32, 33 and 34) (SOLAS 74/88/06 reg.II-2/15 (except 15.2.5));
- (CI) 2.1.3.10 confirming that the normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (SOLAS 74/88 reg.II-1/26);
- (CI) 2.1.3.11 confirming that means are provided so that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88 reg.II-1/26);
- (CI) 2.1.3.12 confirming that the boilers, all parts of the machinery, all steam, hydraulic, pneumatic and other systems and their associated fittings which are under internal pressure have been subjected to the appropriate tests, including a pressure test as may be specified in the requirements of the Administration or the classification societies (SOLAS 74/88 reg.II-1/26);
- (CI) 2.1.3.13 confirming that means are provided to ensure that the safe speed is not exceeded where there is the risk of machinery overspeeding (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.14 confirming that, where practicable, means are provided to protect against overpressure in the parts of main, auxiliary and other machinery that are subject to internal pressure and may be subject to dangerous overpressure (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.15 confirming that, when required, crankcase explosion relief devices are fitted to internal combustion engines and that they are arranged so as to minimize the possibility of injury to personnel (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.16 confirming that main turbine propulsion machinery and, where applicable, main internal combustion propulsion machinery and auxiliary machinery are provided with automatic shut-off arrangements in the case of failures, such as lubricating oil supply failure, which could rapidly lead to a complete breakdown, serious damage or explosion (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.17 confirming and recording the ability of the machinery to reverse the direction of the thrust of the propeller in sufficient time and to bring the ship to rest within a reasonable distance, including the effectiveness of any supplementary means of manoeuvring or stopping the ship (SOLAS 74/88 reg.II-1/28);

- (CI) 2.1.3.18 confirming that the main and auxiliary steering gear are so arranged that the failure of one of them does not render the other inoperative (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.19 confirming that, where appropriate, essential components of the steering gear are permanently lubricated or provided with lubrication fittings (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.20 confirming that relief valves are fitted to any part of a steering gear hydraulic system which can be isolated and in which pressure can be generated from the power source or from external forces and that these relief valves are set to a pressure not exceeding the design pressure (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.21 confirming that the main steering gear is capable of steering the ship at maximum ahead service speed and is capable of putting the rudder over from 35° on one side to 35° on the other side with the ship at its deepest seagoing draught and running ahead at maximum ahead service speed and, under the same conditions, from 35° on either side to 30° on the other side in not more than 28 s (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.22 confirming that the auxiliary steering gear is capable of steering the ship at navigable speed and of being brought speedily into action in an emergency and that it is capable of putting the rudder over from 15° on one side to 15° on the other side in not more than 60 s with the ship at its deepest seagoing draught and running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.23 confirming that the main and auxiliary steering gear power units restart automatically when power is restored after a power failure, that they are capable of being brought into operation from a position on the navigating bridge and that, in the event of a power failure to any one of the steering gear power units, an audible and visual alarm is given on the navigating bridge (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.24 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, a defect can be isolated so that steering capability can be maintained or speedily regained after a single failure in its piping system or in one of the power units (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.25 confirming that the control systems for the main steering gear from both the navigating bridge and the steering gear compartment are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.26 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, the two independent control systems from the navigating bridge are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.27 confirming that the control system for the auxiliary steering gear in the steering gear compartment and, if this gear is power operated, from the

- navigating bridge are operating satisfactorily and that the latter is independent of the control system for the main steering gear (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.28 confirming that the control system for any main and auxiliary steering gear control system operable from the navigating bridge is capable of being brought into operation from a position on the navigating bridge, that means are provided in the steering gear compartment for disconnecting it from the steering gear that it serves and that an audible and visual alarm is given on the navigating bridge in the event of a failure of electrical power supply (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.29 confirming that the electric power circuits and steering gear control systems, together with their associated components, cables and pipes, are separated, as far as practicable, throughout their length (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.30 confirming that the means of communication between the bridge and the steering gear compartment is operating satisfactorily and that, with ships having emergency steering positions, a telephone or other means of communication for relaying heading information and supplying visual compass readings to the emergency steering position are provided (SOLAS 74/88 reg.II-1/29) (SOLAS 74/00 reg.V/19);
- (CI) 2.1.3.31 confirming that the angular position of the rudder is indicated independently of the steering control system on the navigating bridge if the main steering gear is power-operated and that this angular position is given in the steering gear compartment (SOLAS 74/88 reg.II-1/29) (SOLAS 74/00 reg.V/19);
- (CI) 2.1.3.32 confirming that with a hydraulic power-operated steering gear the audible and visual low-level alarms on the navigating bridge and in the machinery space for each hydraulic fluid reservoir are operating satisfactorily and that at least one power actuating system including the reservoir can be recharged from a position within the steering gear compartment by means of a fixed storage tank (to which a contents gauge is fitted) with fixed piping (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.33 confirming that the steering gear compartment is readily accessible, that it is separated, as far as practicable, from machinery spaces and is provided with suitable arrangements to ensure working access to steering gear machinery and controls under safe conditions (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.34 confirming that with electric and electro-hydraulic steering gear the means are provided for indicating on the navigating bridge and at a main machinery control position that the motors are running and that the overload alarm and alarm for the loss of a phase in a three-phase supply located at the main machinery control position are operating satisfactorily (SOLAS 74/88 reg.II-1/30);
- (CI) 2.1.3.35 confirming that the main and auxiliary machinery essential for propulsion and the safety of the ship are provided with the effective means for its operation and control (SOLAS 74/88 reg.II-1/31);

- (CI) 2.1.3.36 confirming that appropriate means are provided where it is intended that the propulsion machinery should be remotely controlled from the navigating bridge, including, where necessary, the control, monitoring, reporting, alert and safety actions. (SOLAS 74/00/02 reg.II-1/31);
- (CI) 2.1.3.37 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (CI) 2.1.3.38 confirming that, in general, means are provided for manually overriding automatic controls and that a failure does not prevent the use of the manual override (SOLAS 74/88 reg.II-1/31);
- (CI) 2.1.3.39 confirming that oil-fired and exhaust gas boilers, unfired steam generators, steam pipe systems and air pressure systems are fitted with the appropriate safety features (SOLAS 74/88 regs.II-1/32, 33 and 34);
- (CI) 2.1.3.40 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);
- (CI) 2.1.3.41 confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-1/36);
- (CI) 2.1.3.42 confirming that the engine room telegraph giving visual indication of the orders and answers both in the machinery space and on the navigating bridge is operating satisfactorily (SOLAS 74/88, reg.II-1/37);
- (CI) 2.1.3.43 confirming that the second means of communication between the navigation bridge and machinery space is also operating satisfactorily and that appropriate means are provided to any other positions from which the engines are controlled (SOLAS 74/88 reg.II-1/37);
- (CI) 2.1.3.44 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);
- (CI) 2.1.3.45 confirming that precautions, taken to prevent any oil that may escape under pressure from any pump, filter or heater from coming into contact with heated surfaces, are efficient (SOLAS 74/00 reg.II-2/4.2.2.3);
- (CI) 2.1.3.46 confirming that the means of ascertaining the amount of oil contained in any oil tank are in good working condition (SOLAS 74/00 reg.II-2/4.2.2.3);
- (CI) 2.1.3.47 confirming that the devices provided to prevent overpressure in any oil tank or in any part of the oil system, including the filling pipes, are in good working condition (SOLAS 74/00 reg.II-2/4.2.2.4);
- (CI) 2.1.3.48 confirming that forepeak tanks are not intended for carriage of oil fuel, lubrication oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.2.3);

- (CI) 2.1.3.49 confirming that the electrical installations, including the main source of power and lighting systems, are installed in accordance with the approved plans (SOLAS 74/88 regs.II-1/40 and 41);
- (CI) 2.1.3.50 confirming that a self-contained emergency source of electrical power has been provided and that the appropriate systems are satisfactorily supplied (SOLAS 74/88 reg.II-1/43);
- (CI) 2.1.3.51 confirming that the starting arrangements of each emergency generating set are satisfactory (SOLAS 74/88 reg.II-1/44);
- (CI) 2.1.3.52 confirming that precautions have been provided against shock, fire and other hazards of electrical origin (SOLAS 74/88 reg.II-1/45);
- (CI) 2.1.3.53 confirming that the arrangements for periodically unattended machinery spaces are satisfactory (SOLAS 74/88 regs.II-1/46 to 53) and in particular:
 - (CI) 2.1.3.53.1 checking the fire precautions and testing alarms, as appropriate;
 - (CI) 2.1.3.53.2 checking the means for the protection against flooding;
 - (CI) 2.1.3.53.3 checking the means to control the propulsion from the navigating bridge;
 - (CI) 2.1.3.53.4 ensuring that a means of vocal communication between the main machinery control room or its control position, as appropriate, and the navigating bridge and engineer officer's accommodation is provided and is effective;
- (CI) 2.1.3.53.5 checking that an alarm system is provided with random testing of functions;
- (CI) 2.1.3.53.6 checking that means are provided to automatically shut down machinery or boiler operations in the event of serious malfunction and testing the alarms;
- (CI) 2.1.3.53.7 ensuring that special requirements for the machinery, boiler and electrical installations, as appropriate, are provided;
- (CI) 2.1.3.54 confirming that all aspects of the structural fire protection, including the ventilation systems, in accommodation and service spaces, control stations and machinery spaces are installed in accordance with the approved plans, testing the operation of the means of closing the main inlets and outlets of all ventilation systems and proving that the power ventilation is capable of being stopped from outside the space served (SOLAS 74/00 regs.II-2/4.4, 5.2, 5.3.1, 5.3.2, 6.2, 6.3, 7.5.5, 7.7, 8.2, 8.4, 9.2.1, 9.3, 9.4.2, 9.5, 9.7.1, 9.7.2, 9.7.3, 9.7.5.2, 11.2, 11.3, 11.4 and 11.5) (SOLAS 74/88 regs.II-2/42 to 44, 46 to 50 and 52);
- (CI) 2.1.3.55 confirming that all aspects of the structural fire protection, including the ventilation systems, in cargo spaces are installed in accordance with the approved plans, testing the operation of the means of closing the main inlets and outlets of all ventilation systems and proving that the

- power ventilation is capable of being stopped from outside the space served (SOLAS 74/00 regs.II-2/5.2.1, 11.2, 11.3, 11.5, 19.3.8, 19.3.10, 20.2.1 and 20.3) (SOLAS 74/88 regs.II-2/42 to 44, 46 to 50 and 52 to 54);
- (CI) 2.1.3.56 confirming that stairways and ladders are so arranged as to provide a means of escape from all accommodation spaces and from spaces in which the crew is normally employed, other than machinery spaces, to the open deck and thence to the lifeboats and liferafts (SOLAS 74/00 regs.II-2/13.2, 13.3.1, 13.3.3 and 13.6; FSSC ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45) and in particular that:
- (CI) 2.1.3.56.1 at all levels of accommodation there are provided at least two widely separated means of escape from each restricted space or group of spaces;
- (CI) 2.1.3.56.2 below the lowest open deck the main means of escape is a stairway (the second being a trunk or a stairway);
- (CI) 2.1.3.56.3 above the lowest open deck the means of escape are stairways or doors to an open deck or a combination of them;
- (CI) 2.1.3.56.4 the radiotelegraph station has direct access to the open deck or is provided with two means of access or egress, one of which is a porthole or window of sufficient size;
- (CI) 2.1.3.57 confirming that two widely separated means of escape and, when appropriate, a fire shelter from the lower part of the space, are provided from each machinery space of Category A and that suitable escape routes are provided from other machinery spaces (SOLAS 74/00 reg.II-2/13.4.2; FSSC ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45);
- (CI) 2.1.3.58 examining the arrangements for gaseous fuel for domestic purposes (SOLAS 74/00 reg.II-2/4.3);
- (CI) 2.1.3.59 confirming, when appropriate, that all aspects of the helicopter facilities are installed in accordance with the approved plans (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8);
- (CI) 2.1.3.60 confirming that installed materials do not contain asbestos (SOLAS 74/00/09 reg.II-1/3-5);
- (CI) 2.1.3.61 confirming, for bulk carriers, that dedicated sea water ballast tanks have an efficient corrosion protection system such as hard coating (SOLAS 74/00 reg.II-1/3-2).
- (CI) 2.1.3.62 confirming that dedicated sea water ballast tanks arranged in ships and double side skin spaces arranged in bulk carriers of 150 m in length and upward when appropriate have been coated in accordance with resolution MSC.215(82) (SOLAS 74/00/06 reg.II-1/3-2);
- (CI) 2.1.3.63 confirming for oil tankers and bulk carriers, when appropriate, the provision of means of access to cargo and other spaces in accordance

- with the arrangements in the Ship Structures Access Manual (SOLAS 74/00/02/04 reg.II-1/3-6);
- (CI) 2.1.3.64 for bulk carriers, examining and testing the hold, ballast and dry space water level detectors and their audible and visual alarms (SOLAS 74/02 reg.XII/12);
- (CI) 2.1.3.65 for bulk carriers, checking the arrangements for availability of draining and pumping systems forward of the collision bulkhead (SOLAS 74/02 reg.XII/13);
- (CI) 2.1.3.66 confirming, for bulk carriers, that the loading instrument is on board and functioning (SOLAS 74/97/04 reg.XII/11);
- (CI) 2.1.3.67 confirming that ship's identification number is permanently marked (SOLAS 74/02 reg.XI-1/3);
- (CI) 2.1.3.68 confirming that the towing and mooring equipment is properly marked with any restriction associated with its safe operation (SOLAS 74/04 reg.II-1/3-8).
- (CI) 2.1.4 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for oil tankers the survey during construction and after installation should consist of:
- (CI) 2.1.4.1 confirming, when appropriate, that the main steering gear comprises the necessary two or more identical power units and the requisite arrangements to regain steering capability in the event of the prescribed single failure (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.4.2 confirming that a hull return system of distribution and earthed distribution system are not used (SOLAS 74/88 reg.II-1/45);
- (CI) 2.1.4.3 confirming that all aspects of the location of spaces and the structural fire protection, including the special arrangements when the ship is a combination carrier, are in accordance with the approved plans (SOLAS 74/00 regs.II-2/1.6, 4.5.1, 4.5.2, 4.5.9, 9.2.4, 9.3 and 9.6.5) (SOLAS 74/88 regs.II-2/55 to 58);
- (CI) 2.1.4.4 confirming that permanent approved gastight lighting enclosures for illuminating cargo pump rooms, having adequate strength and not impairing the integrity and gas tightness of the bulkheads or decks, are fitted in bulkheads and decks separating cargo pump rooms and other spaces (SOLAS 74/00 reg.II-2/4.5.2.5) (SOLAS 74/88 reg.II-2/58.5);
- (CI) 2.1.4.5 confirming that all aspects of the cargo tank venting, cargo tank purging and gas-freeing and other ventilation arrangements and protection of the cargo tank structure against pressure or vacuum are in accordance with the approved plans (SOLAS 74/00 regs.II-2/4.5.3, 4.5.4, 4.5.6, 4.5.8 and 11.6) (SOLAS 74/88 regs.II-2/59 and 62.13.1 to 62.13.3);
- (CI) 2.1.4.6 confirming that access to bow is arranged in accordance with approved plans (SOLAS 74/00/04 reg.II-1/3-3);

- (CI) 2.1.4.7 confirming, for tankers of not less than 20,000 tonnes deadweight, that emergency towing is arranged in accordance with approved plans (SOLAS 74/00/04 reg.II-1/3-4);
- (CI) 2.1.4.8 confirming when appropriate that dedicated sea water ballast tanks have an efficient corrosion protection system such as hard coating (SOLAS 74/00/06 reg.II-1/3-2).
- (CI) 2.1.5 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for chemical tankers and gas carriers, the survey during construction and after installation should consist of:
 - (CI) 2.1.5.1 the provisions of (CI) 2.1.4.
- (CI) 2.1.6 For the hull, machinery and equipment of cargo ships the check that the required documentation has been placed on board should consist of:
 - (CI) 2.1.6.1 confirming that the stability information and the damage control plans have been provided (SOLAS 74/88 regs.II-1/22 and 23-1) (SOLAS 06 regs.II-1/5-1 and 19);
 - (CI) 2.1.6.2 confirming that the manoeuvring booklet has been provided and that the manoeuvring information has been displayed on the navigating bridge (SOLAS 74/88 reg.II-1/28);
 - (CI) 2.1.6.3 confirming that the approved Cargo Securing Manual for ships carrying cargo units including containers is provided on board (SOLAS 74/94 reg.VI/5.6);
 - (CI) 2.1.6.4 confirming, for oil tankers and bulk carriers when appropriate, that the Ship Structure Access Manual is on board (SOLAS 74/00/02/04 reg.II-1/3-6(4));
 - (CI) 2.1.6.5 confirming that a set of as-built construction drawings is available on board (SOLAS 74/04 reg.II-1/3-7);
 - (CI) 2.1.6.6 confirming when appropriate that a coating technical file reviewed by the Administration has been provided on board (SOLAS 74/00/06 reg.II-1/3-2);
 - (CI) 2.1.6.7 checking the provision of a ship-specific emergency towing procedure (SOLAS 08 reg.II-1/3-4);
 - (CI) 2.1.6.8 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 00/06 regs.II-1/55 and II-2/17).
- (CI) 2.1.7 For the hull, machinery and equipment of cargo ships the completion of the initial survey should consist of:
 - (CI) 2.1.7.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be issued.

- (CA) **2.2** **Annual surveys** – see part "General", section 4.2.
- (CA) 2.2.1 For the hull, machinery and equipment of cargo ships the examination of current certificates and other records should consist of:
- (CA) 2.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (CA) 2.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (CA) 2.2.1.3 checking the validity of the International Ship Security Certificate;
- (CA) 2.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (CA) 2.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;
- (CA) 2.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
- (CA) 2.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (CA) 2.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (CA) 2.2.1.9 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (CA) 2.2.1.10 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (CA) 2.2.1.11 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (CA) 2.2.1.12 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00 reg.V/14) (SOLAS 74/88 reg.V/13(b));
- (CA) 2.2.1.13 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (CA) 2.2.1.14 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 00/06 regs.II-1/55 and II-2/17);

- (CA) 2.2.1.15 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (CA) 2.2.1.16 checking the provision of a ship-specific emergency towing procedure (SOLAS 08 reg.II-1/3-4);
- (CA) 2.2.1.17 confirming that the stability information, including damage stability, where applicable, and the damage control plans are on board (SOLAS 74/88 regs.II-1/22, 23 and 25) (SOLAS 06 reg.II-1/5-1 and 19);
- (CA) 2.2.1.18 confirming that the manoeuvring booklet is on board and that the manoeuvring information is displayed on the navigating bridge (SOLAS 74/88 reg.II-1/28);
- (CA) 2.2.1.19 checking by the log-book entries that the testing and the emergency drills of the steering gear have been carried out (SOLAS 74/00 reg.V/26) (SOLAS 74/88 reg.V/19);
- (CA) 2.2.1.20 checking that the routine surveys of the boilers and other pressure vessels, as determined by the Administration, have been carried out as required and that safety devices, such as the boiler safety valves, have been tested;
- (CA) 2.2.1.21 checking that, as appropriate, the hull and machinery has been presented for survey in accordance with the continuous survey scheme approved by the Administration or a classification society;
- (CA) 2.2.1.22 confirming, when appropriate, that a complete file of the enhanced survey reports and the Condition Evaluation Report are on board⁷;
- (CA) 2.2.1.23 confirming that suitable Material Safety Data Sheets are available on board;
- (CA) 2.2.1.24 confirming, for bulk carriers, that the loading/unloading booklet required in SOLAS regulation VI/7.2 is on board (SOLAS 74/97/04 reg.XII/8.1);
- (CA) 2.2.1.25 confirming, that bulk carriers of 150 m in length and upwards of single side skin construction designed to carry solid bulk cargoes having a density of 1,780 kg/m³ and above, constructed before 1 July 1999, have, after the implementation date given in SOLAS 94/97 reg.XII/3, sufficient stability and strength to withstand flooding of the foremost cargo hold (SOLAS 74/97/04 reg.XII/3, 4 and 6);
- (CA) 2.2.1.26 confirming approved Cargo Securing Manual for ships carrying cargo units including containers is on board (SOLAS 74/94 reg.VI/5.6);
- (CA) 2.2.1.27 confirming that the loading booklet for carriage of cargoes in bulk is on board (SOLAS 74/00 reg.VI/7);

⁷ See the Guidelines on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers (resolution A.744(18)), as amended.

- (CA) 2.2.1.28 confirming, for oil tankers and bulk carriers when appropriate, that the Ship Structure Access Manual is on board (SOLAS 74/00/02, reg.II-1/3-6(4));
- (CA) 2.2.1.29 confirming that structural alterations performed, if any, have been approved by the classification society and reported on the as-built drawings kept on board (SOLAS 74/04 reg.II-1/3-7);
- (CA) 2.2.1.30 confirming when appropriate that the coating technical file is available on board (SOLAS 74/00/06 reg.II-1/3-2);
- (CA) 2.2.1.31 confirming when appropriate that the maintenance of the protective coating is included in the overall ship's maintenance system (SOLAS 74/00/06 reg.II-1/3-2);
- (CA) 2.2.1.32 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable.
- (CA) 2.2.2 For the hull⁸, machinery and equipment of cargo ships the annual survey should consist of:
- (CA) 2.2.2.1 examining, in general and as far as can be seen, the hull and its closing appliances;
- (CA) 2.2.2.2 examining the anchoring and mooring equipment as far as can be seen. For ships built after 01/01/2007, confirming that the towing and mooring equipment is properly marked with any restriction associated with its safe operation (SOLAS 74/04 reg.II-1/3-8);
- (CA) 2.2.2.3 examining the collision and the other watertight bulkheads as far as can be seen (SOLAS 74/88 regs.II-1/11 and 14) (SOLAS 06 regs.II-1/10, 11 and 12);
- (CA) 2.2.2.4 examining and testing (locally and remotely) all the watertight doors in watertight bulkheads (SOLAS 74/88 reg.II-1/18) (SOLAS 06 reg.II-1/16);
- (CA) 2.2.2.5 examining the arrangements for closing openings in the shell plating below the freeboard deck (SOLAS 06 reg.II-1/15);
- (CA) 2.2.2.6 examining each bilge pump and confirming that the bilge pumping system for each watertight compartment is satisfactory (SOLAS 74/88 reg.II-1/21) (SOLAS 05 reg.II-1/35-1);
- (CA) 2.2.2.7 confirming that the drainage from enclosed cargo spaces situated on the freeboard deck is satisfactory (SOLAS 74/88 reg.II-1/21) (SOLAS 05 reg.II-1/35-1);

⁸ See also the Guidelines on the Enhanced Programme of Inspections During Surveys of Bulk Carriers (resolution A.744(18), annex A), as amended.

- (CA) 2.2.2.7.1 examining visually the drainage facilities for blockage or other damage and confirming the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 08 reg.II-2/20.6.1.5);
- (CA) 2.2.2.8 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are installed and protected so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/00 reg.II-2/4.2 (except 4.2.2.3.4 relating to remote closing of valves included in safety equipment)) (SOLAS 74/88 regs.II-1/26, 32, 33 and 34) (SOLAS 74/88/06 reg.II-2/15 (except 15.2.5));
- (CA) 2.2.2.9 confirming that the normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (SOLAS 74/88 reg.II-1/26);
- (CA) 2.2.2.10 confirming that means are provided so that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88 reg.II-1/26);
- (CA) 2.2.2.11 carrying out a general examination of the machinery, the boilers, all steam, hydraulic, pneumatic and other systems and their associated fittings to see whether they are being properly maintained and with particular attention to the fire and explosion hazards (SOLAS 74/88 regs.II-1/26 and 27);
- (CA) 2.2.2.12 examining and testing the operation of main and auxiliary steering arrangements, including their associated equipment and control systems (SOLAS 74/88 reg.II-1/29);
- (CA) 2.2.2.13 confirming that the means of communication between the navigation bridge and steering gear compartment and the means of indicating the angular position of the rudder are operating satisfactorily (SOLAS 74/88 reg.II-1/29) (SOLAS 74/00 reg.V/19);
- (CA) 2.2.2.14 confirming that with ships having emergency steering positions there are means of relaying heading information and, when appropriate, of supplying visual compass readings to the emergency steering position (SOLAS 74/88 reg.II-1/29 and SOLAS 74/00 reg.V/19 or the SOLAS 74/88 text in force prior to 1 July 2002 reg.V/12 as appropriate);
- (CA) 2.2.2.15 confirming that the various alarms required for hydraulic power-operated, electric and electro-hydraulic steering gears are operating satisfactorily and that the re-charging arrangements for hydraulic power-operated steering gears are being maintained (SOLAS 74/88 regs.II-1/29 and 30);
- (CA) 2.2.2.16 examining the means for the operation of the main and auxiliary machinery essential for the propulsion and the safety of the ship, including, when applicable, the means of remotely controlling the propulsion machinery from the navigating bridge (including the control,

- monitoring, reporting, alert and safety actions) and the arrangements to operate the main and other machinery from a machinery control room (SOLAS 74/88/00/02 reg.II-1/31);
- (CA) 2.2.2.17 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);
- (CA) 2.2.2.18 confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-1/36);
- (CA) 2.2.2.19 confirming that the engine room telegraph, the second means of communication between the navigation bridge and the machinery space and the means of communication with any other positions from which the engines are controlled are operating satisfactorily (SOLAS 74/88 reg.II-1/37);
- (CA) 2.2.2.20 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);
- (CA) 2.2.2.21 examining, as far as practicable, visually and in operation, the electrical installations, including the main source of power and the lighting systems (SOLAS 74/88 regs.II-1/40 and 41);
- (CA) 2.2.2.22 confirming, as far as practicable, the operation of the emergency source(s) of electrical power including their starting arrangements, the systems supplied and, when appropriate, their automatic operation (SOLAS 74/88 regs.II-1/43 and 44);
- (CA) 2.2.2.23 examining, in general, that the precautions provided against shock, fire and other hazards of electrical origin are being maintained (SOLAS 74/88 reg.II-1/45);
- (CA) 2.2.2.24 examining the arrangements for periodically unattended machinery spaces (SOLAS 74/88 regs.II-1/46 to 53) and, in particular, the random testing of alarm, automatic and shutdown functions;
- (CA) 2.2.2.25 confirming, as far as practicable, that no changes have been made in the structural fire protection, examining any manual and automatic fire doors and proving their operation, testing the means of closing the main inlets and outlets of all ventilation systems and testing the means of stopping power ventilation systems from outside the space served (SOLAS 74/00 regs.II-2/4.4, 5.2, 5.3.1, 5.3.2, 6.2, 6.3, 7.5.5, 7.7, 8.2, 8.3, 8.4, 9.2.1, 9.2.3, 9.3, 9.4.2, 9.5, 9.7.1, 9.7.2, 9.7.3, 9.7.5.2, 11.2, 11.3, 11.4, 11.5, 19.3.8, 19.3.10, 20.2.1 and 20.3) (SOLAS 74/88 regs.II-2/42 to 44, 46 to 50 and 52);
- (CA) 2.2.2.26 confirming that the means of escape from accommodation, machinery and other spaces are satisfactory (SOLAS 74/00 regs.II-2/13.2, 13.3.1, 13.3.3, 13.4.2 and 13.6) (SOLAS 74/88 reg.II-2/45);
- (CA) 2.2.2.27 examining the arrangements for gaseous fuel for domestic purposes (SOLAS 74/00 reg.II-2/4.3) (SOLAS 74/88 reg.II-2/51);

- (CA) 2.2.2.28 examining visually the condition of any expansion joints in seawater systems;
- (CA) 2.2.2.29 confirming, when appropriate and as far as is practicable when examining internal spaces on oil tankers and bulk carriers, that the means of access to cargo and other spaces remain in good condition. (SOLAS 74/00/02 reg.II-1/3-6);
- (CA) 2.2.2.30 confirming that no new materials containing asbestos were installed on board (SOLAS 74/00/04/09 reg.II-1/3-5);
- (CA) 2.2.2.31 examining the functionality of bilge well alarms to all cargo holds and conveyor tunnels (SOLAS 74/97/04 reg.XII/9);
- (CA) 2.2.2.32 for bulk carriers, examining the hold, ballast and dry space water level detectors and their audible and visual alarms. (SOLAS 74/02 reg.XII/12);
- (CA) 2.2.2.33 for bulk carriers, checking the arrangements for availability of draining and pumping systems forward of the collision bulkhead (SOLAS 74/02 reg.XII/13);
- (CA) 2.2.2.34 confirming that ship's identification number is permanently marked (SOLAS 74/02 reg.XI-1/3);
- (CA) 2.2.2.35 for single hull, single hold cargo ships, examining the cargo hold water level detector and its audible and visual alarm (SOLAS 74/04 reg.II-1/23-3) (SOLAS 06 reg.II-1/25);
- (CA) 2.2.2.36 confirming that the coating system in dedicated SWB tanks in ships and double side skin spaces arranged in bulk carriers of 150 m in length and upward when appropriate is maintained and that maintenance, repair and partial recoating are recorded in the coating technical file (SOLAS 74/00/06 reg.II-1/3-2);
- (CA) 2.2.2.37 confirming, for bulk carriers constructed before 1 July 1999 with restrictions imposed with respect to the carriage of cargoes with a density of 1,780 kg/m³ and above, that a triangle is permanently marked at midship (SOLAS 74/97/04 reg.XII/8.3);
- (CA) 2.2.2.38 confirming, for bulk carriers, that the loading instrument is on board and functioning (SOLAS 74/97/04 reg.XII/11).
- (CA) 2.2.3 For the hull⁹, machinery and equipment of cargo ships, concerning the additional requirements for oil tankers, the annual survey should consist of:
 - (CA) 2.2.3.1 confirming, when appropriate, that the requisite arrangements to regain steering capability in the event of the prescribed single failure are being maintained (SOLAS 74/88 reg.II-1/29);

⁹ See also the Guidelines on the Enhanced Programme of Inspections During Surveys of Oil Tankers (resolution A.744(18), annex B), as amended.

- (CA) 2.2.3.2 examining the cargo tank openings, including gaskets, covers, coamings and screens;
- (CA) 2.2.3.3 examining the cargo tank pressure/vacuum valves and devices to prevent the passage of flame (SOLAS 74/00 reg.II-2/11.6);
- (CA) 2.2.3.4 examining the devices to prevent the passage of flame on vents to all bunker, oily-ballast and oily-slop tanks and void spaces, as far as practicable;
- (CA) 2.2.3.5 examining the cargo tank venting, cargo tank purging and gas-freeing and other ventilation systems (SOLAS 74/00 reg.II-2/4.5.3, 4.5.4, 4.5.6 and 4.5.8) (SOLAS 74/88 reg.II-2/59);
- (CA) 2.2.3.6 examining the cargo, crude oil washing, ballast and stripping systems both on deck and in the cargo pump rooms and the bunker system on deck;
- (CA) 2.2.3.7 confirming that all electrical equipment in dangerous zones is suitable for such locations, is in good condition and is being properly maintained;
- (CA) 2.2.3.8 confirming that potential sources of ignition in or near the cargo pump room are eliminated, such as loose gear, combustible materials, etc., that there are no signs of undue leakage and that access ladders are in good condition;
- (CA) 2.2.3.9 examining all pump room bulkheads for signs of oil leakage or fractures and, in particular, the sealing arrangements of all penetrations of cargo pump room bulkheads;
- (CA) 2.2.3.10 examining, as far as practicable, the cargo, bilge, ballast and stripping pumps for undue gland seal leakage, verification of proper operation of electrical and mechanical remote operating and shutdown devices and operation of cargo pump room bilge system, and checking that pump foundations are intact;
- (CA) 2.2.3.11 confirming that the pump room ventilation system is operational, ducting intact, dampers are operational and screens clean;
- (CA) 2.2.3.12 verifying that installed pressure gauges on cargo discharge lines and level indicator systems are operational;
- (CA) 2.2.3.13 examining access to bow arrangement (SOLAS 74/00/04 reg.II-1/3-3);
- (CA) 2.2.3.14 examining the towing arrangement for tankers of not less than 20,000 tonnes deadweight (SOLAS 74/00/04 reg.II-1/3-4);
- (CA) 2.2.3.15 confirming that the corrosion prevention system fitted to dedicated ballast water tanks of oil tankers and bulk carriers when appropriate is maintained (SOLAS 74/00 reg.II-1/3-2);
- (CA) 2.2.3.16 examining the emergency lighting in all cargo pump rooms of tankers constructed after 1 July 2002 (SOLAS 74/00 reg.II-1/43).

- (CA) 2.2.4 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for chemical tankers and gas carriers, the annual survey should consist of:
- (CA) 2.2.4.1 the provisions of (CA) 2.2.3.
- (CA) 2.2.5 For the hull, machinery and equipment of cargo ships the completion of the annual survey should consist of:
- (CA) 2.2.5.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be endorsed;
- (CA) 2.2.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (CIn) **2.3 Intermediate surveys** – see part "General", section 4.3
- (CIn) 2.3.1 For the hull, machinery and equipment of cargo ships the examination of current certificates and other records should consist of:
- (CIn) 2.3.1.1 the provisions of (CA) 2.2.1.
- (CIn) 2.3.2 For the hull, machinery and equipment of cargo ships the intermediate survey should consist of:
- (CIn) 2.3.2.1 the provisions of (CA) 2.2.2;
- (CIn) 2.3.2.2 for ships over 5 years of age, an internal examination of representative spaces used for water ballast;
- (CIn) 2.3.2.3 for ships over 10 years of age, other than ships engaged in the carriage of dry cargoes only, an internal examination of selected cargo spaces;
- (CIn) 2.3.2.4 for ships over 15 years of age, engaged in the carriage of dry cargoes only, an internal examination of selected cargo spaces.
- (CIn) 2.3.3 For the hull, machinery and equipment of cargo ships for the additional requirements for oil tankers the intermediate survey should consist of:
- (CIn) 2.3.3.1 the provisions of (CA) 2.2.3;
- (CIn) 2.3.3.2 should there be any doubt as to its condition when examining the various piping systems, the piping may be required to be pressure tested, gauged or both. Particular attention is to be paid to repairs such as welded doublers;
- (CIn) 2.3.3.3 for ships over 10 years of age an internal examination of selected cargo spaces;
- (CIn) 2.3.3.4 testing the insulation resistance of electrical circuits in dangerous zones such as cargo pump rooms and areas adjacent to cargo tanks, but in cases where a proper record of testing is maintained, consideration should be given to accepting recent readings.

- (CIn) 2.3.4 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for chemical tankers and gas carriers, the intermediate survey should consist of:
- (CIn) 2.3.4.1 the provisions of (CA) 2.2.3.
- (CIn) 2.3.5 For the hull, machinery and equipment of cargo ships the completion of the intermediate survey should consist of:
- (CIn) 2.3.5.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be endorsed;
- (CIn) 2.3.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (CR) **2.4** **Renewal surveys** – see part "General", section 4.5
- (CR) 2.4.1 For the hull, machinery and equipment of cargo ships the examination of current certificates and other records should consist of:
- (CR) 2.4.1.1 the provisions of (CA) 2.2.1, except for the validity of the Cargo Ship Safety Construction Certificate.
- (CR) 2.4.2 For the hull, machinery and equipment of cargo ships the renewal survey should consist of:
- (CR) 2.4.2.1 the provisions of (CIn) 2.3.2;
- (CR) 2.4.2.2 examination of sea valves and their connections to the hull;
- (CR) 2.4.2.3 examination of anchoring and mooring equipment for which purpose the anchors should be lowered and raised using the windlass.
- (CR) 2.4.3 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for oil tankers, the renewal survey should consist of:
- (CR) 2.4.3.1 the provisions of (CIn) 2.3.3.
- (CR) 2.4.4 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for chemical tankers and gas carriers, the renewal survey should consist of:
- (CR) 2.4.4.1 the provisions of (CA) 2.2.3.
- (CR) 2.4.5 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for bulk carriers the renewal survey should consist of the provisions of (CI) 2.1.3.64 and 2.1.3.66.
- (CR) 2.4.6 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be issued.

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- (B) 3 GUIDELINES FOR THE INSPECTION OF THE OUTSIDE OF THE SHIP'S BOTTOM OF CARGO SHIPS**
- (CB) 3.1 For the inspection of the outside of the ship's bottom of cargo ships the inspection should consist of:
- (CB) 3.1.1 examination of the ship's shell including bottom and bow plating, keel, bilge keels, stem, stern frame and rudder;
- (CB) 3.1.2 noting the clearances measured in the rudder bearings;
- (CB) 3.1.3 examination of the propeller and shaft seals, as far as practicable;
- (CB) 3.1.4 noting the clearance measured in the propeller shafts, as far as practicable;
- (CB) 3.1.5 examination of sea chests and strainers;
- (CB) 3.1.6 the survey of related items inspected at the same time (see part "General" section 5.1).
- (CB) 3.2 For the inspection of the outside of the ship's bottom of cargo ships the completion of the inspection should consist of:
- (CB) 3.2.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be endorsed;
- (CB) 3.2.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General" section 4.8.
- (R) 4 GUIDELINES FOR SURVEYS FOR THE CARGO SHIP SAFETY RADIO CERTIFICATE**
- (RI) 4.1 **Initial surveys** – see part "General" section 4.1
- (RI) 4.1.1 For the radio installations, including those used in life-saving appliances, of cargo ships the examination of plans and designs should consist of:
- (RI) 4.1.1.1 establishing the sea areas declared for operation, the equipment installed to fulfil the functional requirements for the sea areas of operation, the methods adopted to ensure the availability of the functional requirements and the arrangements for supply of an emergency source of energy (if any) (SOLAS 74/88 regs.II-1/43 and IV/1 to 15);
- (RI) 4.1.1.2 establishing which radio equipment is to be surveyed and, if duplication of equipment is used as a means of ensuring the availability of the functional requirements, establishing which is the "basic equipment" and which the "duplicated equipment" (SOLAS 74/88 reg.IV/15) (Additional radiocommunications equipment provided other than for SOLAS compliance should be noted);

- (RI) 4.1.1.3 confirming all SOLAS equipment complies with appropriate performance standards not inferior to those adopted by IMO (SOLAS 74/88 reg.IV/14);
- (RI) 4.1.1.4 examining the plans for the provision and position of the radio installation, including sources of energy and antennas (SOLAS 74/88 regs.II-1/43, IV/6, IV/14 and V/19);
- (RI) 4.1.1.5 examining the plans for the provision and positioning of the radio life-saving appliances (SOLAS 74/88 reg.III/6).
- (RI) 4.1.2 For the radio installations, including radio life-saving appliances, of cargo ships the survey during construction and after installation should consist of:
 - (RI) 4.1.2.1 examining the position, physical and electromagnetic protection and illumination of each radio installation (SOLAS 74/88 reg.IV/6);
 - (RI) 4.1.2.2 confirming the provision of equipment for the radio installation with due regard to the declared sea areas in which the ship will trade and the declared means of maintaining availability of functional requirements (SOLAS 74/88 regs.III/6, IV/7 to 11, 14 and 15);
 - (RI) 4.1.2.3 confirming the ability to initiate the transmission of ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service, from the position from which the ship is normally navigated (SOLAS 74/88/06 regs.IV/4, 7 to 11);
 - (RI) 4.1.2.4 examining all antennas, including:
 - (RI) 4.1.2.4.1 visually checking all antennas, including INMARSAT antennas, and feeders for satisfactory siting and absence of defects (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.4.2 checking insulation and safety of all antennas;
 - (RI) 4.1.2.5 examining the reserve source of energy, including:
 - (RI) 4.1.2.5.1 checking there is sufficient capacity to operate the basic or duplicated equipment for 1 hour or 6 hours, as appropriate (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.5.2 if the reserve source of energy is a battery:
 - (RI) 4.1.2.5.2.1 checking its siting and installation (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.5.2.2 where appropriate, checking its condition by specific gravity measurement or voltage measurement;
 - (RI) 4.1.2.5.2.3 with the battery off charge, and the maximum required radio installation load connected to the reserve source of energy, checking the battery voltage and discharge current;

- (RI) 4.1.2.5.2.4 checking that the charger(s) are capable of recharging the reserve battery within 10 hours (SOLAS 74/88 reg.IV/13);
- (RI) 4.1.2.5.2.5 checking that information of ship's position is provided continuously and automatically to all two-way communication equipment (SOLAS 74/88 reg.IV/18);
- (RI) 4.1.2.6 examining the VHF transceiver(s), including:
 - (RI) 4.1.2.6.1 checking for operation on channels 6, 13 and 16 (SOLAS 74/88 regs.IV/7 and 14);
 - (RI) 4.1.2.6.2 checking frequency tolerance, transmission line quality and radio frequency power output (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.6.3 checking for correct operation of all controls including priority of control units (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.6.4 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.6.5 checking the operation of the VHF control unit(s) or portable VHF equipment provided for navigational safety (SOLAS 74/88 reg.IV/6);
 - (RI) 4.1.2.6.6 checking for correct operation by on-air contact with a coast station or other ship;
- (RI) 4.1.2.7 examining the VHF DSC controller and channel 70 DSC watch receiver, including:
 - (RI) 4.1.2.7.1 performing an off-air check confirming the correct Maritime Mobile Service Identity is programmed in the equipment (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.7.2 checking for correct transmission by means of a routine or test call to a coast station, other ship, on board duplicate equipment or special test equipment;
 - (RI) 4.1.2.7.3 checking for correct reception by means of a routine or test call from a coast station, other ship, on board duplicate equipment or special test equipment;
 - (RI) 4.1.2.7.4 checking the audibility of the VHF/DSC alarm;
 - (RI) 4.1.2.7.5 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
- (RI) 4.1.2.8 examining the MF/HF radiotelephone equipment, including:
 - (RI) 4.1.2.8.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.8.2 checking the antenna tuning in all appropriate bands;

- (RI) 4.1.2.8.3 checking that the equipment is within frequency tolerance on all appropriate bands (SOLAS 74/88 reg.IV/14);
- (RI) 4.1.2.8.4 checking for correct operation by contact with a coast station and/or measuring transmission line quality and radio frequency output;
- (RI) 4.1.2.8.5 checking receiver performance by monitoring known stations on all appropriate bands;
- (RI) 4.1.2.8.6 if control units are provided outside the navigating bridge, checking that the control unit on the bridge has first priority for the purpose of initiating distress alerts (SOLAS 74/88 regs.IV/9, 10, 11 and 14);
- (RI) 4.1.2.9 examining the HF radiotelex equipment, including:
 - (RI) 4.1.2.9.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.9.2 confirming that the correct selective calling number is programmed in the equipment;
 - (RI) 4.1.2.9.3 checking correct operation by inspection of recent hard copy or by a test with a coast radio station (SOLAS 74/88 regs.IV/10 and 11);
- (RI) 4.1.2.10 examining the MF/HF DSC controller(s), including:
 - (RI) 4.1.2.10.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.10.2 confirming that the correct Maritime Mobile Service Identity is programmed in the equipment;
 - (RI) 4.1.2.10.3 checking the off-air self-test program;
 - (RI) 4.1.2.10.4 checking operation by means of a test call on MF and/or HF to a coast radio station if the rules of the berth permit the use of MF/HF transmissions (SOLAS 74/88 regs.IV/9, 10 and 11);
 - (RI) 4.1.2.10.5 checking the audibility of the MF/HF DSC alarm;
- (RI) 4.1.2.11 examining the MF/HF DSC watch receiver(s), including:
 - (RI) 4.1.2.11.1 confirming that only distress and safety DSC frequencies are being monitored (SOLAS 74/88 regs.IV/9 to 12);
 - (RI) 4.1.2.11.2 checking that a continuous watch is being maintained whilst keying MF/HF radio transmitters (SOLAS 74/88 reg.IV/12);
 - (RI) 4.1.2.11.3 checking for correct operation by means of a test call from a coast station or other ship;
- (RI) 4.1.2.12 examining the Inmarsat Ship Earth Station(s), including:

- (RI) 4.1.2.12.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy, and that where an uninterrupted supply of information from the ship's navigational or other equipment is required ensuring such information remains available in the event of failure of the ship's main or emergency source of electrical power (SOLAS 74/88 regs.IV/13 and 14);
- (RI) 4.1.2.12.2 checking the distress function by means of an approved test procedure where possible (SOLAS 74/88 regs.IV/10, 12 and 14);
- (RI) 4.1.2.12.3 checking for correct operation by inspection of recent hard copy or by test call;
- (RI) 4.1.2.13 if appropriate, examining the NAVTEX equipment (SOLAS 74/88 regs.IV/7, 12 and 14), including:
 - (RI) 4.1.2.13.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (RI) 4.1.2.13.2 running the self-test program if provided;
- (RI) 4.1.2.14 examining the Enhanced Group Call equipment (SOLAS 74/88 regs.IV/7 and 14), including:
 - (RI) 4.1.2.14.1 checking for correct operation and area by monitoring incoming messages or by inspecting recent hard copy;
 - (RI) 4.1.2.14.2 running the self-test program if provided;
- (RI) 4.1.2.15 if appropriate, examining the radio equipment for receipt of maritime safety information by HF NBDP (SOLAS 74/88 regs.IV/7, 12 and 14), including:
 - (RI) 4.1.2.15.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (RI) 4.1.2.15.2 running the self-test program if provided;
- (RI) 4.1.2.16 examining the 406 MHz satellite EPIRB (SOLAS 74/88 regs.IV/7 and 14), including:
 - (RI) 4.1.2.16.1 checking position and mounting for float free operation;
 - (RI) 4.1.2.16.2 carrying out visual inspection for defects;
 - (RI) 4.1.2.16.3 carrying out the self-test routine;
 - (RI) 4.1.2.16.4 checking that the EPIRB ID is clearly marked on the outside of the equipment and, where possible, decoding the EPIRB identity number confirming it is correct;
 - (RI) 4.1.2.16.5 checking the battery expiry date;
 - (RI) 4.1.2.16.6 if provided, checking the hydrostatic release and its expiry date;

- (RI) 4.1.2.16.7 checking the emission on operational frequencies, coding and registration on the 406 MHz signal without transmission of a distress call to the satellite;
- (RI) 4.1.2.16.8 checking that the EPIRB has been subject to maintenance at intervals not exceeding five years at an approved shore-based maintenance facility (SOLAS 74/00 reg.IV/15.9);
- (RI) 4.1.2.16.9 if possible, checking the emission on operational frequencies, coding and registration on the 121.5 MHz homing signal without transmission of a distress call to the satellite;
- (RI) 4.1.2.17 examining the two-way VHF radiotelephone apparatus (SOLAS 74/88 reg.III/6), including:
 - (RI) 4.1.2.17.1 checking for correct operation on Channel 16 and one other by testing with another fixed or portable VHF installation (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.17.2 checking the battery charging arrangements where re-chargeable batteries are used;
 - (RI) 4.1.2.17.3 checking the expiry date of primary batteries where used;
 - (RI) 4.1.2.17.4 where appropriate, checking any fixed installation provided in a survival craft;
- (RI) 4.1.2.18 examining the search and rescue locating device(s) (SOLAS 74/88/08 regs.III/6, IV/7 and 14), including:
 - (RI) 4.1.2.18.1 checking the position and mounting;
 - (RI) 4.1.2.18.2 monitoring response on ship's 9 GHz radar;
 - (RI) 4.1.2.18.3 checking the battery expiry date;
- (RI) 4.1.2.19 examining the test equipment and spares carried to ensure carriage is adequate in accordance with the sea areas in which the ship trades and the declared options for maintaining availability of the functional requirements (SOLAS 74/88 reg.IV/15).
- (RI) 4.1.3 For the radio installations, including those used in life-saving appliances, the check that documentation, etc., has been placed on board should consist of:
 - (RI) 4.1.3.1 checking for a valid radio licence issued by the flag Administration (ITU RR Art.24);
 - (RI) 4.1.3.2 checking the radio operator's certificates of competence (SOLAS 74/88 reg.IV/16 and ITU RR Art.56);
 - (RI) 4.1.3.3 checking the radio record (log) (SOLAS 74/88 reg.IV/17 and ITU RR App.11);

- (RI) 4.1.3.4 checking the carriage of up-to-date ITU publications (ITU RR App.11);
- (RI) 4.1.3.5 checking the carriage of operating manuals for all equipment (SOLAS 74/88 reg.IV/15);
- (RI) 4.1.3.6 checking the carriage of service manuals for all equipment when at-sea maintenance is the declared option (SOLAS 74/88 reg.IV/15).
- (RI) 4.1.4 For the radio installations, including those used in life-saving appliances, of cargo ships the completion of the initial survey should consist of:
 - (RI) 4.1.4.1 the surveyor preparing and forwarding a survey report, indicating clearly the organization he represents, to the relevant authorities, detailing results of the survey and recording omissions and deficiencies, if satisfied, the relevant authorities should issue a Cargo Ship Safety Radio Certificate and the associated Record of Equipment (form R).
- (RP) **4.2 Periodical surveys** – see part "General" section 4.4
 - (RP) 4.2.1 For radio installations, including radio life-saving appliances, on cargo ships the examination of current certificates and other records should consist of:
 - (RP) 4.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - (RP) 4.2.1.2 checking the validity, where appropriate, of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
 - (RP) 4.2.1.3 checking the validity of the International Ship Security Certificate;
 - (RP) 4.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (RP) 4.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;
 - (RP) 4.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
 - (RP) 4.2.1.7 checking, where appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
 - (RP) 4.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;

- (RP) 4.2.1.9 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (RP) 4.2.1.10 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (RP) 4.2.1.11 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (RP) 4.2.1.12 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/13(b));
- (RP) 4.2.1.13 checking that adequate information is on board to enable the equipment to be properly operated and maintained;
- (RP) 4.2.1.14 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (RP) 4.2.1.15 confirming that any new equipment has been properly approved before installation and that no changes have been made such as would affect the validity of the certificate;
- (RP) 4.2.1.16 confirming that a record has been kept in the period since the last survey to the satisfaction of the Administration and as required by the Radio Regulations (SOLAS 74/88 reg.IV/17);
- (RP) 4.2.1.17 checking documentary evidence that the actual capacity of the battery has been proved in port within the last 12 months (SOLAS 74/88 reg.IV/13);
- (RP) 4.2.1.18 confirming that the provisions of (RI) 4.1.3 have been met;
- (RP) 4.2.1.19 checking that the annual test has been carried out for the Satellite EPIRB and, if applicable, shore-based maintenance has been carried out at intervals not exceeding five years (SOLAS 74/04 reg.IV/15);
- (RP) 4.2.1.20 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2) when applicable.
- (RP) 4.2.2 For radio installations, including radio life-saving appliances, of cargo ships the periodical survey should consist of:
 - (RP) 4.2.2.1 the provisions of (RI) 4.1.2.
- (RP) 4.2.3 For radio installations, including those used in radio life-saving appliances, of cargo ships the completion of the periodical survey should consist of:
 - (RP) 4.2.3.1 after a satisfactory survey, endorsing the Cargo Ship Safety Radio Certificate;
 - (RP) 4.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General" section 4.8.

- (RR) **4.3** **Renewal surveys** – see part "General" section 4.5
- (RR) 4.3.1 For the radio installations, including those used in life-saving appliances, of cargo ships the examination of current certificates and other records should consist of:
- (RR) 4.3.1.1 the provisions of (RP) 4.2.1, except for the validity of the Cargo Ship Safety Radio Certificate.
- (RR) 4.3.2 For the radio installations, including those used in radio life-saving appliances, of cargo ships the renewal survey should consist of:
- (RR) 4.3.2.1 the provisions of (RI) 4.1.2.
- (RR) 4.3.3 For the radio installations, including those used in radio life-saving appliances, on cargo ships the completion of the renewal survey should consist of:
- (RR) 4.3.3.1 after a satisfactory survey, issuing the Cargo Ship Safety Radio Certificate as per the provisions of (RI) 4.1.4.
- (P) **5** **GUIDELINES FOR SURVEYS FOR THE PASSENGER SHIP CERTIFICATE**
- (PI) **5.1** **Initial surveys** – see part "General" section 4.1.
- (PI) 5.1.1 For the hull, machinery and equipment of passenger ships the examination of plans and designs should consist of:
- (PI) 5.1.1.1 examining the subdivision and stability (SOLAS 74/88/95 regs.II-1/4 to 8, 8-1, 8-2, 8-3, 13 and 16) (SOLAS 06/08 regs.II-1/5 to 8-1, 14 and 18; IS Code chs.1, 2 and 3);
- (PI) 5.1.1.2 examining the ballasting arrangements (SOLAS 74/88 reg.II-1/9) (SOLAS 06 reg.II-1/20);
- (PI) 5.1.1.3 examining the arrangement of the bulkheads, their construction and the openings therein, including the disposition and means of operation of the watertight doors (SOLAS 74/88 regs.II-1/10, 14, and 15) (SOLAS 06 regs.II-1/10, 11 12 and 13);
- (PI) 5.1.1.4 examining the arrangement of the double bottoms (SOLAS 74/88 reg.II-1/12) (SOLAS 06 reg.II-1/9);
- (PI) 5.1.1.5 examining the arrangements for the openings in the shell plating below the margin line or the bulkhead deck as applicable, the construction of the watertight doors, sidescuttles, watertight decks, trunks, etc., and the watertight integrity above the margin line or the bulkhead deck as applicable (SOLAS 74/88 regs.II-1/17, 18, 19 and 20) (SOLAS 06 regs.II-1/15, 16, 16-1 and 17);
- (PI) 5.1.1.6 examining the plans for the bilge pumping and drainage systems (SOLAS 74/88 regs.II-1/21 and 39) (SOLAS 05/09 reg.II-1/35-1 and SOLAS 08 reg.II-2/20.6.1.4);

- (PI) 5.1.1.7 examining, when appropriate, the means of indicating the status of any bow doors and the leakage there from (SOLAS 74/88 reg.II-1/23-2) (SOLAS 06 reg.II-1/17-1);
- (PI) 5.1.1.8 examining the plans for the machinery installation (SOLAS 74/88 regs.II-1/26 to 36 and 54);
- (PI) 5.1.1.9 examining the plans for the electrical installation (SOLAS 74/88 regs.II-1/39, 40, 41, 42, 44 and 45);
- (PI) 5.1.1.10 checking, when appropriate, the provision of supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PI) 5.1.1.11 examining, where applicable, the approved documentation for the alternative design and arrangements (SOLAS 00/06 regs.II-1/55, II-2/17 and III/38);
- (PI) 5.1.1.12 examining the plans for the fire pumps, fire mains, hydrants, hoses and nozzles and the international shore connection (SOLAS 74/88 reg.II-1/39 and SOLAS 74/00 reg.II-2/10.2; FSSC chs.2 and 12) (SOLAS 74/88 reg.II-1/39 and regs.II-2/4 and 19);
- (PI) 5.1.1.13 examining the plans for the fire-extinguishing arrangements in the machinery spaces (SOLAS 74/00 regs.II-2/10.4 and 10.5; FSSC chs.5, 6 and 7) (SOLAS 74/88 reg.II-2/7);
- (PI) 5.1.1.14 checking the provision and specification of the fire extinguishers and the fire-fighter's (SOLAS 74/88 regs.II-2/6 and 17) (SOLAS 74/00 reg.II-2/10.10);
- (PI) 5.1.1.15 for passenger ship constructed on or after 1 July 2010, checking the provision of a suitably located means for fully recharging breathing air cylinders (SOLAS 08 reg.II-2/10.10.2);
- (PI) 5.1.1.16 examining the plans for the fire extinguishing and special arrangements in the machinery spaces (SOLAS 74/88 regs.II-1/39 and regs.II-2/7 and 11);
- (PI) 5.1.1.17 examining the arrangements for oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.3) (SOLAS 74/88 reg.II-2/15);
- (PI) 5.1.1.18 examining the plans for the structural fire protection, including the means of escape (SOLAS 74/00 regs.II-2/4.4.4, 5.2, 5.3, 7.5, 7.8.2, 8.4, 8.5, 9, 10.6, 11, 13, 17, 20; FSSC ch.13 sections 1 and 2) (SOLAS 74/88 regs.II-2/23 to 36);
- (PI) 5.1.1.19 examining the plans for the protection of special category spaces and other cargo spaces (SOLAS 74/88 regs.II-2/37, 38 and 39);
- (PI) 5.1.1.20 examining the plans for the fixed fire detection and alarm system, the crew alarm and the public address system or other effective means of communication (SOLAS 74/00/06 regs.II-2/7 and 12) (SOLAS 74/88 reg.II-2/40);

- (PI) 5.1.1.21 examining the plans for the special arrangements for the carriage of dangerous goods, when appropriate, including water supplies, electrical equipment and wiring, fire detection, bilge pumping and personnel protection (SOLAS 74/88 regs.II-2/41 and 54) (SOLAS 74/00/08 reg.II-2/19);
- (PI) 5.1.1.22 examining the provision and disposition of the survival craft and rescue boats and the arrangements for mustering passengers (SOLAS 74/00 regs.III/11 to 17, 21 and 24);
- (PI) 5.1.1.23 examining the design of the survival craft, including their equipment, launching and recovery appliances and embarkation and launching arrangements (SOLAS 74/88/06 regs.III/4, 20 to 24, 36, 38 to 44 and 48);
- (PI) 5.1.1.24 examining the design of the rescue boats, including their equipment and launching and recovery appliances and arrangements (SOLAS 74/88 regs.III/16, 20, 47 and 48);
- (PI) 5.1.1.25 examining the provision, specification and stowage of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 reg.III/6.2.2);
- (PI) 5.1.1.26 examining the provision, specification and stowage of the distress flares and the line-throwing appliance and the provision of on-board communications equipment and the general alarm system (SOLAS 74/88 regs.III/6, 17, 35, 49 and 50);
- (PI) 5.1.1.27 examining the provision, specification and stowage of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets, immersion suits and thermal protective aids (SOLAS 74/88/06 regs.III/7, 21, 22 and 26);
- (PI) 5.1.1.28 examining the plans for the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including the supply from the emergency source of power (SOLAS 74/88 regs.II-1/42 and III/11);
- (PI) 5.1.1.29 examining the plans for the positioning of, and the specification for, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea (COLREG) in force rules 20 to 24, 27 to 30 and 33);
- (PI) 5.1.1.30 examining the plans relating to the bridge design and arrangement of navigational systems and equipment and bridge procedures (SOLAS 74/00 reg.V/15);
- (PI) 5.1.1.31 checking the provision and specification of the following navigation equipment as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), automatic identification system, electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and distance indicator, rudder angle indicator, propeller rate of revolution indicator, variable pitch propeller

- pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, a pelorus or compass bearing device, means for correcting heading and bearings, a BNWAS as applicable and ECDIS including back-up arrangements as applicable (SOLAS 74/00/09 reg.V/19);
- (PI) 5.1.1.32 checking the provision and specification of the voyage data recorder (SOLAS 74/00 reg.V/20);
- (PI) 5.1.1.33 checking navigation bridge visibility (SOLAS 74/00 reg.V/22);
- (PI) 5.1.1.34 checking for the provision and specification of the long-range identification and tracking system (SOLAS 04 reg.V/19-1);
- (PI) 5.1.1.35 checking the provision and specification of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00 reg.V/23);
- (PI) 5.1.1.36 establishing the sea areas declared for operation, the equipment installed to fulfil the functional requirements for the sea areas of operation, the methods adopted to ensure the availability of the functional requirements and the arrangements for supply of an emergency source of energy (if any) (SOLAS 74/88 regs.II-1/42 and IV/1 to 15);
- (PI) 5.1.1.37 establishing which radio equipment is to be surveyed and, if duplication of equipment is used as a means of ensuring the availability of the functional requirements, establishing which is the "basic equipment" and which the "duplicated equipment" (SOLAS 74/88 reg.IV/15) (Additional radiocommunication equipment provided other than for SOLAS compliance should be noted);
- (PI) 5.1.1.38 confirming that all SOLAS equipment complies with appropriate performance standards not inferior to those adopted by IMO (SOLAS 74/88 reg.IV/14);
- (PI) 5.1.1.39 examining the plans for the provision and positioning of the radio installation including sources of energy and antennas. (SOLAS 74/88 regs.II-1/42, IV/6 and 14);
- (PI) 5.1.1.40 examining the plans for the provision and positioning of the radio life-saving appliances (SOLAS 74/88 reg.III/6);
- (PI) 5.1.1.41 if applicable, checking that a list of all limitations on the operation of a passenger ship is kept on board and updated;
- (PI) 5.1.1.42 checking the provision of means of embarkation and disembarkation from ships for use in port and in port related operations, such as gangways and accommodation ladders (SOLAS 08 reg.II-1/3-9);
- (PI) 5.1.1.43 checking the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 08 reg.II-2/20.6.1.5);

- (PI) 5.1.1.44 for passenger ships constructed on or after 1 July 2010, checking the provision of a safety centre (SOLAS reg.II-2/23) and associated ventilation requirements(SOLAS 06 reg.II-2/8.2);
- (PI) 5.1.1.45 for passenger ships constructed on or after 1 July 2010 and having a length of 120 m or more or having three or more main vertical zones, confirming that design criteria for the ship's safe return to port and for systems to remain operational after a fire casualty have been documented and that safe areas have been designated (SOLAS 06 regs.II-2/21 and 22).
- (PI) 5.1.2 For the hull, machinery and equipment of passenger ships the survey during construction and after installation should consist of:
- (PI) 5.1.2.1 examining the outside of the ship's bottom, including the bottom and bow plating, keel, bilge keels, stem, stern frame, the rudder, sea chests and strainers (SOLAS 74/88 reg.I/7(b)(i));
- (PI) 5.1.2.2 confirming the arrangements for subdivision, including the ship's stability in the damaged condition, and checking the subdivision load lines (SOLAS 74/88 regs.II-1/4 to 8, 13 and 16) (SOLAS 06 regs.II-1/6, 7, 7-1, 7-2, 7-3, 8, 14, 18);
- (PI) 5.1.2.3 checking the ballasting arrangements (SOLAS 74/88 reg.II-1/9) (SOLAS 06 reg.II-1/20);
- (PI) 5.1.2.4 confirming that dedicated sea water ballast tanks have an approved coating system when appropriate (SOLAS 74/00/06 reg.II-1/3-2);
- (PI) 5.1.2.5 confirming the arrangement of the bulkheads, their construction and the openings therein, confirming that the collision bulkhead is watertight up to the freeboard deck, that the valves fitted on the pipes piercing the collision bulkhead are operable from above the freeboard deck and that there are no doors, manholes, ventilation ducts or any other openings, confirming that the other bulkheads, as required for the ship's subdivision, are watertight up to the bulkhead deck and confirming the construction of the watertight doors and that they have been tested (SOLAS 74/88 regs.II-1/10, 14, 15 and 18) (SOLAS 06 regs.II-1/10, 11, 12, 13 and 16);
- (PI) 5.1.2.6 confirming that the watertight integrity has been maintained where pipes, scuppers, etc., pass through subdivision watertight bulkheads (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);
- (PI) 5.1.2.7 confirming that a diagram is provided on the navigating bridge showing the location of the watertight doors together with indicators showing whether the doors are open or closed and confirming that the watertight doors and their means of operation have been installed in accordance with the approved plans (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);

- (PI) 5.1.2.8 testing the operation of the watertight doors both from the navigating bridge in the event of an emergency and locally at the door itself (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13) and, in particular, that they are:
 - (PI) 5.1.2.8.1 operable locally from each side of the bulkhead;
 - (PI) 5.1.2.8.2 provided with devices giving an indication of whether the door is open or closed at all remote operating positions;
 - (PI) 5.1.2.8.3 provided with an audible alarm that is distinct from any other alarm in the area and, when appropriate, an intermittent visual signal;
 - (PI) 5.1.2.8.4 provided with control handles on each side of the bulkhead so that a person may hold both handles in the open position and pass safely through the watertight door without accidentally setting the power closing mechanism into operation;
- (PI) 5.1.2.9 confirming that the watertight doors and their indicating devices are operable in the event of a failure of the main and emergency sources of power (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);
- (PI) 5.1.2.10 checking, when appropriate, any watertight doors, that are not required to be closed remotely and are fitted in watertight bulkheads dividing 'tween deck spaces, and confirming that a notice is affixed concerning their closure (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);
- (PI) 5.1.2.11 confirming that a notice is affixed to any portable plates on bulkheads in machinery spaces concerning their closure and, if appropriate, testing any power operated watertight door fitted in lieu (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);
- (PI) 5.1.2.12 confirming the arrangements for closing sidescuttles and their deadlights, also scuppers, sanitary discharges and similar openings and other inlets and discharges in the shell plating below the bulkhead deck (SOLAS 06 reg.II-1/13);
- (PI) 5.1.2.13 confirming that valves for closing the main and auxiliary sea inlets and discharges in the machinery spaces are readily accessible and indicators showing the status of the valves are provided (SOLAS 06 reg.II-1/15);
- (PI) 5.1.2.14 confirming that gangway, cargo and fuelling ports fitted below the bulkhead deck can be effectively closed and that the inboard end of any ash or rubbish chutes are fitted with an effective cover (SOLAS 06 reg.II-1/13);
- (PI) 5.1.2.15 confirming by a hose or flooding test the watertightness of watertight decks and trunks, tunnels and ventilators (SOLAS 74/88 reg.II-1/19) (SOLAS 06 reg.II-1/16-1);
- (PI) 5.1.2.16 confirming the arrangements to maintain the watertight integrity above the bulkhead deck (SOLAS 06 regs.II-1/17 and 17-1);

- (PI) 5.1.2.17 confirming the arrangements for the bilge pumping and that each bilge pump and the bilge pumping system provided for each watertight compartment is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 05, reg.II-1/35-1);
- (PI) 5.1.2.18 confirming that the drainage system of enclosed cargo spaces situated on the freeboard deck is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 05 reg.II-1/35-1);
- (PI) 5.1.2.18.1 examining visually the drainage facilities for blockage or other damage and confirming the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 08 reg.II-2/20.6.1.5);
- (PI) 5.1.2.19 conducting an inclining test (SOLAS 74/88 reg.II-1/22) (SOLAS 06 reg.II-1/5);
- (PI) 5.1.2.20 checking, when appropriate, the means of indicating the status of any bow doors and any leakage there from (SOLAS 74/88 reg.II-1/23-2) (SOLAS 06 reg.II-1/17-1);
- (PI) 5.1.2.21 confirming that the arrangement for monitoring special category spaces or ro-ro spaces, when fitted, is satisfactory (SOLAS 06 reg.II-1/23);
- (PI) 5.1.2.22 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are installed and protected so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/88 reg.II-1/26);
- (PI) 5.1.2.23 confirming that the normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (SOLAS 74/88 reg.II-1/26);
- (PI) 5.1.2.24 confirming that means are provided so that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88 reg.II-1/26);
- (PI) 5.1.2.25 confirming that the boilers, all parts of the machinery, all steam, hydraulic, pneumatic and other systems and their associated fittings which are under internal pressure have been subjected to the appropriate tests, including a pressure test (SOLAS 74/88 reg.II-1/26);
- (PI) 5.1.2.26 confirming that means are provided to ensure that the safe speed is not exceeded where there is the risk of machinery overspeeding (SOLAS 74/88 reg.II-1/27);
- (PI) 5.1.2.27 confirming that, where practicable, means are provided to protect against overpressure in the parts of main, auxiliary and other machinery that are subject to internal pressure and may be subject to dangerous overpressure (SOLAS 74/88 reg.II-1/27);

- (PI) 5.1.2.28 confirming that, when required, crankcase explosion relief devices are fitted to internal combustion engines and that they are arranged so as to minimize the possibility of injury to personnel (SOLAS 74/88 reg.II-1/27);
- (PI) 5.1.2.29 confirming that main turbine propulsion machinery and, where applicable, main internal combustion propulsion machinery and auxiliary machinery are provided with automatic shut-off arrangements in the case of failures, such as lubricating oil supply failure, which could rapidly lead to a complete breakdown, serious damage or explosion (SOLAS 74/88 reg.II-1/27);
- (PI) 5.1.2.30 confirming and recording the ability of the machinery to reverse the direction of the thrust of the propeller in sufficient time and to bring the ship to rest within a reasonable distance, including the effectiveness of any supplementary means of manoeuvring or stopping the ship (SOLAS 74/88 reg.II-1/28);
- (PI) 5.1.2.31 confirming that the main and auxiliary steering gear are so arranged that the failure of one of them does not render the other inoperative (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.32 confirming that, where appropriate, essential components of the steering gear are permanently lubricated or provided with lubrication fittings (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.33 confirming that relief valves are fitted to any part of a steering gear hydraulic system which can be isolated and in which pressure can be generated from the power source or from external forces and that these relief valves are set to a pressure not exceeding the design pressure (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.34 confirming that the main steering gear is capable of steering the ship at maximum ahead service speed and is capable of putting the rudder over from 35 degrees on one side to 35 degrees on the other side with the ship at its deepest seagoing draught and running ahead at maximum ahead service speed and, under the same conditions, from 35 degrees on either side to 30 degrees on the other side in not more than 28 seconds (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.35 confirming that the auxiliary steering gear is capable of steering the ship at navigable speed and of being brought speedily into action in an emergency and that it is capable of putting the rudder over from 15 degrees on one side to 15 degrees on the other side in not more than 60 seconds with the ship at its deepest seagoing draught and running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.36 confirming that the main or auxiliary steering gear power units restart automatically when power is restored after a power failure, that they are capable of being brought into operation from a position on the navigating bridge and that, in the event of a power failure to any one of the steering gear power units, an audible and visual alarm is given on the navigating bridge (SOLAS 74/88 reg.II-1/29);

- (PI) 5.1.2.37 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, a defect can be isolated so that steering capability can be maintained or speedily regained after a single failure in its piping system or in one of the power units (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.38 confirming that the control systems for the main steering gear from both the navigating bridge and the steering gear compartment are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.39 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, the two independent control systems from the navigating bridge are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.40 confirming that the control system for the auxiliary steering gear, in the steering gear compartment and, if this gear is power-operated, from the navigating bridge, is operating satisfactorily and that the latter is independent of the control system for the main steering gear (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.41 confirming that the control system for any main and auxiliary steering gear control system operable from the navigating bridge is capable of being brought into operation from a position on the navigating bridge, that means are provided in the steering gear compartment for disconnecting it from the steering gear that it serves and that an audible and visual alarm is given on the navigating bridge in the event of a failure of electrical power supply (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.42 confirming that the electric power circuits and steering gear control system, together with their associated components, cables and pipes, are separated, as far as practicable, throughout their length (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.43 confirming that the means of communication between the bridge and the steering gear is operating satisfactorily and that, with ships having emergency steering positions, a telephone or other means of communication for relaying heading information and supplying visual compass readings to the emergency steering position are provided (SOLAS 74/88 reg.II-1/29) (SOLAS 74/00 reg.V/19);
- (PI) 5.1.2.44 confirming that the angular position of the rudder is indicated independently of the steering control system on the navigating bridge if the main steering gear is power-operated and that this angular position is given in the steering gear compartment (SOLAS 74/88 reg.II-1/29), (SOLAS 74/00 reg.V/19);
- (PI) 5.1.2.45 confirming that with a hydraulic power-operated steering gear the audible and visual low-level alarms on the navigating bridge and in the machinery space for each hydraulic fluid reservoir are operating satisfactorily and that at least one power actuating system including the reservoir can be recharged from a position within the steering gear compartment by means of a fixed storage tank to which a contents gauge is fitted with fixed piping (SOLAS 74/88 reg.II-1/29);

- (PI) 5.1.2.46 confirming that the steering gear compartment is readily accessible, that it is separated, as far as practicable, from machinery spaces and is provided with suitable arrangements to ensure working access to steering gear machinery and controls under safe conditions (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.47 confirming that with electric and electro-hydraulic steering gear, the means for indicating, on the navigating bridge and at a main machinery control position, that the motors are running and that the overload alarm and alarm for the loss of a phase in a three phase supply located at the main machinery control position are operating satisfactorily (SOLAS 74/88 reg.II-1/30);
- (PI) 5.1.2.48 confirming that the main and auxiliary machinery essential for propulsion and the safety of the ship are provided with the effective means for its operation and control (SOLAS 74/88 reg.II-1/31);
- (PI) 5.1.2.49 confirming that appropriate means are provided where it is intended that the propulsion machinery should be remotely controlled from the navigating bridge, including, where necessary, the control, monitoring, reporting, alert and safety actions (SOLAS 74/00/02 reg.II-1/31);
- (PI) 5.1.2.50 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (PI) 5.1.2.51 confirming that, in general, means are provided for manually overriding automatic controls and that a failure does not prevent the use of the manual override (SOLAS 74/88 reg.II-1/31);
- (PI) 5.1.2.52 confirming that oil-fired and exhaust gas boilers, unfired steam generators, steam pipe systems and air pressure systems are fitted with the appropriate safety features (SOLAS 74/88 regs.II-I/32, 33 and 34);
- (PI) 5.1.2.53 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-I/35);
- (PI) 5.1.2.54 confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-I/36);
- (PI) 5.1.2.55 confirming that the engine room telegraph giving visual indication of the orders and answers both in the machinery space and on the navigating bridge is operating satisfactorily (SOLAS 74/88 regulation II-1/37);
- (PI) 5.1.2.56 confirming that the second means of communication between the navigation bridge and machinery space is also operating satisfactorily and that appropriate means are provided to any other positions from which the engines are controlled (SOLAS 74/88 regulation II-1/37);
- (PI) 5.1.2.57 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 regulation II-1/38);

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- (PI) 5.1.2.58 confirming that precautions, taken to prevent any oil than may escape under pressure from any pump, filter or heater from coming into contact with heated surfaces, are efficient;
- (PI) 5.1.2.59 confirming that the means of ascertaining the amount of oil contained in any oil tank are in satisfactory working condition (SOLAS 88 reg.II-2/15) (SOLAS 02 reg.II-2/33);
- (PI) 5.1.2.60 confirming that the devices provided to prevent overpressure in any oil tank or in any part of the oil system, including the filling pipes, are in satisfactory working condition (SOLAS 88 reg.II-2/15) (SOLAS 02 reg.II-2/33);
- (PI) 5.1.2.61 confirming that forepeak tanks are not intended for carriage of oil fuel, lubrication oil and other flammable oils;
- (PI) 5.1.2.62 confirming that the electrical installations, including the main source of power and lighting systems, are installed in accordance with the approved plans (SOLAS 74/88 regs.II-1/40 and 41);
- (PI) 5.1.2.63 confirming that a self-contained emergency source of electrical power has been provided and that the appropriate systems are satisfactorily supplied (SOLAS 74/88 reg.II-1/42);
- (PI) 5.1.2.64 confirming that the starting arrangements of each emergency generating set are satisfactory (SOLAS 74/88 reg.II-1/44);
- (PI) 5.1.2.65 checking, when appropriate, the disposition of, and testing, the supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PI) 5.1.2.65.1 for passenger ships, constructed on or after 1 July 2010¹⁰, confirming provision of supplementary lighting in all cabins, and checking that such lighting automatically illuminates and remains on for a minimum of 30 min when power to the normal cabin lighting is lost (SOLAS 06 reg.II-1/41.6);
- (PI) 5.1.2.65.2 for passenger ships constructed on or after 1 July 2010, checking the provision of smoke detectors in cabins, which, when activated, are capable of emitting, or cause to be emitted, an audible alarm within the space where they are located (SOLAS 06 regs.II-2/7.5.2 and 7.5.3.1);
- (PI) 5.1.2.66 confirming that precautions have been provided against shock, fire and other hazards of electrical origin (SOLAS 74/88 reg.II-1/45);
- (PI) 5.1.2.67 confirming, when appropriate, that the arrangements for the machinery spaces being periodically unattended are satisfactory (SOLAS 74/88 reg.II-1/54);
- (PI) 5.1.2.68 examining the fire pumps and fire main and the disposition of the hydrants, hoses and nozzles and the international shore connection and checking that each fire pump, including the emergency fire pump,

¹⁰ Refer to MSC.1/Circ.1372 on the Guidance for application of SOLAS regulation II-1/41.6.

- can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main (SOLAS 74/88 regs.II-2/4 and 19);
- (PI) 5.1.2.69 examining the provision and disposition of the fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSSC ch.4) (SOLAS 74/88 reg.II-2/17);
- (PI) 5.1.2.70 examining the fire fighters' outfits and emergency escape breathing devices (EEBDs) and confirming that they are complete and in satisfactory condition and that the cylinders, including the spare cylinders, of the self-contained breathing apparatus, are suitably charged (SOLAS 74/00/08 regs.II-2/10.10, 13.3.4 and 13.4.3; FSSC ch.3) (SOLAS 74/88 reg.II-2/17);
- (PI) 5.1.2.71 checking the operational readiness and maintenance of fire-fighting systems (SOLAS 74/00 reg.II-2/14) (SOLAS 74/88 regs.II-2/6, 17 and 21);
- (PI) 5.1.2.72 examining the fixed fire-fighting system for the machinery cargo, special category and vehicle spaces; as appropriate, and confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/00 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSSC ch.5 to 7) (SOLAS 74/88 regs.II-2/7 and 53);
- (PI) 5.1.2.73 examining the fire-extinguishing and special arrangements in the machinery spaces and confirming, as far as practicable and as appropriate, the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power-operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00 regs.II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88 regs.II-2/7 and 11);
- (PI) 5.1.2.74 checking that fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space (SOLAS 08 reg.II-2/10.4; FSSC ch.5.2.2.2);
- (PI) 5.1.2.75 examining the arrangements for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/88/06 reg.II-2/15) (SOLAS 74/00 reg.II-2/4.2);
- (PI) 5.1.2.76 examining any fire detection and alarm system and confirming that installation tests have been satisfactorily completed; (SOLAS 74/88 regs.II-2/11, 12, 13, 14, 36 and 41);

- (PI) 5.1.2.77 confirming that all aspects of installation of the structural fire protection, including the structure, fire integrity, protection of stairways and lifts, cabin balconies, openings in 'A' and 'B' Class divisions, ventilation systems and windows and sidescuttles, and the use of combustible material are in accordance with the approved plans (SOLAS 74/00/04 regs.II-2/4.4.4, 5.2, 5.3, 7.5, 7.8.2, 8.4, 8.5, 9, 10.6, 11, 13, 17, 20 and FSSC ch.13 sections 1 and 2) (SOLAS 74/88 regs.II-2/23 to 35);
- (PI) 5.1.2.78 testing any manual and automatic fire doors, including the means of closing the openings in 'A' and 'B' Class divisions (SOLAS 74/88 regs.II-2/30 and 31);
- (PI) 5.1.2.79 testing the means of closing the main inlets and outlets of all ventilation smoke extraction systems and proving that the power ventilation is capable of being stopped from outside the space served (SOLAS 74/88 reg.II-2/32);
- (PI) 5.1.2.80 confirming that stairways and ladders are so arranged as to provide a means of escape to the lifeboat and liferaft and liferaft embarkation deck from all passenger and crew spaces and from those spaces in which the crew is normally employed (SOLAS 74/00 reg.II- 2/13.7) and in particular that:
- (PI) 5.1.2.80.1 below the bulkhead deck there are two means of escape from each watertight compartment, one being independent of watertight doors;
- (PI) 5.1.2.80.2 above the bulkhead deck there are two means of escape from each vertical zone or similar such area, one leading directly to a stairway forming a vertical escape;
- (PI) 5.1.2.80.3 the radiotelegraph station, if provided, has direct access to the open deck or is provided with two means of access or egress, one of which is a porthole or window of sufficient size;
- (PI) 5.1.2.81 confirming that the means of escape from any special category spaces are generally in accordance with (PI) 5.1.2.80 (SOLAS 74/88 reg.II-2/28);
- (PI) 5.1.2.82 confirming that in the machinery spaces there are two widely separated means of escape leading to the lifeboat and liferaft embarkation decks, including, when from a space below the bulkhead deck, a continuous fire shelter (SOLAS 74/88 reg.II-2/28);
- (PI) 5.1.2.83 confirming the fire protection arrangements for special category spaces and other cargo spaces and testing, as appropriate, the operation of the means for closing the various openings (SOLAS 74/88 regs.II-2/37, 38 and 39);
- (PI) 5.1.2.84 confirming and testing, as appropriate, the fixed fire detection and alarm system, the special alarm and the public address system or other effective means of communication (SOLAS 74/88 reg.II-2/40) (SOLAS 74/00/06 regs.II-2/7 and 12);

- (PI) 5.1.2.85 for passenger ships constructed on or after 1 July 2010, confirming the provision of a fixed fire detection and fire alarm system for passenger ships capable of remotely and individually identifying each detector and manually operated call point (SOLAS 06 reg.II-2/7.2.4);
- (PI) 5.1.2.86 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring and boundary insulation, the provision of protective clothing and portable appliances and the testing of the water supply, bilge pumping and any water spray system (SOLAS 74/88 regs.II-2/41 and 54) (SOLAS 74/00/08 reg.II-2/19);
- (PI) 5.1.2.87 checking the provision and disposition of the survival craft and rescue boats and the arrangements for mustering passengers (SOLAS 74/88 regs.III/11 to 16, 20 and 24);
- (PI) 5.1.2.88 examining each survival craft, including its equipment, and that the required number of search and rescue locating devices are fitted in liferafts and those liferafts are clearly marked (SOLAS 74/88/00/02/08 regs.III/20, 21 and 26);
- (PI) 5.1.2.89 examining the embarkation arrangements for each survival craft and the testing of each launching appliance, including overload tests, tests to establish the lowering speed and the lowering of each survival craft to the water with the ship at its lightest sea-going draught, checking the recovery of each lifeboat (SOLAS 74/88 regs.III/11, 12, 13, 15, 20 and 48);
- (PI) 5.1.2.90 deployment of 50% of the MES after installation (LSAC section 5.1 and MSC/Circ.809);
- (PI) 5.1.2.91 examining each rescue boat, including its equipment. For inflatable rescue boats, confirming that they are stowed in a fully inflated condition (SOLAS 74/00/04 regs.III/21 and 26.3; LSAC section 5.1 and MSC/Circ.809);
- (PI) 5.1.2.92 examining the embarkation and recovery arrangements for each rescue boat and testing each launching and recovery appliance, including overload tests, tests to establish the lowering and recovery speeds and ensuring that each rescue boat can be lowered to the water and recovered with the ship at its lightest sea-going draught. The rescue boat(s) should be lowered to the water and its recovery demonstrated while underway at 5 knots (SOLAS 74/88 regs.III/14, 16, 17 and 20);
- (PI) 5.1.2.93 examining the arrangements for mustering passengers (SOLAS 74/88 reg.III/24);
- (PI) 5.1.2.94 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern (LSAC section 4.4.6.5);
- (PI) 5.1.2.95 confirming that there are posters or signs in the vicinity of survival craft and their launching stations (SOLAS 74/88 reg.III/9);

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- (PI) 5.1.2.96 examining the provision and stowage and checking the operation of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 reg.III/6);
- (PI) 5.1.2.97 examining the provision and stowage of the distress flares and the line-throwing appliance, checking the provision and operation of onboard communications equipment and testing the means of operation of the general alarm system, verifying that the general alarm system is audible in accommodation, normal crew working spaces and on open decks (SOLAS 74/88 reg.III/6);
- (PI) 5.1.2.98 examining the provision, disposition and stowage of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets¹¹, immersion suits and thermal protective aids (SOLAS 74/88/06 regs.III/7, 21, 22 and 26; LSAC section 2.1-2.5 and 3.3);
- (PI) 5.1.2.98.1 checking that the life-saving appliances are of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (PI) 5.1.2.98.2 checking the provision of lifejackets in three sizes (Infant, Child, Adult) and checking that they are marked by either weight or height, or by both weight and height (LSAC section 2.2.1.1). For passenger ships on voyages less than 24 h, checking that the number of infant lifejackets equals to at least 2.5% of the number of passengers on board and for passenger ships on voyages 24 h or greater, checking that infant lifejackets are provided for each infant on board (SOLAS 06 reg.III/7.2.1);
- (PI) 5.1.2.98.3 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSAC section 2.3.1);
- (PI) 5.1.2.99 checking the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including when supplied from the emergency source of power (SOLAS 74/88 regs.II-1/42 and III/11);
- (PI) 5.1.2.100 checking that means of rescue is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/26.4);
- (PI) 5.1.2.101 checking that a helicopter pick-up area is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/28);
- (PI) 5.1.2.102 checking that a decision support system is provided for the Master (SOLAS 74/00 reg.III/29);
- (PI) 5.1.2.103 checking the electromagnetic compatibility of electrical and electronic equipment on or in the vicinity of the bridge (SOLAS 74/00 reg.V/17);
- (PI) 5.1.2.104 examining the provision and positioning and checking the operation of, as appropriate, the navigation lights, shapes and sound signalling

¹¹ Refer to MSC.1/Circ.1372 on the Guidance for application of SOLAS regulation II-1/41.6.

- equipment (International Regulations for Preventing Collisions at Sea in force, rules 20 to 24, 27 to 30 and 33);
- (PI) 5.1.2.105 checking the provision and specification of the daylight signalling lamp (SOLAS 74/88 reg.V/11);
- (PI) 5.1.2.106 checking, as appropriate, the provision and operation of the following equipment (SOLAS 74/00 reg.V/19):
- (PI) 5.1.2.106.1 the magnetic compass, including examining the siting, movement, illumination and a pelorus or compass bearing device (SOLAS 74/00 reg.V/19);
- (PI) 5.1.2.106.2 that nautical charts and nautical publications necessary for the intended voyage are available and have been updated and, where an electronic chart display and information system(ECDIS) is used, that the electronic charts have been updated and the required back-up system is provided and updated (SOLAS 74/00/09 reg.V/19);
- (PI) 5.1.2.106.3 global navigation satellite receiver or terrestrial radionavigation system;
- (PI) 5.1.2.106.4 sound reception system, when bridge is totally enclosed;
- (PI) 5.1.2.106.5 means of communication to emergency steering position, where provided;
- (PI) 5.1.2.106.6 spare magnetic compass;
- (PI) 5.1.2.106.7 daylight signalling lamp;
- (PI) 5.1.2.106.8 echo sounding device, including examining the display for good access, viewing and lighting;
- (PI) 5.1.2.106.9 radar(s), including examining the waveguide and cable runs for routing and protection and the display unit confirming lighting, plotting facilities, correct operation of all controls, functions and the true-motion facility if provided;
- (PI) 5.1.2.106.10 electronic plotting aid, automatic tracking aid or automatic radar plotting aid as appropriate, using the appropriate test facilities;
- (PI) 5.1.2.106.11 speed and distance measuring device;
- (PI) 5.1.2.106.12 transmitting heading device providing heading information to radar, plotting aids and automatic identification system equipment and distance devices;
- (PI) 5.1.2.106.13 heading or track control system;
- (PI) 5.1.2.106.14 BNWAS;
- (PI) 5.1.2.107 checking for the provision, specification, operation and annual performance test of the voyage data recorder (SOLAS 74/00/04 reg.V/20);

- (PI) 5.1.2.108 checking that a valid conformance test report of the long-range and identification tracking system is available on board (SOLAS 04 reg.V/19-1);
- (PI) 5.1.2.109 checking that the International Code of Signals and a copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02 reg.V/21);
- (PI) 5.1.2.110 checking the provision and, as appropriate, the deployment or operation of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00 reg.V/23);
- (PI) 5.1.2.111 examining the position, physical and electromagnetic protection and illumination of each radio installation (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.112 confirming the provision of equipment for the radio installation with due regard to the declared sea areas in which the ship will trade and the declared means of maintaining availability of functional requirements (SOLAS 74/88 regs.III/6, IV/7 to 11, 14 and 15);
- (PI) 5.1.2.113 confirming the ability to initiate the transmission of ship-to-shore distress alerts by at least two separate and independent means, each using a different radio communication service, from the position from which the ship is normally navigated (SOLAS 74/88/06 regs.IV/4, 7 to 11);
- (PI) 5.1.2.114 examining all antennas, including:
 - (PI) 5.1.2.114.1 visually checking all antennas, including INMARSAT antennas, and feeders for satisfactory siting and absence of defects (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.114.2 checking insulation and safety of all antennas;
- (PI) 5.1.2.115 examining the reserve source of energy, including:
 - (PI) 5.1.2.115.1 checking there is sufficient capacity to operate the basic or duplicated equipment for 1 hour or 6 hours, as appropriate (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.115.2 and, if the reserve source of energy is a battery:
 - (PI) 5.1.2.115.2.1 checking its siting and installation (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.115.2.2 where appropriate, checking its condition by specific gravity measurement or voltage measurement;
 - (PI) 5.1.2.115.2.3 with the battery off charge, and the maximum required radio installation load connected to the reserve source of energy, checking the battery voltage and discharge current;
 - (PI) 5.1.2.115.2.4 checking that the charger(s) are capable of recharging the reserve battery within 10 hours (SOLAS 74/88 reg.IV/13);

- (PI) 5.1.2.116 examining the VHF transceiver(s), including:
 - (PI) 5.1.2.116.1 checking for operation on channels 6, 13 and 16 (SOLAS 74/88 regs.IV/7 and 14);
 - (PI) 5.1.2.116.2 checking frequency tolerance, transmission line quality and radio frequency power output (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.116.3 checking for correct operation of all controls including priority of control units (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.116.4 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.116.5 checking the operation of the VHF control unit(s) or portable VHF equipment provided for navigational safety (SOLAS 74/88 reg.IV/6);
 - (PI) 5.1.2.116.6 checking for correct operation by on-air contact with a coast station or other ship;
- (PI) 5.1.2.117 examining the VHF DSC controller and channel 70 DSC watch receiver, including:
 - (PI) 5.1.2.117.1 performing an off-air check confirming the correct Maritime Mobile Service Identity is programmed in the equipment (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.117.2 checking for correct transmission by means of a routine or test call to a coast station, other ship, onboard duplicate equipment or special test equipment;
 - (PI) 5.1.2.117.3 checking for correct reception by means of a routine or test call from a coast station, other ship, onboard duplicate equipment or special test equipment;
 - (PI) 5.1.2.117.4 checking the audibility of the VHF/DSC alarm;
 - (PI) 5.1.2.117.5 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
- (PI) 5.1.2.118 examining the MF/HF radiotelephone equipment, including:
 - (PI) 5.1.2.118.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.118.2 checking the antenna tuning in all appropriate bands;
 - (PI) 5.1.2.118.3 checking the equipment is within frequency tolerance on all appropriate bands (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.118.4 checking for correct operation by contact with a coast station and/or measuring transmission line quality and radio frequency output;

- (PI) 5.1.2.118.5 checking receiver performance by monitoring known stations on all appropriate bands;
- (PI) 5.1.2.118.6 if control units are provided outside the navigating bridge, checking the control unit on the bridge has first priority for the purpose of initiating distress alerts (SOLAS 74/88 regs.IV/9, 10, 11 and 14);
- (PI) 5.1.2.118.7 checking the correct operation of the radiotelephone alarm signal generating device on a frequency other than 2182 kHz;
- (PI) 5.1.2.119 examining the HF radiotelex equipment, including:
 - (PI) 5.1.2.119.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.119.2 confirming that the correct selective calling number is programmed in the equipment;
 - (PI) 5.1.2.119.3 checking correct operation by inspection of recent hard copy or by a test with a coast radio station (SOLAS 74/88 regs.IV/10 and 11);
- (PI) 5.1.2.120 examining the MF/HF DSC controller(s), including:
 - (PI) 5.1.2.120.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.120.2 confirming that the correct Maritime Mobile Service Identity is programmed in the equipment;
 - (PI) 5.1.2.120.3 checking the off-air self-test program;
 - (PI) 5.1.2.120.4 checking operation by means of a test call on MF and/or HF to a coast radio station if the rules of the berth permit the use of MF/HF transmissions (SOLAS 74/88 regs.IV/9 to 11);
 - (PI) 5.1.2.120.5 checking the audibility of the MF/HF DSC alarm;
- (PI) 5.1.2.121 examining the MF/HF DSC watch receiver(s), including:
 - (PI) 5.1.2.121.1 confirming that only distress and safety DSC frequencies are being monitored (SOLAS 74/88 regs.IV/9 to 12);
 - (PI) 5.1.2.121.2 checking that a continuous watch is being maintained whilst keying MF/HF radio transmitters (SOLAS 74/88 reg.IV/12);
 - (PI) 5.1.2.121.3 checking for correct operation by means of a test call from a coast station or other ship;
- (PI) 5.1.2.122 examining the Inmarsat ship earth station(s), including:
 - (PI) 5.1.2.122.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy, and that where an uninterrupted supply of information from the ship's navigational or other equipment is required ensuring such information remains available in

- the event of failure of the ship's main or emergency source of electrical power. (SOLAS 74/88 regs.IV/13 and 14);
- (PI) 5.1.2.122.2 checking the distress function by means of an approved test procedure where possible (SOLAS 74/88 regs.IV/10, 12 and 14);
- (PI) 5.1.2.122.3 checking for correct operation by inspection of recent hard copy or by test call;
- (PI) 5.1.2.123 if appropriate, examining the NAVTEX equipment (SOLAS 74/88 regs.IV/7, 12 and 14), including:
- (PI) 5.1.2.123.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
- (PI) 5.1.2.123.2 running the self-test program if provided;
- (PI) 5.1.2.124 examining the enhanced group call equipment (SOLAS 74/88 regs.IV/7 and 14), including:
- (PI) 5.1.2.124.1 checking for correct operation and area by monitoring incoming messages or by inspecting recent hard copy;
- (PI) 5.1.2.124.2 running the self-test program if provided;
- (PI) 5.1.2.125 if appropriate, examining the radio equipment for receipt of maritime safety information by HF NBDP (SOLAS 74/88 regs.IV/7, 12 and 14), including:
- (PI) 5.1.2.125.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
- (PI) 5.1.2.125.2 running the self-test program if provided;
- (PI) 5.1.2.126 examining the 406 MHz satellite EPIRB (SOLAS 74/88 regs.IV/7 and 14), including:
- (PI) 5.1.2.126.1 checking position and mounting for float-free operation;
- (PI) 5.1.2.126.2 carrying out visual inspection for defects;
- (PI) 5.1.2.126.3 carrying out the self-test routine;
- (PI) 5.1.2.126.4 checking that the EPIRB ID is clearly marked on the outside of the equipment and, where possible, decoding the EPIRB identity number confirming it is correct;
- (PI) 5.1.2.126.5 checking the battery expiry date;
- (PI) 5.1.2.126.6 if provided, checking the hydrostatic release and its expiry date;
- (PI) 5.1.2.127 examining the two-way VHF radiotelephone apparatus (SOLAS 74/88 reg.III/6), including:

- (PI) 5.1.2.127.1 checking for correct operation on channel 16 and one other by testing with another fixed or portable VHF installation (SOLAS 74/88 reg.IV/14);
- (PI) 5.1.2.127.2 checking the battery charging arrangements where rechargeable batteries are used (SOLAS 74/88 reg.IV/14);
- (PI) 5.1.2.127.3 checking the expiry date of primary batteries where used (SOLAS 74/88 reg.IV/14);
- (PI) 5.1.2.127.4 where appropriate, checking any fixed installation provided in a survival craft (SOLAS 74/88 reg.IV/14);
- (PI) 5.1.2.128 examining the search and rescue locating device(s) (SOLAS 74/88/08 reg.III/6 and regs.IV/7 and 14), including:
 - (PI) 5.1.2.128.1 checking the position and mounting;
 - (PI) 5.1.2.128.2 monitoring response on ship's 9 GHz radar;
 - (PI) 5.1.2.128.3 checking the battery expiry date;
- (PI) 5.1.2.129 examining the test equipment and spares carried to ensure carriage is adequate in accordance with the sea areas in which the ship trades and the declared options for maintaining availability of the functional requirements (SOLAS 74/88 reg.IV/15);
- (PI) 5.1.2.130 checking the distress panel installed at the conning position; or, where applicable, an additional EPIRB is placed near the conning position (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.131 checking that positional information is provided continuously and automatically to all communications equipment included in the initial distress alert (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.132 checking the distress alarm panel installed at the conning position and its visual and aural indications of received distress alerts (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.133 checking the provision and operation of the means for two-way on-scene communication for search and rescue purposes and its operation on 121.5 MHz and 123.1 MHz from the position from which the ship is normally navigated (SOLAS 74/88 reg.IV/7);
- (PI) 5.1.2.134 confirming that the ship's identification number is permanently marked. (SOLAS 74/02 reg.XI-1/3);
- (PI) 5.1.2.135 checking that the provision, operation and the annual test has been carried out for the automatic identification system (SOLAS 74/00/04 reg.V/19);
- (PI) 5.1.2.136 for passenger ships carrying more than 36 passengers constructed on or after 1 July 2010, checking the provision of a suitably located means

- for fully recharging breathing air cylinders, free from contamination (SOLAS 08 reg.II-2/10.10.2.6);
- (PI) 5.1.2.137 confirming that installed materials do not contain asbestos (SOLAS 09 reg.II-1/3-5);
- (PI) 5.1.2.138 confirming the provision of means of embarkation and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders (SOLAS 08 reg.II-1/3-9);
- (PI) 5.1.2.139 for passenger ships constructed on or after 1 July 2010 and having a length of 120 m or more or having three or more main vertical zones, checking the designation of safe areas (SOLAS 06 reg.II-2/21);
- (PI) 5.1.2.140 for passenger ships constructed on or after 1 July 2010, checking the provision of a safety centre (SOLAS reg.II-2/23) and associated ventilation requirements(SOLAS 06 reg.II-2/8.2).
- (PI) 5.1.3 For the hull, machinery and equipment of passenger ships the check that the required documentation has been placed on board should consist of:
- (PI) 5.1.3.1 confirming that the stability information and damage control plans have been provided (SOLAS 74/88 regs.II-1/22 and 23) (SOLAS 06 regs.II-1/5-1 and 19);
- (PI) 5.1.3.2 checking the provision of a ship-specific emergency towing procedure (SOLAS 08 reg.II-1/3-4);
- (PI) 5.1.3.3 confirming that the manoeuvring booklet has been provided and that the manoeuvring information has been displayed on the navigating bridge (SOLAS 74/88 reg.II-1/28);
- (PI) 5.1.3.4 confirming that documented operating procedures for closing and securing the openings in special category spaces and ro-ro spaces are available on board (SOLAS 06 reg.II-1/23);
- (PI) 5.1.3.5 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 00/06 regs.II-1/55, II-2/17 and III/38);
- (PI) 5.1.3.6 confirming that the fire control plans are permanently exhibited or, alternatively, that emergency booklets have been provided to each officer and a duplicate of the plans or the emergency booklet are available in a prominently marked enclosure external to the ship's deckhouse (SOLAS 74/00 regs.II-2/15.2.4 and 15.3.2) (SOLAS 74/88 reg.II-2/20). The fire control plan is in the language required by the Administration;
- (PI) 5.1.3.7 confirming that the maintenance plans have been provided (SOLAS 74/88 regs.II-2/14.2.2 and 14.3);
- (PI) 5.1.3.8 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/88 regs.II-2/15.2.3 and 16.2);

- (PI) 5.1.3.9 confirming, when appropriate, that the ship is provided with a document indicating compliance with the special requirements for carrying dangerous goods (SOLAS 74/00/08 reg.II-2/19.4) (SOLAS 74/88 regs.II-2/41 and 54.3);
- (PI) 5.1.3.10 confirming that emergency instructions are available for each person on board, that the muster list is posted in conspicuous places, and that they are in a language understood by the persons on board (SOLAS 74/00 regs.III/8 and 53);
- (PI) 5.1.3.11 confirming that the training manual for the life-saving appliances has been provided and is available in the working language of the ship (SOLAS 74/00/04 reg.III/35);
- (PI) 5.1.3.12 confirming that the checklist and instructions for MES, if provided, and onboard maintenance of the life-saving appliances have been provided (SOLAS 74/00 reg.III/36);
- (PI) 5.1.3.13 confirming that a table or curve of residual deviations for the magnetic compass have been provided, and that a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00 reg.V/19);
- (PI) 5.1.3.14 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 regs.V/16 and 19);
- (PI) 5.1.3.15 checking that the charts and nautical publications necessary for the intended voyage are available and have been updated (SOLAS 74/00 regs.V/19 and 27);
- (PI) 5.1.3.16 checking that the International Code of Signals is available where the ship is required to carry a radio installation (SOLAS 74/88 reg.V/21);
- (PI) 5.1.3.17 confirming that a list showing the operational limitations imposed to the ship is kept on board (SOLAS 74/00 reg.V/30);
- (PI) 5.1.3.18 checking that the life-saving signals to be used by ships, aircraft or persons in distress (SOLAS 74/00 reg.V/29);
- (PI) 5.1.3.19 checking the carriage of operating manuals for all equipment (SOLAS 74/88 reg.IV/15);
- (PI) 5.1.3.20 checking the carriage of service manuals for all equipment when at-sea maintenance is the declared option (SOLAS 74/88 reg.IV/15);
- (PI) 5.1.3.21 checking for a valid radio licence issued by the flag Administration (ITU RR Art.24);
- (PI) 5.1.3.22 checking the radio operators' certificates of competence (ITU RR Art.55);
- (PI) 5.1.3.23 checking the emission on operational frequencies, coding and registration on the 406 MHz signal without transmission of a distress call to the satellite;

- (PI) 5.1.3.24 checking the radio log (SOLAS 74/88 text in force prior to 1 February 1992 reg.IV/19 and ITU RR App.11);
- (PI) 5.1.3.25 checking the carriage of up-to-date ITU publications (ITU RR App.11);
- (PI) 5.1.3.26 checking that the EPIRB has been subject to maintenance at intervals not exceeding five years at an approved shore-based maintenance facility;
- (PI) 5.1.3.27 if possible, checking the emission on operational frequencies, coding and registration on the 121.5 MHz homing signal without transmission of the distress call to satellite system;
- (PI) 5.1.3.28 confirming that a continuous synopsis record is provided (SOLAS 74/02 reg.XI-1/5);
- (PI) 5.1.3.29 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg.V/28).
- (PI) 5.1.4 For the hull, machinery and equipment of passenger ships the completion of the initial survey should consist of:
 - (PI) 5.1.4.1 after a satisfactory survey, issuing the Passenger Ship Safety Certificate and its associated Record of Equipment (Form P).
- (PR) **5.2 Renewal surveys** – see part "General", section 4.5
 - (PR) 5.2.1 For the hull, machinery and equipment of passenger ships the examination of current certificates and other records should consist of:
 - (PR) 5.2.1.1 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (PR) 5.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
 - (PR) 5.2.1.3 checking the validity of the International Ship Security Certificate;
 - (PR) 5.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;
 - (PR) 5.2.1.5 checking the certificates of class, if the ship is classed with a classification society;
 - (PR) 5.2.1.6 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
 - (PR) 5.2.1.7 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
 - (PR) 5.2.1.8 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;

- (PR) 5.2.1.9 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00 reg.V/14) (SOLAS 74/88 reg.V/13(b));
- (PR) 5.2.1.10 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (PR) 5.2.1.11 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 00/06 regs.II-1/55, II-2/17 and III/38);
- (PR) 5.2.1.12 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (PR) 5.2.1.13 checking that the routine surveys of the boilers and other pressure vessels, as determined by the Administration, have been carried out as required and that safety devices, such as the boiler safety valves, have been tested;
- (PR) 5.2.1.14 checking that, as appropriate, the hull and machinery has been presented for survey in accordance with the continuous survey scheme approved by the Administration or a classification society;
- (PR) 5.2.1.15 confirming that the opening and the closing and locking of side scuttles positioned below the margin line or the bulkhead deck, as applicable, are being recorded in the log-book (SOLAS 74/88 reg.II-1/17), (SOLAS 74/06 reg.II-1/15);
- (PR) 5.2.1.16 confirming that the closure of the cargo loading doors and the opening and closing of any doors at sea required for the operation of the ship or the embarking and disembarking of passengers are being recorded in the log-book (SOLAS 74/88 reg.II-1/20-1) (SOLAS 06 reg.II-1/22);
- (PR) 5.2.1.17 confirming that the stability information and damage control plans are readily available (SOLAS 74/88 regs.II-1/22 and 23) (SOLAS 06 regs.II-1/5-1 and 19);
- (PR) 5.2.1.18 confirming from the log-book entries that the openings required to be closed at sea are being kept closed and that the required drills and inspections of watertight doors, etc., are being carried out (SOLAS 74/88 regs.II-1/24 and 25) (SOLAS 06 regs.II-1/21 and 22);
- (PR) 5.2.1.19 confirming that documented operating procedures for closing and securing the openings in special category spaces and ro-ro spaces are available on board (SOLAS 06 reg.II-1/23);
- (PR) 5.2.1.20 confirming that the manoeuvring booklet is readily available and that the manoeuvring information is displayed on the navigating bridge (SOLAS 74/88 reg.II-1/28);
- (PR) 5.2.1.21 confirming that the fire control plans are permanently exhibited or, alternatively, that emergency booklets have been provided and a duplicate of the plans or the emergency booklet is available in a

- prominently marked enclosure external to the ship's deckhouse (SOLAS 74/88 reg.II-2/20);
- (PR) 5.2.1.22 confirming that the maintenance plans have been provided (SOLAS 74/00 regs.II-2/14.2.2 and 14.3);
- (PR) 5.2.1.23 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/00 regs.II-2/15.2.3 and 16.2);
- (PR) 5.2.1.24 checking whether any fire has occurred on board necessitating the operation of the fixed fire-extinguishing systems or the portable fire extinguishers since the last survey and the entries into the ship's log-book;
- (PR) 5.2.1.25 checking, when appropriate, that the ship is provided with a document indicating compliance with the special requirements for carrying dangerous goods (SOLAS 74/00/08 reg.II-2/19.4) (SOLAS 74/88 reg.II-2/54.3);
- (PR) 5.2.1.26 confirming, when appropriate, that there is a special list, manifest or stowage plan for the carriage of dangerous goods (SOLAS 74/88 reg.VII/5);
- (PR) 5.2.1.27 confirming that emergency instructions are available for each person on board, that the muster list is posted in conspicuous places, and that they are in a language understood by the persons on board (SOLAS 74/00 regs.III/8 and 37);
- (PR) 5.2.1.28 checking that log-book entries are being made (SOLAS 74/00 regs.III/19 and 20), in particular:
- (PR) 5.2.1.28.1 the date when the last full muster of the passengers and crew for boat and fire drill took place;
- (PR) 5.2.1.28.2 the records indicating that the lifeboat equipment was examined at that time and found to be complete;
- (PR) 5.2.1.28.3 the last occasion when the lifeboats were swung out and when each one was lowered into the water;
- (PR) 5.2.1.28.4 the records indicating that crew members have received the appropriate onboard training;
- (PR) 5.2.1.29 confirming that the training manual and training aids for the life-saving appliances are available on board in the working language of the ship (SOLAS 74/00/04 reg.III/35);
- (PR) 5.2.1.30 confirming that the instructions for on board maintenance of the life-saving appliances is on board (SOLAS 74/00 reg.III/36);
- (PR) 5.2.1.31 checking by the log-book entries that the testing and the emergency drills of the steering gear have been carried out (SOLAS 74/00 reg.V/26);

- (PR) 5.2.1.32 confirming that a table or curve of residual deviations for the magnetic compass is available and that a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00 reg.V/19);
- (PR) 5.2.1.33 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (PR) 5.2.1.34 checking that the charts and nautical publications necessary for the intended voyage are available and have been updated (SOLAS 74/00 reg.V/27);
- (PR) 5.2.1.35 checking that the compass deviation book is properly maintained (SOLAS 74/00 reg.V/19);
- (R) 5.2.1.36 confirming that a list showing the operational limitations imposed on the ship is kept on board (SOLAS 74/00 reg.V/30);
- (R) 5.2.1.37 checking the life-saving signals to be used by ships, aircraft or persons in distress (SOLAS 74/00 reg.V/29);
- (PR) 5.2.1.38 confirming the provisions of (PI) 5.1.3.14 to (PI) 5.1.3.19;
- (PR) 5.2.1.39 confirming that a record has been kept in the period since the last survey to the satisfaction of the Administration and as required by the Radio Regulations (SOLAS 74/88 reg.IV/17);
- (PR) 5.2.1.40 checking documentary evidence that the actual capacity of the battery has been proved in port within the last 12 months (SOLAS 74/88 reg.IV/13);
- (PR) 5.2.1.41 if applicable, checking that a list of all limitations on the operation of a passenger ship is kept on board and updated;
- (PR) 5.2.1.42 confirming that continuous synopsis record is provided (SOLAS 74/02 reg.XI-1/5);
- (PR) 5.2.1.43 checking that the annual test has been carried out for the Satellite EPIRB and, if applicable, that shore-based maintenance has been carried out at intervals not exceeding five years (SOLAS 74/04 reg.IV/15);
- (PR) 5.2.1.44 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg.V/28);
- (PR) 5.2.1.45 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable.
- (PR) 5.2.2 For the hull, machinery and equipment of passenger ships the renewal survey should consist of:
 - (PR) 5.2.2.1 examining the outside of the ship's bottom, including the bottom and bow plating, keel, bilge keels, stem, stern frame, the rudder, sea chests and strainers, noting the clearance measured in the rudder bearings,

- examining the propeller and shaft seals, as far as practicable, and noting the clearance measured in the propeller shafts (SOLAS 74/88 reg.I/7(b)(ii));
- (PR) 5.2.2.2 examining the arrangements for subdivision, including the ship's stability in the damaged condition, and checking the subdivision load lines (SOLAS 74/88 regs.II-1/4 to 8, 13 and 16) (SOLAS 06 regs.II-1/8, 14 and 18);
- (PR) 5.2.2.3 checking the ballasting arrangements (SOLAS 74/88 reg.II-1/9) (SOLAS 06 reg.II-1/20);
- (PR) 5.2.2.4 confirming that dedicated sea water ballast tanks have been coated in accordance with resolution MSC.215(82) when appropriate (SOLAS 74/00/06 reg.II-1/3-2);
- (PR) 5.2.2.5 confirming when appropriate that the maintenance of the protective coating is included in the overall ship's maintenance system (SOLAS 74/00/06 reg.II-1/3-2);
- (PR) 5.2.2.6 examining the collision and other watertight bulkheads required for the ship's subdivision (SOLAS 74/88 regs.II-1/10, 14, 15 and 18) (SOLAS 06, regs.II-1/10, 11, 12, 13 and 16);
- (PR) 5.2.2.7 confirming that the watertight integrity has been maintained where pipes, scuppers, etc., pass through subdivision watertight bulkheads (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);
- (PR) 5.2.2.8 confirming that a diagram is provided on the navigating bridge showing the location of the watertight doors together with indicators showing whether the doors are open or closed (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);
- (PR) 5.2.2.9 testing the operation of the watertight doors both from the navigating bridge in the event of an emergency and locally at the door itself (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13) and, in particular, that they are:
- (PR) 5.2.2.9.1 operable locally from each side of the bulkhead;
- (PR) 5.2.2.9.2 provided with devices giving an indication of whether the door is open or closed at all remote operating positions;
- (PR) 5.2.2.9.3 provided with an audible alarm that is distinct from any other alarm in the area and, when appropriate, an intermittent visual signal;
- (PR) 5.2.2.9.4 provided with control handles on each side of the bulkhead so that a person may hold both handles in the open position and pass safely through the watertight door without accidentally setting the power closing mechanism into operation;
- (PR) 5.2.2.10 confirming that the watertight doors and their indicating devices are operable in the event of a failure of the main and emergency sources of power (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);

- (PR) 5.2.2.11 checking, when appropriate, any watertight doors that are not required to be closed remotely, fitted in watertight bulkheads dividing 'tween deck spaces, and confirming that a notice is affixed concerning their closure (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);
- (PR) 5.2.2.12 confirming that a notice is affixed to any portable plates on bulkheads in machinery spaces concerning their closure and, if appropriate, testing any power-operated watertight door fitted in lieu (SOLAS 74/88 reg.II-1/15) (SOLAS 06 reg.II-1/13);
- (PR) 5.2.2.13 examining the arrangements for closing side scuttles and their deadlights, also scuppers, sanitary discharges and similar openings and other inlets and discharges in the shell plating below the margin line (SOLAS 74/88 reg.II-1/17);
- (PR) 5.2.2.14 examining the arrangements for closing side scuttles and their deadlights, also scuppers, sanitary discharges and similar openings and other inlets and discharges in the shell plating below the bulkhead deck (SOLAS 06 reg.II-1/15);
- (PR) 5.2.2.15 confirming that valves for closing the main and auxiliary sea inlets and discharges in the machinery spaces are readily accessible and indicators showing the status of the valves are provided (SOLAS 74/88 reg.II-1/17) (SOLAS 06 reg.II-1/15);
- (PR) 5.2.2.16 confirming that gangway, cargo and coaling ports fitted below the margin line may be effectively closed and that the inboard ends of any ash or rubbish chutes are fitted with an effective cover (SOLAS 74/88 reg.II-1/17);
- (PR) 5.2.2.17 confirming that gangway, cargo and fuelling ports fitted below the bulkhead deck may be effectively closed and that the inboard ends of any ash or rubbish chutes are fitted with an effective cover (SOLAS 06 reg.II-1/15);
- (PR) 5.2.2.18 examining the arrangements to maintain the watertight integrity above the margin line or the bulkhead deck as applicable (SOLAS 74/88 reg.II-1/20) (SOLAS 06 reg.II-1/17);
- (PR) 5.2.2.19 examining the arrangements for the bilge pumping and confirming that each bilge pump and the bilge pumping system provided for each watertight compartment is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 05 reg.II-1/35-1);
- (PR) 5.2.2.20 confirming that the drainage system of enclosed cargo spaces situated on the freeboard deck is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 05 reg.II-1/35-1);
- (PR) 5.2.2.21 examining visually the drainage facilities for blockage or other damage and confirming the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 08 reg.II-2/20.6.1.5);

- (PR) 5.2.2.22 examining, when appropriate, the means of indicating the status of any bow doors and any leakage there from (SOLAS 74/88 reg.II-1/23-2);
- (PR) 5.2.2.23 confirming, that the arrangement for monitoring special category spaces or ro-ro spaces, when fitted, is satisfactory (SOLAS 06 reg.II-1/23);
- (PR) 5.2.2.24 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are being maintained so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/88 reg.II-1/26);
- (PR) 5.2.2.25 confirming that normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (SOLAS 74/88 reg.II-1/26);
- (PR) 5.2.2.26 confirming that means are provided so that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88 reg.II-1/26);
- (PR) 5.2.2.27 examining, where practicable, the means provided to protect against overpressure in the parts of main, auxiliary and other machinery that is subject to internal pressure and may be subject to dangerous overpressure (SOLAS 74/88 reg.II-1/27);
- (PR) 5.2.2.28 examining, when appropriate, the crankcase explosion relief devices fitted to internal combustion engines and confirming that they are arranged so as to minimize the possibility of injury to personnel (SOLAS 74/88 reg.II-1/27);
- (PR) 5.2.2.29 confirming that the automatic shut-off arrangements fitted to the main turbine propulsion machinery and, where applicable, main internal combustion propulsion machinery and auxiliary machinery are being properly maintained (SOLAS 74/88 reg.II-1/27);
- (PR) 5.2.2.30 confirming, as far as practicable, the ability of the machinery to reverse the direction of the thrust of the propeller in sufficient time, including the effectiveness of any supplementary means of manoeuvring or stopping the ship (SOLAS 74/88 reg.II-1/28);
- (PR) 5.2.2.31 confirming that the main and auxiliary steering gear are being properly maintained, are arranged so that the failure of one does not render the other inoperative and that the auxiliary steering gear is capable of being brought speedily into action in an emergency (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.32 confirming that, where appropriate, essential components of the steering gear are permanently lubricated or provided with lubrication fittings (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.33 confirming that relief valves fitted to the steering gear hydraulic system which can be isolated, and in which pressure can be generated from the power source or from external forces, are being maintained and are

- set to a pressure not exceeding the design pressure (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.34 confirming that the main or auxiliary steering gear power units restart automatically when power is restored after a power failure, that they are capable of being brought into operation from a position on the navigating bridge and that, in the event of a power failure to any one of the steering gear power units, an audible and visual alarm is given on the navigating bridge (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.35 confirming that the control systems for the main steering gear from both the navigating bridge and the steering gear compartment are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.36 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, the two independent control systems from the navigating bridge are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.37 confirming that the control system for the auxiliary steering gear, in the steering gear compartment and, if this gear is power-operated, from the navigating bridge, are operating satisfactorily and that the latter is independent of the control system for the main steering gear (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.38 confirming that an audible and visual alarm is given on the navigating bridge in the event of a failure of electrical power supply (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.39 confirming that the means of communication between the bridge and the steering gear is operating satisfactorily and that, with ships having emergency steering positions, a telephone or other means of communication for relaying heading information and supplying visual compass readings to the emergency steering position is provided (SOLAS 74/00 regs.II-1/29 and V/19);
- (PR) 5.2.2.40 confirming that the angular position of the rudder is indicated independently of the steering control system on the navigating bridge if the main steering gear is power-operated and that this angular position is given in the steering gear compartment (SOLAS 74/00 reg.II-1/29 and reg.V/19);
- (PR) 5.2.2.41 confirming that with a hydraulic power-operated steering gear the audible and visual low-level alarms on the navigating bridge and in the machinery space for each hydraulic fluid reservoir are operating satisfactorily and that at least one power-actuating system including the reservoir can be recharged from a position within the steering gear compartment by means of a fixed storage tank to which a contents gauge is fitted with fixed piping (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.42 confirming that the steering gear compartment is readily accessible and is provided with suitable arrangements to ensure working access to steering gear machinery and controls under safe conditions (SOLAS 74/88 reg.II-1/29);

- (PR) 5.2.2.43 confirming that, with electric and electro-hydraulic steering gear, the means for indicating on the navigating bridge and at a main machinery control position that the motors are running and, as far as practicable, that the overload alarm and alarm for the loss of a phase in a three phase supply located at the main machinery control position are operating satisfactorily (SOLAS 74/88 reg.II-1/30);
- (PR) 5.2.2.44 confirming that the effective means of operation and control of the main and auxiliary machinery essential for the propulsion and the safety of the ship are being maintained, including, when appropriate, any means for remotely controlling the propulsion machinery from the navigating bridge (including the control, monitoring, reporting, alert and safety actions) (SOLAS 74/88/00/02 reg.II-1/31);
- (PR) 5.2.2.45 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (PR) 5.2.2.46 confirming that the means provided for manually overriding automatic controls are being maintained and that a failure does not prevent the use of the manual override (SOLAS 74/88 reg.II-1/31);
- (PR) 5.2.2.47 confirming that the appropriate safety features fitted to the oil-fired and exhaust gas boilers, unfired steam generators, steam pipe systems and air pressure systems are being maintained (SOLAS 74/88 regs.II-I/32, 33 and 34);
- (PR) 5.2.2.48 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-I/35);
- (PR) 5.2.2.49 confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II- I/36);
- (PR) 5.2.2.50 confirming that the engine room telegraph giving visual indication of the orders and answers both in the machinery space and on the navigation bridge is operating satisfactorily (SOLAS 74/88 reg.II-1/37);
- (PR) 5.2.2.51 confirming that the second means of communication between the navigation bridge and machinery space is also operating satisfactorily, including any appropriate means provided to any other positions from which the engines are controlled (SOLAS 74/88 reg.II-1/37);
- (PR) 5.2.2.52 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);
- (PR) 5.2.2.53 confirming that precautions taken to prevent any oil that may escape under pressure from any pump, filter or heater from coming into contact with heated surfaces, are efficient;
- (PR) 5.2.2.54 confirming that the means of ascertaining the amount of oil contained in any oil tank are in satisfactory working condition (SOLAS 88 reg.II-2/15) (SOLAS 02 reg.II-2/33);

- (PR) 5.2.2.55 confirming that the devices provided to prevent overpressure in any oil tank or in any part of the oil system, including the filling pipes, are in satisfactory working condition (SOLAS 88 reg.II-2/15) (SOLAS 02 reg.II-2/33);
- (PR) 5.2.2.56 confirming that the electrical installations, including the main source of power and lighting systems, are being maintained (SOLAS 74/88 regs.II-1/40 and 41);
- (PR) 5.2.2.57 confirming that the self-contained emergency source of electrical power and its associated systems are operating satisfactorily (SOLAS 74/88 reg.II-1/42);
- (PR) 5.2.2.58 confirming that the starting arrangements of each emergency generating set are satisfactory (SOLAS 74/88 reg.II-1/44);
- (PR) 5.2.2.59 checking, when appropriate, the disposition of and testing the supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PR) 5.2.2.60 for passenger ships constructed on or after 1 July 2010, checking the provision of supplementary lighting in all cabins, and checking that such lighting automatically illuminates and remains on for a minimum of 30 min when power to the normal cabin lighting is lost (SOLAS 06 reg.II-1/41.6);
- (PR) 5.2.2.61 confirming that precautions provided against shock, fire and other hazards of electrical origin are being maintained (SOLAS 74/88 reg.II-1/45);
- (PR) 5.2.2.62 confirming, when appropriate, that the arrangements for the machinery spaces being periodically unattended are satisfactory (SOLAS 74/88 reg.II-1/54);
- (PR) 5.2.2.63 examining the fire pumps and fire main and the disposition of the hydrants, hoses and nozzles and the international shore connection and checking that each fire pump, including the emergency fire pump, can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main (SOLAS 74/00 reg.II-2/10.2; FSSC chs.2 and 12) (SOLAS 74/88 regs.II-2/4 and 19);
- (PR) 5.2.2.64 examining the provision and randomly examining the condition of the portable and non-portable fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSSC ch.4) (SOLAS 74/88 reg.II-2/6);
- (PR) 5.2.2.65 examining the fixed fire extinguishing system for the machinery spaces and confirming that its means of operation are clearly marked (SOLAS 74/00 regs.II-2/10.4 and 10.5; FSSC chs.2 and 12) (SOLAS 74/88 regs.II-2/5, 7, 9, 10 and 53);
- (PR) 5.2.2.66 examining the special arrangements in the machinery spaces and confirming, as far as practicable and as appropriate, the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and

- ventilation openings, the closure of power-operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00 regs.II-2/5.2, 8.3 and 9.5) (SOLAS 74/88 reg.II-2/11);
- (PR) 5.2.2.67 checking that fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space (SOLAS 08 reg.II-2/10.4, FSSC Ch.5.2.2.2);
- (PR) 5.2.2.68 examining the fire-extinguishing arrangements in control stations, accommodation and service spaces (SOLAS 74/00 reg.II-2/10.6.1; FSSC ch.8) (SOLAS 74/88 reg.II-2/36);
- (PR) 5.2.2.69 examining, when applicable, the fire-extinguishing arrangements in cabin balconies (SOLAS 74/00 reg.II-2/10.6.1);
- (PR) 5.2.2.70 examining the provision of fire-extinguishing systems for the spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5, 6 and 7) (SOLAS 74/88 reg.II-2/15.2.5));
- (PR) 5.2.2.71 examining the arrangements for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2) (SOLAS 74/88 reg.II-2/15);
- (PR) 5.2.2.72 examining and testing, as far as practicable, any fire detection and fire alarm arrangements in machinery spaces, if applicable, accommodation and service spaces and control spaces (SOLAS 74/00 reg.II-2/7 (except 7.5.5, 7.6 and 7.9); FSSC ch.9) (SOLAS 74/88 regs.II-2/11, 12, 13, 13-1, 14, 36 and 41);
- (PR) 5.2.2.72.1 examining and testing, where applicable, any fire detection and fire alarm arrangements on cabin balconies. (SOLAS 74/00 reg.II-2/7.10);
- (PR) 5.2.2.72.2 for passenger ships constructed on or after 1 July 2010, confirming the smoke detectors in cabins, when activated, are emitting, or cause to emit, an audible alarm within the space where they are located (SOLAS 06 regs.II-2/7.5.2 and 7.5.3.1);
- (PR) 5.2.2.72.3 for passenger ships constructed on or after 1 July 2010, confirming detectors and manually operated call points of a fixed fire detection and fire alarm system can be remotely and individually identified (SOLAS 06 reg.II-2/7.2.4);
- (PR) 5.2.2.73 confirming that the firefighters' outfits and the emergency escape breathing devices (EEBDs) are complete and in good condition and that the cylinders, including the spare cylinders, of the self-contained

- breathing apparatus, are suitably charged (SOLAS 74/00 regs.II-2/10.10, 13.3.4 and 13.4.3; FSSC ch.3) (SOLAS 74/88 reg.II-2/17);
- (PR) 5.2.2.74 checking the operational readiness and maintenance of firefighting systems (SOLAS 74/00 reg.II-2/14) (SOLAS 74/88/91 reg.II- 2/21);
- (PR) 5.2.2.75 confirming, as far as practicable, that no changes have been made in the structural fire protection, including the structure, fire integrity, protection of stairways and lifts, cabin balconies, openings in 'A' and 'B' Class divisions, ventilation systems and windows and side scuttles, and the use of combustible material (SOLAS 74/00/04 regs.II-2/5.2, 5.3, 6, 8.2, 8.5, 9.2.1, 9.2.2, 9.3, 9.4.1, 9.5, 9.6 (except 9.6.5), 9.7 and 11 (except 11.6)) (SOLAS 74/88 regs.II-2/11, 16, 18, 23 to 35 and 37);
- (PR) 5.2.2.76 confirming, as far as practicable, that no changes have been made in the structural fire protection in cargo spaces intended for the carriage of dangerous goods (SOLAS 74/00 regs.II-2/19.3.8 and 19.3.10) (SOLAS 74/88 regs.II-2/4, 54.2.8, 54.2.10 and 54.2.11);
- (PR) 5.2.2.77 examining and testing any manual and automatic fire doors including the means of closing the openings in 'A' and 'B' Class divisions (SOLAS 74/00 reg.II-2/9.4.1) (SOLAS 74/88 regs.II-2/30 and 31);
- (PR) 5.2.2.78 examining and testing the main inlets and outlets of all ventilation systems and checking that the power ventilation is capable of being stopped from outside the space served (SOLAS 74/00 reg.II-2/5.2.1) (SOLAS 74/88 regs.II-2/16 and 32);
- (PR) 5.2.2.79 confirming that the stairways and ladders, including the low-location lighting system, arranged to provide a means of escape to the lifeboat and liferaft embarkation deck from all passenger and crew spaces and from those spaces in which the crew is normally employed are being maintained (SOLAS 74/00 regs.II-2/13.2, 13.3.1, 13.3.2 and 13.7; FSSC chs.11 and 13 (except paragraph 3)) (SOLAS 74/88 reg.II-2/28);
- (PR) 5.2.2.80 confirming that the means of escape from any special category spaces and ro-ro spaces are satisfactory (SOLAS 74/00 regs.II-2/13.5 and 13.6) (SOLAS 74/88 reg.II-2/28);
- (PR) 5.2.2.81 confirming that the means of escape from the machinery spaces are satisfactory (SOLAS 74/00 reg.II-2/13.4.1) (SOLAS 74/88 reg.II-2/28);
- (PR) 5.2.2.82 examining the fire-extinguishing arrangements including fire detection in cargo spaces for general cargo and dangerous goods and testing, as far as practicable and as appropriate, the operation of the means for closing the various openings (SOLAS 74/00 regs.II-2/7.6 and 10.7; FSSC ch.5) (SOLAS 74/88 reg.II-2/39);
- (PR) 5.2.2.83 examining the fire-extinguishing arrangements including fire detection in vehicle, special category and ro-ro spaces and testing, as far as practicable and as appropriate, the operation of the means for closing the various openings (SOLAS 74/00 reg.II-2/20 (except 20.5); FSSC chs.5, 6, 7, 9 and 10) (SOLAS 74/88 regs.II-2/37, 38 and 38-1);

- (PR) 5.2.2.84 examining and testing, as appropriate and as far as practicable, the crew alarm and the public address system or other effective means of communication (SOLAS 74/00 regs.II-2/7.9 and 12; LSAC ch.7) (SOLAS 74/88 reg.II-2/40);
- (PR) 5.2.2.85 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring, fire detection, ventilation, the provision of personnel protection clothing and portable appliances and testing, as far as practicable, the water supply, bilge pumping and any water spray system (SOLAS 74/00/08 reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4); FSSC chs.3, 4, 7, 9 and 10) (SOLAS 74/88 regs.II-2/41 and 54);
- (PR) 5.2.2.86 examining, when appropriate, the helicopter facilities (SOLAS 74/00 regs.II-2/18, III/28) (SOLAS 74/88 reg.II-2/18.8);
- (PR) 5.2.2.87 checking the requirement for passenger ships carrying more than 36 passengers and constructed before 1 October 1994 (SOLAS 74/88/92 regs.II-2/41-1 and 41-2);
- (PR) 5.2.2.88 for passenger ships constructed on or after 1 July 2010 and having a length of 120 m or more or having three or more main vertical zones, checking the designation of safe areas (SOLAS 06 reg.II-2/21);
- (PR) 5.2.2.89 for passenger ships constructed on or after 1 July 2010, checking the provision of a safety centre (SOLAS 06 reg.II-2/23) and its associated ventilation system (SOLAS 06 reg.II-2/8.2);
- (PR) 5.2.2.90 checking that emergency instructions are available for each person on board, the muster list is posted in conspicuous places and there are signs or posters in the vicinity of survival craft and their launching stations (SOLAS 74/96 regs.III/8, 9 and 37);
- (PR) 5.2.2.91 checking that the falls used in launching have been periodically inspected and have been renewed in the past 5 years (SOLAS 74/96/04 reg.III/20);
- (PR) 5.2.2.92 examining each survival craft, including its equipment and, when fitted, the on-load release and hydrostatic lock, and for inflatable liferafts the hydrostatic release unit and float free arrangements, including the date of servicing or replacement. Checking that the hand-flares are not out of date and that the required number of search and rescue locating devices are fitted in liferafts and those liferafts are clearly marked (SOLAS 74/96/00/02/08 regs.III/20, 21, 23, 24 and 26; LSAC sections 2.3 to 2.5, 3.2 and 4.1 to 4.6);
- (PR) 5.2.2.93 checking that the life-saving appliances are of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (PR) 5.2.2.94 examining the embarkation arrangements and launching appliances for each survival craft. Each lifeboat should be lowered to the embarkation position or, if the stowage position is the embarkation position, lowered a short distance and, if practicable, one of the

- survival craft should be lowered to the water. The operation of the launching appliances for davit launched liferafts should be demonstrated. Checking that a thorough examination of launching appliances, including the dynamic testing of the winch brake, and servicing of lifeboat and rescue boat on-load release gear and davit-launched liferaft automatic release hooks have been carried out (SOLAS 74/96/04 regs.III/11, 12, 13, 15, 16, 20, 21 and 23; LSAC sections 6.1 and 6.2);
- (PR) 5.2.2.95 checking the rotational deployment of MES (SOLAS 74/88 reg.III/20.8.2; LSAC section 6.2.2.2);
- (PR) 5.2.2.96 examining each rescue boat, including its equipment. For inflatable rescue boats, confirming that they are stowed in a fully inflated condition (SOLAS 74/88/04 regs.III/14, 17, 21, 26.3 and 34);
- (PR) 5.2.2.97 examining the embarkation and recovery arrangements for each rescue boat;
- (PR) 5.2.2.98 checking the arrangements for mustering passengers (SOLAS 74/96 regs.III/11, 24 and 25);
- (PR) 5.2.2.99 confirming that a means of rescue is provided on ro-ro passenger ships (SOLAS 74/00 regs.III/11, 26.4);
- (PR) 5.2.2.100 confirming that a helicopter pick-up area is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/28);
- (PR) 5.2.2.101 confirming that a decision support system is provided for the Master (SOLAS 74/88 reg.III/29);
- (PR) 5.2.2.102 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern;
- (PR) 5.2.2.103 examining and checking the operation of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 regs.III/6, IV/7 and 14);
- (PR) 5.2.2.104 examining the line-throwing appliance and checking that its rockets and the ship's distress signals are not out of date (SOLAS 74/96 regs.III/6, 18 and 35; LSAC sections 3.1 and 7.1);
- (PR) 5.2.2.105 examining and checking the operation of onboard communications equipment and verifying that the general alarm system is audible in accommodation, normal crew working spaces and on open decks (SOLAS 74/96 regs.III/6, 18 and 35; LSAC sections 3.1 and 7.1);
- (PR) 5.2.2.106 examining the provision, disposition, stowage and condition of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets¹², immersion suits, anti-exposure suits and thermal protective aids and that their

¹² Refer to MSC.1/Circ.1372 on the Guidance for application of SOLAS regulation II-1/41.6.

- associated batteries are not out of date (SOLAS 74/88/06 regs.III/7, 21, 22 and 26; LSAC sections 2.1 to 2.5 and 3.1 to 3.3);
- (PR) 5.2.2.106.1 checking the provision of lifejackets in three sizes (Infant, Child, Adult) and checking that they are marked by either weight or height, or by both weight and height (LSAC section 2.2.1.1). For passenger ships on voyages less than 24 h, checking that the number of infant lifejackets equals to at least 2.5% of the number of passengers on board and for passenger ships on voyages 24 h or greater, checking that infant lifejackets are provided for each infant on board (SOLAS 06 reg.III/7.2.1);
- (PR) 5.2.2.106.2 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSAC section 2.3.1);
- (PR) 5.2.2.107 checking the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including when supplied from the emergency source of power (SOLAS 74/88 regs.II-1/42 and III/11);
- (PR) 5.2.2.108 checking that the required navigation lights, shapes and sound signalling equipment are in order (International Regulations for Preventing Collisions at Sea in force (COLREG), rules 20 to 24, 27 to 30 and 33);
- (PR) 5.2.2.109 checking the provision and specification of the following navigation equipment as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and distance indicator, rudder angle indicator, propeller rate-of-revolution indicator, variable pitch propeller pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, a pelorus or compass bearing device, means for correcting heading and bearings, a BNWAS, as applicable, and ECDIS including back-up arrangements, as applicable. Items that cannot be checked with the ship in port should be verified from records (SOLAS 74/00/09 reg.V/19);
- (PR) 5.2.2.110 checking for the provision, specification operation and annual performance test of the voyage data recorder (SOLAS 74/00/04 reg.V/20);
- (PR) 5.2.2.111 checking that the International Code of Signals and a copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02 reg.V/21);
- (PR) 5.2.2.112 checking that a valid conformance test report of the long-range identification and tracking system is available on board, where fitted (SOLAS 04 reg.V/19-1);

- (PR) 5.2.2.113 checking the provision, operation and that the annual test has been carried out, for the automatic identification system, where fitted (SOLAS 74/00/04 reg.V/19);
- (PR) 5.2.2.114 checking the provision and specification of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00 reg.V/17);
- (PR) 5.2.2.115 checking the provisions of (PI) 5.1.2.111 to (PI) 5.1.2.136 and (PI) 5.1.2.139 to (PI) 5.1.2.140;
- (PR) 5.2.2.116 confirming that no new materials containing asbestos were installed on board (SOLAS 74/00/05/09 reg.II-1/3-5);
- (PR) 5.2.2.117 checking that the means of embarkation and disembarkation from ships for use in port and in port related operations, such as gangways and accommodation ladders, are in satisfactory condition, as applicable (SOLAS 08 reg.II-1/3-9).
- (PR) 5.2.3 For the hull, machinery and equipment of passenger ships the completion of the renewal survey should consist of:
 - (PR) 5.2.3.1 after a satisfactory survey, issuing the Passenger Ship Safety Certificate and its associated Record of Equipment (Form P).

ANNEX 2

**SURVEY GUIDELINES UNDER THE 1966 LOAD LINE CONVENTION,
AS MODIFIED BY THE 1988 PROTOCOL RELATING THERETO**

- (L) 1 **GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL LOAD LINE CERTIFICATE OR INTERNATIONAL LOAD LINE EXEMPTION CERTIFICATE**
- (LI) 1.1 **Initial surveys** – see part "General" section 4.1
- (LI) 1.1.1 For the load line the examination of plans and designs should consist of:
 - (LI) 1.1.1.1 examining the structural strength at the draft corresponding to the assigned freeboard (LLC 66/88 reg.1);
 - (LI) 1.1.1.2 examining the intact stability, and, where applicable, the damaged stability information and the loading and ballasting information that is to be supplied to the master, and, where not dispensed by the Administration, inclining experimental data (LLC 66/88/08 regs.1 and 10; IS Code chs.1, 2 and 3);
 - (LI) 1.1.1.3 determining the freeboard, including specifying and the consideration of the conditions of assignment for the freeboard (LLC 66/88/03 regs.11 to 45).
- (LI) 1.1.2 For the load line the survey during construction and after installation should consist of:
 - (LI) 1.1.2.1 checking that, as far as its strength is concerned, the ship has been constructed in accordance with the approved plans (LLC 66/88 reg.1);
 - (LI) 1.1.2.2 confirming that the deck line and load line mark are properly positioned (LLC 66/88 regs.4 to 9);
 - (LI) 1.1.2.3 witnessing the inclining experiment or lightweight survey (LLC 66/88/03 reg.10);
 - (LI) 1.1.2.4 examining the superstructure end bulkheads and the openings therein (LLC 66/88 regs.11 and 12);
 - (LI) 1.1.2.5 examining the means of securing the weathertightness of cargo hatchways, other hatchways and other openings on the freeboard and superstructure decks (LLC 66/88 regs.13 to 18);
 - (LI) 1.1.2.6 examining the ventilators and air pipes, including their coamings and closing appliances (LLC 66/88 regs.19 and 20);
 - (LI) 1.1.2.7 examining the watertight integrity of the closures to any openings in the ship's side below the freeboard deck (LLC 66/88 reg.21);

- (LI) 1.1.2.8 examining the scuppers, inlets and discharges (LLC 66/88/03 reg.22);
- (LI) 1.1.2.9 examining the garbage chutes (LLC 66/88/03 reg.22-1);
- (LI) 1.1.2.10 examining the spurling pipes and cable lockers (LLC 66/88/03 reg.22-2);
- (LI) 1.1.2.11 examining the side scuttles and deadlights (LLC 66/88 reg.23);
- (LI) 1.1.2.12 examining the bulwarks including the provision of freeing ports, special attention being given to any freeing ports fitted with shutters (LLC 66/88/03 regs.24 and 25);
- (LI) 1.1.2.13 examining the guardrails, gangways, walkways and other means provided for the protection of the crew and means for safe passage of crew (LLC 66/88/03 regs.25 and 25-1);
- (LI) 1.1.2.14 special requirements for ships permitted to sail with type "A" or type "B-minus" freeboards (LLC 66/88/03 regs.26 and 27);
- (LI) 1.1.2.15 checking, when applicable, of the fittings and appliances for timber deck cargoes (LLC 66/88 regs.42 to 45).
- (LI) 1.1.3 For the load line the check that certificates, etc., have been placed on board should consist of:
 - (LI) 1.1.3.1 checking that the loading and ballasting information has been supplied to the master (LLC 66/88 reg.10).
- (LI) 1.1.4 For the load line the completion of the initial survey should consist of:
 - (LI) 1.1.4.1 after a satisfactory survey, issuing the International Load Line Certificate or International Load Line Exemption Certificate.
- (LA) **1.2 Annual surveys** – see part "General", section 4.2
 - (LA) 1.2.1 For the load line the examination of current certificates and other records should consist of:
 - (LA) 1.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - (LA) 1.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
 - (LA) 1.2.1.3 checking the validity of the International Ship Security Certificate;
 - (LA) 1.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (LA) 1.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;

- (LA) 1.2.1.6 checking the certificate of class, if the ship is classed with a classification society;
- (LA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (LA) 1.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (LA) 1.2.1.9 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (LA) 1.2.1.10 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (LA) 1.2.1.11 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (LA) 1.2.1.12 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/14);
- (LA) 1.2.1.13 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (LA) 1.2.1.14 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (LA) 1.2.1.15 checking that the stability and, where applicable, the loading and ballasting information is available (LLC 66/88/08 regs.1 and 10; IS Code chs.1, 2 and 3);
- (LA) 1.2.1.16 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable.
- (LA) 1.2.2 For the load line the annual survey should consist of:
 - (LA) 1.2.2.1 checking, in general, that there has been no deterioration in the strength of the hull (LLC 66/88 reg.1);
 - (LA) 1.2.2.2 checking of the positions of the deck line and load line which, if necessary, are to be re-marked and re-painted (LLC 66/88 regs.4 to 9);
 - (LA) 1.2.2.3 checking that no alterations have been made to the hull or superstructures that would affect the calculations determining the position of the load lines (LLC 66/88 regs.11 to 45);
 - (LA) 1.2.2.4 examining the superstructure end bulkheads and the openings therein (LLC 66/88 regs.11 and 12);

- (LA) 1.2.2.5 examining the means of securing the weathertightness of cargo hatchways, other hatchways and other openings on the freeboard and superstructure decks (LLC 66/88 regs.13 to 18);
- (LA) 1.2.2.6 examining the ventilators and air pipes, including their coamings and closing appliances (LLC 66/88 regs.19 and 20);
- (LA) 1.2.2.7 examining the watertight integrity of the closures to any openings in the ship's side below the freeboard deck (LLC 66/88 reg.21);
- (LA) 1.2.2.8 examining the scuppers, inlets and discharges (LLC 66/88 reg.22);
- (LA) 1.2.2.9 examining the garbage chutes (LLC 66/88/03 reg.22-1);
- (LA) 1.2.2.10 examining the means provided to minimize water ingress through the spurling pipes and chain lockers (LLC 66/88/03 reg.22-2);
- (LA) 1.2.2.11 examining the side scuttles and deadlights (LLC 66/88 reg.23);
- (LA) 1.2.2.12 examining the bulwarks including the provision of freeing ports, special attention being given to any freeing ports fitted with shutters (LLC 66/88/03 regs.24 and 25);
- (LA) 1.2.2.13 examining the guardrails, gangways, walkways and other means provided for the protection of the crew and means for safe passage of crew (LLC 66/88/03 regs.25 and 25-1);
- (LA) 1.2.2.14 examining the special requirements for ships permitted to sail with type "A" or type "B-minus" freeboards (LLC 66/88/03 regs.26 and 27);
- (LA) 1.2.2.15 checking, when applicable, the fittings and appliances for timber deck cargoes (LLC 66/88 regs.42 to 45).
- (LA) 1.2.3 For the load line the completion of the annual survey should consist of:
 - (LA) 1.2.3.1 after a satisfactory survey, endorsement of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (LA) 1.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (LR) **1.3 Renewal surveys** – see part "General", section 4.5
 - (LR) 1.3.1 For the load line the examination of current certificates and other records should consist of:
 - (LR) 1.3.1.1 the provisions of (LA) 1.2.1, except for the validity of the International Load Line Certificate or International Load Line Exemption Certificate.
 - (LR) 1.3.2 For the load line the renewal survey should consist of:
 - (LR) 1.3.2.1 the provisions of (LA) 1.2.2;

- (LR) 1.3.2.2 examining the hull to ensure that its strength is sufficient for the draft corresponding to the freeboard assigned (LLC 66/88 reg.1).
- (LR) 1.3.3 For the load line the completion of the renewal survey should consist of:
 - (LR) 1.3.3.1 after a satisfactory survey, issuing the International Load Line Certificate or International Load Line Exemption Certificate.

ANNEX 3

SURVEY GUIDELINES UNDER THE MARPOL CONVENTION

- (O) 1 **GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE**
- (OI) 1.1 **Initial surveys** – see part "General", section 4.1
- (OI) 1.1.1 For oil pollution prevention the examination of plans and designs should consist of:
 - (OI) 1.1.1.1 examining the arrangements for the control of the discharge of oil and examining the plans and designs of the oil discharge monitoring and control system and oily-water separating and oil filtering equipment; confirming that pollution prevention equipment is type approved in accordance with the relevant Resolution (MARPOL 90/04 Annex I regs.14 & 15);
 - (OI) 1.1.1.2 examining the arrangements for operation in special areas (MARPOL 90/04 Annex I reg.15);
 - (OI) 1.1.1.3 examining the arrangements for the segregation of oil and water ballast and the prohibition of carriage of oil in the forepeak tanks or in spaces forward of the collision bulkhead (MARPOL 90/04 Annex I reg.16);
 - (OI) 1.1.1.4 examining the oil residue (sludge) tank and standard discharge arrangements (MARPOL 90/04/09 Annex I regs.12 and 13);
 - (OI) 1.1.1.5 examining oil fuel tank protection arrangements (MARPOL 90/04 Annex I reg.12A);
 - (OI) 1.1.1.6 confirming that requirements regarding capacity and protection of oil fuel tanks are complied with (MARPOL 90/04 Annex I reg.12A);
 - (OI) 1.1.1.7 examining the shipboard oil pollution emergency plan or in the case of a chemical/product tanker the shipboard marine pollution emergency plan (MARPOL 90/04 Annex I reg.37).
- (OI) 1.1.2 For oil pollution prevention, concerning the additional requirements for oil tankers the examination of plans and designs should consist of:
 - (OI) 1.1.2.1 examining the ODME Manual and the arrangements for the control of the discharge of oil and for the retention of oil on board. Verifying that the ODME is type-approved in accordance with the relevant Resolution (MARPOL 90/04 Annex I regs.29, 31 and 34);
 - (OI) 1.1.2.2 examining the arrangements for operation in special areas (MARPOL 90/04 Annex I reg.34);
 - (OI) 1.1.2.3 examining the arrangements for the segregated ballast tanks, checking their capacity and ascertaining whether the draft and trim conditions will be met (MARPOL 90/04 Annex I reg.18);

- (OI) 1.1.2.4 examining the arrangements for crude oil washing, including shadow diagrams and the Operations and Equipment Manual, checking that an inert gas system is to be fitted (MARPOL 90/04 Annex I regs.33 and 35);
- (OI) 1.1.2.5 examining, as appropriate, the arrangements for the prevention of oil pollution in the event of collision or stranding (MARPOL 90/04 Annex I regs.19 to 22);
- (OI) 1.1.2.6 examining the protective location of the segregated ballast spaces and the arrangements for minimizing pollution due to side and bottom damages (MARPOL 90/04 Annex I regs.18, and 24 to 26);
- (OI) 1.1.2.7 confirming, as appropriate, that arrangements are made for the maintenance and inspection of wing and double bottom tanks or spaces (MARPOL 90/04 Annex I reg.19);
- (OI) 1.1.2.8 examining the arrangements for cargo pump-room bottom protection (double bottom where required) (MARPOL 90/04 Annex I reg.22);
- (OI) 1.1.2.9 examining the pumping, piping and discharge arrangements (MARPOL 90/04 Annex I reg.30);
- (OI) 1.1.2.10 examining the arrangements of the oil/water interface detector (MARPOL 90/04 Annex I reg.32);
- (OI) 1.1.2.11 examining, for oil tanker of 5,000 tonnes deadweight and above delivered after 1 February 2002, the intact stability (MARPOL 90/04 Annex I reg.27);
- (OI) 1.1.2.12 examining, for oil tanker of 150 gross tonnage and above delivered after 31 December 1979, the subdivision and damage stability (MARPOL 90/04 Annex I reg.28);
- (OI) 1.1.2.13 examining the accidental oil outflow performance, as applicable (MARPOL 90/04 Annex I reg.23).
- (OI) 1.1.3 For the oil pollution prevention the survey during construction and after installation should consist of:
 - (OI) 1.1.3.1 confirming the satisfactory installation and operation of, as appropriate, oil filtering equipment and when appropriate the operation of the automatic means provided to stop the discharge of effluent and the satisfactory operation of the alarm – or other installation (MARPOL 90/04 Annex I regs.14 and 15);
 - (OI) 1.1.3.2 confirming, when applicable, that the oil content meter and its recording device are operable and that there is a sufficient supply of consumables for the recording device on board (MARPOL 90/04 Annex I regs.14 and 15);
 - (OI) 1.1.3.3 testing, where fitted, the automatic stopping device required for discharges in Special Areas (MARPOL 90/04 Annex I reg.15);

- (OI) 1.1.3.4 confirming the segregation of the oil fuel and water ballast system and the non-carriage of oil in forepeak tanks (MARPOL 90/04 Annex I reg.16);
- (OI) 1.1.3.5 confirming that the oil residue (sludge) tank and its discharge arrangements are satisfactory and, when the size of the sludge tank is approved on the basis of such installations, confirming the satisfactory operation of homogenizers, sludge incinerators or other recognized means for the control of sludge (MARPOL 90/04/09 Annex I reg.12);
- (OI) 1.1.3.6 confirming the provision of the standard discharge connection (MARPOL 90/04 Annex I reg.13);
- (OI) 1.1.3.7 confirming oil fuel tank protection arrangements (MARPOL 90/04 Annex I reg.12A).
- (OI) 1.1.4 For oil pollution prevention, concerning the additional requirements for oil tankers the survey during construction and after installation should consist of:
 - (OI) 1.1.4.1 confirming that the arrangements of slop tanks or cargo tanks designated as slop tanks, and associated piping systems, are satisfactory (MARPOL 90/04 Annex I regs.29 and 34);
 - (OI) 1.1.4.2 confirming the satisfactory installation and operation of the oil discharge monitoring and control system, including any audible or visual alarms, the automatic and manual means to stop the discharge of effluent, the starting interlock, the accuracy of the flow meter and the applicable resolution's requirements for installation survey¹³ (MARPOL 90/04 Annex I regs.31 and 34);
 - (OI) 1.1.4.3 confirming that the oil content meter and its recording device are operable and that there is a sufficient supply of consumables for the recording device on board (MARPOL 90/04 Annex I regs.31 and 34);
 - (OI) 1.1.4.4 confirming that the approved oil/water interface detectors are on board and are operational (MARPOL 90/04 Annex I reg.32);
 - (OI) 1.1.4.5 confirming that the arrangements of pumps, pipes and valves are in accordance with the requirements for segregated ballast systems and that there are no cross-connections between the cargo and segregated ballast systems (MARPOL 90/04 Annex I reg.18);
 - (OI) 1.1.4.6 where a portable spool piece is provided for the emergency discharge of segregated ballast by connecting the segregated ballast system to a cargo pump, confirming that non-return valves are fitted on the segregated ballast connections and that the spool piece is mounted in a conspicuous position in the pump room with a permanent notice restricting its use (MARPOL 90/04 Annex I reg.18);

¹³ Resolution A.586(14) or MEPC.108(49), as applicable.

- (OI) 1.1.4.7 testing ballast pipelines that pass through cargo tanks and those cargo pipelines that pass through ballast tanks to ensure there is no cross contamination (MARPOL 90/04 Annex I reg.18);
- (OI) 1.1.4.8 confirming that the crude oil washing system is installed in accordance with the approved plans (MARPOL 90/04 Annex I regs.18 & 33) and, in particular:
 - (OI) 1.1.4.8.1 examining crude oil washing piping, pumps, valves and deck-mounted washing machines for signs of leakage and to check that all anchoring devices for crude oil washing piping are intact and secure;
 - (OI) 1.1.4.8.2 carrying out pressure testing of the crude oil washing system to 1.5 times the working pressure;
 - (OI) 1.1.4.8.3 confirming in those cases where drive units are not integral with the tank washing machines, that the number of operational drive units specified in the Manual are on board;
 - (OI) 1.1.4.8.4 checking that, when fitted, steam heaters for water washing can be properly isolated during crude oil washing operations, either by double shut-off valves or by clearly identifiable blanks;
 - (OI) 1.1.4.8.5 checking that the prescribed means of communication between the deck watch keeper and the cargo control position is operational;
 - (OI) 1.1.4.8.6 confirming that an overpressure relief device (or other approved arrangement) is fitted to the pumps supplying the crude oil washing system;
 - (OI) 1.1.4.8.7 verifying that flexible hoses for supply of oil to the washing machines on combination carriers are of an approved type, are properly stored and are in good condition;
- (OI) 1.1.4.9 verifying the effectiveness of the crude oil washing system (MARPOL 90/04 Annex I reg.33) and, in particular:
 - (OI) 1.1.4.9.1 checking that the crude oil washing machines are operable and observing the proper operation of the washing machines by means of the movement indicators and/or sound patterns or other approved methods;
 - (OI) 1.1.4.9.2 checking the effectiveness of the stripping system in appropriate cargo tanks by observing the monitoring equipment and by hand-dipping or other approved means;
 - (OI) 1.1.4.9.3 verifying by internal tank inspection after crude oil washing that the installation and operational procedures laid down in the Operations and Equipment Manual are satisfactory;
- (OI) 1.1.4.10 confirming that, where there is a crude oil washing system, an inert gas system has been installed and tested in accordance with the requirements of SOLAS 74/88/2000 (see (EI) 1.1.4.2 in Annex 1);

- (OI) 1.1.4.11 confirming, as appropriate, that the arrangements for the prevention of oil pollution in the event of collision or stranding are in accordance with the approved plans (MARPOL 90/04 Annex I regs.19 to 22);
- (OI) 1.1.4.12 confirming that the piping systems associated with the discharge of dirty ballast water or oil-contaminated water are satisfactory (MARPOL 90/04 Annex I reg.30);
- (OI) 1.1.4.13 confirming that the observation and discharge control positions for visually observing the discharge of oil-contaminated water, including the testing of the communication system between the two positions are satisfactory (MARPOL 90/04 Annex I reg.30);
- (OI) 1.1.4.14 confirming that the means of draining cargo pumps and cargo lines, including the provision of a stripping device and the connections for pumping to the slop or cargo tanks or ashore, are satisfactory (MARPOL 90/04 Annex I reg.30);
- (OI) 1.1.4.15 confirming that closing devices installed in the cargo transfer system and cargo piping, as appropriate, are satisfactory (MARPOL 90/04 Annex I regs.23 and 26);
- (OI) 1.1.4.16 confirming that the subdivision and stability arrangements, in addition to the provision of (OI) 1.1.4.15, to prevent progressive flooding are satisfactory (MARPOL 90/04 Annex I regs.23 and 26);
- (OI) 1.1.4.17 confirming the arrangements for cargo pump-room bottom protection (double bottom where required) (MARPOL 90/04 Annex I reg.22).
- (OI) 1.1.5 For the oil pollution prevention the check that the documentation has been placed on board cargo ships should consist of:
 - (OI) 1.1.5.1 confirming that certificates for type approval for the oil filtering equipment and oil content meters are available (MARPOL 90/04 Annex I reg.14);
 - (OI) 1.1.5.2 confirming that the Oil Record Book (Part I) has been provided (MARPOL 90/04 Annex I reg.17);
 - (OI) 1.1.5.3 confirming that the shipboard oil pollution emergency plan or, in the case of a chemical/product tanker, a shipboard marine pollution emergency plan has been provided (MARPOL 90/04 Annex I reg.37);
 - (OI) 1.1.5.4 confirming, as appropriate, that the Operating and Maintenance manuals for the 15ppm bilge separator and 15ppm bilge alarm are available.
- (OI) 1.1.6 For the oil pollution prevention the check that the documentation has been placed on board oil tankers should additionally consist of:
 - (OI) 1.1.6.1 confirming that, if applicable, a Ship to Ship (STS) operations Plan approved by the Administration has been provided (MARPOL Annex I Reg.41);

- (OI) 1.1.6.2 confirming that, if applicable, a Crude Oil Washing Operations and Equipment Manual has been provided (MARPOL 90/04 Annex I reg.35);
- (OI) 1.1.6.3 confirming that an operations manual for the oil discharge monitoring and control system has been provided together with any other documentation requested by the applicable resolution¹⁴ (MARPOL 90/04 Annex I reg.31);
- (OI) 1.1.6.4 confirming that certificates for type approval for the oil content meters, oil discharge monitoring and control system and oil/water interface detectors are available (MARPOL 90/04 Annex I regs.31 and 32);
- (OI) 1.1.6.5 confirming that the Oil Record Book (Part II) has been provided (MARPOL 90/04 Annex I reg.36);
- (OI) 1.1.6.6 confirming that the information and data concerning the subdivision and damage stability has been provided (MARPOL 90/04 Annex I reg.28);
- (OI) 1.1.6.7 confirming that the shipboard oil pollution emergency plan or in the case of a chemical/product tanker a shipboard marine pollution emergency plan has been provided (MARPOL 90/04 Annex I reg.37);
- (OI) 1.1.6.8 confirming, for oil tankers of 5,000 tonnes deadweight and above delivered on/after 1 February 2002, that the intact stability has been approved (MARPOL 90/04 Annex I reg.27);
- (OI) 1.1.6.9 confirming, for oil tankers of 5,000 tonnes deadweight and above, that arrangements are in place to provide prompt access to shore-based damage stability and residual structural strength computerized calculation programs (MARPOL 90/04 Annex I reg.37.4).
- (OI) 1.1.7 For oil pollution prevention the completion of the initial survey should consist of:
- (OI) 1.1.7.1 after satisfactory survey, issuing the International Oil Pollution Prevention Certificate.
- (OA) **1.2 Annual surveys** – see part "General", section 4.2
- (OA) 1.2.1 For oil pollution prevention the examination of current certificates and other records should consist of:
- (OA) 1.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (OA) 1.2.1.2 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;

¹⁴ Resolution A.586(14) or MEPC.108(49), as applicable.

- (OA) 1.2.1.3 checking the validity of the International Oil Pollution Prevention Certificate;
- (OA) 1.2.1.4 checking the certificates of class, if the ship is classed with a classification society;
- (OA) 1.2.1.5 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (OA) 1.2.1.6 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (OA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (OA) 1.2.1.8 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (OA) 1.2.1.9 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (OA) 1.2.1.10 checking, when appropriate, the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (OA) 1.2.1.11 checking the validity of the International Ship Security Certificate;
- (OA) 1.2.1.12 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88/2000 reg.V/14.2);
- (OA) 1.2.1.13 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (OA) 1.2.1.14 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (OA) 1.2.1.15 checking the certificates for the type approval of the oil filtering equipment (MARPOL 90/04 Annex I regs.14 and 15);
- (OA) 1.2.1.16 checking, when appropriate, that the Operating and Maintenance manuals for the 15ppm bilge separator and 15ppm bilge alarm are available on board;
- (OA) 1.2.1.17 verifying, if applicable, that the 15ppm bilge alarm has been calibrated by the manufacturer or a person authorized by the manufacturer and that a valid calibration certificate is available on board¹⁵;
- (OA) 1.2.1.18 checking whether the appropriate entries have been made in Part I of the Oil Record Book (MARPOL 90/04 Annex I reg.17);

¹⁵ For installations complying with resolution MEPC.107(49).

- (OA) 1.2.1.19 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable;
- (OA) 1.2.1.20 confirming that the oil pollution emergency plan or, in the case of a chemical/product tanker, a shipboard marine pollution emergency plan, is on board (MARPOL 90/04 Annex I reg.37).
- (OA) 1.2.2 For oil pollution prevention the examination of current certificates and other records for oil tankers should additionally consist of:
 - (OA) 1.2.2.1 confirming that the approved Dedicated Clean Ballast Tank Operation Manual, and/or the approved Operations and Equipment Manual for the Crude Oil Washing Systems, as appropriate, is/are on board (MARPOL 90/04 Annex I regs.18 and 35);
 - (OA) 1.2.2.2 confirming, when appropriate, that a CAS Statement of Compliance together with the CAS Final Report¹⁶ are on board (MARPOL 90/04 Annex I, regs. 20.6, 20.7 and 21.6);
 - (OA) 1.2.2.3 confirming that the Operating and Maintenance manual for the oil discharge monitoring and control system, is on board (MARPOL 90/04 Annex I reg.31);
 - (OA) 1.2.2.4 confirming that a valid calibration certificate for the oil discharge monitoring equipment is available on board¹⁷;
 - (OA) 1.2.2.5 checking whether the appropriate entries have been made in Part II of the Oil Record Book (MARPOL 90/04 Annex I reg.36);
 - (OA) 1.2.2.6 confirming that for oil tankers of 5,000 tonnes deadweight and above delivered on/after 1 February 2002 the loading conditions and intact stability information, in an approved form, is on board (MARPOL 90/04 Annex I reg.27);
 - (OA) 1.2.2.7 confirming that subdivision and damage stability information in an approved form, where applicable, is on board (MARPOL 90/04 Annex I reg.28);
 - (OA) 1.2.2.8 checking the certificates for the type approval of the oil pollution prevention equipment, such as the oil content meters and oil/water interface detectors, and sighting the records of the various oil discharge monitoring equipment, as applicable (MARPOL 90/04 Annex I reg.31);
 - (OA) 1.2.2.9 checking that the ship is allowed continued operation according to the phase-out scheme of MARPOL 90/04 Annex I reg.20);
 - (OA) 1.2.2.10 confirming that, if applicable, a Ship to Ship (STS) operations Plan approved by the Administration has been provided (MARPOL Annex I reg.41).

¹⁶ Refer to resolution MEPC.94(46) as amended – Condition Assessment Scheme.

¹⁷ For installations complying with resolution MEPC.108(49).

- (OA) 1.2.3 For the oil pollution prevention the annual survey should consist of:
 - (OA) 1.2.3.1 examining externally the oil filtering equipment and confirming, as far as practicable, its satisfactory operation including, when appropriate, testing the operation of the automatic means provided to stop the discharge of effluent and the alarm for the oil filtering equipment (MARPOL 90/04 Annex I regs.14 and 15);
 - (OA) 1.2.3.2 testing, where fitted, the oil filtering equipment required for discharge in special areas (MARPOL 90/04 Annex I reg.15);
 - (OA) 1.2.3.3 confirming the segregation of oil fuel and water ballast systems and that the arrangements prohibit the carriage of oil in forepeak tanks or in spaces forward of the collision bulkhead (MARPOL 90/04 Annex I reg.16);
 - (OA) 1.2.3.4 checking that the arrangement of oil residue (sludge) tank and its discharge arrangements are satisfactory and confirming that, where applicable, homogenizers, sludge incinerators or other recognized means for the control of sludge are satisfactory (MARPOL 90/04/09 Annex I reg.12);
 - (OA) 1.2.3.5 confirming that a standard discharge connection is provided (MARPOL 90/04 Annex I reg.13).
- (OA) 1.2.4 For oil pollution prevention the annual survey of the additional requirements for oil tankers should consist of:
 - (OA) 1.2.4.1 examining the oil discharge monitoring and control system and its associated equipment (MARPOL 90/04 Annex I reg.31) and, in particular:
 - (OA) 1.2.4.1.1 examining externally the system and equipment and, if applicable, verifying that the instrument is properly sealed;
 - (OA) 1.2.4.1.2 confirming, as far as practicable, the satisfactory operation of the oil discharge monitoring and control system including the oil content meter and, where applicable, the automatic and manual means provided to stop the discharge of effluent and the starting interlock;
 - (OA) 1.2.4.1.3 observing that indicators and recording devices are operable and verifying that sufficient supply of consumables for the recorders are on board;
 - (OA) 1.2.4.1.4 testing, as far as practicable, any audible or visual alarms fitted to the oil discharge monitoring and control system;
 - (OA) 1.2.4.2 examining, as far as practicable, the oil/water interface detectors (MARPOL 90/04 Annex I reg.32);
 - (OA) 1.2.4.3 confirming that no cross-connections have been fitted between the cargo and segregated ballast systems (MARPOL 90/04 Annex I reg.18);

- (OA) 1.2.4.4 where a portable spool piece is provided for the emergency discharge of segregated ballast by connecting the segregated ballast system to a cargo pump, confirming that non-return valves are fitted on the segregated ballast connections and that the spool piece is mounted in a conspicuous position in the pump room with a permanent notice restricting its use (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.5 confirming by sighting that there has been no contamination with oil in the segregated ballast tanks (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.6 confirming, as far as practicable, that the dedicated clean ballast tank arrangement remains satisfactory (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.7 confirming by sighting that there has been no contamination with oil in the dedicated clean ballast tanks (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.8 confirming, as far as practicable, that the crude oil washing system remains satisfactory (MARPOL 90/04 Annex I reg.33) and, in particular:
 - (OA) 1.2.4.8.1 examining externally the crude oil washing piping, pumps, valves and deck mounted washing machines for signs of leakage and checking that all anchoring devices for crude oil washing piping are intact and secure;
 - (OA) 1.2.4.8.2 confirming, in those cases where drive units are not integral with the tank cleaning machines, that the number of operational drive units as specified in the Manual are on board;
 - (OA) 1.2.4.8.3 checking that, when fitted, steam heaters for water washing can be properly isolated during crude oil washing operations, either by double shut-off valves or clearly identifiable blanks;
 - (OA) 1.2.4.8.4 checking that the prescribed means of communications between the deck watch keeper and the cargo control position is operational;
 - (OA) 1.2.4.8.5 confirming that an overpressure relief device (or other approved arrangement) is fitted to the pumps supplying the crude oil washing systems;
 - (OA) 1.2.4.8.6 confirming that flexible hoses for supply of oil to the washing machines on combination carriers, are of an approved type, are properly stored and are in good condition;
- (OA) 1.2.4.9 verifying, where applicable and as far as practicable, the effectiveness of the crude-oil washing system (MARPOL 90/04 Annex I reg.33) and, in particular:
 - (OA) 1.2.4.9.1 checking tanks containing departure and/or arrival ballast water, as applicable, to confirm the effectiveness of the cleaning and stripping;
 - (OA) 1.2.4.9.2 checking, as far as practicable, that the crude oil washing machines are operable and, when the survey is carried out during crude oil washing operations, observing the proper operation of the washing

- machines by means of the movement indicators and/or sound patterns or other approved methods;
- (OA) 1.2.4.9.3 checking, as far as practicable, the effectiveness of the stripping system in appropriate cargo tanks by observing the monitoring equipment and by hand-dipping or other approved means;
- (OA) 1.2.4.10 confirming that on those existing tankers operating with special ballast arrangements, the arrangements are as approved and are satisfactory (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.11 confirming, as appropriate and as practicable, that the arrangements for the prevention of oil pollution in the event of collision or stranding are approved and are satisfactory (MARPOL 90/04 Annex I regs.19 to 22);
- (OA) 1.2.4.12 examining the piping systems associated with the discharge of dirty ballast or oil-contaminated water including the part flow system, if fitted (MARPOL 90/04 Annex I reg.30);
- (OA) 1.2.4.13 testing the communication system between the observation and discharge control positions (MARPOL 90/04 Annex I reg.30);
- (OA) 1.2.4.14 examining the means of draining cargo pumps and cargo lines, including the stripping device and the connections for pumping to the slop or cargo tanks or ashore (MARPOL 90/04 Annex I reg.30);
- (OA) 1.2.4.15 confirming for oil tankers of 5,000 tonnes deadweight and above that arrangements are in place to provide prompt access to shore-based damage stability and residual structural strength computerized calculation programs(MARPOL 90/04 Annex I reg.37.4).
- (OA) 1.2.5 For oil pollution prevention the completion of the annual survey should consist of:
- (OA) 1.2.5.1 after a satisfactory survey, endorsing the International Oil Pollution Prevention Certificate;
- (OA) 1.2.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (OIn) **1.3 Intermediate surveys** – see part "General", section 4.3
- (OIn) 1.3.1 For oil pollution prevention the examination of current certificates and other records should consist of:
- (OIn) 1.3.1.1 the provisions of (OA) 1.2.1.
- (OIn) 1.3.2 For oil pollution prevention the examination of current certificates and other records for oil tankers should additionally consist of:
- (OIn) 1.3.2.1 the provisions of (OA) 1.2.2.
- (OIn) 1.3.3 For oil pollution prevention the intermediate survey should consist of:

- (OIn) 1.3.3.1 the provisions of (OA) 1.2.3;
- (OIn) 1.3.3.2 examining the oily-water separating equipment or oil filtering equipment or process unit, where fitted, including associated pumps, piping and fittings for wear and corrosion (MARPOL 90/04 Annex I regs.14 and 15);
- (OIn) 1.3.3.3 examining the oil content meter (15 ppm alarm and bilge monitor) for obvious defects, deterioration or damage and checking the record of calibration of the meter when done in accordance with the manufacturer's operational and instruction manual (MARPOL 90/04 Annex I reg.14).
- (OIn) 1.3.4 For oil pollution prevention the intermediate survey of the additional requirements for oil tankers should consist of:
 - (OIn) 1.3.4.1 the provisions of (OA) 1.2.4;
 - (OIn) 1.3.4.2 examining the oil discharge monitoring and control system and the oil content meter for obvious defects, deterioration or damage, and checking the record of calibration of the meter when done in accordance with the manufacturer's operational and instruction manual (MARPOL 90/04 Annex I reg.31);
 - (OIn) 1.3.4.3 confirming the satisfactory operation of the oil/water interface detectors (MARPOL 90/04 Annex I reg.32);
 - (OIn) 1.3.4.4 for the crude oil washing system (MARPOL 90/04 Annex I reg.33):
 - (OIn) 1.3.4.4.1 examining the crude oil washing piping outside the cargo tanks. If upon examination there is any doubt as to its condition, the piping may be required to be pressure tested, gauged or both. Particular attention should be paid to any repairs such as welded doublers;
 - (OIn) 1.3.4.4.2 confirming the satisfactory operation of the isolation valves to steam heaters for washing water, when fitted;
 - (OIn) 1.3.4.4.3 examining at least two selected cargo tanks for the express purpose of verifying the continued effectiveness of the installed crude oil washing and stripping systems. If the tank cannot be gas-freed for the safe entry of the surveyor, an internal examination should not be conducted. In this case this examination may be conducted in conjunction with the internal examination of cargo tanks required in (CIn) 2.3.3.3 in Annex 1;
 - (OIn) 1.3.4.5 examining the manual and/or remote operation of the individual tank valves (or other similar closing devices) to be kept closed at sea (MARPOL 90/04 Annex I regs.23 and 26).
- (OIn) 1.3.5 For the oil pollution prevention the completion of the intermediate survey should consist of:
 - (OIn) 1.3.5.1 after a satisfactory survey, endorsing the International Oil Pollution Prevention Certificate;

- (OIn) 1.3.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory; see part "General", section 4.8.
- (OR) **1.4 Renewal surveys** – see part "General" section 4.5
- (OR) 1.4.1 For oil pollution prevention the examination of current certificates and other records should consist of:
- (OR) 1.4.1.1 the provisions of (OA) 1.2.1, except for the validity of the International Oil Pollution Prevention Certificate;
- (OR) 1.4.1.2 verifying that, if applicable, the 15ppm bilge alarm has been calibrated by the manufacturer or a person authorized by the manufacturer and that a valid calibration certificate is available on board¹⁸.
- (OR) 1.4.2 For oil pollution prevention the examination of current certificates and other records for tankers should additionally consist of:
- (OR) 1.4.2.1 the provisions of (OA) 1.2.2;
- (OR) 1.4.2.2 verifying that, if applicable, the oil discharge monitoring equipment has been calibrated and that a valid calibration certificate is available on board¹⁹.
- (OR) 1.4.3 For oil pollution prevention the renewal survey should consist of:
- (OR) 1.4.3.1 the provisions of (OIn) 1.3.3;
- (OR) 1.4.3.2 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the oily-water separating equipment or oil filtering equipment (MARPOL 90/04 Annex I reg.14);
- (OR) 1.4.3.3 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the oil discharge monitoring and control system, including where practicable the automatic and manual operation of the means provided to stop the discharge of effluent (MARPOL 90/04 Annex I reg.31);
- (OR) 1.4.3.4 confirming the satisfactory operation of the alarm for the oil filtering system (MARPOL 90/04 Annex I reg.14);
- (OR) 1.4.3.5 confirming the satisfactory operation of homogenizers, sludge incinerators or other recognized means for the control of sludge when the size of oil residue (sludge) tank is approved on the basis of such installations (MARPOL 90/04 Annex I reg.12).
- (OR) 1.4.4 For oil pollution prevention the renewal survey of the additional requirements for oil tankers should consist of:
- (OR) 1.4.4.1 the provisions of (OIn) 1.3.4;

¹⁸ For installations complying with resolution MEPC.107(49).

¹⁹ For installations complying with resolution MEPC.108(49).

- (OR) 1.4.4.2 confirming that the arrangements of slop tanks or cargo tanks designated as slop tanks and associated piping systems are satisfactory (MARPOL 90/04 Annex I regs.29 and 34);
- (OR) 1.4.4.3 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the oil discharge monitoring and control system and its associated equipment, including the oil/water interface detectors (MARPOL 90/04 Annex I regs.31 and 32);
- (OR) 1.4.4.4 confirming that the arrangements of pumps, pipes and valves are in accordance with the requirements for SBT systems (MARPOL 90/04 Annex I reg.18);
- (OR) 1.4.4.5 confirming that the arrangements of pumps, pipes and valves are in accordance with the Revised Specifications for Oil Tankers with Dedicated Clean Ballast Tanks (MARPOL 90/04 Annex I reg.18);
- (OR) 1.4.4.6 confirming that the crude oil washing system is in accordance with the requirements for such systems (MARPOL 90/04 Annex I reg.33) and, in particular:
 - (OR) 1.4.4.6.1 carrying out pressure testing of the crude oil washing system to at least the working pressure;
 - (OR) 1.4.4.6.2 examining the cargo tanks for the express purpose of verifying the continued effectiveness of the installed crude oil washing and stripping systems;
 - (OR) 1.4.4.6.3 examining internally, when fitted, the isolation valves for any steam heaters;
 - (OR) 1.4.4.7 verifying, by internal tank inspection or by another alternative method acceptable to the Administration, the effectiveness of the crude oil washing system. If the tank cannot be gas-freed for the safe entry of the surveyor, an internal inspection should not be conducted. An acceptable alternative would be satisfactory results during the surveys required by (OA) 1.2.4.9 (MARPOL 90/04 Annex I reg.33);
- (OR) 1.4.4.8 confirming that there is no leakage from those ballast pipelines passing through cargo tanks and those cargo pipelines passing through ballast tanks (MARPOL 90/04 Annex I regs.18 and 33);
- (OR) 1.4.4.9 confirming that the pumping, piping and discharge arrangements are satisfactory (MARPOL 90/04 Annex I reg.30) and, in particular:
 - (OR) 1.4.4.9.1 confirming that the piping systems associated with the discharge of dirty ballast water or oil contaminated water are satisfactory;
 - (OR) 1.4.4.9.2 confirming that the means of draining cargo pumps and cargo lines, including the stripping device and the connections for pumping to the slop or cargo tanks or ashore are satisfactory;
 - (OR) 1.4.4.9.3 confirming that the arrangements for the part flow system, where fitted, are satisfactory;

- (OR) 1.4.4.10 confirming that closing devices installed in the cargo transfer system and cargo piping as appropriate are satisfactory (MARPOL 90/04 Annex I regs.23 and 26);
- (OR) 1.4.4.11 confirming, as appropriate and as practicable, that the arrangements for the prevention of oil pollution in the event of collision or stranding are satisfactory (MARPOL 73/78/90 Annex I regs.19 to 22);
- (OR) 1.4.4.12 confirming for oil tankers of 5,000 tonnes deadweight and above that arrangements are in place to provide prompt access to shore based damage stability and residual structural strength computerized calculation programs (MARPOL 90/04 Annex I reg.37.4).
- (OR) 1.4.5 For oil pollution prevention the completion of the renewal survey should consist of:
- (OR) 1.4.5.1 after a satisfactory survey, issuing the International Oil Pollution Prevention Certificate.
- (N) **2 GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL POLLUTION PREVENTION CERTIFICATE FOR THE CARRIAGE OF NOXIOUS LIQUID SUBSTANCES IN BULK**
- (NI) **2.1 Initial surveys** – see part General section 4.1
- (NI) 2.1.1 For the carriage of noxious liquid substances in bulk the examination of plans and designs (as applicable to the cargoes the ship is to be certified to carry) should consist of:
- (NI) 2.1.1.1 drawing up the list of noxious liquid substances it is proposed the ship will be certified to carry (MARPOL 90/04 Annex II reg.6);
- (NI) 2.1.1.2 examining the pumping system (MARPOL 90/04 Annex II reg.12);
- (NI) 2.1.1.3 examining the stripping system (MARPOL 90/04 Annex II reg.12);
- (NI) 2.1.1.4 examining the tank washing system and equipment (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.1.5 examining the underwater discharge arrangements (MARPOL 90/04 Annex II reg.12);
- (NI) 2.1.1.6 examining the ventilation equipment for residue removal (MARPOL 90/04 Annex II reg.13 and App.7);
- (NI) 2.1.1.7 examining the heating system for solidifying and high viscosity substances (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.1.8 examining the Procedures and Arrangements Manual (including cargo carriage requirements to meet Annex II regulations) (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.1.9 examining the shipboard marine pollution emergency plan (MARPOL 90/04 Annex II reg.17);

- (NI) 2.1.1.10 examining if applicable the construction and arrangements of a ship certified to carry individually identified vegetable oils under exemption from the carriage requirements (MARPOL 90/04 Annex II reg.4.3).
- (NI) 2.1.2 For the carriage of noxious liquid substances in bulk, the survey during construction and after installation (as applicable to the cargoes the ship is to be certified to carry) should consist of:
 - (NI) 2.1.2.1 confirming that the pumping and stripping systems are satisfactory and that portable pipes or bends in sufficient number, if required, are on board (MARPOL 90/04 Annex II reg.12);
 - (NI) 2.1.2.2 conducting the water test for assessing the stripping quantity, as required (MARPOL 73/78/90/04 Annex II reg.12 and App.5);
 - (NI) 2.1.2.3 confirming that the tank washing machines provided on board are in working order, are those described in the Procedures and Arrangements Manual and are installed in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NI) 2.1.2.4 confirming that the wash water heating system, if required, is installed in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NI) 2.1.2.5 confirming that the number and position of tank cleaning openings for portable machines are in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NI) 2.1.2.6 confirming that the underwater discharge outlet(s) are in accordance with the approved plans (MARPOL 90/04 Annex II reg.12);
 - (NI) 2.1.2.7 verifying by actual test that the discharge rate of the pumps, where a variable rate type is used, can be controlled as specified in the Procedures and Arrangements Manual (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NI) 2.1.2.8 confirming that the ventilation equipment for residue removal is installed in accordance with the approved plan and is in working order and that the pressure in the driving medium for portable fans for ventilation equipment for residue removal can be achieved to give the required fan capacity (MARPOL 90/04 Annex II reg.13 and App.7);
 - (NI) 2.1.2.9 confirming that the heating system for solidifying and high viscosity substances is installed in accordance with the approved plan (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NI) 2.1.2.10 confirming if applicable the construction and arrangements of a ship certified to carry individually identified vegetable oils under exemption from the carriage requirements (MARPOL 90/04 Annex II reg.4.3).
- (NI) 2.1.3 For the carriage of noxious liquid substances in bulk the check that the required documentation has been placed on board cargo ships (as applicable to the cargoes the ship is to be certified to carry) should consist of:

- (NI) 2.1.3.1 confirming that Procedures and Arrangements Manual has been provided (MARPOL 90/04 Annex II reg.14);
- (NI) 2.1.3.2 confirming that the Cargo Record Book has been provided (MARPOL 90/04 Annex II reg.15);
- (NI) 2.1.3.3 confirming that the shipboard marine pollution emergency plan is provided (MARPOL 90/04 Annex II reg.17).
- (NI) 2.1.4 For the carriage of noxious liquid substances in bulk the completion of initial survey should consist of:
 - (NI) 2.1.4.1 after satisfactory survey, issuing the International Certificate for the Carriage of Noxious Liquid Substances in Bulk.
- (NA) **2.2 Annual surveys** – see part "General", section 4.2
 - (NA) 2.2.1 For the carriage of noxious liquid substances in bulk the examination of current certificates and other records should consist of:
 - (NA) 2.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - (NA) 2.2.1.2 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (NA) 2.2.1.3 checking the validity of the International Oil Pollution Prevention Certificate;
 - (NA) 2.2.1.4 checking the certificates of class, if the ship is classed with a classification society;
 - (NA) 2.2.1.5 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
 - (NA) 2.2.1.6 checking the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
 - (NA) 2.2.1.7 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
 - (NA) 2.2.1.8 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
 - (NA) 2.2.1.9 checking, when appropriate, the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
 - (NA) 2.2.1.10 checking the validity of the International Ship Security Certificate;
 - (NA) 2.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88/2000 reg.V/14.2);

- (NA) 2.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (NA) 2.2.1.13 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (NA) 2.2.1.14 confirming that the Procedures and Arrangements Manual is on board (MARPOL 90/04 Annex II reg.14);
- (NA) 2.2.1.15 confirming that the Cargo Record Book is being correctly used (MARPOL 90/04 Annex II reg.15);
- (NA) 2.2.1.16 confirming that the shipboard marine pollution emergency plan is on board (MARPOL 90/04 Annex II reg.17);
- (NA) 2.2.1.17 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable.
- (NA) 2.2.2 For the carriage of noxious liquid substances in bulk the annual survey should consist of:
 - (NA) 2.2.2.1 examining externally and confirming that the pumping and piping systems, including a stripping system if fitted, and associated equipment remain as approved (MARPOL 90/04 Annex II reg.12);
 - (NA) 2.2.2.2 examining externally the tank washing piping and confirming that the type, capacity, number, and arrangement of the tank washing machines are as approved (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NA) 2.2.2.3 examining externally the wash water heating system (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NA) 2.2.2.4 examining externally, as far as practicable, the underwater discharge arrangements (MARPOL 90/04 Annex II reg.12);
 - (NA) 2.2.2.5 confirming that the means of controlling the rate of discharge of the residue is as approved (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NA) 2.2.2.6 confirming that the ventilation equipment for residue removal is as approved (MARPOL 90/04 Annex II reg.13 and App.7);
 - (NA) 2.2.2.7 examining externally, as far as is accessible, the heating system required for solidifying and high viscosity substances (MARPOL 90/04 Annex II-reg.14 and App.4);
 - (NA) 2.2.2.8 examining any additional requirements listed on the International Certificate for the Carriage of Noxious Liquid Substances in Bulk.
- (NA) 2.2.3 For the carriage of noxious liquid substances in bulk the completion of annual survey should consist of:

- (NA) 2.2.3.1 after satisfactory survey, endorsing the International Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (NA) 2.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General" section 4.8.
- (NIn) **2.3 Intermediate surveys** – see part "General", section 4.3
- (NIn) 2.3.1 For the carriage of noxious liquid substances in bulk the examination of current certificates and other records should consist of:
- (NIn) 2.3.1.1 the provisions of (NA) 2.2.1.
- (NIn) 2.3.2 For the carriage of noxious liquid substances in bulk the intermediate survey should consist of:
- (NIn) 2.3.2.1 the provisions of (NA) 2.2.2;
- (NIn) 2.3.2.2 verifying from the cargo record book that the pumping and stripping arrangements have been emptying the tanks efficiently and are all in working order (MARPOL 90/04 Annex II regs.12 and 15);
- (NIn) 2.3.2.3 confirming, if possible, that the discharge outlet(s) are in good condition (MARPOL 90/04 Annex II P & A Standards);
- (NIn) 2.3.2.4 confirming that the ventilation equipment for residue removal is satisfactory and that the pressure in the driving medium for portable fans for ventilation equipment for residue removal can be achieved to give the required fan capacity (MARPOL 90/04 Annex II App.7).
- (NIn) 2.3.3 For the carriage of noxious liquid substances in bulk the completion of intermediate survey should consist of:
- (NIn) 2.3.3.1 after satisfactory survey, endorsing the International Certificate for the Carriage of Noxious Liquid Substances in Bulk; should be endorsed;
- (NIn) 2.3.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (NR) **2.4 Renewal surveys** – see part "General", section 4.4
- (NR) 2.4.1 For the carriage of noxious liquid substances in bulk the examination of current certificates and other records should consist of:
- (NR) 2.4.1.1 the provisions of (NA) 2.2.1, except for the validity of the International Certificate for the Carriage of Noxious Liquid Substances in Bulk.
- (NR) 2.4.2 For the carriage of noxious liquid substances in bulk the renewal survey should consist of:
- (NR) 2.4.2.1 the provisions of (NIn) 2.3.2;

- (NR) 2.4.2.2 confirming that the pumping and stripping systems are satisfactory and that portable pipes or bends in sufficient number, if required, are on board (MARPOL 73/78/90/04 Annex II reg.12);
- (NR) 2.4.2.3 conducting the water test for assessing the stripping quantity, as required (MARPOL 73/78/90/04 Annex II reg.12 and App. 5);
- (NR) 2.4.2.4 confirming that the tank washing machines provided on board are in working order, are those described in the Procedures and Arrangements Manual and are installed in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
- (NR) 2.4.2.5 confirming that the wash water heating system, if required, is installed in accordance with the approved plans and is in working order (MARPOL 90/04 Annex II reg.14 and App.4);
- (NR) 2.4.2.6 confirming that the number and position of tank cleaning openings for portable machines are in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
- (NR) 2.4.2.7 confirming that the underwater discharge outlet(s) are in good condition and are in accordance with the approved plans (MARPOL 90/04 Annex II regs.12, 14 and App.4);
- (NR) 2.4.2.8 verifying by actual test that the discharge rate of the pumps, where a variable rate type is used, can be controlled as specified in the Procedures and Arrangements Manual (MARPOL 90/04 Annex II reg.14 and App.4);
- (NR) 2.4.2.9 confirming that the ventilation equipment for residue removal is installed in accordance with the approved plan and is in working order (MARPOL 90/04 Annex II regs.12, 14 and App.4);
- (NR) 2.4.2.10 confirming that the heating system for solidifying and high viscosity substances is installed in accordance with the approved plan and is in working order (MARPOL 90/04 Annex II regs.12, 14 and App.4).
- (NR) 2.4.3 For the carriage of noxious liquid substances in bulk the completion of renewal survey should consist of:
 - (NR) 2.4.3.1 after satisfactory survey, issuing the International Certificate for the Carriage of Noxious Liquid Substances in Bulk.
- (S) **3** **GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL SEWAGE POLLUTION PREVENTION CERTIFICATE**
- (SI) **3.1** **Initial surveys** – see part "General", section 4.1
- (SI) 3.1.1 For sewage pollution prevention the examination of plans and designs should consist of:
 - (SI) 3.1.1.1 examining as appropriate the arrangements for the provision of a sewage treatment plant, or of a sewage comminuting and disinfecting system, or of a sewage holding tank (MARPOL Annex IV reg.9);

- (SI) 3.1.1.2 if a sewage treatment plant is fitted, checking that it is type approved by the administration in accordance with the appropriate resolution (MARPOL Annex IV reg.9.1);
- (SI) 3.1.1.3 if a sewage comminuting and disinfecting system is fitted, checking that it is approved by the administration and that facilities for the temporary storage of sewage are provided (MARPOL Annex IV reg.9.2);
- (SI) 3.1.1.4 if a sewage holding tank is fitted, checking its capacity having regard to the number of persons on board (MARPOL Annex IV reg.9.1.3);
- (SI) 3.1.1.5 examining the arrangements for the provision of a standard discharge connection (MARPOL Annex IV reg.10);
- (SI) 3.1.1.6 examining the arrangements for the provision of a pipeline for the discharge of sewage to a reception facility (MARPOL Annex IV reg.10).
- (SI) 3.1.2 For sewage pollution prevention the survey during construction and after installation should consist of:
 - (SI) 3.1.2.1 checking externally, as applicable, the sewage treatment plant or the sewage comminuting and disinfecting system, and confirming their operation (MARPOL Annex IV regs.4.1.1 and 9);
 - (SI) 3.1.2.2 if a sewage holding tank is fitted, checking that it has been constructed in a satisfactory manner, and checking that the holding tank has a means to indicate visually the amount of its contents (MARPOL Annex IV reg.9.1.3);
 - (SI) 3.1.2.3 confirming that a standard discharge connection is provided (MARPOL Annex IV reg.10);
 - (SI) 3.1.2.4 confirming that a pipeline for the discharge of sewage to a reception facility is provided (MARPOL Annex IV reg.10).
- (SR) **3.2 Renewal surveys** – See "General", section 4.5
 - (SR) 3.2.1 For sewage pollution prevention the examination of current certificates and other records should consist of:
 - (SR) 3.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate or Passenger Ship Safety Certificate;
 - (SR) 3.2.1.2 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (SR) 3.2.1.3 checking the validity of the International Oil Pollution Prevention Certificate;
 - (SR) 3.2.1.4 checking the validity of the International Air Pollution Prevention Certificate;

- (SR) 3.2.1.5 checking the validity of the International Ship Security Certificate;
- (SR) 3.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
- (SR) 3.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in bulk or the Certificate of Fitness for the Carriage of Dangerous Chemical in Bulk;
- (SR) 3.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (SR) 3.2.1.9 checking when appropriate the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (SR) 3.2.1.10 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/13(b));
- (SR) 3.2.1.11 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (SR) 3.2.1.12 checking the validity of the Safety management certificate(SMC) and that a copy of the Document of Compliance (DOC) is on board, where applicable;
- (SR) 3.2.1.13 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the certificate;
- (SR) 3.2.1.14 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable.
- (SR) 3.2.2 For sewage pollution prevention the renewal survey should consist of:
 - (SR) 3.2.2.1 confirming that no change has been made nor any new equipment installed which would affect the validity of the certificate (MARPOL Annex IV reg.4.8);
 - (SR) 3.2.2.2 examining externally the sewage pollution prevention system and confirming, as far as practicable its satisfactory operation;
 - (SR) 3.2.2.3 confirming that a procedure for discharge of animal effluent is implemented on board (MARPOL 73/78/07 Annex IV reg.11.1.1).
- (SR) 3.2.3 For sewage pollution prevention the completion of the renewal survey should consist of:
 - (SR) 3.2.3.1 after satisfactory survey the International Sewage Prevention Certificate should be issued.

- (A) 4 **GUIDELINES FOR THE SURVEYS FOR THE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE AND THE NO_x TECHNICAL CODE**
- (AI) 4.1 **Initial surveys** – see part "General", section 4.1
- (AI) 4.1.1 For air pollution prevention the examination of plans and designs should consist of:
- (AI) 4.1.1.1 examining the arrangements for systems using ozone-depleting substances (MARPOL Annex VI reg.12);
- (AI) 4.1.1.2 examining the arrangements for NO_x emission control, if applicable (MARPOL Annex VI reg.13);
- (AI) 4.1.1.3 examining the arrangements for SO_x and particulate matter control, if applicable (MARPOL Annex VI reg.14);
- (AI) 4.1.1.4 examining the arrangements for vapour collection systems, if applicable (MARPOL Annex VI reg.15 and MSC/Circ.585);
- (AI) 4.1.1.5 examining the arrangements for shipboard incinerators, if applicable (MARPOL Annex VI reg.16).
- (AI) 4.1.2 For air pollution prevention the survey should consist of:
- (AI) 4.1.2.1 Ozone-depleting substances (MARPOL Annex VI reg.12):
- (AI) 4.1.2.1.1 confirming, if applicable, the satisfactory installation and operation of systems using ozone depleting substances;
- (AI) 4.1.2.1.2 confirming that no installation or equipment containing ozone depleting substances has been installed after 19 May 2005, other than hydro-chlorofluorocarbons (MARPOL Annex VI reg.12.3.1);
- (AI) 4.1.2.1.3 confirming that no installation or equipment containing hydro-chlorofluorocarbons are fitted after 1 January 2020 (MARPOL Annex VI reg.12.3.2);
- (AI) 4.1.2.2 Nitrogen oxide emissions from marine diesel engines (MARPOL Annex VI reg.13):
- (AI) 4.1.2.2.1 confirming that all marine diesel engines which are required to be certified are pre-certified in accordance with section 2.2 of the NO_x Technical Code to the required Tier and installed in accordance with the approved duty cycle.
- (AI) 4.1.2.2.1.1 If engine parameter check method is used:
- (AI) 4.1.2.2.1.1.1 an onboard verification survey in accordance with section 6.2 of the NO_x Technical Code;
- (AI) 4.1.2.2.1.2 If the simplified method is used:

- (AI) 4.1.2.2.1.2.1 an onboard verification survey in accordance with section 6.3 of the NO_x Technical Code;
- (AI) 4.1.2.2.1.3 If direct measurement and monitoring method is used (for existing ships only):
- (AI) 4.1.2.2.1.3.1 an onboard verification survey, in accordance with section 6.4 of the NO_x Technical Code;
- (AI) 4.1.2.2.1.4 For marine diesel engines of an output more than 5,000 kW and a per cylinder displacement at or above 90 litres/cylinder installed on ships constructed between 1 January 1990 and 31 December 1999, check whether:
- .1 an approved method exists;
 - .2 an approved method is not commercially available; or
 - .3 that an approved method is installed and where this is the case, that there is an approved method file,
- and apply the verification procedures as given in the approved method file;
- (AI) 4.1.2.3 Sulphur Oxides and Particulate Matter (MARPOL Annex VI reg.14):
- (AI) 4.1.2.3.1 confirming, if appropriate, that:
- .1 satisfactory arrangements are in place for using compliant fuel as required; or
 - .2 satisfactory installation and operation of the fuel switching arrangements are in place when tanks are provided for different grades of fuel; or
 - .3 satisfactory installation and operation of the exhaust gas cleaning system or other technological methods are examined, (regulation 4 of Annex VI);
- (AI) 4.1.2.4 Volatile Organic Compounds (MARPOL Annex VI reg.15) (if applicable):
- (AI) 4.1.2.4.1 confirming the satisfactory installation of the vapour collection piping;
- (AI) 4.1.2.4.2 confirming the satisfactory installation and operation of the means provided to eliminate the collection of condensation in the system, such as drains in low points of the line end;
- (AI) 4.1.2.4.3 confirming the satisfactory installation and operation of the isolation valves at the vapour manifolds;
- (AI) 4.1.2.4.4 confirming that the ends of each line are properly identified as vapour collection lines;
- (AI) 4.1.2.4.5 confirming that the vapour collection flanges are in accordance with the IMO guidelines and industrial standards;

- (AI) 4.1.2.5 Shipboard Incinerators (MARPOL Annex VI reg.16) (installed on or after 1 January 2000):
 - (AI) 4.1.2.5.1 confirming the satisfactory installation and operation of each incinerator;
 - (AI) 4.1.2.5.2 confirming that the manufacturer's name, incinerator model number/type and capacity in heat units per hour is permanently marked on the incinerator.
- (AI) 4.1.3 For air pollution prevention the check that certificates and other relevant documentation have been placed on board should consist of:
 - (AI) 4.1.3.1 the provision of (AA) 4.2.2.2 as applicable except (AA) 4.2.2.2.14.
- (AI) 4.1.4 For air pollution prevention the completion of the initial survey should consist of:
 - (AI) 4.1.4.1 after satisfactory survey, issuing the International Air Pollution Prevention Certificate.
- (AA) **4.2 Annual surveys** – see "General", section 4.2
 - (AA) 4.2.1 For air pollution prevention the examination of current certificates and other records should consist of:
 - (AA) 4.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - (AA) 4.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board, where applicable;
 - (AA) 4.2.1.3 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (AA) 4.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;
 - (AA) 4.2.1.5 checking the certificates of class, if the ship is classed with a classification society;
 - (AA) 4.2.1.6 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
 - (AA) 4.2.1.7 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88, regulation V/13(b));
 - (AA) 4.2.1.8 checking that the master, officers and ratings are certificated as required by the STCW Convention;

- (AA) 4.2.1.9 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate.
- (AA) 4.2.2 For air pollution prevention the annual survey should consist of the following:
- (AA) 4.2.2.1 General:
- (AA) 4.2.2.1.1 confirm that no changes have been made or any new equipment installed which would affect the validity of the certificate;
- (AA) 4.2.2.2 Documentation:
- (AA) 4.2.2.2.1 confirm that there is an Ozone Depleting Substances Record Book, if applicable (MARPOL Annex VI reg.12.6);
- (AA) 4.2.2.2.2 confirm that there are Engine International Air Pollution Prevention (EIAPP) Certificates for each marine diesel engine, required to be certified, as described in chapter 2.1 of the NO_x Technical Code;
- (AA) 4.2.2.2.3 confirm that there is on board an approved Technical File for each marine diesel engine required to be certified;
- (AA) 4.2.2.2.4 confirm that there is a record book of engine parameters for each marine diesel engine required to be certified in the case where the engine parameter check method is used as a means of onboard NO_x verification (NO_x Technical Code para. 6.2.3);
- (AA) 4.2.2.2.5 confirm that there is an approved onboard monitoring manual for each marine diesel engine required to be certified in the case where the direct measurement and monitoring method is to be used as a means of onboard NO_x verification (NO_x Technical Code para. 6.4.17.1);
- (AA) 4.2.2.2.6 confirm that there are written procedures covering fuel change over, where applicable;
- (AA) 4.2.2.2.7 confirm that there is a record of fuel changeover, where applicable, and that this record should take the form of a log-book as prescribed by the Administration (MARPOL Annex VI reg.14.6)²⁰;
- (AA) 4.2.2.2.8 confirm that there is for each Exhaust Gas Cleaning System (EGCS)-SO_x either a SO_x Emission Control Area (SECA²¹) Compliance Certificate for the EGCS-SO_x, or an Onboard Monitoring Manual (OMM) as appropriate, plus in either cases a SECA Compliance Plan (regulation 4 of Annex VI) or approved documentation in respect of other technological means of achieving compliance;

²⁰ When not prescribed by the Administration, this information could be contained in the engine-room log-book, the deck log-book, the official log-book, the oil record book or a separate log-book solely for this purpose.

²¹ This will need to be updated when the exhaust gas cleaning system guidelines are updated to take into account the revised Annex VI for consistency against for the terminology used in the revised guideline.

- (AA) 4.2.2.2.9 confirm that there is a VOC Management Plan, if required (MARPOL Annex VI reg.15.6);
- (AA) 4.2.2.2.10 confirm that there is a transfer procedure, if required, for the VOC collection system;
- (AA) 4.2.2.2.11 confirm that there is, if required, an IMO Type Approval Certificate for each incinerator on board (MARPOL Annex VI reg.16.6.1);
- (AA) 4.2.2.2.12 confirm that there is an instruction manual for each incinerator if required (MARPOL Annex VI reg.16.7);
- (AA) 4.2.2.2.13 confirm that records documenting training of the crew in operating each incinerator, if required;
- (AA) 4.2.2.2.14 confirm that there are the required bunker delivery notes on board and the required fuel oil samples are kept under the ships control (MARPOL Annex VI reg.18) or other relevant documentation;
- (AA) 4.2.2.3 Systems containing ozone-depleting substances, if fitted:
 - (AA) 4.2.2.3.1 confirm that no new installation or equipment containing ozone depleting substances except those covered by (AA) 4.2.2.3.2 have been fitted to the ship after 19 May 2005 (MARPOL Annex VI reg.12.3.1);
 - (AA) 4.2.2.3.2 confirm that no installations containing hydro-chlorofluocarbons have been fitted after 1 January 2020 (MARPOL Annex VI reg.12.3.2);
 - (AA) 4.2.2.3.3 examine externally any installation or equipment as far as practicable to ensure satisfactory maintenance and that there are no emissions of ozone-depleting substances;
 - (AA) 4.2.2.3.4 confirm through documentary evidence that there has been no deliberate emission of ozone-depleting substance;
- (AA) 4.2.2.4 Nitrogen oxide emissions from each diesel marine diesel engine:
 - (AA) 4.2.2.4.1 confirm that each marine diesel engine has been operated as required in accordance with its applicable NO_x emission limit(s);
 - (AA) 4.2.2.4.2 confirm that no marine diesel engine been subject to major conversion in the intervening period;
 - (AA) 4.2.2.4.3 if engine parameter check method is used:
 - (AA) 4.2.2.4.3.1 review engine documentation contained in the Technical File and the record book of engine parameters to check, as far as practicable, engine rating, duty and limitation/restrictions as given in the Technical File;
 - (AA) 4.2.2.4.3.2 confirm that the engine has not undergone any modifications or adjustments outside the options and ranges permitted in the Technical File since the last survey;

- (AA) 4.2.2.4.3.3 conduct survey as detailed in the Technical File;
- (AA) 4.2.2.4.4 if the simplified method is used:
- (AA) 4.2.2.4.4.1 review engine documentation contained in the Technical File;
- (AA) 4.2.2.4.4.2 confirm that the test procedure is acceptable to the Administration;
- (AA) 4.2.2.4.4.3 confirm that the analysers, engine performance sensors, ambient condition measurement equipment, span check gases and other test equipment are the correct type and have been calibrated in accordance with the NO_x Technical Code;
- (AA) 4.2.2.4.4.4 confirm that the correct test cycle, as defined in the engine's Technical File, is used for this onboard confirmation test measurements;
- (AA) 4.2.2.4.4.5 ensure that a fuel sample is taken during the test and submitted for analysis;
- (AA) 4.2.2.4.4.6 witness the test and confirm that a copy of the test report has been submitted for approval on completion of the test;
- (AA) 4.2.2.4.5 if the direct measurement and monitoring method is used:
- (AA) 4.2.2.4.5.1 review the Technical File and the onboard monitoring manual that the arrangements are as approved;
- (AA) 4.2.2.4.5.2 the procedures to be checked in the direct monitoring and measure method and the data obtained as given in the approved onboard monitoring manual should be followed (NO_x Technical Code para.6.4.16.1);
- (AA) 4.2.2.4.6 for a marine diesel engine with an output of more than 5,000 kW and a per cylinder displacement at or above 90 litres/cylinder installed on ships constructed between 1 January 1990 and 31 December 1999, check whether:
- .1 an approved method exists;
 - .2 an approved method is not commercially available; or
 - .3 that an approved method is installed and where this is the case, that there is an approved method file,
- and apply the verification procedures as given in the approved method file;
- (AA) 4.2.2.5 Sulphur Oxides and Particulate Matter:
- confirming, if appropriate, that:
- .1 satisfactory arrangements are in place for using compliant fuel as required; or

- .2 satisfactory installation and operation of the fuel switching arrangements are in place when tanks are provided for different grades of fuel, including records of the changeover to and from low sulphur fuel during transit through an emission control area established for SO_x and particulate matter control; or
 - .3 satisfactory installation and operation of the exhaust gas cleaning system or other technological methods are examined, (MARPOL Annex VI reg.4);
- (AA) 4.2.2.6 Volatile Organic Compounds (VOCs):
- (AA) 4.2.2.6.1 confirm that the vapour collect system, if required, is maintained in accordance with its approved arrangement;
 - (AA) 4.2.2.6.2 for ships carrying crude oil, confirm the VOC management plan has been implemented as appropriate;
- (AA) 4.2.2.7 Incineration:
- (AA) 4.2.2.7.1 confirm that prohibited materials have not been incinerated;
 - (AA) 4.2.2.7.2 confirm that shipboard incineration of sewage sludge or sludge oil in boilers or marine power plants is not undertaken while the ship is inside ports, harbours or estuaries;
- (AA) 4.2.2.8 Incinerators (installed on or after 1 January 2000):
- (AA) 4.2.2.8.1 confirm that operators have been trained as required;
 - (AA) 4.2.2.8.2 confirm from an external examination that each incinerator is in a generally satisfactory condition and free from leaks of gas or smoke;
 - (AA) 4.2.2.8.3 confirm that combustion chamber outlet temperatures have been maintained as required;
 - (AA) 4.2.2.8.4 confirm that each incinerator is maintained according to its approved arrangement.
- (AA) 4.2.3 Fuel Oil Quality:
- (AA) 4.2.3.1 confirm that Bunker Delivery Notes as required conform to the requirements of MARPOL Annex VI, Appendix V;
 - (AA) 4.2.3.2 confirm that MARPOL samples as required are retained on board and labels duly completed or otherwise retained under the ship's control;
 - (AA) 4.2.3.3 confirm that documentation in lieu of that required by (AA) 4.2.3.1 or 4.2.3.2 is available on board.
- (AA) 4.2.4 For air pollution prevention the completion of the annual survey should consist of:

- (AA) 4.2.4.1 after a satisfactory survey, endorsing the International Air Pollution Prevention certificate;
- (AA) 4.2.4.2 if a survey shows that the condition of the ship or its equipment is unsatisfactory – see "General", section 4.8.
- (Aln) **4.3 Intermediate surveys** – see "General", section 4.3
- (Aln) 4.3.1 For air pollution prevention the examination of current certificates and other records should consist of:
- (Aln) 4.3.1.1 the provisions of (AA) 4.2.1.
- (Aln) 4.3.2 For air pollution prevention the intermediate survey should consist of:
- (Aln) 4.3.2.1 the provisions of (AA) 4.2.2.
- (Aln) 4.3.3 For air pollution prevention the completion of the intermediate survey should consist of:
- (Aln) 4.3.3.1 after a satisfactory survey, endorsing the International Air Pollution Prevention Certificate;
- (Aln) 4.3.3.2 if a survey shows that the condition of the ship or its equipment is unsatisfactory see "General", section 4.8.
- (AR) **4.4 Renewal surveys** – see "General", section 4.5
- (AR) 4.4.1 For air pollution prevention the examination of current certificates and other records should consist of:
- (AR) 4.4.1.1 the provisions of (AA) 4.2.1 except the validity of the International Air Pollution Prevention Certificate.
- (AR) 4.4.2 For air pollution prevention the renewal survey should consist of:
- (AR) 4.4.2.1 the provisions of (AA) 4.2.2;
- (AR) 4.4.2.2 for each incinerator the renewal survey should consist of;
- (AR) 4.4.2.2.1 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the following alarms and safety devices.
- (AR) 4.4.3 For air pollution prevention the completion of the renewal survey should consist of:
- (AR) 4.4.3.1 after satisfactory survey the International Air Pollution prevention Certificate should be issued.

ANNEX 4

SURVEY GUIDELINES UNDER THE MANDATORY CODES

- (D) 1 **GUIDELINES FOR THE SURVEYS FOR THE INTERNATIONAL CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK AND THE CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK**
- (DI) 1.1 **Initial surveys** – see part "General" section 4.1
- (DI) 1.1.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of plans and designs of the structure, equipment, fittings, arrangements and materials should consist of:
- (DI) 1.1.1.1 determining the products that it is intended that the ship will be permitted to carry and noting the corresponding minimum special requirements (IBC Code 83/90/00 ch.17) and any other special requirements (IBC Code 83/90/00 ch.15);
- (DI) 1.1.1.2 examining the plans for the ship type, location of the cargo tanks, cargo containment, materials of construction, cargo temperature control, cargo tank vent systems, continuous monitoring of the concentration of flammable vapours, environmental control, electrical installations, fire protection and fire extinction, instrumentation and the provision, specification and stowage of the equipment for personnel protection (IBC Code 83/90/00 chs.2, 4, 6, 7, 8, 9, 10, 11, 13 and 14);
- (DI) 1.1.1.3 examining the plans for the freeboard and intact stability, discharges below the bulkhead deck and survival capability (IBC Code 83/90/00 ch.2);
- (DI) 1.1.1.4 examining the plans for the ship arrangements IBC Code 83/90/00 ch.3);
- (DI) 1.1.1.5 examining the plans for the cargo transfer IBC Code 83/90/00 ch.5);
- (DI) 1.1.1.6 examining the plans for the mechanical ventilation in the cargo area (IBC Code 83/90/00 ch.12);
- (DI) 1.1.1.7 the provisions of (NI) 2.1.1 in Annex 3.
- (DI) 1.1.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, the survey during construction and after installation of the structure, equipment, fittings, arrangements and materials should consist of:
- (DI) 1.1.2.1 confirming that tanks containing cargo or residues of cargo are suitably segregated from accommodation, service and machinery spaces and from drinking water and stores for human consumption, that cargo piping does not pass through any accommodation, service or machinery space other than cargo pump rooms or pump rooms and

- that cargoes are not to be carried in either the fore or the aft peak tank (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.2 examining the air intakes and openings into the accommodation, service and machinery spaces in relation to the cargo piping and vent systems and their entrances, air inlets and openings in relation to the cargo area (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.3 examining the arrangements of the cargo pump rooms (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.4 examining the accesses to spaces in the cargo area (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.5 examining the bilge and ballast arrangements and confirming that pumps and pipelines are identified (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.6 examining, when applicable, the bow or stern loading and unloading arrangements with particular reference to the air inlets and entrances to the accommodation, machinery and service spaces, the electrical equipment, fire-fighting arrangements and means of communication and testing the remote shut down for the cargo pumps (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.7 confirming that the cargo tank types are arranged and installed in accordance with the approved plans, internally examining the cargo tanks, water ballast tanks and other spaces in the cargo area and pressure testing the boundaries (IBC Code 83/90/00 ch.4);
- (DI) 1.1.2.8 examining the cargo transfer arrangements and confirming that any hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IBC Code 83/90/00 ch.5);
- (DI) 1.1.2.9 examining and testing any cargo heating and cooling systems (IBC Code 83/90/00 ch.7);
- (DI) 1.1.2.10 confirming that the cargo tank vent systems have been installed in accordance with the approved plans (IBC Code 83/90/00 ch.8);
- (DI) 1.1.2.11 confirming that high-level alarms, or overflow control systems or spill valves or other equivalent means provided to control possible liquid rising in the venting system, are operating satisfactorily (IBC Code 83/90/00 ch.8);
- (DI) 1.1.2.12 confirming that suitable provision is made for drainage of vent lines and that no shut-off valves or other means of stoppage, including spectacle or blank flanges, are fitted either to the individual vents or to the header, if the vents are combined or either above or below pressure/vacuum relief valves with closed vent systems (IBC Code 83/90/00 ch.8);

- (DI) 1.1.2.13 confirming that suitable provisions are made for primary and secondary means (or alternative measures) for controlled tank venting (IBC Code 83/90/00 ch.8);
- (DI) 1.1.2.14 examining the location of the vent outlets in respect of the height above the weather deck or the fore and aft gangway, from the nearest air intakes or openings to accommodation, service and machinery spaces and ignition sources and confirming that any high velocity vents are of the approved type (IBC Code 83/90/00 ch.8);
- (DI) 1.1.2.15 examining the arrangements for environmental control, including the means of storing or generating and drying an inert gas (IBC Code 83/90/00 ch.9);
- (DI) 1.1.2.16 examining the electrical installations and confirming that, when appropriate, special materials have been used and that the electrical equipment installed in hazardous locations, as permitted, is certified by a recognized authority for the cargoes to be carried (IBC Code 83/90/00 ch.10);
- (DI) 1.1.2.17 confirming that independent cargo tanks are electrically bonded to the hull and that all gasketed cargo pipe joints and hose connections are electrically bonded (IBC Code 83/90/00 ch.10);
- (DI) 1.1.2.18 examining the arrangements for the fire protection and fire extinction (IBC Code 83/90/00 ch.11);
- (DI) 1.1.2.19 examining the fixed fire fighting system for the cargo pump room and confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (IBC Code 83/90/00 ch.11);
- (DI) 1.1.2.20 checking the deck foam system for the cargo area, including the supplies of foam concentrate, and testing that the minimum number of jets of water at the required pressure in the fire main is obtained (see (EI) 1.1.3.1 in Annex 1), when the system is in operation (IBC Code 83/90/00 ch.11);
- (DI) 1.1.2.21 examining the system for continuous monitoring of the concentration of flammable vapours and confirming that the installation tests have been satisfactorily completed (IBC Code 83/90/00 ch.11);
- (DI) 1.1.2.22 confirming that suitable portable fire extinguishing equipment for the cargoes to be carried is provided in the cargo area (IBC Code 83/90/00, ch.11);
- (DI) 1.1.2.23 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces in the cargo area normally entered during cargo handling operations (IBC Code 83/90/00, ch.12) and checking in particular that:
 - (DI) 1.1.2.23.1 it may be controlled from outside the space;
 - (DI) 1.1.2.23.2 warning notices concerning its use have been posted;

- (DI) 1.1.2.23.3 it is of the extraction type, with extraction from below the floor plates, unless the space houses electrical motors driving cargo pumps when it should be of the positive pressure type;
- (DI) 1.1.2.23.4 the ducting does not pass through accommodation, machinery and service spaces and that the exhaust ducts are clear of the ventilation inlets and openings to such spaces;
- (DI) 1.1.2.23.5 the electric motors driving ventilation fans are positioned outside the ventilation ducts and the ventilation fans and the ducts, in way of the fans only, are of non-sparking construction in hazardous locations;
- (DI) 1.1.2.24 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces normally entered, other than those covered by (DI) 1.1.2.23 (IBC Code 83/90/00, ch.12);
- (DI) 1.1.2.25 confirming that double bottoms, cofferdams, duct keels, pipe tunnels, hold spaces and other spaces where cargo may accumulate are capable of being efficiently ventilated to ensure a safe environment when entry into the space is necessary and that, when appropriate, permanent ducting is provided and any ventilation fans comply with (DI) 1.1.2.23.5 (IBC Code 83/90/00, ch.12);
- (DI) 1.1.2.26 examining the intrinsically safe systems and circuits used for measurement, monitoring, control and communication purposes in all hazardous locations (IBC Code 83/90/00, ch.13);
- (DI) 1.1.2.27 checking the provision of equipment for personnel protection (IBC Code 83/90/00, ch.14) and in particular that:
 - (DI) 1.1.2.27.1 suitable protective clothing is available for the crew engaged in loading and discharging operations and that suitable storage is provided;
 - (DI) 1.1.2.27.2 the required safety equipment and associated breathing apparatus and air supplies and, when appropriate, emergency-escape respiratory and eye protection, are provided and are properly stowed;
 - (DI) 1.1.2.27.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment are provided;
 - (DI) 1.1.2.27.4 arrangements have been made for the antidotes for the cargoes actually carried to be on board;
 - (DI) 1.1.2.27.5 decontamination arrangements and eyewashes are operational;
 - (DI) 1.1.2.27.6 the required gas detection instruments are on board and that arrangements have been made for the supply of the appropriate vapour detection tubes;
 - (DI) 1.1.2.27.7 the stowage for cargo samples is satisfactory;
- (DI) 1.1.2.28 the provisions of (NI) 2.1.2 in annex 3;

- (DI) 1.1.2.29 confirming that sampling points or detector heads are located in suitable positions in order that potentially dangerous leakages are readily detected (IBC Code 07 ch.11.1.4, BCH Code ch.IIIE 3.13).
- (DI) 1.1.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the check that all the required documentation has been placed on board the ship should consist of:
- (DI) 1.1.3.1 confirming that a loading and stability information booklet, containing details of typical service and ballast conditions, provisions for evaluating other conditions of loading, a summary of the ship's survival capabilities and sufficient information to ensure that the ship is loaded and operated in a safe and seaworthy manner, is available on board (IBC Code 83/90/00 ch.2);
- (DI) 1.1.3.2 confirming that damage survival capability information is supplied on the basis of loading information for all anticipated conditions of loading and variations in draught and trim (IBC Code 83/90/00 ch.2);
- (DI) 1.1.3.3 confirming that a table giving the filling ratios for the cargo tanks at various densities has been provided (IBC Code 83/90/00 ch.16);
- (DI) 1.1.3.4 confirming that a copy of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, or the equivalent national regulations, has been provided (IBC Code 83/90/00 ch.16);
- (DI) 1.1.3.5 confirming that information relating to the chemical and physical properties of the products to be carried has been provided and that provision has been made for the measures to be taken in an accident (IBC Code 83/90/00 ch.16);
- (DI) 1.1.3.6 confirming that a manual covering procedures for cargo transfer, tank cleaning, gas freeing, ballasting, etc., has been provided (IBC Code 83/90/00 ch.16);
- (DI) 1.1.3.7 the provisions of (NI) 2.1.3 in annex 3;
- (DI) 1.1.3.8 confirming that compatibility information as to material of construction, protective linings and coating is provided on board. (IBC Code 83/04 ch.6).
- (DI) 1.1.4 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the completion of the initial survey should consist of:
- (DI) 1.1.4.1 after a satisfactory survey issuing the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk.
- (DA) **1.2** **Annual surveys** – see part "General" section 4.2
- (DA) 1.2.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the

Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of current certificates and other records should consist of:

- (DA) 1.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (DA) 1.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (DA) 1.2.1.3 checking the validity of the International Ship Security Certificate;
- (DA) 1.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (DA) 1.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;
- (DA) 1.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
- (DA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (DA) 1.2.1.8 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (DA) 1.2.1.9 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (DA) 1.2.1.10 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/13(b));
- (DA) 1.2.1.11 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (DA) 1.2.1.12 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (DA) 1.2.1.13 confirming that the loading and stability information booklet, containing details of typical service and ballast conditions, provisions for evaluating other conditions of loading, a summary of the ship's survival capabilities and sufficient information to ensure that the ship is loaded and operated in a safe and seaworthy manner, is available on board (IBC Code 83/90/00, ch.2) (No BCH Code 85/90/00 reference);
- (DA) 1.2.1.14 confirming that damage survival capability information is supplied on the basis of loading information for all anticipated conditions of loading and variations in draught and trim (IBC Code 83/90/00 ch.2) (No BCH Code 85/90/00 reference);

- (DA) 1.2.1.15 confirming that a table giving the filling ratios for the cargo tanks at various densities has been provided (IBC Code 83/90/00 ch.16) (BCH Code 85/90/00 ch.IIIG);
- (DA) 1.2.1.16 confirming that a copy of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk or the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, or the equivalent national regulations, has been provided (IBC Code 83/90/00 ch.16) (BCH Code 85/90/00 ch.V);
- (DA) 1.2.1.17 confirming that information relating to the chemical and physical properties of the products to be carried has been provided, and that provision has been made for the measures to be taken in an accident (IBC Code 83/90/00 ch.16) (BCH Code 85/90/00 ch.V);
- (DA) 1.2.1.18 confirming that a manual covering procedures for cargo transfer, tank cleaning, gas freeing, ballasting, etc., has been provided (IBC Code 83/90/00 ch.16) (BCH Code 85/90/00 ch.V);
- (DA) 1.2.1.19 confirming that the Procedures and Arrangements Manual is on board (IBC Code 83/90/00 ch.16A) (BCH Code 85/90/00 ch.VA);
- (DA) 1.2.1.20 confirming that the Shipboard marine pollution emergency plan is on board (MARPOL 73/78/02 Annex II reg.16);
- (DA) 1.2.1.21 confirming that the Cargo Record Book is on board and being correctly used (MARPOL 73/78/91/97/02 Annex II reg.9);
- (DA) 1.2.1.22 confirming that compatibility information as to material of construction, protective linings and coating is provided onboard. (IBC Code 83/04 Ch.6) (BCH Code 85/90/00 ch.IIG);
- (DA) 1.2.1.23 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable.
- (DA) 1.2.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the annual survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (DA) 1.2.2.1 confirming that wheelhouse doors and windows, sidescuttles and windows in superstructure and deckhouse ends facing the cargo area are in a satisfactory condition (IBC Code 83/90/00 ch.3) (BCH Code 85/90/00 ch.IIC);
- (DA) 1.2.2.2 confirming that potential sources of ignition in or near the cargo pump room are eliminated, such as loose gear, combustible materials, etc., that there are no signs of undue leakage and that access ladders are in a satisfactory condition (IBC Code 83/90/00 ch.3) (BCH Code 85/90/00 ch.IIC);
- (DA) 1.2.2.3 confirming that removable pipe lengths or other approved equipment necessary for cargo separation are available in the pump room

- and are in a satisfactory condition (IBC Code 83/90/00 ch.3) (BCH Code 85/90/00 ch.IIC);
- (DA) 1.2.2.4 examining all pump room bulkheads for signs of cargo leakage or fractures and, in particular, the sealing arrangements of all penetrations of pump room bulkheads (IBC Code 83/90/00 ch.3) (BCH Code 85/90/00 ch.IIC);
- (DA) 1.2.2.5 confirming that the remote operation of the cargo pump bilge system is satisfactory (IBC Code 83/90/00 ch.3) (BCH Code 85/90 ch.IIC);
- (DA) 1.2.2.6 examining the bilge and ballast arrangements and confirming that pumps and pipelines are identified (IBC Code 83/90/00 ch.3) (No BCH Code 85/90/00 reference);
- (DA) 1.2.2.7 confirming, when applicable, that the bow or stern loading and unloading arrangements are in order and testing the means of communication and the remote shut down for the cargo pumps (IBC Code 83/90/00 ch.3) (No BCH Code 85/90/00 reference);
- (DA) 1.2.2.8 examining the cargo transfer arrangements and confirming that any hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IBC Code 83/90/00 ch.5) (BCH Code 85/90/00 ch.IID);
- (DA) 1.2.2.9 examining, when applicable, the cargo heating or cooling systems, including any sampling arrangements, and confirming that the means for measuring the temperature and associated alarms are operating satisfactorily (IBC Code 83/90/00 ch.7) (BCH Code 85/90/00 ch.IIF);
- (DA) 1.2.2.10 examining, as far as practicable, the cargo tank vent system, including the pressure/vacuum valves and secondary means to prevent over- or under-pressure and devices to prevent the passage of flame (IBC Code 83/90/00 ch.8, MSC.102(73) and MEPC.79(43)) (BCH Code 85/90/00 ch.IIE and MEPC.80(43));
- (DA) 1.2.2.11 examining the gauging devices, high-level alarms and valves associated with overflow control (IBC Code 83/90/00 ch.8) (BCH Code 85/90/00 ch.IIE);
- (DA) 1.2.2.12 confirming that arrangements for sufficient gas to be carried or generated to compensate for normal losses, and that the means provided for monitoring ullage spaces, are satisfactory (IBC Code 83/90/00 ch.9) (BCH Code 85/90/00 ch.IIH);
- (DA) 1.2.2.13 confirming that arrangements are made for sufficient medium to be carried where drying agents are used on air inlets to cargo tanks (IBC Code 83/90/00 ch.9) (BCH Code 85/90/00 ch.IIH);
- (DA) 1.2.2.14 confirming that all electrical equipment in dangerous zones is suitable for such locations, is in satisfactory condition and has been properly maintained (IBC Code 83/90/00 ch.10) (BCH Code 85/90/00 ch.IIIB);

- (DA) 1.2.2.15 examining the fixed fire-fighting system for the cargo pump room and the deck foam system for the cargo area and confirming that their means of operation are clearly marked (IBC Code 83/90/00 ch.11) (BCH Code 85/90/00 ch.III E);
- (DA) 1.2.2.16 confirming that the condition of the portable fire extinguishing equipment for the cargoes to be carried in the cargo area is satisfactory (IBC Code 83/90/00 ch.11) (BCH Code 85/90/00 ch.III E);
- (DA) 1.2.2.17 confirming that the system for continuous monitoring of the concentration of flammable vapours is satisfactory (IBC Code 83/90/00 ch.11);
- (DA) 1.2.2.18 examining, as far as practicable, and confirming the satisfactory operation of, the arrangements for the ventilation of spaces normally entered during cargo handling operations and other spaces in the cargo area (IBC Code 83/90/00 ch.12) (BCH Code 85/90/00 ch.III A);
- (DA) 1.2.2.19 confirming, as far as practicable, that the intrinsically safe systems and circuits used for measurement, monitoring, control and communication purposes in all hazardous locations are being properly maintained (IBC Code 83/90/00 ch.13) (BCH Code 85/90/00 ch.III C);
- (DA) 1.2.2.20 examining the equipment for personnel protection (IBC Code 83/90/00, ch.14) (BCH Code 85/90/00 ch.III F) and in particular that:
- (DA) 1.2.2.20.1 the protective clothing for crew engaged in loading and discharging operations and its stowage is in a satisfactory condition;
- (DA) 1.2.2.20.2 the required safety equipment and associated breathing apparatus and associated air supplies and, when appropriate, emergency-escape respiratory and eye protection, are in a satisfactory condition and are properly stowed;
- (DA) 1.2.2.20.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment are in a satisfactory condition;
- (DA) 1.2.2.20.4 arrangements have been made for the antidotes for the cargoes actually carried to be on board;
- (DA) 1.2.2.20.5 decontamination arrangements and eyewashes are operational;
- (DA) 1.2.2.20.6 the required gas detection instruments are on board and arrangements have been made for the supply of the appropriate vapour detection tubes;
- (DA) 1.2.2.20.7 the arrangements for the stowage of cargo samples are satisfactory;
- (DA) 1.2.2.21 the provisions of (NA) 2.2.2 in annex 3;
- (DA) 1.2.2.22 confirming that sampling points or detector heads are located in suitable positions in order that potentially dangerous leakages are readily detected (IBC Code 07 ch.11.1.4) (BCH Code ch.III E 3.13).

- (DA) 1.2.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the completion of the annual survey should consist of:
- (DA) 1.2.3.1 after a satisfactory survey, endorsing the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (DA) 1.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory – see part "General" section 4.8.
- (DIn) **1.3 Intermediate surveys** – see part "General", section 4.3
- (DIn) 1.3.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of current certificates and other records should consist of:
- (DIn) 1.3.1.1 the provisions of (DA) 1.2.1.
- (DIn) 1.3.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the intermediate survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (DIn) 1.3.2.1 the provisions of (DA) 1.2.2;
- (DIn) 1.3.2.2 examination of vent line drainage arrangements (IBC Code 83/90/00 ch.8) (BCH Code 85/90/00 ch.IIE);
- (DIn) 1.3.2.3 confirmation, where applicable, that pipelines and independent cargo tanks are electrically bonded to the hull (IBC Code 83/90/00 ch.10) (BCH Code 85/90/00 ch.IIIB);
- (DIn) 1.3.2.4 generally examining the electrical equipment and cables in dangerous zones such as cargo pump rooms and areas adjacent to cargo tanks to check for defective equipment, fixtures and wiring. The insulation resistance of the circuits should be tested and in cases where a proper record of testing is maintained, consideration should be given to accepting recent readings (IBC Code 83/90/00 ch.10) (BCH Code 85/90/00 ch.IIIB);
- (DIn) 1.3.2.5 confirmation that spares are provided for cargo area mechanical ventilation fans (IBC Code 83/90/00 ch.12) (BCH Code 85/90/00 ch.IIIA);
- (DIn) 1.3.2.6 the provisions of (NIn) 2.3.2 in annex 3.
- (DIn) 1.3.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the

Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the completion of the intermediate survey should consist of:

- (DIn) 1.3.3.1 after a satisfactory survey endorsing the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (DIn) 1.3.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory – see part "General", section 4.8.
- (DR) **1.4** **Renewal surveys** – see part "General" section 4.4
- (DR) 1.4.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of current certificates and other records should consist of:
 - (DR) 1.4.1.1 the provisions of (DA) 1.2.1, except the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk.
 - (DR) 1.4.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the renewal survey of the structure, equipment, fittings, arrangements and materials should consist of:
 - (DR) 1.4.2.1 the provisions of (DIn) 1.3.3;
 - (DR) 1.4.2.2 the provisions of (NR) 2.4.2 in annex 3.
 - (DR) 1.4.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the completion of the renewal survey should consist of:
 - (DR) 1.4.3.1 after a satisfactory survey, issuing the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk.
- (G) **2** **GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL CERTIFICATE OF FITNESS FOR THE CARRIAGE OF LIQUEFIED GASES IN BULK**
- (GI) **2.1** **Initial surveys** – see part "General", section 4.1.
- (GI) 2.1.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the examination of plans and designs of the structure, equipment, fittings, arrangements and materials should consist of:

- (GI) 2.1.1.1 determining the products that it is intended that the ship will be permitted to carry and noting the corresponding minimum special requirements (IGC Code 83/90/00 ch.19);
- (GI) 2.1.1.2 examining the plans for the ship type, cargo containment, control of vapour space within the cargo tanks, vapour detection, gauging, personnel protection, filling limits for cargo tanks and other special requirements (IGC Code 83/90/00 chs.2, 4, 6, 13, 14, 15, and 17);
- (GI) 2.1.1.3 examining the plans for the freeboard and intact stability, discharges below the bulkhead deck and survival capability (IGC Code 83/90/00 ch.2);
- (GI) 2.1.1.4 examining the plans for the ship arrangements (IGC Code 83/90/00 ch.3);
- (GI) 2.1.1.5 examining the plans for the process pressure vessels and liquid, vapour and pressure piping systems (IGC Code 83/90/00 chs.5 and 6);
- (GI) 2.1.1.6 examining the plans for the cargo pressure/temperature control (IGC Code 83/90/00 ch.7);
- (GI) 2.1.1.7 examining the plans for the cargo tank ventilation systems (IGC Code 83/90/00 ch.8);
- (GI) 2.1.1.8 examining the plans for the environmental control (IGC Code 83/90/00 ch.9);
- (GI) 2.1.1.9 examining the plans for the electrical installations (IGC Code 83/90/00 ch.10);
- (GI) 2.1.1.10 examining the plans for fire protection and fire extinction equipment (IGC Code 83/90/00 ch.11);
- (GI) 2.1.1.11 examining the plans for the mechanical ventilation in the cargo area (IGC Code 83/90/00 ch.12);
- (GI) 2.1.1.12 examining the plans for the instrumentation (gauging, gas detection) (IGC Code 83/90/00 ch.13);
- (GI) 2.1.1.13 examining, when applicable, the plans for the use of cargo as fuel (IGC Code 83/90/00 ch.16).
- (GI) 2.1.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the survey during construction and after installation of the structure, equipment, fittings, arrangements and materials should consist of:
 - (GI) 2.1.2.1 confirming that the segregation in the cargo area and the arrangement of the accommodation, service and machinery spaces are in accordance with the approved plans (IGC Code 83/90/00 ch.3);
 - (GI) 2.1.2.2 examining the arrangements of the cargo pump rooms and cargo compressor rooms (IGC Code 83/90/00 ch.3);

- (GI) 2.1.2.3 confirming that the manually operated emergency shutdown system together with the automatic shutdown of the cargo pumps and compressors are satisfactory (IGC Code 83/90/00 ch.3);
- (GI) 2.1.2.4 examining the arrangement of the cargo control room (IGC Code 83/90/00 ch.3);
- (GI) 2.1.2.5 examining the accesses to spaces in the cargo area (IGC Code 83/90/00 ch.3);
- (GI) 2.1.2.6 confirming the arrangements for the air locks (IGC Code 83/90/00 ch.3);
- (GI) 2.1.2.7 examining the bilge, ballast and oil fuel arrangements (IGC Code 83/90/00 ch.3);
- (GI) 2.1.2.8 examining, when applicable, the bow or stern loading and unloading arrangements with particular reference to the air inlets and entrances to the accommodation, machinery and service spaces, the electrical equipment, fire-fighting arrangements and means of communication between the cargo control room and the shore location (IGC Code 83/90/00 ch.3);
- (GI) 2.1.2.9 confirming that the cargo tanks are arranged and installed in accordance with the approved plans, internally examining the cargo tanks, water ballast tanks and other spaces in the cargo area, ensuring that the appropriate non-destructive and pressure testing are carried out (IGC Code 83/90/00 ch.4);
- (GI) 2.1.2.10 for containment systems with glued secondary barriers, confirming that a tightness test has been carried out in accordance with the approved procedures of the system manufacturer before and after the initial cool down. Where significant differences in the results before and after cool down for each tanks or between tanks have been observed, confirming that an investigation has been carried out including additional testing, such as differential pressure, thermo graphic or acoustic emission testing, where necessary (IGC Code 83/90/00 ch.4);
- (GI) 2.1.2.11 examining during the initial cool down, loading and discharging of the first cargo, the overall performance of the cargo containment system and confirming that the system is in compliance with the design parameters. For vessels carrying liquefied natural gas, the examination includes witnessing the satisfactory operation of the following systems, if fitted:
 - (GI) 2.1.2.11.1 Gas detection system;
 - (GI) 2.1.2.11.2 Cargo control and monitoring systems such as level gauging; equipment, temperature sensors, pressure gauges, cargo pump room and compressors, and proper control of cargo heat exchanges, if operating;
 - (GI) 2.1.2.11.3 Nitrogen generating plant or inert gas generator;

- (GI) 2.1.2.11.4 Nitrogen pressure control systems for insulation, interbarrier and annular spaces;
- (GI) 2.1.2.11.5 Re-liquefaction plant;
- (GI) 2.1.2.11.6 Equipment fitted for the burning of cargo vapours, such as boilers or engines gas combustion units;
- (GI) 2.1.2.11.7 Cofferdam heating systems;
- (GI) 2.1.2.11.8 On-deck cargo piping systems including expansion and supporting arrangements;
- (GI) 2.1.2.11.9 High level alarms, by witnessing topping-off process for cargo tanks (IGC Code 83/90/00 ch.4);
- (GI) 2.1.2.12 examining the hull for cold spots following the first loaded voyage (IGC Code 83/90/00 ch.4);
- (GI) 2.1.2.13 examining the cargo and process piping, including the expansion arrangements, insulation from the hull structure, pressure relief and drainage arrangements and carrying out a leak detection test (IGC Code 83/90/00 ch.5);
- (GI) 2.1.2.14 confirming that the cargo system valving arrangements are in accordance with the approved plans (IGC Code 83/90/00 ch.5);
- (GI) 2.1.2.15 confirming that any liquid and vapour hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IGC Code 83/90/00 ch.5);
- (GI) 2.1.2.16 examining the arrangements for the cargo pressure/temperature control including, when fitted, any refrigeration system and confirming that any associated alarms are satisfactory (IGC Code 83/90/00 ch.7);
- (GI) 2.1.2.17 confirming that the cargo tank vent systems, including, when appropriate, any additional pressure relieving system for liquid level control and vacuum pressure systems, have been installed in accordance with the approved plans (IGC Code 83/90/00 ch.8);
- (GI) 2.1.2.18 examining the arrangements for the environmental control, including the means of storing or generating and drying an inert gas (IGC Code 83/90/00 ch.9);
- (GI) 2.1.2.19 examining the electrical installations with particular reference to the certified safe type equipment fitted in gas-dangerous spaces and zones (IGC Code 83/90/00 ch.10);
- (GI) 2.1.2.20 examining the arrangements for the fire protection and fire extinction (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.21 examining the fixed fire-fighting system for the cargo pump room and confirming that the installation tests have been satisfactorily

- completed and that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.22 examining the fire water main with particular reference to the provision of hydrants and isolation arrangements, checking that the two jets of water reach all areas of the cargo and containment area at the required pressure and testing the remote means of starting one main fire pump (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.23 examining and testing the water spray system for cooling, fire protection and crew protection and confirming that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.24 examining the dry chemical powder fire-extinguishing system for the cargo area, seeing that the fixed piping has been properly installed and has been proved clear and confirming that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.25 examining the carbon dioxide system for the cargo compressor and pump rooms and confirming that the installation tests have been satisfactorily completed and that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.26 confirming the provision and examining the disposition of the firefighters outfits (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.27 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces in the cargo area normally entered during cargo handling operations (IGC Code 83/90/00 ch.12) and checking in particular that:
- (GI) 2.1.2.27.1 it may be controlled from outside the space;
- (GI) 2.1.2.27.2 warning notices concerning its use have been posted;
- (GI) 2.1.2.27.3 it is fixed and is of the negative pressure type, permitting extraction from either the upper or lower parts of the space or from both the upper and lower parts when appropriate, for cargo compressor and pump rooms and for cargo control rooms when considered to be gas-dangerous spaces;
- (GI) 2.1.2.27.4 it is of the positive pressure type for spaces containing electric motors driving cargo compressors or pumps and other gas-safe spaces within the cargo area, except those containing inert gas generators;
- (GI) 2.1.2.27.5 exhaust ducts are clear of the ventilation inlets and openings to accommodation spaces, service spaces, control stations and other gas-safe spaces;
- (GI) 2.1.2.27.6 intakes are arranged to minimize the recycling or hazardous vapours;
- (GI) 2.1.2.27.7 ducts from gas-dangerous spaces are not led through accommodation, service and machinery spaces and control stations, except when (GI) 2.1.2.33 applies;

- (GI) 2.1.2.27.8 the electric motors driving ventilation fans are positioned outside the ventilation ducts when the carriage of flammable products is intended and the ventilation fans and the ducts, in way of the fans only, are of non-sparking construction in gas-dangerous spaces;
- (GI) 2.1.2.28 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces normally entered other than those covered by (GI) 2.1.2.27 (IGC Code 83/90/00 ch.12);
- (GI) 2.1.2.29 examining, and testing as appropriate, the liquid level indicators, overflow control, pressure gauges, high pressure and, when applicable, low pressure alarms, and temperature indicating devices for the cargo tanks (IGC Code 83/90/00 ch.13);
- (GI) 2.1.2.30 examining, and testing as appropriate, the gas detection equipment (IGC Code 83/90/00 ch.13);
- (GI) 2.1.2.31 confirming that two sets of portable gas detection equipment suitable for the cargoes to be carried and a suitable instrument for measuring oxygen levels have been provided (IGC Code 83/90/00 ch.13);
- (GI) 2.1.2.32 checking the provision of equipment for personnel protection (IGC Code 83/90/00 ch.14) and in particular that:
 - (GI) 2.1.2.32.1 two complete sets of safety equipment each permitting personnel to enter and work in a gas-filled space are provided and are properly stowed;
 - (GI) 2.1.2.32.2 the requisite supply of compressed air is provided and examining, when applicable, the arrangements for any special air compressor and low-pressure air line system;
 - (GI) 2.1.2.32.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment and antidotes, when available, for the products to be carried are provided;
 - (GI) 2.1.2.32.4 respiratory and eye protection suitable for emergency escape purposes are provided;
 - (GI) 2.1.2.32.5 decontamination arrangements and eyewashes are operational;
 - (GI) 2.1.2.32.6 when applicable, personnel are protected against the effects of a major cargo release by a special suitably designed and equipped space within the accommodation area;
 - (GI) 2.1.2.32.7 when applicable, the cargo control room is of the gas-safe type;
- (GI) 2.1.2.33 examining, when applicable, the arrangements for the use of cargo as fuel and testing that the gas supply to the machinery space is cut off should the exhaust ventilation not be functioning correctly and that the master gas fuel valve may be remotely closed from within the machinery space (IGC Code 83/90/00 ch.16).

- (GI) 2.1.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the check that all the required documentation has been placed on board the ship should consist of:
- (GI) 2.1.3.1 confirming that a loading and stability information booklet, containing details of typical service and ballast conditions, provisions for evaluating other conditions of loading, a summary of the ship's survival capabilities and sufficient information to ensure that the ship is loaded and operated in a safe and seaworthy manner, is available on board (IGC Code 83/90/00 ch.2);
- (GI) 2.1.3.2 confirming that damage survival capability information is supplied on the basis of loading information for all anticipated conditions of loading and variations in draught and trim (IGC Code 83/90/00 ch.2);
- (GI) 2.1.3.3 confirming that necessary information for the safe carriage of the products to be carried has been provided (IGC Code 83/90/00 ch.18);
- (GI) 2.1.3.4 confirming that a copy of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, or the equivalent national regulations, has been provided (IGC Code 83/90/00 ch.18).
- (GI) 2.1.4 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the completion of the initial survey should consist of:
- (GI) 2.1.4.1 after a satisfactory survey, issuing the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk.
- (GA) **2.2** **Annual surveys** – see part "General", section 4.2.
- (GA) 2.2.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the examination of current certificates and other records should consist of:
- (GA) 2.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (GA) 2.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (GA) 2.2.1.3 checking the validity of the International Ship Security Certificate;
- (GA) 2.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (GA) 2.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;

- (GA) 2.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
- (GA) 2.2.1.7 checking the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (GA) 2.2.1.8 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (GA) 2.2.1.9 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (GA) 2.2.1.10 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/13(b));
- (GA) 2.2.1.11 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (GA) 2.2.1.12 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (GA) 2.2.1.13 confirming that the loading and stability information booklet, containing details of typical service and ballast conditions, provisions for evaluating other conditions of loading, a summary of the ship's survival capabilities and sufficient information to ensure that the ship is loaded and operated in a safe and seaworthy manner, is available on board (IGC Code 83/90/00 ch.2);
- (GA) 2.2.1.14 confirming that damage survival capability information is supplied on the basis of loading information for all anticipated conditions of loading and variations in draught and trim (IGC Code 83/90/00 ch.2);
- (GA) 2.2.1.15 confirming that necessary information for the safe carriage of the products to be carried has been provided (IGC Code 83/90/00 ch.18);
- (GA) 2.2.1.16 confirming that a copy of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, or the equivalent national regulations, has been provided (IGC Code 83/90/00 ch.18);
- (GA) 2.2.1.17 confirming that there are records of the performance of the cargo containment system (IGC Code 83/90/00 ch.4);
- (GA) 2.2.1.18 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable.
- (GA) 2.2.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the annual survey of the structure, equipment, fittings, arrangements and materials should consist of:
 - (GA) 2.2.2.1 confirming that any special arrangements to survive conditions of damage are in order (IGC Code 83/90/00 ch.2);

- (GA) 2.2.2.2 confirming that the wheelhouse doors and windows, sidescuttles and windows in superstructure and deckhouse ends in the cargo area are in a satisfactory condition (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.3 examining the cargo pump rooms and cargo compressor rooms (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.4 confirming that the manually operated emergency shutdown system together with the automatic shutdown of the cargo pumps and compressors are satisfactory (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.5 examining the cargo control room (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.6 examining the gas detection arrangements for cargo control rooms and the measures taken to exclude ignition sources where such spaces are not gas-safe (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.7 confirming the arrangements for the air locks are being properly maintained (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.8 examining, as far as practicable, the bilge, ballast and oil fuel arrangements (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.9 examining, when applicable, the bow or stern loading and unloading arrangements with particular reference to the electrical equipment, fire-fighting arrangements and means of communication between the cargo control room and the shore location (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.10 confirming that the sealing arrangements at the gas domes are satisfactory (IGC Code 83/90/00 ch.4);
- (GA) 2.2.2.11 confirming that portable or fixed drip trays or deck insulation for cargo leakage is in order (IGC Code 83/90/00 ch.4);
- (GA) 2.2.2.12 examining the cargo and process piping, including the expansion arrangements, insulation from the hull structure, pressure relief and drainage arrangements (IGC Code 83/90/00 ch.5);
- (GA) 2.2.2.13 confirming that the cargo tank and interbarrier space pressure and relief valves, including safety systems and alarms, are satisfactory (IGC Code 83/90/00 ch.5);
- (GA) 2.2.2.14 confirming that any liquid and vapour hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IGC Code 83/90/00 ch.5);
- (GA) 2.2.2.15 examining the arrangements for the cargo pressure/temperature control including, when fitted, any refrigeration system and confirming that any associated alarms are satisfactory (IGC Code 83/90/00 ch.7);
- (GA) 2.2.2.16 examining the cargo, bunker, ballast and vent piping systems, including vent masts and protective screens, as far as practicable (IGC Code 83/90/00 ch.8);

- (GA) 2.2.2.17 confirming that arrangements are made for sufficient inert gas to be carried to compensate for normal losses and that means are provided for monitoring the spaces (IGC Code 83/90/00 ch.9);
- (GA) 2.2.2.18 confirming that the use of inert gas has not increased beyond that needed to compensate for normal losses by examining records of inert gas usage (IGC Code 83/90/00 ch.9);
- (GA) 2.2.2.19 confirming that any air-drying system and any interbarrier and hold space purging inert gas system are satisfactory (IGC Code 83/90/00 ch.9);
- (GA) 2.2.2.20 confirming that electrical equipment in gas-dangerous spaces and zones is in a satisfactory condition and is being properly maintained (IGC Code 83/90/00 ch.10);
- (GA) 2.2.2.21 examining the arrangements for the fire protection and fire extinction and testing the remote means of starting one main fire pump (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.22 examining the fixed fire-fighting system for the cargo pump room and confirming that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.23 examining the water spray system for cooling, fire protection and crew protection and confirming that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.24 examining the dry chemical powder fire-extinguishing system for the cargo area and confirming that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.25 examining the fixed installation for the gas-dangerous spaces and confirming its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.26 confirming the provision and examining the condition of the firefighters outfits (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.27 examining, as far as practicable, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces in the cargo area normally entered during cargo handling operations (IGC Code 83/90/00 ch.12);
- (GA) 2.2.2.28 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces normally entered other than those covered by (GI) 2.1.2.27 (IGC Code 83/90/00 ch.12);
- (GA) 2.2.2.29 examining, and testing as appropriate and as far as practicable, the liquid level indicators, overflow control, pressure gauges, high pressure and, when applicable, low pressure alarms, and temperature indicating devices for the cargo tanks (IGC Code 83/90/00 ch.13);

- (GA) 2.2.2.30 examining, and testing as appropriate, the gas detection equipment (IGC Code 83/90/00 ch.13);
- (GA) 2.2.2.31 confirming that two sets of portable gas detection equipment suitable for the cargoes to be carried and a suitable instrument for measuring oxygen levels have been provided (IGC Code 83/90/00 ch.13);
- (GA) 2.2.2.32 checking the provision of equipment for personnel protection (IGC Code 83/90/00 ch.14) and in particular that:
 - (GA) 2.2.2.32.1 two complete sets of safety equipment each permitting personnel to enter and work in a gas-filled space are provided and are properly stowed;
 - (GA) 2.2.2.32.2 the requisite supply of compressed air is provided and examining, when applicable, the arrangements for any special air compressor and low-pressure air line system;
 - (GA) 2.2.2.32.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment and antidotes, when available, for the products to be carried, are provided;
 - (GA) 2.2.2.32.4 respiratory and eye protection suitable for emergency escape purposes are provided;
 - (GA) 2.2.2.32.5 decontamination arrangements and eyewashes are operational;
 - (GA) 2.2.2.32.6 examining, when applicable, the arrangements to protect personnel against the effects of a major cargo release by a special suitably designed and equipped space within the accommodation area;
- (GA) 2.2.2.33 examining, when applicable, the arrangements for the use of cargo as fuel and testing, as far as practicable, that the gas supply to the machinery space is cut off should the exhaust ventilation not be functioning correctly and that master gas fuel valve may be remotely closed from within the machinery space (IGC Code 83/90/00 ch.16).
- (GA) 2.2.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the completion of the annual survey should consist of:
 - (GA) 2.2.3.1 after a satisfactory survey, endorsing the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
 - (GA) 2.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory - see part "General" section 4.8.
- (GIn) **2.3 Intermediate surveys** – see part "General", section 4.3.
 - (GIn) 2.3.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the examination of current certificates and other records should consist of:
 - (GIn) 2.3.1.1 the provisions of (GA) 2.2.1.

- (GIn) 2.3.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the intermediate survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (GIn) 2.3.2.1 the provisions of (GA) 2.2.2;
- (GIn) 2.3.2.2 confirming, where applicable, that pipelines and independent cargo tanks are electrically bonded to the hull (IGC Code 83/90/00 ch.10);
- (GIn) 2.3.2.3 generally examining the electrical equipment and cables in dangerous zones such as cargo pump rooms and areas adjacent to cargo tanks to check for defective equipment, fixtures and wiring. The insulation resistance of the circuits should be tested and in cases where a proper record of testing is maintained consideration should be given to accepting recent readings (IGC Code 83/90/00 ch.10);
- (GIn) 2.3.2.4 confirming that spares are provided for cargo area mechanical ventilation fans (IGC Code 83/90/00 ch.12);
- (GIn) 2.3.2.5 confirming that the heating arrangements, if any, for steel structures are satisfactory.
- (GIn) 2.3.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the completion of the intermediate survey should consist of:
- (GIn) 2.3.3.1 after a satisfactory survey, endorsing the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (GIn) 2.3.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory – see part "General" section 4.8.
- (GR) **2.4** **Renewal surveys** – see part "General", section 4.4.
- (GR) 2.4.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the examination of current certificates and other records should consist of:
- (GR) 2.4.1.1 the provisions of (GA) 2.2.1, except the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk.
- (GR) 2.4.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the renewal survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (GR) 2.4.2.1 the provisions of (GIn) 2.3.3;
- (GR) 2.4.2.2 examining the insulation and means of support of the cargo tanks and confirming that the secondary barrier remains effective (IGC Code 83/90/00 ch.4).

(GR) 2.4.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the completion of the renewal survey should consist of:

(GR) 2.4.3.1 after a satisfactory survey, issuing the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk.

APPENDIX 1

SUMMARY OF AMENDMENTS TO MANDATORY INSTRUMENTS REFLECTED IN THE SURVEY GUIDELINES UNDER HSSC

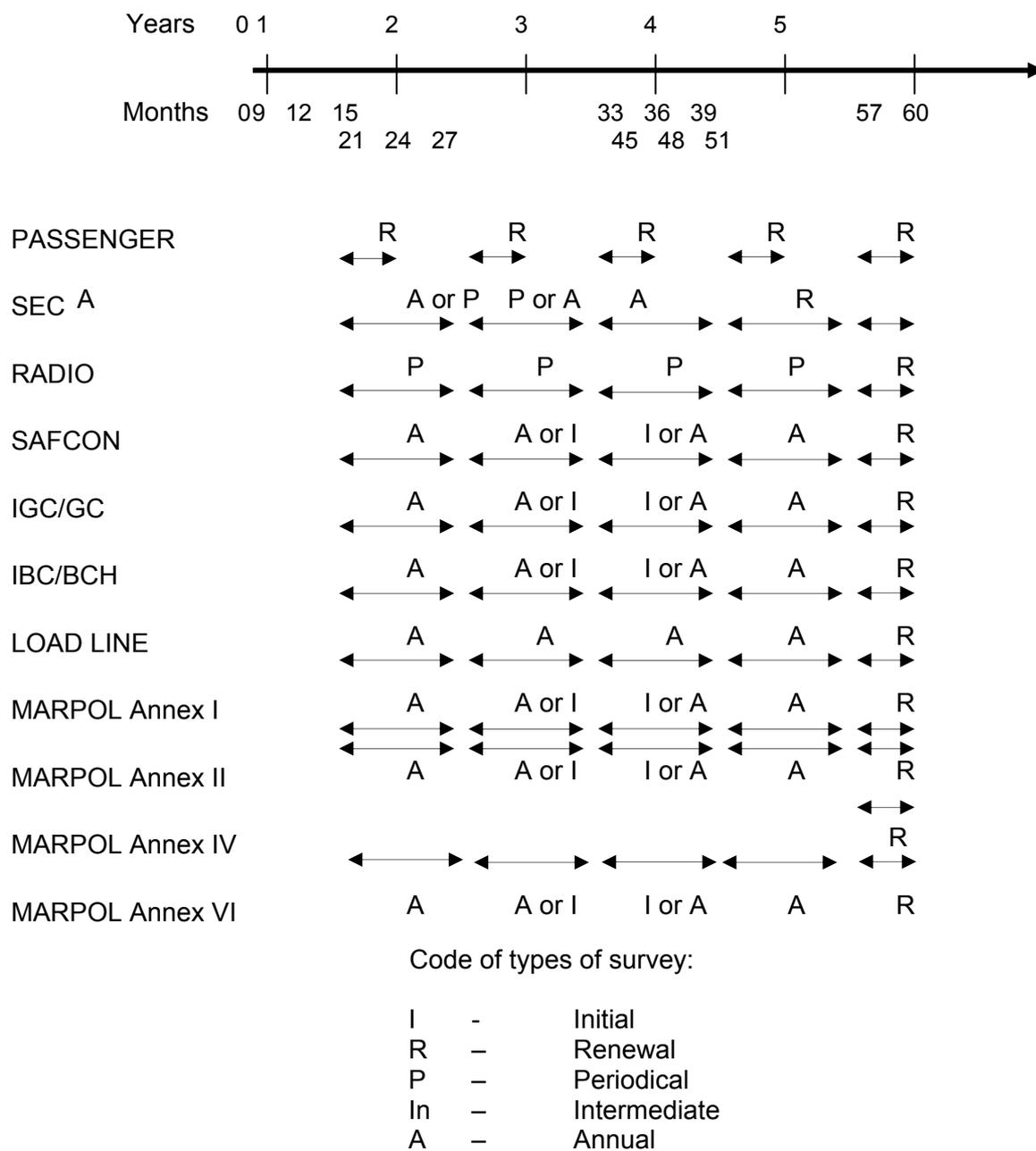
The amendments of mandatory instruments reflected in the Annexes 1 to 4 are summarized below to facilitate the amendment of the Survey Guidelines under the HSSC in the future:

SOLAS 1974	up to and including the 2009 amendments, (res. MSC.282(86))
SOLAS PROT 1988	up to and including the 2009 amendments (res. MSC.283(86))
LL 1966	up to and including the 2005 amendments (res. A.972(24))
LL PROT 1988	up to and including 2008 amendments (res. MSC.270(85))
MARPOL	up to and including the 2010 amendments (res. MEPC.190(60))
NOx Code	up to and including the 2008-amendments (res. MEPC.177(58))
IBC Code	up to and including the 2006/2007 amendments (res. MEPC.166(56)/res. MSC.219(82))
IGC Code	up to and including the 2006/2007 amendments (res. MSC.220(82) and res. MEPC.166(56))
BCH Code	up to and including the 2006 amendments (res.MSC.212(81)/res. MEPC.144(54))

APPENDIX 2

THE HARMONIZED SYSTEM OF SURVEY AND CERTIFICATION

DIAGRAMMATIC ARRANGEMENT



ANNEX 7

DRAFT IMO INSTRUMENTS IMPLEMENTATION CODE (IIIC)

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PART 1 – COMMON AREAS

Objective

1 The objective of this Code is to enhance global maritime safety and protection of the marine environment and assist States in the implementation of instruments of the Organization.

2 Different States will view this Code according to their own circumstances and will be bound only for the implementation of those instruments to which they are Contracting Governments or Parties. By virtue of geography and circumstance, some States may have a greater role as a flag State than as a port State or as a coastal State, whilst others may have a greater role as a coastal State or port State than as a flag State.

Strategy

3 In order to meet the objective of this Code, a State should:

- .1 develop an overall strategy to ensure that its international obligations and responsibilities as a flag, port and coastal State are met;
- .2 establish a methodology to monitor and assess that the strategy ensures effective implementation and enforcement of relevant international mandatory instruments; and
- .3 continuously review the strategy to achieve, maintain and improve the overall organizational performance and capability as a flag, port and coastal State.

General

4 Under customary international law, States are responsible for promulgating laws and regulations and for taking all other steps, which may be necessary to give the international instruments, to which they are parties, full and complete effect, so as to ensure safety of life at sea and protection of the marine environment.

5 In taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another.

Scope

6 The Code seeks to address those aspects necessary for a Contracting Government or Party to give full and complete effect to the provisions of the applicable international instruments to which it is a Contracting Government or Party, pertaining to:

- .1 safety of life at sea;
- .2 prevention of pollution from ships;
- .3 standards of training, certification and watchkeeping for seafarers;
- .4 load lines;

- .5 tonnage measurement of ships; and
- .6 regulations for preventing collisions at sea.

7 The following areas are to be considered and addressed in the development of policies, legislation, associated rules and regulations and administrative procedures for the implementation and enforcement of those obligations and responsibilities by the State:

- .1 jurisdiction;
- .2 organization and authority;
- .3 legislation, rules and regulations;
- .4 promulgation of the applicable international mandatory instruments, rules and regulations;
- .5 enforcement arrangements;
- .6 control, survey, inspection, audit, verification, approval and certification functions;
- .7 selection, recognition, authorization, empowerment and monitoring of recognized organizations, as appropriate, and of nominated surveyors;
- .8 investigations required to be reported to the Organization; and
- .9 reporting to the Organization and other Administrations.

Initial actions

8 When a new or amended instrument of the Organization enters into force for a State, the Government of that State shall be in a position to implement and enforce its provisions through appropriate national legislation and to provide the necessary implementation and enforcement infrastructure. This means that the Government of the State shall have:

- .1 the ability to promulgate laws, which permit effective jurisdiction and control in administrative, technical and social matters over ships flying its flag and, in particular, provide the legal basis for general requirements for registries, the inspection of ships, safety and pollution-prevention laws applying to such ships and the making of associated regulations;
- .2 a legal basis for the enforcement of its national laws and regulations including the associated investigative and penal processes; and
- .3 the availability of sufficient personnel with maritime expertise to assist in the promulgation of the necessary national laws and to discharge all the responsibilities of the State, including reporting as required by the respective conventions.

Communication of information

9 The State shall communicate its strategy, as referred to in paragraph 3, including information on its national legislation to all concerned.

Records

10 Records, as appropriate, shall be established and maintained to provide evidence of conformity to requirements and of the effective operation of the State. Records shall remain legible, readily identifiable and retrievable. A documented procedure shall be established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.

Improvement

11 States shall continually improve the adequacy of the measures which are taken to give effect to those conventions and protocols which they have accepted. Improvement shall be made through rigorous and effective application and enforcement of national legislation, as appropriate, and monitoring of compliance.

12 The State shall stimulate a culture which provides opportunities for improvement of performance in maritime safety and environmental protection activities, which may include, *inter alia*:

- .1 continual training programmes relating to safety and pollution prevention;
- .2 regional and national drills on safety and pollution prevention, which engage a broad spectrum of maritime related national, regional and international organizations and companies and seafarers; and
- .3 using reward and incentive mechanisms for shipping companies and seafarers, regarding improving safety and pollution prevention.

13 Further, the State shall take action to identify and eliminate the cause of any non-conformities in order to prevent recurrence, including:

- .1 review and analysis of non-conformities;
- .2 implementation of necessary corrective action; and
- .3 review of the corrective action taken.

14 The State shall determine action needed to eliminate the causes of potential non-conformities in order to prevent their occurrence.

PART 2 – FLAG STATES

Implementation

15 In order to effectively discharge their responsibilities and obligations, flag States shall:

- .1 implement policies through the issuance of national legislation and guidance, which will assist in the implementation and enforcement of the

requirements of all safety and pollution prevention conventions and protocols to which they are parties; and

- .2 assign responsibilities within their Administrations to update and revise any relevant policies adopted, as necessary.

16 A flag State shall establish resources and processes capable of administering a safety and environmental protection programme, which, as a minimum, shall consist of the following:

- .1 administrative instructions to implement applicable international rules and regulations as well as develop and disseminate any interpretative national regulations that may be needed [including certificates issued by a classification society, which is recognized by the flag State in accordance with the provisions of SOLAS regulation XI-1/1, and which certificate is required by the flag State to demonstrate compliance with structural, mechanical, electrical, and/or other requirements of an international convention to which the flag State is a party or a requirement of the flag State's national regulations];
- .2 compliance with the requirements of the applicable international instruments, using an audit and inspection programme, independent of any administrative bodies issuing the required certificates and relevant documentation and/or of any entity which has been delegated authority by the State to issue the required certificates and relevant documentation;
- .3 compliance with the requirements related to international standards of training, certification and watchkeeping of seafarers. This includes, *inter alia*:
 - .1 training, assessment of competence and certification of seafarers;
 - .2 certificates and endorsements that accurately reflect the competencies of the seafarers, using the appropriate terminology as well as terms which are identical to those used in any safe manning document issued to the ship;
 - .3 impartial investigation to be held of any reported failure, whether by act or omission, that may pose a direct threat to safety of life or property at sea or to the marine environment, by the holders of certificates or endorsements issued by the State;
 - .4 that certificates or endorsements issued by the State can be effectively withdrawn, suspended or cancelled when warranted, and when necessary to prevent fraud; and
 - .5 administrative arrangements, including those involving training, assessment and certification activities conducted under the purview of another State, are such that the flag State accepts its responsibility for ensuring the competence of masters, officers and other seafarers serving on ships entitled to fly its flag;
- .4 the conduct of investigations into casualties and adequate and timely handling of cases of ships with identified deficiencies; and

- .5 the development, documentation and provision of guidance concerning those requirements that are to the satisfaction of the Administration, found in the relevant international instruments.

17 A flag State shall ensure that ships entitled to fly its flag are sufficiently and efficiently manned, taking into account relevant and existing measures such as the Principles of Safe Manning adopted by the Organization.

Delegation of authority

18 [With regard only to ships entitled to fly its flag] a flag State authorizing a recognized organization to act on its behalf, in conducting the surveys, inspections and audits, issuing of certificates and documents, marking of ships and other statutory work required under the conventions of the Organization [or under their national legislation], must regulate such authorization(s) in accordance with the applicable requirements of the international mandatory instruments to:

- .1 determine that the recognized organization has adequate resources in terms of technical, managerial and research capabilities to accomplish the tasks being assigned, in accordance with the "Minimum Standards for Recognized Organizations Acting on Behalf of the Administration" set out in the relevant guidelines of the Organization¹ ;
- .2 have as its basis a formal written agreement between the Administration and the recognized organization which, as a minimum, includes the elements set out in the relevant guidelines of the Organization², or equivalent legal arrangements, and which may be based on the model agreement for the authorization of recognized organizations acting on behalf of the Administration³;
- .3 issue specific instructions detailing actions to be followed in the event that a ship is found unfit to proceed to sea without danger to the ship or persons on board, or is found to present an unreasonable threat of harm to the marine environment;
- .4 provide the recognized organization with all appropriate instruments of national law and interpretations thereof giving effect to the provisions of the conventions or [and] specify [only for application to ships entitled to fly its flag, any additional] whether the Administration's standards go beyond convention requirements in any respect; and
- .5 require that the recognized organization shall maintain records, which will provide the Administration with data to assist in interpretation of requirements contained in the applicable international instruments.

[18 (bis) No flag State shall mandate its recognized organizations to apply to ships, other than those entitled to fly its flag, any requirement pertaining to their classification rules,

¹ Appendix 1 of resolution A.739(18) "Guidelines for the authorization of organizations acting on behalf of the Administration".

² Appendix 2 of resolution A.739(18) "Guidelines for the authorization of organizations acting on behalf of the Administration".

³ MSC/Circ.710-MEPC/Circ.307.

requirements, procedures or performance of other statutory certification processes, beyond convention requirements and the mandatory instruments of the Organization.]

19 The flag State shall establish or participate in an oversight programme with adequate resources for monitoring of, and communication with, its recognized organization(s) in order to ensure that its international obligations are fully met, by:

- .1 exercising its authority to conduct supplementary surveys to ensure that ships entitled to fly its flag in fact comply with the requirements of the applicable international instruments;
- .2 conducting supplementary surveys as it deems necessary to ensure that ships entitled to fly its flag comply with national requirements, which supplement the international mandatory requirements; and
- .3 providing staff who have a good knowledge of the rules and regulations of the flag State and the recognized organizations and who are available to carry out effective oversight of the recognized organizations.

20 A flag State nominating surveyor(s) for the purpose of carrying out surveys, audits and inspections on its behalf shall regulate such nominations, as appropriate, in accordance with the guidance provided in paragraph 18, in particular subparagraphs .3 and .4.

Enforcement

21 A flag State shall take all necessary measures to secure observance of international rules and standards by ships entitled to fly its flag and by entities and persons under their jurisdiction so as to ensure compliance with their international obligations. Such measures shall include, *inter alia*:

- .1 prohibiting ships entitled to fly their flag from sailing until such ships can proceed to sea in compliance with the requirements of international rules and standards;
- .2 the periodic inspection of ships entitled to fly its flag to verify that the actual condition of the ship and its crew is in conformity with the certificates it carries;
- .3 the surveyor ensuring, during the periodic inspection referred to in subparagraph .2, that seafarers assigned to the ships are familiar with:
 - .1 their specific duties; and
 - .2 ship arrangements, installations, equipments and procedures;
- .4 ensuring that the ship's complement, as a whole, can effectively coordinate their activities in an emergency situation and in performing functions vital to safety or to the prevention or mitigation of pollution;
- .5 providing, in national laws and regulations, for penalties of adequate severity to discourage violation of international rules and standards by ships entitled to fly its flag;

- .6 instituting proceedings – after an investigation has been conducted – against ships entitled to fly its flag, which have violated international rules and standards, irrespective of where the violation has occurred;
- .7 providing, in national laws and regulations, for penalties of adequate severity to discourage violations of international rules and standards by individuals issued with certificates or endorsements under their authority; and
- .8 instituting proceedings – after an investigation has been conducted – against individuals holding certificates or endorsements who have violated international rules and standards, irrespective of where the violation has occurred.

22 A flag State shall develop and implement a control and monitoring programme, as appropriate, in order to:

- .1 provide for prompt and thorough casualty investigations, with reporting to the Organization as appropriate;
- .2 provide for the collection of statistical data, so that trend analyses can be conducted to identify problem areas; and
- .3 provide for a timely response to deficiencies and alleged pollution incidents reported by port or coastal States.

23 Furthermore, the flag State shall:

- .1 ensure compliance with the applicable international instruments through national legislation;
- .2 provide an appropriate number of qualified personnel to implement and enforce the national legislation referred to in subparagraph 15.1, including personnel for performing investigations and surveys;
- .3 provide a sufficient number of qualified flag State personnel to investigate incidents where ships entitled to fly its flag have been detained by port States;
- .4 provide a sufficient number of qualified flag State personnel to investigate incidents where the validity of a certificate or endorsement or competence of individuals holding certificates or endorsements issued under its authority are questioned by port States; and
- .5 ensure the training and oversight of the activities of flag State surveyors and investigators.

24 When a State is informed that a ship entitled to fly its flag has been detained by a port State, the flag State shall oversee that appropriate corrective measures to bring the ship in question into immediate compliance with the applicable international instruments are taken.

25 A flag State, or a recognized organization acting on its behalf, shall only issue or endorse an international certificate to a ship after it has determined that the ship meets all applicable requirements.

26 A flag State shall only issue an international certificate of competency or endorsement to a person after it has determined that the person meets all applicable requirements.

Flag State surveyors

27 The flag State shall define and document the responsibilities, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention.

28 Personnel responsible for, or performing, surveys, inspections and audits on ships and companies covered by the relevant international mandatory instruments shall have as a minimum the following:

- .1 appropriate qualifications from a marine or nautical institution and relevant seagoing experience as a certificated ship officer holding or having held a valid management level certificate of competency and have maintained their technical knowledge of ships and their operation since gaining their certificate of competency; or
- .2 a degree or equivalent from a tertiary institution within a relevant field of engineering or science recognized by the State; or
- .3 accreditation as a surveyor through a formalized training programme that leads to the same standard of surveyor's experience and competency as that required in paragraphs 28.1, 28.2 and 31.

29 Personnel qualified under paragraph 28.1 shall have served for a period of not less than three years at sea as an officer in the deck or engine department.

30 Personnel qualified under paragraph 28.2 shall have worked in a relevant capacity for at least three years.

31 In addition, such personnel shall have appropriate practical and theoretical knowledge of ships, their operation and the provisions of the relevant national and international instruments necessary to perform their duties as flag State surveyors obtained through documented training programmes.

32 Other personnel assisting in the performance of such work shall have education, training and supervision commensurate with the tasks they are authorized to perform.

33 Previous relevant experience in the field of expertise should be considered an advantage; in case of no previous experience, the Administration shall provide appropriate field training.

34 The flag State shall implement a documented system for qualification of personnel and continuous updating of their knowledge as appropriate to the tasks they are authorized to undertake.

35 Depending on the function(s) to be performed, the qualifications shall encompass:

- .1 knowledge of applicable, international and national, rules and regulations for ships, their companies, their crew, their cargo and their operation;
- .2 knowledge of the procedures to be applied in survey, certification, control, investigative and oversight functions;
- .3 understanding of the goals and objectives of the international and national instruments dealing with maritime safety and protection of the marine environment, and of related programmes;
- .4 understanding of the processes both on board and ashore, internal as well as external;
- .5 possession of professional competency necessary to perform the given tasks effectively and efficiently;
- .6 full safety awareness in all circumstances, also for one's own safety; and
- .7 training or experience in the various tasks to be performed and, preferably, also in the functions to be assessed.

36 The flag State shall issue an identification document for the surveyor to carry when performing his/her tasks.

Flag State investigations

37 Marine safety investigations should be conducted by qualified, impartial and objective investigators, knowledgeable in matters relating to the casualty. Subject to any agreement on which the State or States will be the marine safety investigating State(s), the flag State shall provide qualified investigators for this purpose, irrespective of the location of the casualty or incident.

38 The flag State should ensure that individual investigators have working knowledge and practical experience in those subject areas pertaining to their normal duties. Additionally, to assist individual investigators in performing duties outside their normal assignments, the flag State should ensure ready access to expertise in the following areas, as necessary:

- .1 navigation and the Collision Regulations;
- .2 flag State regulations on certificates of competency;
- .3 causes of marine pollution;
- .4 interviewing techniques;
- .5 evidence gathering; and
- .6 evaluation of the effects of the human element.

39 Any accidents involving personal injury necessitating absence from duty of three days or more and any deaths resulting from occupational accidents and casualties to ships of the flag State should be investigated, and the results of such investigations made public.

40 Ship casualties are to be investigated and reported in accordance with the relevant international instruments, taking into account the Casualty Investigation Code, as may be amended, and guidelines developed by the Organization⁴. The report on the investigation shall be forwarded to the Organization together with the flag State's observations, in accordance with the guidelines referred to above.

Evaluation and review

41 A flag State shall, on a periodic basis, evaluate its performance with respect to the implementation of administrative processes, procedures and resources necessary to meet its obligations as required by the international instruments to which it is a party.

42 Measures to evaluate the performance of flag States shall include, *inter alia*, port State control detention rates, flag State inspection results, casualty statistics, communication and information processes, annual loss statistics (excluding constructive total losses (CTLs)), and other performance indicators as may be appropriate, to determine whether staffing, resources and administrative procedures are adequate to meet its flag State obligations.

43 Areas to be regularly reviewed may include, *inter alia*:

- .1 fleet loss and accident ratios to identify trends over selected time periods;
- .2 the number of verified cases of detained ships in relation to the size of the fleet;
- .3 the number of verified cases of incompetence or wrongdoing by individuals holding certificates or endorsements issued under its authority;
- .4 responses to port State deficiency reports or interventions;
- .5 investigations into very serious and serious casualties and lessons learned from them;
- .6 technical and other resources committed;
- .7 results of inspections, surveys and controls of the ships in the fleet;
- .8 investigation of occupational accidents;
- .9 the number of incidents and violations that occur under the applicable international maritime pollution prevention regulations; and
- .10 the number of suspensions or withdrawals of certificates, endorsements, approvals, etc.

⁴ Refer to the Code for the Investigation of Marine Casualties and Incidents, adopted by the Organization by resolution A.849(20), as amended by resolution A.884(21), and the mandatory Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) adopted by the Organization by resolution MSC.255(84).

PART 3 – COASTAL STATES⁵

Implementation

44 Coastal States have certain rights and obligations under various international instruments. When exercising their rights under those instruments coastal States incur additional obligations.

45 In order to effectively meet its obligations, a coastal State shall:

- .1 implement policies through the issuance of national legislation and guidance, which will assist in the implementation and enforcement of the requirements of all safety and pollution prevention conventions and protocols to which it is a party; and
- .2 assign responsibilities to update and revise any relevant policies adopted, as necessary.

46 A coastal State shall ensure that its legislation, guidance and procedures are established for the consistent implementation and verification of its rights, obligations and responsibilities contained in the relevant international instruments to which it is a party.

47 Those rights, obligations and responsibilities may include, *inter alia*:

- .1 radiocommunication services;
- .2 meteorological services and warnings;
- .3 search and rescue services;
- .4 hydrographic services;
- .5 ship routeing;
- .6 ship reporting systems;
- .7 vessel traffic services; and
- .8 aids to navigation.

Enforcement

48 A coastal State shall take all necessary measures to ensure their observance of international rules when exercising their rights and fulfilling their obligations.

49 A coastal State shall consider, develop and implement a control and monitoring programme, as appropriate, in order to:

- .1 provide for the allocation of statistical data so that trend analyses can be conducted to identify problem areas;

⁵ The requirements contained in this section apply to the extent that ships subject to the IMO mandatory instruments can access the ports of the Contracting Government.

- .2 establish mechanisms for timely response to pollution incidents in its waters; and
- .3 co-operate with flag States and/or port States, as appropriate, in investigations of maritime casualties.

Evaluation and review

50 A coastal State shall periodically evaluate its performance in respect of exercising its rights and meeting its obligations under the applicable international instruments.

PART 4 – PORT STATES⁶

Implementation

51 Port States have certain rights and obligations under various international instruments. When exercising their rights under those instruments, port States incur additional obligations.

52 Port States can play an integral role in the achievement of maritime safety and environmental protection, including pollution prevention. The role and responsibilities of the port State with respect to maritime safety and environmental protection is derived from a combination of international treaties, conventions, national laws, as well as in some instances, bilateral and multilateral agreements.

53 In order to effectively meet its obligations, a port State shall:

- .1 implement policies through the issuance of national legislation and guidance, which will assist in the implementation and enforcement of the requirements of all safety and pollution prevention conventions and protocols to which it is a party; and
- .2 assign responsibilities to update and revise any relevant policies adopted, as necessary.

54 A port State shall ensure that its legislation, guidance and procedures are established for the consistent implementation and verification of its rights, obligations and responsibilities contained in the relevant international instruments to which it is a party.

55 Those rights, obligations and responsibilities include, *inter alia*:

- .1 provision of appropriate reception facilities or capability to accept all waste streams regulated under the instruments of the Organization;
- .2 port State control⁷; and
- .3 keeping a register of fuel oil suppliers.

⁶ The requirements contained in this section apply to the extent that ships subject to the IMO mandatory instruments can access the ports of the Contracting Government.

⁷ Refer to the Procedures for Port State Control (resolution A.787(19), as amended by resolution A.882(21)).

Enforcement

56 Port States shall take all necessary measures to ensure their observance of international rules when exercising their rights and fulfilling their obligations.

57 Several international maritime instruments on safety and maritime pollution prevention contain specific provisions that permit port State control.

58 Also a number of those instruments obligate port States to treat non-parties to those conventions no more favourably than those that are parties. This means that port States are obliged to impose the conditions of those instruments on parties, as well as on non-parties.

59 When exercising its right to carry out port State control, a port State shall establish processes to administer a port State control programme consistent with the relevant resolution adopted by the Organization⁸.

60 Port State control shall be carried out only by authorized and qualified port State control officers in accordance with the relevant procedures adopted by the Organization*.

61 Port State control officers and persons assisting them shall be free from any commercial, financial, and other pressures and have no commercial interest, either in the port of inspection or the ships inspected, in ship repair facilities or any support services in the port or elsewhere nor shall the port State control officers be employed by or undertake work on behalf of recognized organizations or classification societies. Further procedures shall be implemented to ensure that persons or organizations external to the port State cannot influence the results of port State inspection and control carried out.

Evaluation and review

62 A port State shall periodically evaluate its performance in respect of exercising its rights and meeting its obligations under the applicable instruments of the Organization.

Note: Annexes to this Code are not an integral part of it.

⁸ Refer to the Procedures for Port State Control (resolution A.787(19), as amended by resolution A.882(21)).

ANNEX 8

DRAFT ASSEMBLY RESOLUTION ON THE CODE FOR THE IMPLEMENTATION OF MANDATORY IMO INSTRUMENTS, 2011

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO that, by resolution A.1019(26), it adopted amendments to the Code for the Implementation of Mandatory IMO Instruments, 2007, as adopted by resolution A.996(25),

RECOGNIZING the need for the above Code to be further revised to take account of the amendments to the IMO instruments referred to above, which have entered into force or become effective since the adoption of resolution A.1019(26),

BEING AWARE of the request of the seventh session of the UN Commission on Sustainable Development (CSD 7) that measures be developed to ensure that flag States give full and complete effect to the IMO and other relevant conventions to which they are party, so that the ships of all flag States meet international rules and standards,

RECOGNIZING that parties to the relevant international conventions have, as part of the ratification process, accepted to fully meet their responsibilities and to discharge their obligations under the conventions and other instruments to which they are party,

REAFFIRMING that States have the primary responsibility to have in place an adequate and effective system to exercise control over ships entitled to fly their flag, and to ensure that they comply with relevant international rules and regulations in respect of maritime safety, security and protection of the marine environment,

REAFFIRMING ALSO that States, in their capacity as port and coastal States, have other obligations and responsibilities under applicable international law in respect of maritime safety, security and protection of the marine environment,

NOTING that, while States may realize certain benefits by becoming party to instruments aiming at promoting maritime safety, security and the prevention of pollution from ships, these benefits can only be fully realized when all parties carry out their obligations as required by the instruments concerned,

NOTING ALSO that the ultimate effectiveness of any instrument depends, *inter alia*, upon all States:

- (a) becoming party to all instruments related to maritime safety, security and pollution prevention and control;
- (b) implementing and enforcing such instruments fully and effectively;
- (c) reporting to the Organization, as required,

NOTING FURTHER that, in the context of the Voluntary IMO Member State Audit Scheme, the enactment of appropriate legislation and its implementation and enforcement are the three key issues on which a Member State's performance can be measured,

BEARING IN MIND that the Voluntary IMO Member State Audit Scheme contains references to the Code for the Implementation of Mandatory IMO Instruments, as appropriate; and that the Code, in addition to providing guidance for the implementation and enforcement of IMO instruments, forms the basis of the Audit Scheme, in particular concerning the identification of the auditable areas,

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee, [at its eighty-ninth] session and the Marine Environment Protection Committee, [at its sixty-second] session,

1. ADOPTS the Code for the Implementation of Mandatory IMO Instruments, 2011, set out in the annex to the present resolution;
2. URGES Governments of all States in their capacity as flag, port and coastal States to implement the amendments to the Code on a national basis;
3. REQUESTS the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Code under review and, in coordination with the Council, to propose amendments thereto to the Assembly;
4. REVOKES resolutions A.996(25) and A.1019(26).

* * *

ANNEX

**DRAFT CODE FOR THE IMPLEMENTATION OF
MANDATORY IMO INSTRUMENTS, 2011**

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PART 1 – COMMON AREAS

Objective

1 The objective of this Code is to enhance global maritime safety and protection of the marine environment.

2 Different Administrations will view this Code according to their own circumstances and will be bound only for the implementation of those instruments referred to in paragraph 6 to which they are Contracting Governments or Parties. By virtue of geography and circumstance some Administrations may have a greater role as a flag State than as a port State or as a coastal State, whilst others may have a greater role as a coastal State or port State than as a flag State. Such imbalances do not diminish, in any way, their duties as a flag, port or coastal State.

Strategy

3 In order for a State to meet the objective of this Code, a strategy should be developed, covering the following issues:

- .1 implementation and enforcement of relevant international mandatory instruments;
- .2 adherence to international recommendations, as appropriate;
- .3 continuous review and verification of the effectiveness of the State in respect of meeting its international obligations; and
- .4 the achievement, maintenance and improvement of overall organizational performance and capability.

In implementing the aforementioned strategy, the guidance given in this Code should be adhered to.

General

4 Under the provisions of the United Nations Convention on the Law of the Sea, 1982 (UNCLOS) and of IMO conventions, Administrations are responsible for promulgating laws and regulations and for taking all other steps which may be necessary to give these instruments full and complete effect so as to ensure that, from the point of view of safety of life at sea and protection of the marine environment, a ship is fit for the service for which it is intended and is manned with competent maritime personnel.

5 In taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another. (UNCLOS, article 195.)

Scope

6 The mandatory IMO instruments addressed in this Code are:

- .1 the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS 1974);

- .2 the Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS PROT 1978);
- .3 the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS PROT 1988);
- .4 the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (MARPOL 73/78);
- .5 the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (MARPOL PROT 1997);
- .6 the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW 1978);
- .7 the International Convention on Load Lines, 1966 (LL 66);
- .8 the Protocol of 1988 relating to the International Convention on Load Lines, 1966 (LL PROT 1988);
- .9 the International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE 1969); and
- .10 the Convention on the International Regulations for Preventing Collisions at Sea, 1972, as amended (COLREG 1972),

as well as all instruments made mandatory through these conventions and protocols. Non-exhaustive lists of obligations under the above mandatory instruments are found in annexes 1 to 4. A list of the relevant instruments is given in annex 5 and a summary of amendments to mandatory instruments reflected in the Code is given in annex 6.

Initial actions

7 When a new or amended IMO mandatory instrument enters into force for a State, the Government of that State must be in a position to implement and enforce its provisions through appropriate national legislation and to provide the necessary implementation and enforcement infrastructure. This means that the Government of the State must have:

- .1 the ability to promulgate laws which permit effective jurisdiction and control in administrative, technical and social matters over ships flying its flag and, in particular, provide the legal basis for general requirements for registries, the inspection of ships, safety and pollution-prevention laws applying to such ships and the making of associated regulations;
- .2 a legal basis for the enforcement of its national laws and regulations including the associated investigative and penal processes; and
- .3 the availability of sufficient personnel with maritime expertise to assist in the promulgation of the necessary national laws and to discharge all the responsibilities of the State, including reporting as required by the respective conventions.

8 A possible framework for national legislation to give effect to the provisions of relevant IMO instruments can be found in "Guidelines for Maritime Legislation", a United Nations publication¹.

Communication of information

9 The State should communicate its strategy, as referred to in paragraph 3, including information on its national legislation to all concerned.

Records

10 Records, as appropriate, should be established and maintained to provide evidence of conformity to requirements and of the effective operation of the State. Records should remain legible, readily identifiable and retrievable. A documented procedure should be established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.

Improvement

11 States should continually improve the adequacy of the measures which are taken to give effect to those conventions and protocols which they have accepted. Improvement should be made through rigorous and effective application and enforcement of national legislation, as appropriate, and monitoring of compliance.

12 The State should stimulate a culture which provides opportunities to people for improvement of performance in maritime safety and environmental protection activities.

13 Further, the State should take action to identify and eliminate the cause of any non-conformities in order to prevent recurrence, including:

- .1 review and analysis of non-conformities;
- .2 implementation of necessary corrective action; and
- .3 review of the corrective action taken.

14 The State should determine action to eliminate the causes of potential non-conformities in order to prevent their occurrence.

PART 2 – FLAG STATES

Implementation

15 In order to effectively discharge their responsibilities and obligations, flag States should:

- .1 implement policies through the issuance of national legislation and guidance which will assist in the implementation and enforcement of the requirements of all safety and pollution prevention conventions and protocols to which they are party; and

¹ ST/ESCAP/1076.

- .2 assign responsibilities within their Administration to update and revise any relevant policies adopted, as necessary.

16 Flag States should establish resources and processes capable of administering a safety and environmental protection programme which, as a minimum, should consist of the following:

- .1 administrative instructions to implement applicable international rules and regulations as well as develop and disseminate any interpretative national regulations that may be needed;
- .2 resources to ensure compliance with the requirements of the mandatory IMO instruments listed in paragraph 6 using an audit and inspection programme independent of any administrative bodies issuing the required certificates and relevant documentation and/or of any entity which has been delegated authority by the flag States to issue the required certificates and relevant documentation;
- .3 resources to ensure compliance with the requirements of the 1978 STCW Convention, as amended. This includes resources to ensure, *inter alia*, that:
 - .3.1 training, assessment of competence and certification of seafarers are in accordance with the provisions of the Convention;
 - .3.2 STCW certificates and endorsements accurately reflect the competencies of the seafarers, using the appropriate STCW terminology as well as terms which are identical to those used in any safe manning document issued to the ship;
 - .3.3 impartial investigation can be held of any reported failure, whether by act or omission, that may pose a direct threat to safety of life or property at sea or to the marine environment, by the holders of certificates or endorsements issued by that Party;
 - .3.4 certificates or endorsements issued by the flag State can be effectively withdrawn, suspended or cancelled when warranted, and when necessary to prevent fraud; and
 - .3.5 administrative arrangements, including those involving training, assessment and certification activities conducted under the purview of another State, are such that the flag State accepts its responsibility for ensuring the competence of masters, officers and other seafarers serving on ships entitled to fly its flag²;
- .4 resources to ensure the conduct of investigations into casualties and adequate and timely handling of cases of ships with identified deficiencies; and
- .5 the development, documentation and provision of guidance concerning those requirements that are to the satisfaction of the Administration, found in relevant mandatory IMO instruments.

² Regulations I/2, I/9, I/10 and I/11 of the 1978 STCW Convention, as amended.

17 Flag States shall ensure that ships entitled to fly their flag are sufficiently and efficiently manned, taking into account the Principles of Safe Manning adopted by IMO.

Delegation of authority

18 Flag States authorizing recognized organizations to act on their behalf in conducting the surveys, inspections, the issue of certificates and documents, the marking of ships and other statutory work required under the IMO conventions must regulate such authorization in accordance with SOLAS regulation XI-1/1 to:

- .1 determine that the recognized organization has adequate resources in terms of technical, managerial and research capabilities to accomplish the tasks being assigned, in accordance with the "Minimum Standards for Recognized Organizations Acting on Behalf of the Administration" set out in the relevant IMO resolution³;
- .2 have as its basis a formal written agreement between the Administration and the recognized organization which, as a minimum, includes the elements set out in the relevant IMO resolution⁴, or equivalent legal arrangements, and which may be based on the model agreement for the authorization of recognized organizations acting on behalf of the Administration⁵;
- .3 issue specific instructions detailing actions to be followed in the event that a ship is found unfit to proceed to sea without danger to the ship or persons on board, or is found to present an unreasonable threat of harm to the marine environment;
- .4 provide the recognized organization with all appropriate instruments of national law and interpretations thereof giving effect to the provisions of the conventions or specify whether the Administration's standards go beyond convention requirements in any respect; and
- .5 require that the recognized organization must maintain records which will provide the Administration with data to assist in interpretation of convention regulations.

19 Flag States nominating surveyors for the purpose of carrying out surveys and inspections on their behalf should regulate such nominations, as appropriate, in accordance with the guidance provided in paragraph 18, in particular subparagraphs .3 and .4.

20 The flag State should establish or participate in an oversight programme with adequate resources for monitoring of, and communication with, its recognized organizations in order to ensure that its international obligations are fully met, by:

- .1 exercising its authority to conduct supplementary surveys to ensure that ships entitled to fly its flag in fact comply with mandatory IMO instruments;

³ Appendix 1 of resolution A.739(18) on the Guidelines for the authorization of organizations acting on behalf of the Administration, as amended by resolution MSC.208(81).

⁴ Appendix 2 of resolution A.739(18) on the Guidelines for the authorization of organizations acting on behalf of the Administration.

⁵ MSC/Circ.710-MEPC/Circ.307.

- .2 conducting supplementary surveys as it deems necessary to ensure that ships entitled to fly its flag comply with national requirements which supplement the IMO convention requirements; and
- .3 providing staff who have a good knowledge of the rules and regulations of the flag State and the recognized organizations and who are available to carry out effective field oversight of the recognized organizations.

Enforcement

21 Flag States should take all necessary measures to secure observance of international rules and standards by ships entitled to fly their flag and by entities and persons under their jurisdiction so as to ensure compliance with their international obligations. Such measures should, *inter alia*, include:

- .1 prohibiting ships entitled to fly their flag from sailing until such ships can proceed to sea in compliance with the requirements of international rules and standards;
- .2 the periodic inspection of ships entitled to fly their flag to verify that the actual condition of the ship and its crew is in conformity with the certificates it carries;
- .3 the surveyor ensuring, during the periodic inspection referred to in subparagraph .2, that seafarers assigned to the ships are familiar with:
 - .3.1 their specific duties; and
 - .3.2 ship arrangements, installations, equipments and procedures;
- .4 ensuring that the ship's complement, as a whole, can effectively co-ordinate their activities in an emergency situation and in performing functions vital to safety or to the prevention or mitigation of pollution;
- .5 providing, in national laws and regulations, for penalties of adequate severity to discourage violation of international rules and standards by ships entitled to fly their flag;
- .6 instituting proceedings – after an investigation has been conducted – against ships entitled to fly their flag which have violated international rules and standards, irrespective of where the violation has occurred;
- .7 providing, in national laws and regulations, for penalties of adequate severity to discourage violations of international rules and standards by individuals issued with certificates or endorsements under their authority; and
- .8 instituting proceedings – after an investigation has been conducted – against individuals holding certificates or endorsements who have violated international rules and standards, irrespective of where the violation has occurred.

22 A flag State should consider developing and implementing a control and monitoring programme, as appropriate, in order to:

- .1 provide for prompt and thorough casualty investigations, with reporting to IMO as appropriate;
- .2 provide for the collection of statistical data, so that trend analyses can be conducted to identify problem areas; and
- .3 provide for a timely response to deficiencies and alleged pollution incidents reported by port or coastal States.

23 Furthermore, the flag State should:

- .1 ensure compliance with applicable IMO instruments through national legislation;
- .2 provide an appropriate number of qualified personnel to implement and enforce the national legislation referred to in subparagraph 15.1, including personnel for performing investigations and surveys;
- .3 provide a sufficient number of qualified flag State personnel to investigate incidents where ships entitled to fly its flag have been detained by port States;
- .4 provide a sufficient number of qualified flag State personnel to investigate incidents where the validity of a certificate or endorsement or competence of individuals holding certificates or endorsements issued under its authority are questioned by port States; and
- .5 ensure the training and oversight of the activities of flag State surveyors and investigators.

24 When a State is informed that a ship entitled to fly its flag has been detained by a port State, the flag State should oversee that appropriate corrective measures to bring the ship in question into immediate compliance with the applicable international conventions are taken.

25 A flag State, or a recognized organization acting on its behalf, should only issue or endorse an international certificate to a ship after it has determined that the ship meets all applicable requirements.

26 A flag State should only issue an international certificate of competency or endorsement to a person after it has determined that the person meets all applicable requirements.

Flag State surveyors

27 The flag State should define and document the responsibilities, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention.

28 Personnel responsible for, or performing, surveys, inspections and audits on ships and companies covered by the relevant IMO mandatory instruments should have as a minimum the following:

- .1 appropriate qualifications from a marine or nautical institution and relevant seagoing experience as a certificated ship officer holding or having held a valid STCW II/2 or III/2 certificate of competency and have maintained their technical knowledge of ships and their operation since gaining their certificate of competency; or
- .2 a degree or equivalent from a tertiary institution within a relevant field of engineering or science recognized by the State.

29 Personnel qualified under 28.1 should have served for a period of not less than three years at sea as an officer in the deck or engine department.

30 Personnel qualified under 28.2 should have worked in a relevant capacity for at least three years.

31 In addition such personnel should have appropriate practical and theoretical knowledge of ships, their operation and the provisions of the relevant national and international instruments necessary to perform their duties as flag State surveyors obtained through documented training programmes.

32 Other personnel assisting in the performance of such work should have education, training and supervision commensurate with the tasks they are authorized to perform.

33 Previous relevant experience in the field of expertise should be considered an advantage; in case of no previous experience the Administration should provide appropriate field training.

34 Flag States may accredit surveyors through a formalized, detailed training programme that leads to the same standard of knowledge and ability as that required in paragraphs 28 to 31.

35 The flag State should have implemented a documented system for qualification of personnel and continuous updating of their knowledge as appropriate to the tasks they are authorized to undertake.

36 Depending on the function(s) to be performed the qualifications should encompass:

- .1 knowledge of applicable international and national rules and regulations for ships, their companies, their crew, their cargo and their operation;
- .2 knowledge of the procedures to be applied in survey, certification, control, investigative and oversight functions;
- .3 understanding of the goals and objectives of the international and national instruments dealing with maritime safety and protection of the marine environment, and of related programmes;
- .4 understanding of the processes both on board and ashore, internal as well as external;
- .5 possession of professional competency necessary to perform the given tasks effectively and efficiently;
- .6 full safety awareness in all circumstances, also for one's own safety; and

- .7 training or experience in the various tasks to be performed and, preferably, also in the functions to be assessed.

37 The flag State should issue an identification document for the surveyor to carry when performing his/her tasks.

Flag State investigations

38 Investigations should be carried out following a marine casualty or pollution incident. Casualty investigations should be conducted by suitably qualified investigators, competent in matters relating to the casualty. The flag State should be prepared to provide qualified investigators for this purpose, irrespective of the location of the casualty or incident.

39 The flag State should ensure that individual investigators have working knowledge and practical experience in those subject areas pertaining to their normal duties. Additionally, to assist individual investigators in performing duties outside their normal assignments, the flag State should ensure ready access to expertise in the following areas, as necessary:

- .1 navigation and the Collision Regulations;
- .2 flag State regulations on certificates of competency;
- .3 causes of marine pollution;
- .4 interviewing techniques;
- .5 evidence gathering; and
- .6 evaluation of the effects of the human element.

40 Any accidents involving personal injury necessitating absence from duty of three days or more and any deaths resulting from occupational accidents and casualties to ships of the flag State should be investigated, and the results of such investigations made public.

41 Ship casualties should be investigated and reported in accordance with the relevant IMO conventions, and the guidelines developed by IMO⁶. The report on the investigation should be forwarded to IMO together with the flag State's observations, in accordance with the guidelines referred to above.

Evaluation and review

42 The flag States should, on a periodic basis, evaluate their performance with respect to the implementation of administrative processes, procedures and resources necessary to meet their obligations as required by the conventions to which they are party.

⁶ Refer to the Code for the Investigation of Marine Casualties and Incidents, adopted by the Organization by resolution A.849(20), as amended by resolution A.884(21), and the mandatory Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) adopted by the Organization by resolution MSC.255(84).

43 Measures to evaluate the performance of the flag States may include, *inter alia*, port State control detention rates, flag State inspection results, casualty statistics, communication and information processes, annual loss statistics (excluding constructive total losses (CTLs)), and other performance indicators as may be appropriate, to determine whether staffing, resources and administrative procedures are adequate to meet their flag State obligations.

44 Measures may include a regular review of:

- .1 fleet loss and accident ratios to identify trends over selected time periods;
- .2 the number of verified cases of detained ships in relation to the size of the fleet;
- .3 the number of verified cases of incompetence or wrongdoing by individuals holding certificates or endorsements issued under its authority;
- .4 responses to port State deficiency reports or interventions;
- .5 investigations into very serious and serious casualties and lessons learned from them;
- .6 financial, technical and other resources committed;
- .7 results of inspections, surveys and controls of the ships in the fleet;
- .8 investigation of occupational accidents;
- .9 the number of incidents and violations under MARPOL 73/78, as amended; and
- .10 the number of suspensions or withdrawals of certificates, endorsements, approvals, etc.

Implementation

PART 3 – COASTAL STATES

45 Coastal States have certain rights and obligations under various mandatory IMO instruments. When exercising their rights under the instruments coastal States incur additional obligations.

46 In order to effectively meet their obligations, coastal States should:

- .1 implement policies and guidance which will assist in the implementation and enforcement of their obligations; and
- .2 assign responsibilities within their Administration to update and revise any relevant policies adopted, as necessary.

Enforcement

47 Coastal States should take all necessary measures to ensure their observance of international rules when exercising their rights and fulfilling their obligations.

48 A coastal State should consider developing and implementing a control and monitoring programme, as appropriate, in order to:

- .1 provide for the allocation of statistical data so that trend analyses can be conducted to identify problem areas;
- .2 provide for timely response to pollution incidents in its waters; and
- .3 co-operate with flag States and/or port States, as appropriate, in investigations of maritime casualties.

Evaluation and review

49 Coastal States should periodically evaluate their performance in respect of exercising their rights and meeting their obligations under mandatory IMO instruments.

PART 4 – PORT STATES

Implementation

50 Port States have certain rights and obligations under various mandatory IMO instruments. When exercising their rights under the instruments, port States incur additional obligations.

51 Port States can play an integral role in the achievement of maritime safety and environmental protection, including pollution prevention. The role and responsibilities of the port State with respect to maritime safety and environmental protection is derived from a combination of international treaties, conventions, national laws, as well as in some instances, bilateral and multilateral agreements.

Enforcement

52 Port States should take all necessary measures to ensure their observance of international rules when exercising their rights and fulfilling their obligations.

53 Several IMO conventions contain specific provisions that permit port State control.

54 In this respect, SOLAS, as modified by its 1988 Protocol, MARPOL and STCW also contain provisions that obligate port States to treat non-Parties to those conventions no more favourably than those that are Parties. This means that port States are obliged to impose the conditions of the conventions on Parties as well as on non-Parties.

55 When exercising their right to carry out port State control, a port State should establish processes to administer a port State control programme consistent with the relevant resolution adopted by the Organization⁷.

56 Port State control should be carried out only by authorized and qualified port State control officers in accordance with the relevant procedures adopted by the Organization*.

⁷ Refer to the Procedures for Port State Control (resolution A.787(19), as amended by resolution A.882(21)).

57 Port State control officers and persons assisting them should have no commercial interest, either in the port of inspection or the ships inspected, nor should the port State control officers be employed by or undertake work on behalf of recognized organizations or classification societies.

Evaluation and review

58 Port States should periodically evaluate their performance in respect of exercising their rights and meeting their obligations under mandatory IMO instruments.

ANNEX 1

OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES

The following table contains a non-exhaustive list of obligations, including those obligations imposed when a right is exercised.

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
TONNAGE 69		
Art. 1	General obligation under the Convention	
Art. 5(2)	Force majeure	
Art. 8	Issue of a certificate by another Government	
Art. 10	Cancellation of certificate	
Art. 11	Acceptance of certificates	
Art. 15	Communication of information	
LL 66 and LL PROT 88⁸		
Art. 1	General obligation under the Convention	
	General obligations	LL PROT 88 only (Art. I)
Art. 7(2)	Force majeure	
Art. 17	Issue or endorsement of certificates by another Government	amended by LL PROT 88
Art. 20	Acceptance of certificates	
Art. 25	Special rules drawn up by agreement	
Art. 26	Communication of information	
	Communication of information	LL PROT 88 only (Art. III)
COLREG 72		
Art. I	General obligations	

⁸

When the obligation does not derive from the International Convention on Load Lines, 1966, but solely from the Protocol of 1988 relating thereto, this is indicated in the "Comments" column.

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
STCW 78		
Art. I	General obligations under the Convention	
Art. IV	Communication of information	
Art. XI(1)	Promotion of technical co-operation	
Reg. I/3	Principles governing near-coastal waters	
Reg. I/5	National provisions	
Reg. I/6	Training and assessment	
Reg. I/7	Communication of information	
Reg. I/8	Quality standards	
Reg. I/9	Medical standards – Issue and registration of certificates	
SOLAS 74		
Art. I	General obligations under the Convention	in SOLAS PROT 78 and SOLAS PROT 88
Art. III	Communication of information	in SOLAS PROT 78 and SOLAS PROT 88
Art. V(c)	Carriage of persons in emergencies – reporting	
Art. VII	Special rules drawn up by agreement	
Art. XI	Denunciation	in SOLAS PROT 88 (Art. VII)
Reg. I/13	Issue or endorsement of certificates by another Government	in SOLAS PROT 88
Reg. I/17	Acceptance of certificates	also reg. I/19(b)
Reg. I/21(b)	Casualties – reporting	
Reg. IV/5	Provision of radiocommunication services and communication of information on such provision	
Reg. IV/5-1	Global maritime distress and safety system identities – ensuring suitable arrangements	

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
Reg. V/5	Meteorological services and warnings	
Reg. V/6	Ice Patrol Service	
Reg. V/10	Ships' routing	
Reg. V/11	Ship reporting systems	
Reg. V/12	Vessel traffic services	
Reg. V/13	Establishment and operation of aids to navigation	
Reg. V/31.2	Danger messages – bring to the knowledge of those concerned and communicate to other interested Governments	
Reg. V/33.1-1	Distress situations: obligations and procedures – co-ordination and co-operation	
Reg. VI/1.2	Appropriate information on safe carriage of cargoes	
Reg. VII/2.4	Issue of instructions on emergency response, etc.	
Reg. VII/7-1	Issue of instructions on emergency response, etc.	
MARPOL		
Art. 1	General obligations under the Convention	and Art. I of MARPOL PROT 78
Art. 4(2) and (4)	Violation	
Art. 5(1)	Certificates and special rules on inspection of ships – acceptance of certificates	
Art. 5(4)	Certificates and special rules on inspection of ships – no more favourable treatment	
Art. 6(1)	Detection of violations and enforcement of the Convention – co-operation	
Art. 6(3)	Detection of violations and enforcement of the Convention – furnishing evidence	
Art. 7	Undue delay to ships	
Art. 8	Reports on incidents involving harmful substances	
Art. 11	Communication of information	
Art. 12(2)	Casualties to ships – information to IMO	

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
Art. 17	Promotion of technical co-operation	
Annex I		
Reg. 8	Issue or endorsement of a certificate by another Government	
Reg. 15.7	Control of discharge of oil – investigations (Machinery spaces)	
Reg. 34.7	Control of discharge of oil – investigations (Cargo area)	
Annex II		
Reg. 6.3	Categorization and listing of noxious liquid substances and other substances – establish and agree on provisional assessment and notify IMO	
Reg. 9.3.1, 9.3.2, 9.3.3 and 9.3.4	Issue or endorsement of a certificate by another Government	
Reg. 13.4	Control of discharges of residues – exemption for a pre-wash	
Reg. 18.3	Reception facilities and cargo unloading terminal arrangements – agree and establish a date, notify IMO	
Annex III		
Reg. 1(3)	Application – issue detailed requirements	
Annex IV		
Reg. 6	Issue or endorsement of a certificate by another Government	
Revised Annex VI		
Reg. 7	Issue or endorsement of a certificate by another Government	
Reg. 11.1	Detection of violations and enforcement – co-operation	
Reg. 11.2	Inspection report in case of detection of violations	
Reg. 11.3	Detection of violations and enforcement – information to flag State and master on violations detected	

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
Reg. 11.5	Transmission of report to requesting Party	
Reg. 13.7.1	Certification of an Approved Method and communication to IMO	
Reg. 17.1	Adequate Reception Facilities	
Reg. 17.3	Reception Facilities unavailable or inadequate – communication to IMO	
Reg. 18.1	Availability of fuel oils and communication to IMO	
Reg. 18.2.1	Ship not compliant with fuel oil standards	
Reg. 18.2.3	Action taken, including not taking control measures	
Reg. 18.2.5	Evidence of the non-availability of compliant fuel oil – communication to IMO	
Reg. 18.9	Authorities designated for register of local suppliers, bunker delivery note and sample, fuel oil quality, actions against fuel oil suppliers of non-compliance, informing the Administration of any ship receiving non-compliant fuel oil and communication to IMO of non-compliant fuel oil suppliers as referred to in the paragraph	
ISM Code		
Para 14.3	Extension of validity of Interim SMC by another Contracting Government	
1994 HSC Code		
Para 1.8.2	Issue of certificates by another Government	
Para 14.2.1.12	Definition of "sea area A1"	as may be defined
Para 14.2.1.13	Definition of "sea area A2"	as may be defined
2000 HSC Code		
Para 1.8.2	Issue of certificates by another Government	
Para 14.2.1.13	Definition of "sea area A1"	as may be defined
Para 14.2.1.14	Definition of "sea area A2"	as may be defined

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
IMDG Code		
Section 1.5.2	Radiation protection programme – role of Competent Authority	
Section 1.5.3	Quality assurance programmes- role of Competent Authority	
Chapter 4.1	Approval of packagings as referred to in the Chapter – role of Competent Authority	
Section 5.1.5	General provisions for class 7 – role of Competent Authority	
Chapter 6.2	Approval of pressure receptacles, aerosol dispensers, small receptacles containing gas and fuel cell cartridges containing liquefied flammable gas – role of Competent Authority	
Section 6.2.2.6.2	General provisions – role of Competent Authority	
Section 6.3.2	Quality assurance programme – role of Competent Authority	
Section 6.3.5	Procedures for performance and frequency of tests – role of Competent Authority	
Chapter 6.4	Approval of package design and materials for class 7 – role of Competent Authority	
Section 6.5.4	Testing, certification and inspection – role of Competent Authority	
Chapter 6.6	Provisions for the construction and testing of large packagings – role of Competent Authority	
Chapter 6.7	Provisions for the design, construction, inspection and testing of portable tanks and multiple-element gas containers – role of Competent Authority	
Chapter 6.8	Provisions for road tank vehicles – role of Competent Authority	
Section 7.1.14	Stowage of goods of class 7 – role of Competent Authority	
Chapter 7.9	Exemptions, approvals and certificates – notification to IMO and recognition of approvals and certificates	

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
Casualty Investigation Code		
Para 4/4.1	Detailed contact information of the marine safety investigation Authority (ies) to IMO	
Para 5/5.1 and 5.2	Notification of a marine casualty	
Para 7/7.1 and 7.2	Agreement to conduct a marine safety investigation	
Para 8/8.1	Powers provided for investigator(s)	
Para 9/9.2	Coordination for parallel investigations	
Para 10/10.1	Cooperation in investigating	
Para 11/11.1	Investigation not to be subject to external direction	
Para 13/13.1,13.4 and 13.5	Draft marine safety investigation reports	
Para 14/14.1 and 14.2	Marine safety investigation reports – communication to IMO	
Para 14/14.4	Marine safety investigation reports – available to public and shipping industry	
IBC Code		
Para 1.5.3	Maintenance of conditions after survey	
Para 1.5.5.1	Issue or endorsement of International Certificate of Fitness by another Government	
BCH Code		
Para 1.6.4.1	Issue or endorsement of certificate by another Government	
IGC Code		
Para 1.5.5.1	Issue or endorsement of certificate by another Government	

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
STCW Code, Part A		
Section A-I/6.1	Training and assessment	
Section A-I/6.3	Qualifications of instructors, supervisors and assessors	
Section A-I/6.7	Training and assessment within an institution	
Section A-I/7	Communication of information	
Section A-I/8	Quality standards	
Section A-I/12	Standards governing the use of simulators	
Section A.VIII/2.8	Watchkeeping at sea – direct attention of companies, masters, chief engineer officers and watchkeeping personnel to observe principles in Parts 3-1 and 3-2	

ANNEX 2

SPECIFIC FLAG STATE OBLIGATIONS

The following tables contain a non-exhaustive list of obligations, including those obligations imposed when a right is exercised.

Specific flag State obligations		
Source	Summary description	Comments
TONNAGE 69		
Art. 6	Determination of tonnages	
Art. 7(2)	Issue of certificates	
Annex I, reg. 1(3)	Novel types of craft – determination of tonnage and communication to IMO on method used	
Annex I, reg. 5(3)(b)	Change of net tonnage – Alterations or modifications deemed by the Administration to be of a major character	
Annex I, reg. 7	Measurement and calculation	
LL 66 and LL PROT 88⁹		
	Existing certificates	LL PROT 88 only (Art.II-2)
Art. 6(3)	Exemptions – reporting	
Art. 8(2)	Equivalentents – reporting	
Art. 9(2)	Approvals for experimental purposes – reporting	
Art. 13	Surveys and marking	amended by LL PROT 88
Art. 14	Initial, renewal and annual survey	amended by LL PROT 88
Art. 16(3)	Issue of certificates	
Art. 19	Duration and validity of certificate	amended by LL PROT 88
Art. 23	Casualties	
Annex I, reg. 1	Strength of hull	

⁹ When the obligation does not derive from the International Convention on Load Lines, 1966, but solely from the Protocol of 1988 relating thereto, this is indicated in the "Comments" column.

Specific flag State obligations		
Source	Summary description	Comments
	Strength and intact stability of ships	LL PROT 88 only (Annex I, reg. I)
Annex I, reg. 2	Application – Assignment of freeboard	amended by LL PROT 88
	Authorization of recognized organizations	LL PROT 88 only (Annex I, reg. 2-1)
Annex I, reg. 8	Details of marking	
Annex I, reg. 10	Stability information – approval	amended by LL PROT 88
Annex I, reg. 12	Doors	amended by LL PROT 88
Annex I, reg. 14	Cargo and other hatchways	amended by LL PROT 88
Annex I, reg. 15	Hatchways closed by portable covers and secured weathertight by tarpaulins and battering devices	amended by LL PROT 88
Annex I, reg. 16(1)	Hatchway coamings – reduced heights	amended by LL PROT 88 (Annex I, reg. 14-1(2))
Annex I, reg. 16(4)	Securing arrangements	amended by LL PROT 88 (Annex I, reg. 16(6))
	Machinery space openings	LL PROT 88 only (Annex I, reg. 17(4))
Annex I, reg. 19	Ventilators	amended by LL PROT 88
Annex I, reg. 20	Air pipes	amended by LL PROT 88
	Cargo ports and other similar openings – applicable national standards	LL PROT 88 only (Annex I, reg. 21(5))
Annex I, reg. 22	Scuppers, inlets and discharges	amended by LL PROT 88
Annex I, reg. 25	Protection of the crew	amended by LL PROT 88
Annex I, reg. 27	Freeboards – Types of ships	amended by LL PROT 88
Annex I, reg. 28	Freeboard tables	amended by LL PROT 88
Annex I, reg. 39	Minimum bow height and reserve buoyancy	amended by LL PROT 88
	Lashing system	LL PROT 88 only (Annex I, reg. 44(6))

Specific flag State obligations		
Source	Summary description	Comments
COLREG 72		
Annex I, paragraph 14	Approval of construction of lights and shapes and the installation of lights on board	
Annex III, paragraph 3	Approval of construction, performance and installation of sound signal appliances on board	
STCW 78		
Art. VI	Certificates	
Art. VIII(3)	Dispensation – reporting	
Art. IX(2)	Equivalents – reporting	
Reg. I/2	Certificates and endorsements	
Reg. I/10	Recognition of certificates	
Reg. I/11(5)	Revalidation of certificates	
Reg. I/14	Responsibilities of companies	
Reg. IV/1.3	Application	
Reg. V/1.4	Mandatory minimum requirements for the training and qualification of masters, officers and ratings on tankers	
Reg. V/2.9	Mandatory minimum requirements for the training and qualification of masters, officers, ratings and other personnel on ro-ro passenger ships	
Reg. V/3.9	Mandatory minimum requirements for the training and qualification of masters, officers, ratings and other personnel on passenger ships other than ro-ro passenger ships	
Reg. VIII/1	Fitness for duty	
Reg. VIII/2	Watchkeeping arrangements and principles to be observed	
SOLAS 74		
Reg. I/4(b)	Exemptions – reporting	
Reg. I/5(b)	Equivalents – reporting	

Specific flag State obligations		
Source	Summary description	Comments
Reg. I/6	Inspection and survey	in SOLAS PROT 78 and SOLAS PROT 88
Reg. I/7	Survey of passenger ships	in SOLAS PROT 88
Reg. I/8	Survey of life-saving appliances and other equipment of cargo ships	in SOLAS PROT 88
Reg. I/9	Survey of radio installations of cargo ships	in SOLAS PROT 88
Reg. I/10	Survey of structure, machinery and equipment of cargo ships	in SOLAS PROT 88
Reg. I/12	Issue of certificates	in SOLAS PROT 88
	Issue and endorsement of certificates	in SOLAS PROT 88
Reg. I/14	Duration and validity of certificates	in SOLAS PROT 88
Reg. I/15	Forms of certificates and records of equipment	in SOLAS PROT 88
Reg. I/18	Qualification of certificates	
Reg. I/21	Casualties	
Reg. II-1/1.2	Compliance with earlier requirements	revised SOLAS chapter II-I adopted by MSC 80 and MSC82
Reg. II-1/3-2	Approval of corrosion prevention systems of seawater ballast tanks	
Reg. II-1/3-2.4	Maintenance of the protective coating	
Reg. II-1/3-3.2	Approval of means of access to tanker bows	
Reg. II-1/3-4.1.2.2 and 3-4.1.3	Approval of emergency towing arrangements on tankers	
Reg. II-1/3-6.2.3	Means of access to cargo and other spaces – satisfaction of the Administration as well as survey	
Reg. II-1/3-6.4.1	Approval of Ship Structure Access Manual	
Reg. II-1/3-8.3	Appropriate requirements for towing and mooring equipment	

Specific flag State obligations		
Source	Summary description	Comments
Reg. II-1/3-9.1	Means of embarkation and disembarkation	
Reg. II-1/4.2	Alternative methodologies – communication to IMO	
Reg. II-1/4.4	Beneficial or adverse effects of fitting structures as defined by the regulation	
Reg. II-1/5-1.1	Stability information to the Administration	
Reg. II-1/7-2.5	Acceptance to equalization devices and their control	
Reg. II-1/13.9.2	Number and arrangements of doors with a device preventing unauthorized opening	
Reg. II-1/13.11.2	Special consideration for tunnels piercing watertight bulkheads	
Reg. II-1/15.2	Arrangement and efficiency of the means for closing any opening in the shell plating	
Reg. II-1/15.6	Special sanction for automatic ventilating sidescuttles	
Reg. II-1/15.8.5	Material of pipes as referred to in the regulation	
Reg. II-1/16.1.1	Construction and initial tests of watertight doors, sidescuttles, etc.	
Reg. II-1/16-1.1	Construction and initial tests of watertight decks, trunks, etc.	
Reg. II-1/17-1.2	Indicators for closing appliances that could lead to flooding of a special category space or ro-ro space	
Reg. II-1/19.3 and 19.4	Damage control information – General and specific precautions	
Reg. II-1/22.4	Determination for watertight doors permitted to remain open	
Reg. II-1/26.2	Consideration of reliability of single essential propulsion components	
Reg. II-1/29.1, .2.1 and .6.3	Steering gear	

Specific flag State obligations		
Source	Summary description	Comments
Reg. II-1/29.17.2	Adoption of regulations on rudder actuators for tankers, chemical tankers and gas carriers	
Reg. II-1/35-1.3.7.2 and 3.9	Bilge pumping arrangements	
Reg. II-1/40.2	Electrical installations – ensuring uniformity	
Reg. II-1/42.1.3	Emergency source of electrical power in passenger ships	
Reg. II-1/43.1.3	Emergency source of electrical power in cargo ships	
Reg. II-1/44.2	Approval of automatically starting emergency generating sets	
Reg. II-1/45.3.3, 45.5.3, 45.5.4, 45.9.3, 45.10, and 45.11	Precautions against shock, fire and other hazards of electrical origin	
Reg. II-1/46.2 and .3	Additional requirements for periodically unattended machinery space	
Reg. II-1/53.1	Special requirements for machinery, boiler and electrical installations	
Reg. II-1/55.3, 55.4.1 and 55.6	Evaluation of the alternative design and arrangements and re-evaluation due to change of conditions	
Reg. II-1/55.5	Alternative design and arrangements – communication to IMO	
Reg. II-2/1.2.1	Approval of fire protection arrangements in existing ships	
Reg. II-2/1.6.2.1.2 and 1.6.6	Application of requirements for tankers	
Reg. II-2/4.2.2.5.1	Approval of material for oil fuel pipes and their valves and fittings	
Reg. II-2/4.3	Approval of gaseous fuel systems used for domestic purposes	
Reg. II-2/4.5.1.4.4	Installation of cargo oil lines where cargo wing tanks are provided	

Specific flag State obligations		
Source	Summary description	Comments
Reg. II-2/4.5.3.3	Requirements for safety devices in venting systems	
Reg. II-2/4.5.5.2.1	Requirements for inert gas system on chemical tankers	
Reg. II-2/4.5.6.3	Arrangements for inerting, purging or gas-freeing	see reg. II-2/4.5.5.3.1
Reg. II-2/5.2.2.5	Positioning of controls for any required fire-extinguishing system in passenger ships	see reg. II-2/8.3.3 and II-2/9.5.2.3
Reg. II-2/5.2.3.1	Special consideration to maintaining the fire integrity of periodically unattended machinery spaces	
Reg. II-2/7.3.2	Initial and periodical tests	
Reg. II-2/7.6	Protection of cargo spaces in passenger ships	
Reg. II-2/8.3.4	Release of smoke from machinery spaces – passenger ships	
Reg. II-2/9.2.2.1.5.1	Approval of equivalent means of controlling and limiting a fire on ships designed for special purposes	
Reg. II-2/9.2.2.3.1	Fire integrity of bulkheads and decks in ships carrying more than 36 passengers	
Reg. II-2/9.2.2.4.4, 9.2.3.3.4 and 9.2.4.2.4	Fire integrity of bulkheads and decks	see reg. II-2/11.2
Reg. II-2/9.3.4	Approval of structural fire protection details, taking into account the risk of heat transmission	
Reg. II-2/9.5.2.4	Protection of openings in machinery space boundaries	
Reg. II-2/10.2.1.2.1.3	Provisions for fixed water fire-extinguishing arrangements for periodically unattended machinery spaces	
Reg. II-2/10.2.1.2.2.1	Ready availability of water supply	

Specific flag State obligations		
Source	Summary description	Comments
Reg. II-2/10.2.3.1.1	Approval of non-perishable material for fire hoses	
Reg. II-2/10.2.3.2.1	Number and diameter of fire hoses	
Reg. II-2/10.3.2.1	Arrangement of fire extinguishers	
Reg. II-2/10.6.1.1	Type approval of automatic sprinkler, fire detection and fire alarm system	
Reg. II-2/10.6.3.2	Approval of fire-extinguishing arrangement for flammable liquid lockers	
Reg. II-2/10.7.1.2	Fixed gas fire-extinguishing systems for general cargo	
Reg. II-2/10.7.1.4	Issue of an Exemption Certificate	
Reg. II-2/13.3.1.4	Provision of means of escape from, or access to, radiotelegraph stations	
Reg. II-2/13.3.2.5.1	Lighting or photoluminescent equipment to be evaluated, tested and applied in accordance with the FSS Code	
Reg. II-2/13.3.2.6.2	Normally locked doors that form part of an escape route – Quick release mechanisms	
Reg. II-2/13.5.1	Means of escape on passenger ships from special category and open ro-ro spaces to which any passengers carried can have access	
Reg. II-2/17.4.1 and 17.6	Evaluation and approval of the engineering analysis for alternative design and arrangements for fire safety	
Reg. II-2/17.5	Alternative design and arrangements for fire safety – communication of information to IMO	
Reg. II-2/19.4	Provision of document of compliance	
Reg. II-2/20.4.1	Provision and approval of fixed fire detection and fire alarm systems	
Reg. II-2/20.6.1.4.2	Adverse effect as referred to in the regulation – Approval of stability information	

Specific flag State obligations		
Source	Summary description	Comments
Reg. II-2/21.5.2	Alternate space for medical care	
Reg. III/4	Evaluation, testing and approval of life-saving appliances and arrangements	
Reg. III/5	Production tests for life-saving appliances	
Reg. III/20.8.1.2	Approval of servicing stations	
Reg. III/20.8.5	Extension of liferaft service intervals – notification to IMO	
Reg. III/20.11.1 and 20.11.2	Periodic servicing of launching appliances and on-load release gear – thorough examination at the annual surveys	
Reg. III/26.2.4	Approval of liferafts on ro-ro passenger ships	
Reg. III/26.3.1 and 26.3.2	Approval of fast rescue boats and their launching appliances on ro-ro passenger ships	
Reg. III/28	Approval of helicopter landing and pick-up areas on ro-ro passenger ships	
Reg. III/38.3, 38.4.1 and 38.6	Evaluation of the alternative design and arrangements and re-evaluation due to change of conditions	
Reg. III/38.5	Alternative design and arrangements – communication to IMO	
Reg. IV/3.3	Exemptions – reporting to IMO	
Reg. IV/14.1	Type approval of radio equipment	
Reg. IV/15.5	Ensure radio equipment is maintained	
Reg. IV/16.1	Radio personnel	
Reg. IV/17	Radio records	
Reg. V/3.3	Exemptions and equivalents – reporting to IMO	
Reg. V/14	Ships' manning	
Reg. V/16	Maintenance of equipment	
Reg. V/17	Electromagnetic compatibility	

Specific flag State obligations		
Source	Summary description	Comments
Reg. V/18.1	Type approval of navigational systems and equipment and voyage data recorder	
Reg. V/18.5	Requirement for quality control system at manufacturers	
Reg. V/23.3.3.1.3	Pilot transfer arrangements	
Reg. V/23.6.1	Type approval of mechanical pilot hoists	
Reg. VI/3.1 and 3.2	Provision of equipment for oxygen analysis and gas detection and training of crews in their use	
Reg. VI/5.6	Approval of Cargo Securing Manual	
Reg. VI/6	Acceptability for shipment	
Reg. VI/9.2	Grain loading information	
Reg. VII/5	Approval of Cargo Securing Manual	
Reg. VII/15.2	Warships – INF cargo	
Reg. VIII/4	Approval of design, construction and standards of inspection and assembly of reactor installations	
Reg. VIII/6	Ensure radiation safety	
Reg. VIII/7(a)	Approval of safety assessment	
Reg. VIII/8	Approval of operating manual	
Reg. VIII/10(f)	Issue of certificates	
Reg. IX/4.1	Issue of Document of Compliance (DOC)	
Reg. IX/4.3	Issue of Safety Management Certificate (SMC)	
Reg. IX/6.1	Periodical verification of the safety management system	
Reg. XI-1/1	Authorization of recognized organizations	
Reg. XI-1/2	Enhanced surveys	
Reg. XI-1/3.5.4	Ship identification number – approval of method of marking	

Specific flag State obligations		
Source	Summary description	Comments
Reg. XI-1/3-1.2	Registered owner identification number	
Reg. XI-1/5.3	Issue of Continuous Synopsis Record (CSR)	
Reg. XI-1/5.4.2	Amendments to CSR	
Reg. XI-1/5.4.3	Authorize and require changes to be made to CSR	
Reg. XI-1/5.8	Former flag State to send CSR to new flag State	
Reg. XI-1/5.9	Append previous CSR to new CSR	
Reg. XI-1/6	Investigations of marine casualties and incidents	
Reg. XII/8.1	Endorsement of booklet required by reg. VI/7.2	
Reg. XII/9.2	Approval of bilge well high water level alarms	
Reg. XII/11.3	Loading instrument – approval of software for stability calculations	
MARPOL		
Art. 4(1) and (3)	Violation	
Art. 6(4)	Detection of violations and enforcement of the Convention – investigations	
Art. 12(1)	Casualties to ships – investigations	
Annex I		
Reg. 2.6.2	Application – an oil tanker delivered on or before 1 June 1982 engaged in specific trades: agreement with port States	
Reg. 3.3	Exemptions and waivers – reporting	
Reg. 4.3	Exceptions – discharge of substances containing oil for the purpose of combating pollution incidents	
Reg. 5.2	Equivalents – reporting	

Specific flag State obligations		
Source	Summary description	Comments
Reg. 6	Surveys	
Reg. 7	Issue or endorsement of certificate	
Reg. 10.9.3	Transfer of flag	
Reg. 12A.12	Oil fuel tank protection – approval of the design and construction of ships	
Reg. 14.3	Oil filtering equipment – volume of oil bilge holding tank	
Reg. 14.4	Oil filtering equipment – ships of less than 400 gross tonnage	
Reg. 14.6 and 14.7	Oil filtering equipment – approval	
Reg. 15.6.2	Control of discharge of oil – ships of less than 400 gross tonnage: design approval	
Reg. 18.8.2, 18.8.3 and 18.8.4	Requirements for product carriers of 40,000 tonnes deadweight and above – arrangement and operation, approval of oil content meter, clean ballast tank operational manual	
Reg. 18.10.1.1	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements: approval	
Reg. 18.10.1.2	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements: agreement with port States	
Reg. 18.10.3	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements: communication to IMO	
Reg. 20.8.1	Double hull and double bottom requirements for oil tankers delivered before 6 July 1996 – communication to IMO	
Reg. 21.8.1	Prevention of oil pollution from oil tankers carrying heavy grade oil as cargo – communication to IMO	
Reg. 23.3.1	Accidental oil outflow performance – Calculation of mean oil outflow parameter	

Specific flag State obligations		
Source	Summary description	Comments
Reg. 25.5	Hypothetical outflow of oil – information to IMO on accepted arrangements	
Reg. 27.3	Intact stability – approval of written procedures for liquid transfer operation	
Reg. 28.3.4	Subdivision and damage stability – sufficient stability during flooding	
Reg. 29.2.1	Slop tanks – approval	
Reg. 30.6.5.2	Pumping, piping and discharge arrangement – establishment of requirements	
Reg. 30.7	Pumping, piping and discharge arrangement – positive means of loading, transporting or discharging cargo	
Reg. 31.2 and 31.4	Oil discharge monitoring and control system – approval	
Reg. 32	Oil/water interface detector – approval	
Reg. 33.1	Crude oil washing requirement – compliance with requirement	
Reg. 33.2	Crude oil washing requirements – establishment of requirements	
Reg. 35.1	Crude oil washing operations – Operations and Equipment Manual	
Reg. 36.9	Oil Record Book, Part II – development of oil record book for ships of less than 150 gross tonnage	
Reg. 37.1	Shipboard oil pollution emergency plan – approval	
Reg. 38.7.2	Reception facilities within special areas: Antarctic area – sufficient capacity	
Reg. 38.8	Reception facilities – Notification on alleged inadequacies of port reception facilities	
Reg. 39.2.2	Special requirements for fixed or floating platforms – approval of record form	
Reg. 41.1	Oil tankers Ship to Ship (STS) operations Plan to be approved	

Specific flag State obligations		
Source	Summary description	Comments
Annex II		
Reg. 3.1.3	Exceptions – approval of discharge of NLS for the purpose of combating pollution incidents	
Reg. 4.1.2	Exemptions – communication to IMO on relaxations	
Reg. 4.3.4	Exemptions – communication to IMO	
Reg. 4.4.5	Exemptions – communication to IMO	
Reg. 5.1	Equivalents – substitution of operational method	
Reg. 5.2	Equivalents – communication to IMO on alternatives	
Reg. 5.3.4 and 5.3.5	Equivalents – pumping and piping arrangement, approval of manual	
Reg. 6.3	Establishment of Tripartite Agreements – Notification to IMO	
Reg. 8	Surveys	
Reg. 9	Issue or endorsement of certificates	
Reg. 10.7	Expiry date of existing certificate	
Reg. 10.9.3	Transfer of flag	
Reg. 11.2	Design, construction, equipment and operations – establishment of appropriate measures	
Reg. 12.5	Pumping, piping, unloading arrangements and slop tanks – approval of pumping performance test	
Reg. 13.3	Control of discharges of residues of NLS – approval of ventilation procedure	
Reg. 13.5	Control of discharges of residues of NLS – approval of tank washing procedure	
Reg. 14.1	Procedures and arrangements manual – approval	

Specific flag State obligations		
Source	Summary description	Comments
Reg. 17.1	Shipboard marine pollution emergency plan for NLS – approval	
Reg. 18.5	Notification on alleged inadequacies of port reception facilities	
Annex IV		
Reg. 4	Surveys	
Reg. 5	Issue or endorsement of certificates	
Reg. 8(8)(2)	Transfer of flag	
Reg. 9	Approval of sewage systems	
Reg. 11(1)(1)	Approval of rate of discharge	
Reg. 12(2)	Notification on alleged inadequacies of port reception facilities	
Annex V		
Reg. 5(5)(b)	Disposal of garbage within special areas – Antarctic area	
Reg. 7(2)	Notification on alleged inadequacies of port reception facilities	
Revised Annex VI		
Reg. 3.2 and 3.3.2	Exceptions and exemptions	
Reg. 4.2 and 4.4	Equivalents and communication to IMO	
Reg. 5	Surveys and certification	
Reg. 6	Issue or endorsement of Certificate	
Reg. 9.1	Duration and validity of certificate	
Reg. 9.9.3	Transfer of flag	
Reg. 11.4	Detection of violations and enforcement – investigations and communication to the Party and IMO	
Reg. 12.6	Ozone Depleting Substances Record Book – approval of alternative forms of record keeping	

Specific flag State obligations		
Source	Summary description	Comments
Reg. 13.1.1.2 and 13.1.2.2)	Nitrogen oxides – Acceptance of identical replacement and alternative control measures	
Reg. 13.2.2	Acceptance of installation of Tier II engine in lieu of Tier III where Tier III engine could not be accommodated	
Reg. 13.5.2.2	Combined nameplate diesel engine – application as referred to in the paragraph	
Reg. 13.7.2	Approved method not commercially available	
Reg. 14.6	Sulphur oxides – prescription of log-book	
Reg. 15.5	Volatile organic compounds – approval of vapour collection systems	
Reg. 15.6	VOC Management Plan - approval	
Reg. 16.6.1	Shipboard incineration – approvals	
Appendix IV, para 1	Type approval as referred to in the paragraph	
Appendix VI, para 1.2, para 2.1 and para 3.1	Fuel verification procedure – management and sample delivery	
Res. MSC.133(76), as amended	Technical provisions for means of access for inspections	
Para 3.7	Vertical or spiral ladders – acceptance	
Para 3.9.7	Other means of access – approval and acceptance	
Res. A.739(18), as amended	Guidelines for the authorization of organizations acting on behalf of the Administration	
Para 2	Assignment of authority	
Para 3	Verification and monitoring	
ISM Code		
Para 13.2	Issue of DOC	
Para 13.4	Annual verification (DOC)	

Specific flag State obligations		
Source	Summary description	Comments
Para 13.5	Withdrawal of DOC	
Para 13.7	Issue of SMC	
Para 13.8	Intermediate verification (SMC)	
Para 13.9	Withdrawal of SMC	
Para 14.1	Issue of Interim DOC	
Para 14.2	Issue of Interim SMC	
Para 14.4	Verification required for issuance of an Interim SMC	
Para 15.1	Verification – acceptance of procedures	
Para 16	Forms of certificates	
INF Code		
Para 1.3.2	Issue of certificate	
Para 2.1	Damage stability (INF.1 ship)	
Para 3.1	Fire safety measures (INF.1 cargo)	
Para 4.1.3	Temperature control of cargo spaces (INF.1, 2 and 3 ship)	
Para 6.2	Safe stowage and securing – approval of principles	
Para 7.1	Electrical power supplies (INF.1 ship)	
Chapter 8	Radiological protection	
Chapter 9	Management and training	
Para 10.2	Shipboard emergency plan – approval	
FSS Code		
Para 1/4	Use of toxic extinguishing media	
Para 4/2	Type approval of fire extinguishers	
Para 4/3.1.1.2	Determine equivalents of fire extinguishers	
Para 4/3.2.2.2	Approval of foam concentrate	

Specific flag State obligations		
Source	Summary description	Comments
Para 5/2.1.1.4	Containers for the storage of fire-extinguishing medium, etc.	
Para 5/2.1.2.1	System flow calculations	
Para 5/2.1.2.3	Spare parts	
Para 5/2.3	Steam systems	
Para 5/2.5	Equivalent systems – approval	
Para 6/2.2.1.1 and 6/2.3.1.1	Foam concentrates – approval	
Para 7/2.1	Fixed pressure water-spraying fire-extinguishing systems - approval	
Para 7/2.2	Equivalent systems – approval	
Para 7/2.3	Fixed pressure water-spraying fire-extinguishing systems for cabin balconies – approval	
Para 8/2.1.2	Equivalent sprinkler systems – approval	
Para 9/2.3.1.3	Heat detectors temperature limits	
Para 9/2.4.1.3	Limiting the number of enclosed spaces included in each section	
Para 9/2.6	Fixed fire detection and fire alarm systems for cabin balconies – approval	
Para 10/2.1.2	Sequential scanning – overall response time	
Para 10/2.2.2	Extractor fans – overall response time	
Para 10/2.3.1.1	Means to isolate smoke accumulators	
Para 11/2.1	Low-location lighting – approval	
Para 14/2.2.1.2	Medium expansion ratio foam – application rate, etc.	
Para 15/2.1.2	Inert gas systems – approval	
Para 15/2.2.4.6	Adequate reserve of water	

Specific flag State obligations		
Source	Summary description	Comments
FTP Code		
Para 4.2.1	Recognition of testing laboratories	
Para 5.1.1	Approval procedures	
Para 5.2.2	Requirement of manufactures' quality control system audit	
Para 7.2	Use of equivalents and modern technology – information to IMO	
LSA Code		
Para 1.2.3	Determine the period of acceptability of LSAs subject to deterioration with age	
Para 4.4.1.2	Endorsement of lifeboat affixed approval plate	
Para 4.5.4	Fixed two-way VHF radiotelephone apparatus – sheltered space	
Para 5.1.1.4	Rescue boats – combination of rigid and inflatable construction	
Para 5.1.3.8	Rubbing strips on inflated rescue boats	
Paras 6.1.2.9 and 6.1.2.10	Lowering speed of a fully equipped liferaft	
Para 6.2.1.2	MES – strength and construction of passage and platform	
Para 7.2.2.1	Broadcast of messages from other places on board	
1994 HSC Code		
Para 1.3.5	Verification	
Para 1.4.29	Determination of "maximum operational weight"	
Para 1.5.1.2	Specifying intervals for renewal surveys	
Para 1.5.4	Inspection and survey	
Para 1.5.5	Recognized organizations and nominated surveyors	

Specific flag State obligations		
Source	Summary description	Comments
Para 1.5.7	Completeness of survey and inspection	
Para 1.8.1	Issue/endorsement of certificate	
Para 1.9.2	Issue of permit to operate	
Para 1.11.2	Equivalents – reporting	
Para 1.12.1	Adequate information and guidance provided to the craft by the company	
Paras 1.13.2 and 1.13.3	Novel designs	
Para 1.14.1	Investigation reports to IMO	
Paras 2.7.4 and 2.14.2	Inclining and stability information – approval	
Para 3.4	Determination of service life	
Para 3.5	Design criteria	
Para 4.8.3	Documentation and verification of evacuation time	
Para 7.5.6.3	Safe outlets for exhaust fans in fuel tank spaces	
Para 7.7.2.3.2	Sensitivity limits of smoke detectors	
Para 7.7.6.1.5	Additional quantity of fire-extinguishing medium	
Para 7.7.6.1.12	Containers for the storage of fire-extinguishing medium, etc. – design	
Para 7.7.8.5	Maximum length of fire hoses	
Para 8.1	Approval and acceptance of LSA and arrangements	
Para 8.9.1.2	Approval of novel life-saving appliances or arrangements	
Para 8.9.1.3	Notification to the Organization	
Para 8.9.7.1.2	Approval of servicing stations	
Para 8.9.7.2	Deployment intervals of MES	

Specific flag State obligations		
Source	Summary description	Comments
Para 8.9.11	Novel life-saving appliances or arrangements	
Para 8.9.12	Notification to the Organization	
Para 10.2.4.9	Flexible oil fuel pipes	
Para 10.3.7	Internal diameters of suction branches	
Para 12.6.2	Specified voltages to earth	
Para 13.1.2	Navigational equipment and its installation	
Para 13.13	Approval of systems, equipment and performance standards	
Para 14.3.3	Exemptions – reporting	
Para 14.13.1	Type approval	
Para 14.14.5	Ensuring maintenance	
Para 14.15	Radio personnel	
Para 14.16	Radio records	
Para 15.3.1	Operating station – field of vision	
Para 15.7.2	Ensuring clear view through windows	
Para 17.8	Acceleration and deceleration	
Para 18.1.4	Determining maximum allowable distance from a base port or place of refuge	
Para 18.2	Craft documentation	
Paras 18.3.1 to 18.3.7	Training and qualifications	
Chapter 19	Inspection and maintenance requirements	
2000 HSC Code		
Para 1.3.7	Verification	
Para 1.4.37	Determination of "maximum operational weight"	
Para 1.5.1.2	Specifying intervals for renewal surveys	

Specific flag State obligations		
Source	Summary description	Comments
Para 1.5.4	Inspection and survey	
Para 1.5.5	Recognized organizations and nominated surveyors	
Para 1.5.7	Completeness of survey and inspection	
Para 1.7.3	Investigation to determine the need of survey	
Para 1.8.1	Issue/endorsement of certificate	
Para 1.9.1.1.4	Transit voyage – satisfied with the arrangement	
Para 1.9.2	Issue of permit to operate	
Para 1.9.7	The worst intended conditions and the operational limitations	
Para 1.11.2	Equivalents – reporting	
Para 1.12.1	Adequate information and guidance provided to the craft by the company	
Paras 1.13.2 and 1.13.3	Novel designs	
Para 1.14.1	Investigation reports to IMO	
Para 2.9.3	Verification of load line marks	
Para 2.7.5 and 2.14.2	Inclining and stability information – approval	
Para 3.4	Determination of service life	
Para 3.5	Design criteria	
Para 4.2.2	Approval of public address system	
Para 4.8.3	Documentation and verification of evacuation time	
Para 4.8.10	Evacuation demonstration	
Para 7.3.3	Approval of structural fire protection details	
Para 7.5.6.3	Safe outlets for exhaust fans in fuel tank spaces	

Specific flag State obligations		
Source	Summary description	Comments
Para 7.7.1.1.8	Limitation of number of enclosed spaces in each section	
Para 7.7.1.3.2	Sensitivity limits of smoke detectors	
Para 7.7.3.3.6	Additional quantity of fire-extinguishing medium	
Para 7.17.1	Reduced requirements for cargo craft of less than 500 GT	
Para 7.17.3.1.5	Water spray system – approval	
Para 7.17.3.3	Smoke detection systems – equivalent protection	
Para 7.17.4	Issue of Document of Compliance for craft carrying dangerous goods	
Para 8.1	Approval and acceptance of LSA and arrangements	
Para 8.9.7.1.2	Approval of servicing stations	
Para 8.9.8	Rotational deployment of marine evacuation systems	
Para 8.9.11	Extension of liferaft service intervals – notification	
Para 8.11	Helicopter pick-up areas – approval	
Para 10.2.4.9	Flexible oil fuel pipes	
Para 10.3.7	Internal diameters of suction branches	
Para 12.6.2	Specified voltages to earth	
Para 13.1.2	Ship borne navigational system and equipment and voyage data recorder and their installation	
Para 13.17	Type approval	
Para 14.3.3	Exemptions – reporting	
Para 14.4.2	GMDSS Identities – suitable arrangements	
Para 14.14.1	Type approval	
Para 14.15.5	Ensuring maintenance	

Specific flag State obligations		
Source	Summary description	Comments
Para 14.16	Radio personnel	
Para 14.17	Radio records	
Para 15.3.1	Operating station – field of vision	
Para 15.7.2	Ensuring clear view through windows	
Para 17.8	Acceleration and deceleration	
Para 18.1.4	Determining maximum allowable distance from a base port or place of refuge	
Para 18.2	Craft documentation	
Paras 18.3.1 to 18.3.7	Training and qualifications	
Chapter 19	Inspection and maintenance requirements	
Res. A.744(18), as amended	Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers	
Annex A – Bulk carriers		
Part A – Single-side skin bulk carriers		
Para 1.3.1	Repair of damage affecting the ship's structural, watertight or weathertight integrity	
Para 1.3.2	Corrosion or structural defects impairing the ship's fitness	
Para 3.3.4	Repairs of cargo hatch securing system	
Para 5.1.1	Survey programme	
Para 5.1.4	Maximum acceptable structural corrosion diminution levels	
Para 5.2.1.1	Provisions for proper and safe access	
Para 6.2.2	Survey report file	

Specific flag State obligations		
Source	Summary description	Comments
Para 8.1.2	Evaluation of survey report	
Para 8.2.3	Condition evaluation report	
Annex 4B, para 1	Survey planning questionnaire	
Annex 5, para 3.1	Certification of thickness measurement	
Annex 9, para 2.3	Technical assessment in conjunction with the planning of enhanced surveys for bulk carriers	
Annex 13, para 3	Cargo hatch cover securing arrangements	
Part B – Double-side skin bulk carriers		
Para 1.3.1	Repair of damage affecting the ship's structural, watertight or weathertight integrity	
Para 1.3.2	Corrosion or structural defects impairing the ship's fitness	
Para 3.3.4	Cargo hatch cover securing system	
Para 5.1.1	Survey programme	
Para 5.1.5	Maximum acceptable structural corrosion diminution levels	
Para 5.2.2	Provisions for proper and safe access	
Para 6.2.2	Survey report file retained in the Administration	
Para 8.1.2 & 8.2.3	Evaluation of survey report	
Annex 4B	Survey planning questionnaire	
Annex 5, Para 3.1	Certification of a company engaged in thickness measurement	
Annex 9, Para 2.3	Technical assessment in conjunction with the planning of enhanced surveys for bulk carriers	
Annex 11, Para 3	Materials and welding	

Specific flag State obligations		
Source	Summary description	Comments
Annex B – Oil tankers		
Part A – Double hull oil tankers		
Para 1.3.1	Repair of damage affecting the ship's structural, watertight or weathertight integrity	
Para 1.3.2	Corrosion or structural defects impairing the ship's fitness	
Para 2.4.3.2	Approval of corrosion prevention system	
Para 5.1.1	Survey programme	
Para 5.1.4	Maximum acceptable structural corrosion diminution levels	
Para 5.2.1.1	Provisions for proper and safe access	
Para 6.2.2	Survey report file	
Para 8.1.3	Evaluation of survey report	
Para 8.2.3	Condition evaluation report	
Annex 6B	Survey planning questionnaire	
Annex 7, para 3.1	Certification of thickness measurement	
Annex 9	Diminution limits of structural members	
Annex 11, para 2.3	Technical assessment in conjunction with the planning of enhanced surveys for oil tankers	
Annex 12	Criteria for longitudinal strength of hull girder for oil tankers	
Part B – Oil tankers other than double hull oil tankers		
Para 1.3.1	Repair of damage affecting the ship's structural, watertight or weathertight integrity	
Para 1.3.2	Corrosion or structural defects impairing the ship's fitness	

Specific flag State obligations		
Source	Summary description	Comments
Para 2.4.3.2	Approval of corrosion prevention system	
Para 5.1.1	Survey programme	
Para 5.1.4	Maximum acceptable structural corrosion diminution levels	
Para 5.2.1.1	Provisions for proper and safe access	
Para 6.2.2	Survey report file	
Para 8.1.3	Evaluation of survey report	
Para 8.2.3	Condition evaluation report	
Annex 6B	Survey planning questionnaire	
Annex 7, para 3.1	Certification of thickness measurement	
Annex 9	Diminution limits of structural members	
Annex 11, para 2.3	Technical assessment in conjunction with the planning of enhanced surveys for oil tankers	
Annex 12	Criteria for longitudinal strength of hull girder for oil tankers	
Res.4 of the 1997 SOLAS Conference		
Section 5	Dimension and selection of weld connections and materials	
Res. MSC.168(79)	Standards and criteria for side structures of bulk carriers of single-side skin construction	
Para 2.1	Applicable national standards	
Para 4.4	Applicable national standards	
Para 4.5	Applicable national standards	

Specific flag State obligations		
Source	Summary description	Comments
NO_x Technical Code 2008		
Chapter 1	Assumption of full responsibility for the approval of documentation as required by the Code together with the acceptance of procedures and alternatives as permitted by the Code	
Chapter 2	Issue of the Engine International Air Pollution Prevention Certificate, arrangements for the Parent Engine test and pre-certification of engines, usage of the Engine Family/Engine Group concepts and approval of the Technical File and any subsequent amendments	
Chapter 3	Acceptance of modification of engine speed at E2 test cycle 25% power mode point	
Chapter 4	Assignment of Engine Family/Engine Group status, as applicable, and selection of associated Parent Engine. Acceptance of conformity of production arrangements. Adjustment of Parent Engine relative to Engine Group reference values	
Chapter 5	Ensuring that the Parent Engine test and subsequent calculations are undertaken in accordance with Code requirements and that, where alternatives are applied, these meet the Code's equivalency requirements and any deviations are within the permitted margins. Filing of Parent Engine test report	
Chapter 6	Onboard NO _x Verification Procedures are in accordance with the provisions of the Code and are adequate to provide verification that an engine, as so surveyed, will be in accordance with the applicable Annex VI requirements. Acceptance of aspects within Onboard NO _x Verification Procedure – Simplified Measurement Method if applicable. Approval of aspects within Onboard NO _x Verification Procedure – Direct Measurement and Monitoring Method including the Onboard Monitoring Manual, if applicable	
Chapter 7	Installation of Approved method – amendment of IAPP Certificate	

Specific flag State obligations		
Source	Summary description	Comments
Appendix IV	Verification that the calibration of all necessary measurement equipment meets Code requirements	
Appendix VII	Aspects to be included within Onboard NO _x Verification Procedure – Parameter Check Method	
Appendix VIII	Approval of alternative exhaust gas measurement principles.	
IBC Code		
Para 1.1.6	Prescribe preliminary suitable conditions for carriage of products not listed in chapter 17 or 18	
Para 1.4.2	Equivalents – communication to IMO	
Section 1.5	Survey and certification	
Para 2.2.2	Intact stability in all seagoing conditions	
Para 2.2.3	Free surface effect in undamaged compartments	
Para 2.4	Conditions of loading	
Para 2.8.1.6	Standard of damage	
Para 2.8.2	Standard of damage – alternative measures	
Para 2.9.2.3	Residual stability during intermediate stages of flooding	
Para 3.4.4	Access to spaces in the cargo area	
Para 3.7.3.5	Alternative arrangements for draining the piping	
Para 3.7.4	Relaxation for small ships	
Para 5.1.6.4	Dimensions for flanges not complying with the standards	
Para 5.2.2	Piping fabrication and joining details	
Para 7.1.1	Cargo temperature control - general	

Specific flag State obligations		
Source	Summary description	Comments
Para 8.3.6	Devices to prevent the passage of flames into cargo tanks – requirements for the design, testing and locating	
Para 10.1.3	Electrical installations – appropriate steps for uniform implementation	
Para 10.1.4	Electric equipment, cables and wiring which do not conform to the standard	
Para 10.1.5	Electrical equipment in hazardous locations	
Para 11.2.2	Approval of an appropriate fire-extinguishing systems	
Para 11.3.2	Cargo area – additional arrangements	
Para 11.3.5.3	Cargo area – minimum capacity of monitor	
Para 11.3.7	Minimum capacity of foam monitor for ships less than 4,000 tonnes deadweight	
Para 11.3.13	Alternative provisions to deck foam system	
Para 13.2.3	Exemption of toxic vapour detection equipment	
Para 14.1.2	Protective equipment	
Chapter 15	Approval of special requirements for specific chemicals	
Para 16.2.2	Cargo information – independent expert	
Para 16.5.1	Stowage of cargo samples – approval	
Para 18.2	Safety requirements – list of products to which the Code does not apply	
BCH Code		
Para 1.5.2	Equivalentents – communication to IMO	
Section 1.6	Survey requirements	
Section 1.8	New products – establishing suitable conditions – notification to IMO	

Specific flag State obligations		
Source	Summary description	Comments
Para 2.2.4	Determination of the ability to survive flooding of the machinery space in Type 3 below 125m in length	
Para 2.2.5	Nature of alternative measures prescribed for small ships – duly noted on certificate	
Para 2.9.5	Access to void spaces, cargo tanks, etc. – approval of smaller dimensions in special circumstances	
Section 2.10	Cargo piping systems – setting standards	
Section 2.12	Cargo hoses – setting standards	
Para 2.14.2	High-velocity vent valves – type approval	
Para 2.15.1	Cargo heating and cooling systems	
Para 3.1.2(f)	Ventilation fans – approval	
Para 3.14.1	Alternative provisions for ships dedicated to the carriage of specific cargoes	
Para 3.14.2	Additional arrangements when foam is not effective or is incompatible	
Para 3.14.7	Foam monitors on ships of less than 4,000 tonnes deadweight – minimum capacity	
Para 3.15.2	Protection of cargo pump-rooms with fire-extinguishing systems – approval	
Para 3.15.5	Products evolving flammable vapours – fire-extinguishing systems – approval	
Chapter IV	Approval of special requirements for specific chemicals	
IGC Code		
Para 1.1.6	Establishment of preliminary suitable conditions of carriage and notification	
Para 1.4.2	Equivalentents – reporting	
Section 1.5	Surveys and certification	
Para 2.2.2	Stability standard – acceptance	

Specific flag State obligations		
Source	Summary description	Comments
Para 2.2.3	Method to calculate free surface effect – acceptance	
Para 2.3.3	Automatic non-return valves – acceptance	
Para 2.4	Damage survival capability investigation	
Para 2.8.2	Alternative measures – approval	
Para 2.9.1.3	Residual stability during intermediate stages of flooding	
Para 3.5.3.2	Decreased clear opening in the cargo area	
Section 3.8	Bow or stern loading and unloading arrangements – approval	
Para 4.2.7	Design temperature	
Paras 4.4.2.5 and 4.4.4.1	Structural analysis of the hull	
Paras 4.4.6.1.1, 4.4.6.2.1 and 4.4.6.3.2	Setting standards	
Para 4.4.7.2.1	Three-dimensional structural analysis	
Para 4.4.7.3	Analysis	
Para 4.5.1.11	Allowable stresses – approval	
Para 4.7.3	Secondary barriers for non-basic tank types	
Para 4.7.7	Checking method – approval	
Para 4.8.4.4	Design and construction of the heating system	
Para 4.9.8	Insulation materials	
Para 4.10.1.2.2	Bevel preparation, etc. – acceptance and approval	
Para 4.10.2	Workmanship	
Para 4.10.5.2	Quality control specifications	
Para 4.10.6	Integral tank-testing	
Para 4.10.8.3	Tightness test	

Specific flag State obligations		
Source	Summary description	Comments
Para 4.10.9	Type C independent tanks – inspection and NDT	
Para 4.10.10.3.7	Consideration of pneumatic testing	
Para 4.11.1	Soaking temperature and holding times	
Para 4.11.2	Alternative to heat treatment – approval	
Paras 5.2.4.4 and 5.2.4.5	Flanges, valves and other fittings	
Para 5.4.2.2	Dimensions	
Para 5.4.2.3	Screwed couplings – acceptance	
Para 5.5.2	Cargo and process piping – alternative testing approval	
Para 6.1.5	Tensile strength, yield stress and elongation	
Para 6.3.7.4	Schedule for inspection and NDT	
Section 7.1	Cargo pressure/temperature control	
Paras 8.2.2, 8.2.5 and 8.2.7	Pressure relief devices	
Para 9.5.2	A means of preventing the backflow of cargo	
Para 10.1.5	Electrical equipment installation	
Para 11.4.1	Dry chemical powder fire-extinguishing system	
Para 11.5.2	Approval of appropriate fire-extinguishing system for cargo compressor and pump-rooms	
Para 13.5.4	Number and position of temperature indicating devices	
Para 13.6.1	Gas detector equipment	
Para 13.6.13	Portable gas detection equipment	
Para 14.4.5	Provision of space to protect personnel	
Section 15.2	Maximum allowable loading limits – approval of list	

Specific flag State obligations		
Source	Summary description	Comments
Para 16.5.2	Forced draught system for boilers	
Para 16.5.6	Purging of combustion chambers of boilers	
Para 17.14.2.1	Non-acceptance of cargo discharge compressors on board	
Para 17.20.3.1	Valves, flanges, fittings and accessory equipment material – acceptance	
Para 17.20.13.2	Cargo handling plans – approval	
Para 17.20.14	Maximum allowable tank filling limits – approval of list	
STCW Code, Part A		
Section A-I/10.2	Withdrawal of endorsement – information	
Section A-III/4.4	No tables of competence – determine requirements	
Section A-VIII/1.5	Watch schedules to be posted	
Section A-VIII/2.84	Principles to be observed in keeping radio watch – direct attention of companies masters, radio watchkeeping personnel to comply with provisions in Part 3-3 to ensure that and adequate safety radio watch is maintained when the ship is at sea	
Res. MEPC.94(46), as amended		
Para 4.1	Issue instructions to the recognized organization (RO) for Condition Assessment Scheme (CAS) survey	
Para 4.3	Require oil tankers to remain out of service until Statement of Compliance is issued	
Para 7.1.3	CAS surveyors' requirements	
Para 11	Verification of CAS	
Para 12	Reassessment of ships that have failed	

Specific flag State obligations		
Source	Summary description	Comments
Para 13	Issue, suspension or withdrawal of Statement of Compliance	
Para 14	Communication to IMO	
Res. MSC.215(82)	Performance standard for protective coatings	
Para 3.2	Inspection of surface preparation and coating processes	
Para 3.4.1	Coating technical file	
Para 4.4.3	The Technical Data Sheet and Statement of Compliance or Type Approval Certificate – verification	
Section 5	Coating system approval	
Para 6.1.1	Verification of equivalent qualification of coating inspector	
Section 7	Verification requirements	
Casualty Investigation Code		
Para 1/1.3	Qualified person (s) for investigation	
Para 6/6.2	Investigation into a very serious marine casualty	
IS Code, 2008	International Code on Intact Stability, 2008	
Part A, Ch. 1.2	Criteria demonstrating sufficient ship stability in critical stability situation in waves	
Part A, Ch. 2.1.3	Stability criteria where anti-rolling devices are installed	
Part A, Ch. 2.3	Severe wind and stability criterion	
Part A, Ch. 3	Special criteria for certain types of ships	

Specific flag State obligations		
Source	Summary description	Comments
IMSBC Code	International Maritime Solid Bulk Cargoes Code	
Section 1.3	Conditions for the carriage of cargoes not listed in the Code	
Section 1.5	Exemptions	
Para. 7.3.2.2	Approval of specially constructed cargo ships	
Para. 7.3.2.3	Approval of plan of special arrangements and details of the stability conditions on which the design has been based	

ANNEX 3

SPECIFIC COASTAL STATE OBLIGATIONS

The following tables contain a non-exhaustive list of obligations, including those obligations imposed when a right is exercised.

Specific coastal State obligations		
Source	Summary description	Comments
SOLAS 74		
Reg. V/4	Navigation warnings	
Reg. V/7.1	Search and rescue services – necessary arrangements	
Reg. V/7.2	Search and rescue services – information to IMO	
Reg. V/8	Life-saving signals	
Reg. V/9	Hydrographic services	
Reg. VII/6.1 and 7-4.1	Reporting of incidents involving dangerous goods	
MARPOL		
Annex I		
Reg. 4.3	Exceptions – discharge of substances containing oil for the purpose of combating pollution incidents	
Annex II		
Reg. 3.1.3	Exceptions – approval of discharge of NLS for the purpose of combating pollution incidents	
Reg. 13.2.3	Control of discharges of residues of NLS – agreement and communication to IMO	

ANNEX 4

SPECIFIC PORT STATE OBLIGATIONS

The following tables contain a non-exhaustive list of obligations, including those obligations imposed when a right is exercised.

Specific port State obligations		
Source	Summary description	Comments
TONNAGE 69		
Art. 12	Inspection	
LL 66 and LL PROT 88		
Art. 21	Control	amended by LL PROT 88
STCW 78		
Art. X	Control	
Reg. I/4	Control procedures	
SOLAS 74		
Reg. I/6(c)	Ships not allowed to sail	
Reg. I/19	Control	
Reg. VII/7-2.2	Documents relating to carriage of dangerous goods in solid form	
Reg. VIII/11	Special control for nuclear ships	
Reg. XI-1/4	Port State control on operational requirements	
MARPOL		
Art. 5(2)	Certificates and special rules on inspection of ships – port State control	
Art. 5(3)	Certificates and special rules on inspection of ships – denial of entry	
Art. 6(2)	Detection of violations and enforcement of the Convention – inspection	
Art. 6(5)	Detection of violations and enforcement of the Convention – inspection upon request – reporting	

Specific port State obligations		
Source	Summary description	Comments
Annex I		
Reg. 2.6.2	Application – an oil tanker delivered on or before 1 June 1982 engaged in specific trades: agreement with flag States	
Reg. 2.6.3	Application – an oil tanker delivered on or before 1 June 1982, engaged in specific trades: approval by port States	
Reg. 11	Port State control on operational requirements	
Reg. 17.7	Oil Record Book, Part I – inspection without undue delay	
Reg. 18.10.1.2	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements : agreement with flag States	
Reg. 20.8.2	Denial of entry – communication to IMO	
Reg. 21.8.2	Denial of entry – communication to IMO	
Reg. 36.8	Oil Record Book, Part II – inspection without undue delay	
Reg. 38.1, 38.2 and 38.3	Reception facilities outside special areas	
Reg. 38.4 and 38.5	Reception facilities within special areas	
Reg. 38.6	Reception facilities within special areas – notification to IMO	
Reg. 38.7.1	Reception facilities within special areas: "Antarctic area"	
Annex II		
Reg. 4.3.3	Exemptions – approval of adequacy of reception facilities	
Reg. 13.6.1	Control of discharges of residues – endorsement of cargo record book	
Reg. 15.6	Cargo record book – inspection without undue delay	
Reg. 16.1	Measures of control	
Reg. 16.6 and 16.7	Measures of control – exemption granted (endorsement of cargo record book)	
Reg. 16.9	Port State control on operational requirement	

Specific port State obligations		
Source	Summary description	Comments
Reg. 18.1 and 18.2	Reception facilities and cargo unloading terminal arrangements	
Reg. 18.4	Cargo unloading terminal arrangements	
Annex III		
Reg. 8	Port State control on operational requirements	
Annex IV		
Reg. 12(1)	Provision of reception facilities	
Reg. 13	Port State control on operational requirements	
Annex V		
Reg. 5(4)	Reception facilities within special areas	
Reg. 5(5)(a)	Provision of reception facilities – Antarctic area	
Reg. 7(1)	Reception facilities	
Reg. 8	Port State control on operational requirements	
Reg. 9(5)	Inspection of Garbage Record Book	
Revised Annex VI		
Reg. 5.3.3	Necessary assistance to the surveyor as referred to in the paragraph	
Reg. 10	Port State control on operational requirements	
Reg. 15.2 and 15.3	Volatile organic compounds – approvals of vapour emission control systems and notification to IMO	
Reg. 17.2	Reception facilities as referred to in the paragraph – communication to IMO	
Reg. 18.10	Fuel oil quality – Communication to Party or non-Parties and remedial action	
IBC Code		
Para 15.8.25.3	Certification verifying that the required piping separation	
1994 HSC Code		
Para 1.3.5	Acceptance of the Code	

Specific port State obligations		
Source	Summary description	Comments
Para 1.5.6	Provide assistance for surveyors	
Para 1.6	Design approval	
Para 1.9.3	Operational conditions – Permit to Operate	
Para 1.9.4	Port State control	
Para 18.3.8	Training and qualifications	
2000 HSC Code		
Para 1.3.7	Acceptance of the Code	
Para 1.5.6	Provide assistance for surveyors	
Para 1.6	Design approval	
Para 1.9.3	Operational conditions – Permit to Operate	
Para 1.9.4	Port State control	
Para 18.3.8	Training and qualifications	
Grain Code		
Para 3.4	Document of authorization	
Para 3.5	Document of authorization	
Para 5	Exemptions for certain voyages	
Para 7.2	Stability requirements	
IMSBC Code	International Maritime Solid Bulk Cargoes Code	
Section 1.3	Conditions for the carriage of cargoes not listed in the Code	
Section 1.5	Exemptions	

ANNEX 5

INSTRUMENTS MADE MANDATORY UNDER IMO CONVENTIONS

SOLAS 74	Res. MSC.215(82)	reg.II-1/3-2.2
	Res. MSC.133(76), as amended	reg. II-1/3-6.2.1
	2008 IS Code	reg. II-1/5.1
	FSS Code	reg. II-2/3.22
	FTP Code	reg. II-2/3.23
	LSA Code	reg. III/3.10
	IMSBC Code	reg. VI/1-2
	CSS Code, sub-chapter 1.9	reg. VI/2.1
	Grain Code	reg. VI/8.1
	IMDG Code	reg. VII/1.1
	IBC Code	reg. VII/8.1
	IGC Code	reg. VII/11.1
	INF Code	reg. VII/14.1
	ISM Code	reg. IX/1.1
	1994 HSC Code	reg. X/1.1
	2000 HSC Code	reg. X/1.2
	Res. A.739(18), as amended	reg. XI-1/1
	Res. A.789(19)	reg. XI-1/1
	Res. A.744(18), as amended	reg. XI-1/2
	Casualty Investigation Code	reg. XI-1/6
	Res. 4 of the 1997 SOLAS Conf.	reg. XII/1.7
Res. MSC.169(79)	reg. XII/7.2	
Res. MSC.168(79)	reg. XII/14	
MARPOL	Res. MEPC.94(46), as amended	Annex I, reg. 20.6
	IBC Code	Annex II, reg. 1.4
	BCH Code	Annex II, reg. 1.4
	NO _x Technical Code 2008	Annex VI, reg. 5.3.2
STCW 78	STCW Code, Part A	reg. I/1.2.3
LL PROT 1988	2008 IS Code	Annex 1, reg. 1

ANNEX 6

**SUMMARY OF AMENDMENTS TO MANDATORY INSTRUMENTS
REFLECTED IN THE CODE**

The amendments of mandatory instruments reflected in the annexes 1 through 4 are summarized below to facilitate the amendment of corresponding tables in the future.

SOLAS 1974	up to and including 2009 amendments (res. MSC.282(86), except res. MSC.202(81) and SOLAS/2004 Conf./res.1)
Res.MSC.215(82)	as adopted
Res. MSC.133(76), as amended	up to and including the 2004 amendments (res.MSC.158(78))
2008 IS Code	MSC.267(85)
FSS Code	up to and including the 2006 amendments (res. MSC.217(82) annex 1)
FTP Code	up to and including the 2004 amendments (res.MSC.173(79))
LSA Code	up to and including the 2008 amendments (res. MSC.272(85))
IMSBC Code	MSC.268(85)
CSS Code, sub-chapter 1.9	up to and including the 2002 amendments (MSC/Circ.1026)
GRAIN Code	up to and including the 1991 amendments (res.MSC.23(59))
IMDG Code	up to and including the 2008 amendments (res.MSC.262(84))
IBC Code	up to and including the 2006 amendments (res. MSC.219(82) and res.MEPC.166(56))
IGC Code	up to and including the 2006 amendments (res.MSC.220(82))
INF Code	up to and including the 2007 amendments (res.MSC.241(83))
ISM Code	up to and including the 2008 amendments (res. MSC.273(85))
1994 HSC Code	up to and including the 2008 amendments (res.MSC.259(84))
2000 HSC Code	up to and including the 2008 amendments (res. MSC.272(85))
Res. A.739(18)	up to and including 2006 amendments (res. MSC.208(81))
Res. A.789(19)	no amendments yet adopted
Res. A.744(18), amended	up to and including the 2008 amendments (res.MSC.261(84))
Casualty Investigation Code	res.MSC.255(84)
Res. 4 of the 1997 SOLAS Conf.	no amendments yet adopted
Res. MSC.169(79)	no amendments yet adopted
Res. MSC.168(79)	no amendments yet adopted

SOLAS PROT 1978	up to and including the 1988 amendments(resolution of the 1988 GMDSS-P Conference)
SOLAS PROT 1988	up to and including the 2009 amendments (res. MSC.283(86), except res. MSC.204(81))
MARPOL	up to and including the 2010 amendments (resolution MEPC.190(60))
Res. MEPC.94(46), as amended	up to and including the 2006 amendments (res. MEPC.155(55))
IBC Code	up to and including the 2006 amendments (res.MEPC.166(56) and res. MSC.219(82))
BCH Code	up to and including the 2006 amendments (res.MEPC.144(54) and res. MSC.212(81))
NO _x Technical Code 2008	up to and including the 2008 amendments (res. MEPC.177(58))
STCW 1978	up to and including the 1997 amendments (res. MSC.66(68), except res. MSC.203(81))
STCW Code Part A	up to and including the 2004 amendments (res. MSC.180(79))
LL 1966	up to and including the 2005 amendments (res. A.972(24))
LL PROT 1988	up to and including the 2008 amendments (res. MSC.270(85))
TONNAGE 1969	no amendments yet adopted
COLREG 1972	up to and including the 2001 amendments (res. A.910(22))

ANNEX 7

**AMENDMENTS¹⁰ TO IMO INSTRUMENTS EXPECTED TO BE ACCEPTED
AND TO ENTER INTO FORCE BETWEEN 1 JANUARY 2012 AND 1 JULY 2012**

The following tables contain a non-exhaustive list of obligations, including those obligations imposed when a right is exercised.

OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
STCW 78		
<u>Reg. I/2.12</u>	<u>Issuance of certificates of competency</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/2.14</u>	<u>Maintenance of a register or registers of all certificates and endorsements</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/2.15 and 2.16</u>	<u>Availability of information on the status of certificates of competency, endorsements and dispensations (as of 1 January 2017, available in English through electronic means)</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
Reg. I/3	Principles governing near-coastal voyage waters, <u>communication of information and incorporation of limits in the endorsements</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
Reg. I/5	National provisions – <u>Impartial investigation, enforcement measures including penalties or disciplinary measures and cooperation</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
Reg. I/6	Training and assessment – <u>Administration, supervision and monitoring</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/6</u>	<u>Qualification of those responsible for the training and assessment</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
Reg. I/7	Communication of <u>the information, as referred to in Article IV and A-I/7 of STCW Code</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
Reg. I/8.1 and 8.2	Quality standards <u>system and periodically independent evaluation</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/8.3</u>	<u>Communication of a report relevant to amendments to the Convention</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>

¹⁰ The struck-out text indicates deletions and the underlined text shows additions or changes, to the Code.

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
<u>Reg. I/9.1 and 9.2</u>	<u>Medical standards – Issue and registration of certificates fitness and procedures and qualification for medical practitioners</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/11.4 and 11.5</u>	<u>Revalidation of certificates – appropriate refresher and updating training or assessment</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/13.6 and 13.7</u>	<u>Objection to particular trials and communication</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. II/5.3</u>	<u>Determination of need to update qualifications for Able seaman to whom certificates are issued before 1 January 2012</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. III/5.3</u>	<u>Determination of need to update qualifications for ratings in engine department to whom certificates are issued before 1 January 2012</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. III/6.3</u>	<u>Determination of need to update qualifications for electro-technical officers to whom certificates are issued before 1 January 2012</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. III/7.3</u>	<u>Determination of need to update qualifications for electro-technical ratings to whom certificates are issued before 1 January 2012</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. VII/3.1</u>	<u>Principles governing the issue of alternative certificates</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
IMDG Code		
<u>Section 1.3.1</u>	<u>Training of shore-side personnel – establishing period for keeping records of training</u>	<u>In force 1.1.2012 by MSC.294(87)</u>
<u>Chapter 3.3</u>	<u>Approval for Metal hydride storage system(s) installed in conveyances or in completed conveyance components or intended to be installed in conveyances</u>	<u>In force 1.1.2012 by MSC.294(87)</u>
<u>Chapter 5.5</u>	<u>Determining the period between fumigant application and loading of fumigated cargo transport unit on board the ship</u>	<u>In force 1.1.2012 by MSC.294(87)</u>
STCW Code, Part A		
<u>Section A-I/6.1</u>	<u>Training and assessment of seafarers for certification</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
<u>Section A-I/7.2</u>	<u>Communication of information – initial communication (within one year of entry into force of regulation I/7)</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-I/7.3, 7.4 and 7.5</u>	<u>Communication of information – subsequent reports (within the periods as referred to in paragraphs 7.3, 7.4 and 7.5)</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-I/8.1 and 8.3</u>	<u>National objectives and quality standards</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-I/9.1</u>	<u>Medical standards – eyesight standards, physical and medical fitness</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-I/9.4</u>	<u>A register of recognized medical practitioners – maintenance and availability</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-I/9.5 and 9.6</u>	<u>Guidance, processes and procedures for the conduct of medical fitness examinations and issuing of medical certificates</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-I/12.1</u>	<u>General performance standards governing the use of simulators for simulators used in training</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-I/12.2</u>	<u>General performance standards for simulators used in assessment of competence</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-I/12.6</u>	<u>Simulator training objectives</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-I/12.9</u>	<u>Qualifications of instructors and assessors</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-VIII/2.9.8</u>	<u>Watchkeeping at sea – directing the attention of companies, masters, chief engineer officers and watchkeeping personnel to observe principles in Parts 3 4-1 and 3 4-2</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>

SPECIFIC FLAG STATE OBLIGATIONS

Specific flag State obligations		
Source	Summary description	Comments
STCW 78		
<u>Reg. I/2.1, 2.2, 2.7 and 2.8</u>	<u>Issuance Certificates and endorsements of certificates of competency</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/10.1 and 10.2</u>	<u>Recognition of certificates and Seafarer's knowledge of the maritime legislation</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/11(5)</u>	<u>Revalidation of certificates</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/11.6</u>	<u>Availability – recent changes in national and international regulations</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/13.3</u>	<u>Conduct of trials – safety, security and pollution prevention</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/13.5 and 13.8.1</u>	<u>Results of trials – Communication</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. I/14.1</u>	<u>Responsibilities of companies</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. IV/1.2 3</u>	<u>Application – appropriate certificates for radio operators</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. V/1-1.7 4.4</u>	<u>Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on oil and chemical tankers</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. V/1-2.5</u>	<u>Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on liquefied gas tankers</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. V/2.1</u>	<u>Applicability of the requirements on domestic voyages</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. V/2.9</u>	<u>Mandatory minimum requirements for the training and qualification of masters, officers, ratings and other personnel on ro-ro passenger ships</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. V/2.8 3-9</u>	<u>Mandatory minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on passenger ships other than ro-ro passenger ships</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
<u>Reg. VIII/1.1 and 1.2</u>	<u>Fitness for duty – preventing fatigue and preventing drug and alcohol abuse</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>

Specific flag State obligations		
Source	Summary description	Comments
<u>Reg. VIII/2.1 and 2.2</u>	<u>Watchkeeping arrangements and principles – direction and requirements</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.1</u>
STCW Code, Part A		
Section A-I/10.2	<u>Withdrawal of endorsement – information of recognition for disciplinary reasons – communication to the Party that issued the certificate</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-II/4.4</u>	<u>Determining the requirements of training, assessment and certification where no tables of competence for the support level</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
Section A-III/4.4	<u>Determining the requirements of training, assessment and certification where no tables of competence – determine requirements for the support level</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-VIII/1.1</u>	<u>Fitness of duty – consideration of the danger posed by fatigue of seafarers</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
Section A-VIII/1.5	<u>Requirements of watch schedules to be posted in a standardized form</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-VIII/1.7</u>	<u>Requirements of maintaining records of daily hours of rest of seafarers</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Section A-VIII/1.10</u>	<u>Limitation of alcohol concentration</u>	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
Section A-VIII/2.84	Principles to be observed in keeping a radio watch – directing the attention of companies, masters and radio watchkeeping personnel to comply with the provisions in Parts 4-3 3-3 to ensure that an adequate safety radio watch is maintained when the ship is at sea	<u>In force 1.1.2012 by STCW/Conf.2/res.2</u>
<u>Res. MSC.288(87)</u>	<u>Performance standard for protective coatings for cargo oil tanks of crude oil tankers</u>	<u>In force 1.1.2012 by MSC.288(87)</u>
<u>Para 3.2</u>	<u>Inspection of surface preparation and coating processes – review</u>	<u>In force 1.1.2012 by MSC.288(87)</u>
<u>Para 4.6.3</u>	<u>Verification of the Technical Data Sheet and Statement of Compliance or Type Approval Certificate for the protective coating system</u>	<u>In force 1.1.2012 by MSC.288(87)</u>
<u>Para 6.1.1</u>	<u>Equivalent to NACE Coating Inspector Level 2 and FROSIO Inspector Level III – verification</u>	<u>In force 1.1.2012 by MSC.288(87)</u>

Specific flag State obligations		
Source	Summary description	Comments
<u>Para 7</u>	<u>Coating verification requirement as referred to in paragraph 7</u>	<u>In force 1.1.2012 by MSC.288(87)</u>
<u>Res. MSC.289(87)</u>	<u>Performance standard for alternative means of corrosion protection for cargo oil tanks of crude oil tankers</u>	<u>In force 1.1.2012 by MSC.289(87)</u>
<u>Para 2.2</u>	<u>Verification of Technical File</u>	<u>In force 1.1.2012 by MSC.289(87)</u>
<u>Para 4.2</u>	<u>Issuance of Type Approval Certificate for corrosion resistant steel</u>	<u>In force 1.1.2012 by MSC.289(87)</u>
<u>Para 5</u>	<u>Survey(s) during the construction process to verify that approved corrosion-resistant steel has been applied to the area required</u>	<u>In force 1.1.2012 by MSC.289(87)</u>