



**MINISTRY OF TRANSPORT AND COMMUNICATIONS
DEPARTMENT OF MARINE ADMINISTRATION**

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Directive (40/2017)

National Guidelines for Renewal Surveys

Applicable to: Ship owners, Recognized Organizations, Shipping Companies, Flag State Surveyors

1. The Department of Marine Administration circulated this notification in the exercise of the power of Section 294(B), paragraph (b) of Myanmar Merchant Shipping Act.
- 2 Pursuant to the provision of Section 213(A) of Myanmar Merchant Shipping Act, the Department of Marine Administration shall employ National Guidelines for Renewal Surveys of Myanmar ships engaged on International Voyages.
3. The purpose of this directive is to provide the guidelines for renewal surveys of Myanmar ships in the survey and certification process according to Resolution A.1104 (29) – Survey Guidelines under the Harmonized System of Survey and Certification (HSSC).

Maung Maung Oo

Director General

Department of Marine Administration

**SURVEY GUIDELINES UNDER THE 1974 SOLAS CONVENTION,
AS MODIFIED BY THE 1988 PROTOCOL PELATING THERETO**

- (E) 1 GUIDELINES FOR SURVEYS FOR THE CARGO SHIP
SAFETY EQUIPMENT CERTIFICATE
- (EI) 1.1 Initial surveys
- (EA) 1.2 Annual surveys
- (EP) 1.3 Periodical surveys
- (ER) 1.4 Renewal surveys
- (C) 2 GUIDELINES FOR SURVEYS FOR THE CARGO SHIP
SAFETY CONSTRUCTION CERTIFICATE
- (CI) 2.1 Initial surveys
- (CA) 2.2 Annual surveys
- (CIn) 2.3 Intermediate surveys
- (CR) 2.4 Renewal surveys
- (B) 3 GUIDELINES FOR THE INSPECTION OF THE OUTSIDE
OF THE SHIP'S BOTTOM OF CARGO SHIPS
- (R) 4 GUIDELINES FOR SURVEYS FOR THE CARGO SHIP
SAFETY RADIO CERTIFICATE
- (RI) 4.1 Initial surveys
- (RP) 4.2 Periodical surveys
- (RR) 4.3 Renewal surveys
- (P) 5 GUIDELINES FOR SURVEYS FOR THE PASSENGER SHIP
SAFETY CERTIFICATE
- (PI) 5.1 Initial surveys
- (PR) 5.2 Renewal surveys

**SURVEY GUIDELINES UNDER THE 1966 LL CONVENTION,
AS MODIFIED BY THE 1988 PROTOCOL PELATING THERETO**

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| (L) | 1 | GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL
LOAD LINE CERTIFICATE OR INTERNATIONAL LOAD
LINE EXEMPTION CERTIFICATE |
| (LI) | 1.1 | Initial surveys |
| (LA) | 1.2 | Annual surveys |
| (LR) | 1.3 | Renewal surveys |

SURVEY GUIDELINES UNDER THE MARPOL CONVENTION

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| (O) | 1 | GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL
OIL POLLUTION PREVENTION CERTIFICATE |
| (OI) | 1.1 | Initial surveys |
| (OA) | 1.2 | Annual surveys |
| (OIn) | 1.3 | Intermediate surveys |
| (OR) | 1.4 | Renewal surveys |
| (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 |
| (NA) | 2.2 | Annual surveys |
| (NIn) | 2.3 | Intermediate surveys |
| (NR) | 2.4 | Renewal surveys |
| (S) | 3 | GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL
SEWAGE POLLUTION PREVENTION CERTIFICATE |
| (SI) | 3.1 | Initial surveys |
| (SR) | 3.2 | Renewal surveys |
| (A) | 4 | GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL
AIR POLLUTION PREVENTION CERTIFICATE AND THE
NOX TECHNICAL CODE |
| (AI) | 4.1 | Initial surveys |
| (AA) | 4.2 | Annual surveys |
| (AIn) | 4.3 | Intermediate surveys |
| (AR) | 4.4 | Renewal surveys |

SURVEY GUIDELINES UNDER MANDATORY CODES

- (D) 1 GUIDELINES FOR 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
 - (DA) 1.2 Annual surveys
 - (DIn) 1.3 Intermediate surveys
 - (DR) 1.4 Renewal surveys
- (G) 2 GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL CERTIFICATE OF FITNESS FOR THE CARRIAGE OF LIQUEFIED GASES IN BULK
 - (GI) 2.1 Initial surveys
 - (GA) 2.2 Annual surveys
 - (GIn) 2.3 Intermediate surveys
 - (GR) 2.4 Renewal surveys
- (E) 1 **GUIDELINES FOR RENEWAL SURVEYS FOR THE CARGO SHIP SAFETY EQUIPMENT CERTIFICATE**
 - (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 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 (FSS Code 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 RENEWAL SURVEYS FOR THE CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE**
- (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 except (CA) 2.2.3.16 and (CA) 2.2.3.18.
- (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) 2.1.3.68 and 2.1.3.70.
- (CR) 2.4.6 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be issued.
- (R) **4 GUIDELINES FOR RENEWAL SURVEYS FOR THE CARGO SHIP SAFETY RADIO CERTIFICATE**
- (RR) 4.1 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) 4.1.1 the provisions of (RP) 4.2.1, except for the validity of the Cargo Ship Safety Radio Certificate.
- (RR) 4.2 For the radio installations, including those used in radio life-saving appliances, of cargo ships the renewal survey should consist of:
 - (RR) 4.2.1 the provisions of (RI) 4.1.2.
- (RR) 4.3 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) 4.3.1 after a satisfactory survey, issuing the Cargo Ship Safety Radio Certificate as per the provisions of (RI) 4.1.4.

(P) **5 GUIDELINES FOR RENEWAL SURVEYS FOR THE PASSENGER SHIP CERTIFICATE**

- (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; A 29/Res.1104 Page 100
 - (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 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs.6.4 and 6.5);
 - (PR) 5.2.1.10 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg.V/14) (SOLAS 74/88 reg.V/13(b));
 - (PR) 5.2.1.11 checking that the master, officers and ratings are certificated as required by the STCW Convention;

- (PR) 5.2.1.12 checking, where applicable, that the noise survey report as required by the Code on noise levels on board ships is available on board (SOLAS 74/12 reg. II-1/3-12);
- (PR) 5.2.1.13 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 74/00/06 regs.II-1/55, II-2/17 and III/38);
- (PR) 5.2.1.14 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;
- (PR) 5.2.1.15 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) 5.2.1.16 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) 5.2.1.17 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); A 29/Res.1104 Page 101
- (PR) 5.2.1.18 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 74/06 reg.II-1/22);
- (PR) 5.2.1.19 confirming that the stability information and damage control plans and damage control booklets are readily available (SOLAS 74/88 regs.II-1/22 and 23)
(SOLAS 74/06 regs.II-1/5-1 and 19);
- (PR) 5.2.1.20 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 74/06 regs.II-1/21 and 22);
- (PR) 5.2.1.21 confirming that documented operating procedures for closing and securing the openings in special category spaces and ro-ro spaces are available on board
(SOLAS 74/06 reg.II-1/23);
- (PR) 5.2.1.22 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) 5.2.1.23 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) 5.2.1.24 confirming that the maintenance plans have been provided (SOLAS 74/00 regs.II-2/14.2.2 and 14.3);
- (PR) 5.2.1.25 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) 5.2.1.26 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) 5.2.1.27 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) 5.2.1.28 confirming that ship-specific plans and procedures for recovery of persons from the water have been provided (SOLAS 74/12 reg. III/17-1);
- (PR) 5.2.1.29 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) 5.2.1.30 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) 5.2.1.31 confirming that, if applicable, a factual statement issued by the manufacturer of the lifeboat release mechanism is available, confirming the successful overhaul examination of a mechanism compliant with paragraphs 4.4.7.6.4 to 4.4.7.6.6 of the LSA Code, or, alternatively, that a statement of acceptance of the installation of a replacement release and retrieval system to an existing lifeboat is available (SOLAS 74/11 reg.III/1.5; LSA Code section 4.4.7.6);
- (PR) 5.2.1.32 checking that log-book entries are being made (SOLAS 74/00/13 regs.III/19 and 20), in particular:
 - (PR) 5.2.1.32.1 the date when the last full muster of the passengers and crew for boat and fire drill took place, and the date when the last enclosed space entry and rescue drills took place;

- (PR) 5.2.1.32.2 the records indicating that on voyages where passengers are scheduled to be on board for more than 24 h, musters of newly-embarked passengers have taken place prior to or immediately upon departure;
- (PR) 5.2.1.32.3 the records indicating that the lifeboat equipment was examined at that time and found to be complete;
- (PR) 5.2.1.32.4 the last occasion when the lifeboats were swung out and when each one was lowered into the water;
- (PR) 5.2.1.32.5 the records indicating that crew members have received the appropriate onboard training;
- (PR) 5.2.1.33 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) 5.2.1.34 confirming that the instructions for on board maintenance of the life-saving appliances is on board (SOLAS 74/00 reg.III/36);
- (PR) 5.2.1.35 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) 5.2.1.36 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) 5.2.1.37 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (PR) 5.2.1.38 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) 5.2.1.39 checking that the compass deviation book is properly maintained (SOLAS 74/00 reg.V/19);
- (PR) 5.2.1.40 checking that records are maintained identifying any pilot ladders placed into service and any repair effected (SOLAS 74/10 reg. V/23.2.4);
- (R) 5.2.1.41 confirming that a list showing the operational limitations imposed on the ship is kept on board (SOLAS 74/00 reg.V/30);
- (R) 5.2.1.42 checking the life-saving signals to be used by ships, aircraft or persons in distress (SOLAS 74/00 reg.V/29);
- (PR) 5.2.1.43 confirming the provisions of (PI) 5.1.3.16 to (PI) 5.1.3.22 except (PI) 5.1.3.19;
- (PR) 5.2.1.44 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) 5.2.1.45 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) 5.2.1.46 if applicable, checking that a list of all limitations on the operation of a passenger ship is kept on board and updated;
- (PR) 5.2.1.47 confirming that continuous synopsis record is provided (SOLAS 74/02 reg.XI-1/5);
- (PR) 5.2.1.48 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) 5.2.1.49 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg.V/28);
- (PR) 5.2.1.50 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 74/06/12 regs.II-1/8, 8-1, 14 and 18);
 - (PR) 5.2.2.3 confirming the provision of operational information to the master for safe return to port after a flooding casualty by on board stability computer or shore-based support (SOLAS 74/12 reg. II-1/8-1);
 - (PR) 5.2.2.4 checking the ballasting arrangements (SOLAS 74/88 reg.II-1/9) (SOLAS 74/06 reg.II-1/20);
 - (PR) 5.2.2.5 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) 5.2.2.6 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) 5.2.2.7 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 74/06, regs.II-1/10, 11, 12, 13 and 16);

- (PR) 5.2.2.8 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 74/06 reg.II-1/13);
- (PR) 5.2.2.9 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 74/06 reg.II-1/13);
- (PR) 5.2.2.10 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 74/06 reg.II-1/13) and, in particular, that they are:
 - (PR) 5.2.2.10.1 operable locally from each side of the bulkhead;
 - (PR) 5.2.2.10.2 provided with devices giving an indication of whether the door is open or closed at all remote operating positions;
 - (PR) 5.2.2.10.3 provided with an audible alarm that is distinct from any other alarm in the area and, when appropriate, an intermittent visual signal;
 - (PR) 5.2.2.10.4 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) 5.2.2.11 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 74/06 reg.II-1/13);
- (PR) 5.2.2.12 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 74/06 reg.II-1/13);
- (PR) 5.2.2.13 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 74/06 reg.II-1/13);
- (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 margin line (SOLAS 74/88 reg.II-1/17);
- (PR) 5.2.2.15 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 74/06 reg.II-1/15);

- (PR) 5.2.2.16 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 74/06 reg.II-1/15);
- (PR) 5.2.2.17 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) 5.2.2.18 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 74/06 reg.II-1/15);
- (PR) 5.2.2.19 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 74/06 reg.II-1/17);
- (PR) 5.2.2.20 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 74/05 reg.II-1/35-1);
- (PR) 5.2.2.21 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 74/05 reg.II-1/35-1);
- (PR) 5.2.2.22 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 74/08 reg.II-2/20.6.1.5);
- (PR) 5.2.2.23 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) 5.2.2.24 confirming, that the arrangement for monitoring special category spaces or ro-ro spaces, when fitted, is satisfactory (SOLAS 74/06 reg.II-1/23);
- (PR) 5.2.2.25 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) 5.2.2.26 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) 5.2.2.27 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) 5.2.2.28 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) 5.2.2.29 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) 5.2.2.30 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) 5.2.2.31 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) 5.2.2.32 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) 5.2.2.33 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) 5.2.2.34 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) 5.2.2.35 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) 5.2.2.36 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) 5.2.2.37 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) 5.2.2.38 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) 5.2.2.39 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) 5.2.2.40 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) 5.2.2.41 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) 5.2.2.42 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) 5.2.2.43 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) 5.2.2.44 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) 5.2.2.45 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) 5.2.2.46 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (PR) 5.2.2.47 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) 5.2.2.48 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) 5.2.2.49 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-I/35);
- (PR) 5.2.2.50 when appropriate, confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg. II-I/36 and SOLAS 74/12 reg.II-1/3-12.2); or confirming that the ship was constructed to reduce on board noise and to protect personnel from noise in accordance with the *Code on noise levels on board ships*, adopted by resolution MSC.337(91), as amended (SOLAS 74/12 reg.II-1/3-12);
- (PR) 5.2.2.51 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) 5.2.2.52 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) 5.2.2.53 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);

- (PR) 5.2.2.54 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) 5.2.2.55 confirming that the means of ascertaining the amount of oil contained in any oil tank are in satisfactory working condition (SOLAS 74/88 reg.II-2/15) (SOLAS 74/02 reg.II-2/33);
- (PR) 5.2.2.56 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 74/88 reg.II-2/15) (SOLAS 74/02 reg.II-2/33);
- (PR) 5.2.2.57 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) 5.2.2.58 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) 5.2.2.59 confirming that the starting arrangements of each emergency generating set are satisfactory (SOLAS 74/88 reg.II-1/44);
- (PR) 5.2.2.60 checking, when appropriate, the disposition of and testing the supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PR) 5.2.2.61 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 74/06 reg.II-1/41.6);
- (PR) 5.2.2.62 confirming that precautions provided against shock, fire and other hazards of electrical origin are being maintained (SOLAS 74/88 reg.II-1/45);
- (PR) 5.2.2.63 confirming, when appropriate, that the arrangements for the machinery spaces being periodically unattended are satisfactory (SOLAS 74/88 reg.II-1/54);
- (PR) 5.2.2.64 examining, where applicable, the alternative design and arrangements for machinery or electrical installations, fire safety, or life-saving appliances and arrangements, in accordance with the test, inspection and maintenance requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs.II-1/55, II-2/17 and III/38);
- (PR) 5.2.2.65 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; FSS Code chs.2 and 12) (SOLAS 74/88 regs.II-2/4 and 19);
- (PR) 5.2.2.66 examining the provision and randomly examining the condition of the portable and non-portable fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSS Code ch.4) (SOLAS 74/88 reg.II-2/6);
- (PR) 5.2.2.67 examining the fixed fire extinguishing system for machinery, cargo, special category and vehicle spaces and confirming that its means of operation are clearly marked (SOLAS 74/00/12 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSS Code chs.5 to 7) (SOLAS 74/88 regs.II-2/5, 7, 9, 10 and 53);
- (PR) 5.2.2.68 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) 5.2.2.69 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 74/08 reg.II-2/10.4, FSS Code ch.5.2.2.2);
- (PR) 5.2.2.70 examining the fire-extinguishing arrangements in control stations, accommodation and service spaces (SOLAS 74/00 reg.II-2/10.6.1; FSS Code ch.8) (SOLAS 74/88 reg.II-2/36);
- (PR) 5.2.2.71 examining, when applicable, the fire-extinguishing arrangements in cabin balconies (SOLAS 74/00 reg.II-2/10.6.1);
- (PR) 5.2.2.72 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; FSS Code chs.5, 6 and 7) (SOLAS 74/88 reg.II-2/15.2.5));
- (PR) 5.2.2.73 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) 5.2.2.74 examining and testing, as far as practicable, any fire detection and fire alarm arrangements in machinery spaces, including enclosed spaces containing incinerators, if applicable, accommodation and service spaces and control spaces (SOLAS 74/00/10 reg. II-2/7 (except 7.5.5, 7.6 and 7.9); FSS Code chs.8 and 9) (SOLAS 74/88 regs.II-2/11, 12, 13, 13-1, 14, 36 and 41);
- (PR) 5.2.2.74.1 examining and testing, where applicable, any fire detection and fire alarm arrangements on cabin balconies. (SOLAS 74/00 reg.II-2/7.10);
- (PR) 5.2.2.74.2 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 74/06 regs.II-2/7.5.2 and 7.5.3.1);
- (PR) 5.2.2.74.3 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 74/06 reg.II-2/7.2.4);
- (PR) 5.2.2.75 confirming that the firefighters' outfits including their self-contained compressed air breathing apparatus, 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, and that onboard means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used are provided, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (SOLAS 74/00/12 regs.II-2/10.10, 13.3.4, 13.4.3 and 15.2.2; FSS Code ch.3) (SOLAS 74/88 reg.II-2/17);
- (PR) 5.2.2.76 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) 5.2.2.77 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 74/00/04/12 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 9.6.3), 9.7 and 11 (except 11.6)) (SOLAS 74/88 regs.II-2/11, 16, 18, 23 to 35 and 37);
- (PR) 5.2.2.78 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) 5.2.2.79 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) 5.2.2.80 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) 5.2.2.81 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 74/00regs.II-2/13.2, 13.3.1, 13.3.2 and 13.7; FSS Code chs.11 and 13 (except paragraph 3)) (SOLAS 74/88 reg.II-2/28);
- (PR) 5.2.2.82 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) 5.2.2.83 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) 5.2.2.84 examining the fire-extinguishing arrangements, examining and testing the fire detection and alarm systems and the sample extraction smoke detection systems, where applicable 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; FSS Code chs.5, 9 and 10) (SOLAS 74/88 reg. II-2/39);
- (PR) 5.2.2.85 examining the fire-extinguishing arrangements examining and testing the fire detection and alarm system and the sample extraction smoke detection system, where applicable, 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); FSS Code chs.5, 6, 7, 9 and 10) (SOLAS 74/88 regs.II-2/37, 38 and 38-1);
- (PR) 5.2.2.86 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; LSA Code ch.7) (SOLAS 74/88 reg.II-2/40);

- (PR) 5.2.2.87 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring, ventilation, the provision of personnel protection clothing and portable appliances, testing any fire detection and alarm system and any sample extraction smoke detection system 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); FSS Code chs.3, 4, 7, 9 and 10) (SOLAS 74/88 regs.II-2/41 and 54);
- (PR) 5.2.2.88 examining, when appropriate, the helicopter facilities (SOLAS 74/00 regs.II-2/18, III/28) (SOLAS 74/88 reg.II-2/18.8);
- (PR) 5.2.2.89 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) 5.2.2.90 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 74/06 reg.II-2/21);
- (PR) 5.2.2.91 for passenger ships constructed on or after 1 July 2010, checking the provision of a safety centre (SOLAS 74/06 reg.II-2/23) and its associated ventilation system (SOLAS 74/06 reg.II-2/8.2);
- (PR) 5.2.2.92 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) 5.2.2.93 checking that the falls used in launching have been periodically inspected and have been renewed in the past five years (SOLAS 74/96/04 reg.III/20);
- (PR) 5.2.2.94 examining each survival craft, including its equipment and, when fitted, the on-load release mechanism 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; LSA Code sections 2.3 to 2.5, 3.2 and 4.1 to 4.6);
- (PR) 5.2.2.95 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 (LSA Code section 1.2.2.6);

- (PR) 5.2.2.96 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. (SOLAS 74/96/04 regs.III/11, 12, 13, 15, 16, 20, 21 and 23; LSA Code sections 6.1 and 6.2);
- (PR) 5.2.2.97 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 life raft automatic release hooks have been carried out. (SOLAS 74/00/12 reg. III/ 20);
- (PR) 5.2.2.98 checking the rotational deployment of MES (SOLAS 74/88 reg.III/20.8.2; LSA Code section 6.2.2.2);
- (PR) 5.2.2.99 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) 5.2.2.100 examining the embarkation and recovery arrangements for each rescue boat (SOLAS 74/88 reg.III/14);
- (PR) 5.2.2.101 checking the arrangements for mustering passengers (SOLAS 74/96 regs.III/11, 24 and 25);
- (PR) 5.2.2.102 confirming that a means of rescue is provided on ro-ro passenger ships (SOLAS 74/00 regs.III/11, 26.4);
- (PR) 5.2.2.103 confirming that a helicopter pick-up area is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/28);
- (PR) 5.2.2.104 confirming that a decision support system is provided for the Master (SOLAS 74/88 reg. III/29) (SOLAS 74/06 regs. II-2/21 and 22);
- (PR) 5.2.2.105 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) 5.2.2.106 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) 5.2.2.107 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; LSA Code sections 3.1 and 7.1);
- (PR) 5.2.2.108 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; LSA Code sections 3.1 and 7.1);

- (PR) 5.2.2.109 examining the provision, disposition, stowage and condition of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets anti-exposure suits and thermal protective aids and that their associated batteries are not out of date (SOLAS 74/88/06 regs.III/7, 21, 22 and 26; LSA Code sections 2.1 to 2.5 and 3.1 to 3.3);
- (PR) 5.2.2.109.1 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 (LSA Code 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 74/06 reg.III/7.2.1);
- (PR) 5.2.2.109.2 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSA Code section 2.3.1);
- (PR) 5.2.2.110 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) 5.2.2.111 checking that the required navigation lights, shapes and sound signalling equipment are in order (COLREG, rules 20 to 24, 27 to 30 and 33);
- (PR) 5.2.2.112 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 74/00/09/13 reg.V/19);

- (PR) 5.2.2.113 checking for the provision, specification operation and annual performance test of the voyage data recorder (SOLAS 74/00/04 reg.V/20);
- (PR) 5.2.2.114 checking that the International Code of Signals and an up-to-date 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) 5.2.2.115 checking that a valid conformance test report of the long-range identification and tracking system is available on board, where fitted (SOLAS 74/04 reg.V/19-1);
- (PR) 5.2.2.116 checking the provision and operation of the automatic identification system, where fitted, and whether the annual test has been carried out and a copy of the test report is on board (SOLAS 74/00/04/10 regs.V/18.9 and 19);
- (PR) 5.2.2.117 checking the provision and specification of the pilot ladders and pilot transfer arrangements (SOLAS 74/00/10 reg. V/23);
- (PR) 5.2.2.118 checking the provisions of (PI) 5.1.2.115 to (PI) 5.1.2.140 and (PI) 5.1.2.143 to (PI) 5.1.2.145;
- (PR) 5.2.2.119 confirming that no new materials containing asbestos were installed on board (SOLAS 74/00/05/09 reg. II-1/3-5)
- (PR) 5.2.120 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 74/08 reg.II-1/3-9);
- (PR) 5.2.2.121 confirming, where applicable, that an appropriate portable atmosphere testing instrument or instruments† is on board, and that suitable means are provided for the calibration of all such instruments; and checking appropriateness of the testing and calibration (SOLAS 74/14 reg. XI-1/7‡).
- (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).

**SURVEY GUIDELINES UNDER THE 1966 LL CONVENTION,
AS MODIFIED BY THE 1988 PROTOCOL RELATING THERETO**

- (L) 1 **GUIDELINES FOR RENEWAL SURVEYS FOR THE INTERNATIONAL LOAD LINE CERTIFICATE OR INTERNATIONAL LOAD LINE EXEMPTION CERTIFICATE**
- (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.

SURVEY GUIDELINES UNDER THE MARPOL CONVENTION

- (O) 1 **GUIDELINES FOR RENEWAL SURVEYS FOR THE INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE**
- (OI) 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 15 ppm bilge alarm has been calibrated by the manufacturer or a person authorized by the manufacturer and that a valid calibration certificate is available on board.
- (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 board†.
- (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;
 - (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 RENEWAL SURVEYS FOR THE INTERNATIONAL POLLUTION PREVENTION CERTIFICATE FOR THE CARRIAGE OF NOXIOUS LIQUID SUBSTANCES IN BULK**
- (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 RENEWAL SURVEYS FOR THE INTERNATIONAL SEWAGE POLLUTION PREVENTION CERTIFICATE**
- (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 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
 - (SR) 3.2.1.6 checking the validity of the International Ship Security Certificate;
 - (SR) 3.2.1.7 checking the certificates of class, if the ship is classed with a classification society;
 - (SR) 3.2.1.8 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) 3.2.1.9 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
 - (SR) 3.2.1.10 checking when appropriate the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;

- (SR) 3.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (SR) 3.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (SR) 3.2.1.13 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) 3.2.1.14 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 certificate;
- (SR) 3.2.1.15 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 (MARPOL Annex IV, reg. 9);
 - (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) 3.2.2.4 confirming, for ships where a sewage holding tank is fitted as a sewage system, that an approval for the rate of discharge is available (MARPOL Annex IV, regs. 9.1.3 and 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 RENEWAL SURVEYS FOR THE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE AND THE NO_x TECHNICAL CODE**

- (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 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.

SURVEY GUIDELINES UNDER MANDATORY CODES

- (D) 1 **GUIDELINES FOR THE RENEWAL 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**
- (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 RENEWAL SURVEYS FOR THE INTERNATIONAL CERTIFICATE OF FITNESS FOR THE CARRIAGE OF LIQUEFIED GASES IN BULK**
- (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) 2.4.2.3 internal examination of selected cargo tanks (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.

**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 including the emergency fire pump, if applicable, fire mains, hydrants, hoses and nozzles and the international shore connection (SOLAS 74/00 regs.II-2/10.2 and 10.4.4 and FSS Code 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 firefighters' outfits including its self-contained compressed air breathing apparatus, emergency escape breathing devices (EEBDs), on board means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (SOLAS 74/00/12 regs.II-2/10.10, 13.3.4, 13.4.3 and 15.2.2; FSS Code 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 74/00/12 regs.II-2/10.4 and 10.5 (except 10.5.5); FSS Code 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 and enclosed spaces containing incinerators(SOLAS 74/00/10 regs.II-2/7.2, 7.3 and 7.4; FSS Code ch.9) (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; FSS Code 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; FSS Code 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);
 - (EI) 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);

- (EI) 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); FSS Code chs.5, 6, 7, 9 and 10) (SOLAS 74/88 regs.II-2/37, 38 and 53);
- (EI) 1.1.1.12 checking navigation bridge visibility (SOLAS 74/00 reg.V/22);
- (EI) 1.1.1.13 examining the plans for the helicopter facilities (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8);
- (EI) 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 including sample extraction smoke detection systems, where applicable, 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); FSS Code chs.9 and 10) (SOLAS 74/88 reg. II-2/54);
- (EI) 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);
- (EI) 1.1.1.16 examining, where applicable, the approved documentation for the alternative design and arrangements (SOLAS 74/00/06 regs.II-2/17 and III/38);
- (EI) 1.1.1.17 examining the design of the survival craft, including their construction equipment, fittings, release mechanisms and recovery appliances and embarkation and launching arrangements (SOLAS 74/96/06/11 regs.III/4,16, 31, 32 to 33; LSA Code sections 3.2, 4.1 to 4.9, 6.1 and 6.2);
- (EI) 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 (LSA Code section 1.2.2.6);
- (EI) 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; LSA Code sections 5.1 and 6.1);
- (EI) 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);
- (EI) 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 LSA Code sections 3.1, 7.1 and 7.2);
- (EI) 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, lifejackets, immersion suits and anti-exposure suits (SOLAS 74/00/06 regs.III/7 and 32; LSA Code 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 (LSA Code 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 (COLREG 1972, 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 an electronic chart display and information system (ECDIS) including back-up arrangements as applicable (SOLAS 74/00/09/13 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 74/04 reg.V/19-1);
- (EI) 1.1.1.30 checking the plans and specification for the pilot transfer arrangement, the pilot ladders, the combination arrangements, where applicable, the access to the ship's deck and the associated equipment and lighting (SOLAS 74/88/10 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 74/08 reg.II-1/3-9).
- (EI) 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 tankers should consist of:
 - (EI) 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 and 10.8; FSS Code chs.14 and 15) (SOLAS 74/88 regs.II-2/60 and 62);
 - (EI) 1.1.2.2 examining the plans for gas measurement in double-hull spaces and double bottom spaces, including the fitting of permanent gas sampling lines, where appropriate (SOLAS 74/10 reg. II-2/4.5.7.2);
 - (EI) 1.1.2.3 examining, for oil tankers of 20,000 tonnes deadweight and above, the plans for the fixed hydrocarbon gas detection system for measuring hydrocarbon gas concentrations in all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks (SOLAS 74/10 reg.II-2/4.5.7.3 and FSS Code ch.16); and
 - (EI) 1.1.2.4 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).
- (EI) 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:

- (EI) 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; and testing that the emergency fire pump has the required capacity, and if the emergency fire pump is the main supply of water for any fixed fire-extinguishing system, checking that that the emergency fire pump has the capacity for this system (SOLAS 74/00 reg. II-2/10.2; FSS Code chs.2 and 12) (SOLAS 74/88 regs.II-2/4 and 19);
- (EI) 1.1.3.2 examining the provision and disposition of the fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSS Code ch.4) (SOLAS 74/88 reg.II-2/17);
- (EI) 1.1.3.3 examining the firefighters' outfits including its self-contained compressed air breathing apparatus, emergency escape breathing devices (EEBDs), on board means of recharging breathing apparatus cylinders used during drills or the provision of a suitable number of spare cylinders to replace those used, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe (SOLAS 74/00/12 regs.II-2/10.10, 13.3.4, 13.4.3 and 15.2.2; FSS Code ch.3) (SOLAS 74/88 reg.II-2/17) (BCH Code ch.III, part E);
- (EI) 1.1.3.4 checking the operational readiness and maintenance of firefighting systems (SOLAS 74/00 reg.II-2/14.1) (SOLAS 74/88 reg.II-2/21);
- (EI) 1.1.3.5 examining the fixed firefighting 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 74/00/08/12 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSS Code chs.5 to 7) (SOLAS 74/88 regs.II-2/7 and 53);
- (EI) 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 74/08 reg.II-2/10.4.1.5);
- (EI) 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 74/00/12 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 any sample extraction smoke detection system, and confirming that installation tests have been satisfactorily completed (SOLAS 74/00/10 regs. II-2/7.2, 7.3, 7.4, 7.5.1, 7.5.5, 19.3.3 and 20.4; FSS Code chs. 8, 9 and 10) (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 74/00regs.II-2/10.6.3

and 10.6.4; FSS Code 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, where applicable, the alternative design and arrangements for fire safety or life-saving appliances and arrangements, in accordance with the test and inspection requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs.II-2/17 and III/38);
- (EI) 1.1.3.13 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); FSS Code chs.9 and 10) (SOLAS 74/88 reg.II-2/54);
- (EI) 1.1.3.14 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 (LSA Code section 1.2.2.6);
- (EI) 1.1.3.15 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; LSA Code section 6.2);
- (EI) 1.1.3.16 deployment of 50% of the MES after installation (LSA Code paragraph 6.2.2.2);
- (EI) 1.1.3.17 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; LSA Code sections 2.5, 3.1 to 3.3 and 4.1 to 4.9) (SOLAS 74/00 reg.III/31.1);
- (EI) 1.1.3.18 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; LSA Code section 6.1);
- (EI) 1.1.3.19 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; LSA Code section 6.2);
- (EI) 1.1.3.20 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; LSA Code sections 2.5, 5.1 and 6.1);

- (EI) 1.1.3.21 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; LSA Code section 6.1);
- (EI) 1.1.3.22 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);
- (EI) 1.1.3.23 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);
- (EI) 1.1.3.24 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);
- (EI) 1.1.3.25 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; LSA Code sections 3.1, 7.1 and 7.2);
- (EI) 1.1.3.26 examining the provision, disposition and stowage of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets, immersion suits and anti-exposure suits (SOLAS 74/00/06 regs.III/7 and 32; LSA Code sections 2.1 to 2.5 and 3.1 to 3.3);
- (EI) 1.1.3.27 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);
- (EI) 1.1.3.28 examining the provision and positioning and checking the operation of, as appropriate, the navigation lights, shapes and sound signalling equipment (COLREG 1972, rules 20 to 24, 27 to 30 and 33);
- (EI) 1.1.3.29 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);
- (EI) 1.1.3.30 checking the electromagnetic compatibility of electrical and electronic equipment on or in the vicinity of the bridge (SOLAS 74/00 reg.V/17);
- (EI) 1.1.3.31 checking, as appropriate, the provision and operation of the following shipborne navigational systems equipment (SOLAS 74/00 reg.V/19):
 - (EI) 1.1.3.31.1 the magnetic compass, including examining the siting, movement, illumination and a pelorus or compass bearing device (SOLAS 74/00 reg.V/19);
 - (EI) 1.1.3.31.2 nautical charts and nautical publications necessary for the intended voyage are available and have been updated, and, where 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);
 - (EI) 1.1.3.31.3 global navigation satellite system receiver or terrestrial radionavigation system;
 - (EI) 1.1.3.31.4 sound-reception system, when bridge is totally enclosed;

- (EI) 1.1.3.31.5 means of communication to emergency steering position, where provided;
- (EI) 1.1.3.31.6 spare magnetic compass;
- (EI) 1.1.3.31.7 daylight signalling lamp;
- (EI) 1.1.3.31.8 echo sounding device;
- (EI) 1.1.3.31.9 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;
- (EI) 1.1.3.31.10 electronic plotting aid, automatic tracking aid or automatic radar plotting aid as appropriate, using the appropriate test facilities;
- (EI) 1.1.3.31.11 speed and distance measuring devices "through the water" and "over the ground";
- (EI) 1.1.3.31.12 transmitting heading device providing heading information to radar, plotting aids and automatic identification system equipment;
- (EI) 1.1.3.31.13 automatic identification system;
- (EI) 1.1.3.31.14 gyrocompass, including examining the alignment of the master and all repeaters;
- (EI) 1.1.3.31.15 rudder angle indicator;
- (EI) 1.1.3.31.16 propeller rate of revolution indicator;
- (EI) 1.1.3.31.17 propeller, operational mode, thrust, and pitch indicator;
- (EI) 1.1.3.31.18 rate-of-turn indicator;
- (EI) 1.1.3.31.19 heading or track control system;
- (EI) 1.1.3.31.20 BNWAS;
- (EI) 1.1.3.32 checking for the provision and operation of the voyage data recorder (SOLAS 74/00 reg.V/20);
- (EI) 1.1.3.33 checking the record of the voyage data recorder annual performance test (SOLAS 74/00 reg.V/18);
- (EI) 1.1.3.34 checking navigation bridge visibility (SOLAS 74/00 reg.V/22);
- (EI) 1.1.3.35 checking that a valid conformance test report of the long-range identification and tracking system is available on board (SOLAS 74/04 reg.V/19-1);
- (EI) 1.1.3.36 checking the provision of the pilot transfer arrangement, the access to the ship's deck and the associated equipment and lighting, checking the operation of the pilot ladders and the combination arrangements (SOLAS 74/00/10 reg. V/23);
- (EI) 1.1.3.37 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 74/08 reg.II-1/3-9);
- (EI) 1.1.3.38 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 74/08 reg.VI/3).
- (EI) 1.1.4 For the life-saving appliances and the other equipment of cargo ships for the additional requirements for 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; FSS Code 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; FSS Code 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 firefighting 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; FSS Code 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) 1.1.4.5 examining, for all tankers, the arrangements for cargo tank protection, (SOLAS 74/00/10 regs.II-2/4.5.3, 4.5.6, and 10.8; FSS Code chs.14 and 15) (SOLAS 74/88 regs.II-2/60 and 62);
- (EI) 1.1.4.6 checking, for all tankers, the provision of at least one portable instrument for measuring oxygen and one for measuring flammable vapour concentrations, together with a sufficient set of spares, and suitable means for the calibration of these instruments (SOLAS 74/10 reg. II-2/4.5.7.1);
- (EI) 1.1.4.7 examining the arrangements for gas measurement in double-hull spaces and double bottom spaces, including the fitting of permanent gas sampling lines, where appropriate (SOLAS 74/10 reg. II-2/4.5.7.2);
- (EI) 1.1.4.8 examining, for oil tankers of 20,000 tonnes deadweight and above, the fixed hydrocarbon gas detection system for measuring hydrocarbon gas concentrations in all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks, and confirming that the installation tests have been satisfactorily completed (SOLAS 74/10 reg. II-2/4.5.7.3 and FSS Code ch.16).
- (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 that, where applicable, the approved documentation for the alternative design and arrangement is on board (SOLAS 74/00/06 regs. II-2/17 and III/38);
 - (EI) 1.1.5.5 confirming, where appropriate, that the ship is provided with a document indicating compliance with the special requirement for carrying dangerous goods (SOLAS 74/00/08, reg.II-2/19.4) (SOLAS 74/88 reg.II-2/54(3));
 - (EI) 1.1.5.6 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) 1.1.5.7 confirming that ship-specific plans and procedures for recovery of persons from the water have been provided (SOLAS 74/12 reg. III/17-1);
 - (EI) 1.1.5.8 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) 1.1.5.9 confirming that the instructions for onboard maintenance of the life-saving appliances have been provided (SOLAS 74/88 reg.III/36);
 - (EI) 1.1.5.10 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) 1.1.5.11 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (EI) 1.1.5.12 checking that records are provided, identifying any pilot ladders placed into service (SOLAS 74/10 reg. V/23.2.4);
- (EI) 1.1.5.13 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) 1.1.5.14 checking that the International Code of Signals and an up-to-date 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) 1.1.5.15 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg.V/28);
- (EI) 1.1.5.16 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) 1.1.5.17 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 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 (FSS Code ch.15 paragraph 2.4.4) (SOLAS 74/88 reg.II-2/62.21);
 - (EI) 1.1.6.2 confirming that the operating and maintenance instructions for the fixed hydrocarbon gas detection system are provided (SOLAS 74/10 reg. II-2/4.5.7.3 and FSS Code ch.16).
- (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 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (EA) 1.2.1.13 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (EA) 1.2.1.14 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (EA) 1.2.1.15 checking the manning and supervision of survival craft (SOLAS 74/00 reg.III/10);
- (EA) 1.2.1.16 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 74/00/06 regs. II-2/17 and III/38);
- (EA) 1.2.1.17 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) 1.2.1.18 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) 1.2.1.19 confirming that the maintenance plans have been provided (SOLAS 74/00 regs.II-2/14.2.2 and 14.4);
- (EA) 1.2.1.20 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) 1.2.1.21 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) 1.2.1.22 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) 1.2.1.23 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) 1.2.1.24 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 (FSS Code ch.15) (SOLAS 74/88 reg.II-2/62);
- (EA) 1.2.1.25 confirming that, where applicable, a factual statement has been provided on board by the lifeboat release and retrieval system manufacturer or one of their representatives, that confirms the successful completion of the overhaul examination of an existing lifeboat release and retrieval system found to be

compliant with paragraphs 4.4.7.6.4 to 4.4.7.6.6 of the LSA Code, or, alternatively, that a statement of acceptance of the installation of a replacement release and retrieval system to an existing lifeboat is available (SOLAS 74/11 reg. III/1.5; LSA Code section 4.4.7.6);

- (EA) 1.2.1.26 checking that log-book entries are being made (SOLAS 74/00/12 regs.III/19 and 20) and in particular:
 - (EA) 1.2.1.26.1 the date when the last full muster of the crew for boat and fire drill took place, the date when the last enclosed space entry and rescue drills took place;
 - (EA) 1.2.1.26.2 the records indicating that the lifeboat equipment was examined at that time and found to be complete;
 - (EA) 1.2.1.26.3 the last occasion when the lifeboats were swung out and when each one was lowered into the water;
 - (EA) 1.2.1.26.4 the records indicating that crew members have received the appropriate onboard training;
 - (EA) 1.2.1.26.5 the records indicating that on voyages where passengers are scheduled to be on board for more than 24 h, musters of newly-embarked passengers have taken place prior to or immediately upon departure;
- (EA) 1.2.1.27 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) 1.2.1.28 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) 1.2.1.29 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) 1.2.1.30 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (EA) 1.2.1.31 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) 1.2.1.32 checking that the International Code of Signals and an up-to-date 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) 1.2.1.33 checking that records are maintained identifying any pilot ladders placed into service and any repair effected (SOLAS 74/10 reg. V/23.2.4);
- (EA) 1.2.1.34 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) 1.2.1.35 checking that records of navigational activities and daily reporting have been maintained (SOLAS 74/00/03 reg. V/28);
- (EA) 1.2.1.36 confirming that continuous synopsis record is provided (SOLAS 74/02 reg.XI-1/5);
- (EA) 1.2.1.37 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; FSS Code 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; FSS Code ch.4) (SOLAS 74/88 reg.II-2/6);
- (EA) 1.2.2.3 confirming that the firefighters' outfits including its self-contained compressed air breathing apparatus and emergency escape breathing devices (EEBDs) are complete and in good condition, that the cylinders, including the spare cylinders, of any required self-contained breathing apparatus are suitably charged, and that on board means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used are provided, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (SOLAS 74/00/12 regs.II-2/10.10, 13.3.4 , 13.4.3 and 15.2.2; FSS Code 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 firefighting systems (SOLAS 74/00 reg.II-2/14) (SOLAS 74/88/91 reg.II-2/21);
- (EA) 1.2.2.5 examining the fixed firefighting 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 74/00/12 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSS Code 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 74/00/12 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 74/08 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 and any sample extraction smoke detection system (SOLAS 74/00/10 regs.II-2/7.2, 7.3, 7.4, 7.5.1, 7.5.5, 19.3.3 and 20.4; FSS Code chs. 9 and 10) (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; FSS Code 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, where applicable, the alternative design and arrangements for fire safety or life-saving appliances and arrangements, in accordance with the test, inspection and maintenance requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs.II-2/17 and III/38);
- (EA) 1.2.2.15 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) 1.2.2.16 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) 1.2.2.17 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 (LSA Code section 1.2.2.6);
- (EA) 1.2.2.18 examining each survival craft, including its equipment and, when fitted, the on-load release mechanism 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/16, 20 and 31; LSA Code sections 2.5, 3.1 to 3.3, 4.1.5, 4.4.7 and 4.4.8);
- (EA) 1.2.2.19 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) 1.2.2.20 checking that the falls used in launching appliances have been periodically inspected and have been renewed as necessary in the past five years (SOLAS 74/00 reg.III/20);
- (EA) 1.2.2.21 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 (SOLAS 74/00 regs.III/11, 12, 13, 16, 20 and 31; LSA Code section 6.1);

- (EA) 1.2.2.22 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 life raft automatic release hooks, has been carried out. The operational testing of free-fall lifeboat release systems shall be performed either by free-fall launch with only the operating crew on board or by a simulated launching carried out based on MSC.1/Circ.1206/Rev.1 (SOLAS 74/00/12 reg. III/ 20);
- (EA) 1.2.2.23 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; LSA Code sections 2.5 and 5.1);
- (EA) 1.2.2.24 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) 1.2.2.25 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; LSA Code section 6.1);
- (EA) 1.2.2.26 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) 1.2.2.27 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) 1.2.2.28 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; LSA Code sections 3.1, 7.1 and 7.2);
- (EA) 1.2.2.29 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, lifejacket 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, LSA Code sections 2.1 to 2.5);
- (EA) 1.2.2.30 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSA Code section 2.3.1);
- (EA) 1.2.2.31 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) 1.2.2.32 checking that the required navigation lights, shapes and sound signalling equipment are in order (COLREG 1972, rules 20 to 24, 27 to 30 and 33);
- (EA) 1.2.2.33 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, Global Navigation Satellite 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, 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 74/00/09/13 reg.V/19);

- (EA) 1.2.2.34 checking that the International Code of Signals is available (SOLAS 74/00 reg.V/21);
- (EA) 1.2.2.35 checking the rotational deployment of Marine Evacuation System (MES) (SOLAS 74/88 reg.III/20.8.2; LSA Code section 6.2.2.2);
- (EA) 1.2.2.36 checking the provision, specification, operation and annual performance test of the voyage data recorder, where fitted (SOLAS 74/00/04 reg.V/20);
- (EA) 1.2.2.37 checking the provision and operation of the automatic identification system, where fitted, and whether the annual test has been carried out and a copy of the test report is on board (SOLAS 74/00/04/10 regs. V/18.9 and 19);
- (EA) 1.2.2.38 checking that a valid conformance test report of the long-range identification and tracking system is available on board, where fitted (SOLAS 74/04 reg.V/19-1);
- (EA) 1.2.2.39 checking the provision and specification of the pilot ladders and pilot transfer arrangements (SOLAS 74/00/10 reg. V/23);
- (EA) 1.2.2.40 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 74/08 reg.II-1/3-9);
- (EA) 1.2.2.41 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 74/08 reg.VI/3);
- (EA) 1.2.2.42 confirming that ship-specific plans and procedures for recovery of persons from the water have been provided (SOLAS 74/12 reg. III/17-1).
- (EA) 1.2.3 For the life-saving appliances and the other equipment of cargo ships, concerning the additional requirements for 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; FSS Code 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; FSS Code 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 (FSS Code ch.15) (SOLAS 74/88 reg.II-2/62);
- (EA) 1.2.3.4 examining the fixed firefighting 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 for all tankers, the provision of at least one portable instrument for measuring oxygen and one for measuring flammable vapour concentrations, together with a sufficient set of spares, and suitable means for the calibration of these instruments (SOLAS 74/10 reg. II-2/4.5.7.1);
- (EA) 1.2.3.6 examining the arrangements for gas measurement in double-hull spaces and double bottom spaces, including the fitting of permanent gas sampling lines, where appropriate (SOLAS 74/10 reg. II-2/4.5.7.2);
- (EA) 1.2.3.8 examining, as far as possible, and testing the fixed hydrocarbon gas detection system (SOLAS 74/10 reg. II-2/4.5.7.3 and FSS Code ch.16); checking condition and operation of water spray and air supply systems that are in totally enclosed lifeboats and have self-contained air support systems (LSA Code sections 4.4 and 4.6 to 4.9);
- (EA) 1.2.3.9 checking protection of cargo pump room (SOLAS 74/00 reg.II-2/4.5.10), and in particular:
 - (EA) 1.2.3.9.1 checking temperature sensing devices for bulkhead glands and alarms;
 - (EA) 1.2.3.9.2 checking interlock between lighting and ventilation;
 - (EA) 1.2.3.9.3 checking gas detection system;
 - (EA) 1.2.3.9.4 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 firefighting 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 74/00/12 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSS Code 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 and any sample extraction smoke detection system (SOLAS 74/00/10 regs.II-2/7.2, 7.3, 7.4, 7.5.5, 19.3.3 and 20.4; FSS Code chs.9 and 10) (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; FSS Code 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 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 firefighting 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;

FSS Code 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.

(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 74/06 regs.II-1/9, 10, 11, 12, 13-1, 15, 15-1, 16 and 16-1);
 - (CI) 2.1.1.2 examining plans to verify that bulk carriers of 150 m in length and above, where appropriate, meet the applicable structural requirements of an organization recognized by the Administration, or national standards of the Administration, conforming to the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (SOLAS 74/10 reg. II-1/3-10);
 - (CI) 2.1.1.3 examining the plans for the bilge pumping and drainage systems (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05/08/09 regs.II-1/35-1 and II-2/20.6.1.4);
 - (CI) 2.1.1.4 examining the stability information and the damage control plans (SOLAS 74/88/00 regs.II-1/22, 23-1 and 25-8) (SOLAS 74/06/08 regs.II-1/5, 5-1 and 19; IS Code chs.1, 2 and 3);
 - (CI) 2.1.1.5 examining the plans for the machinery installation (SOLAS 74/88 regs.II-1/26 to 36);
 - (CI) 2.1.1.6 examining the plans for the electrical installation (SOLAS 74/88 regs.II-1/40, 41, 43, 44 and 45);
 - (CI) 2.1.1.7 examining, where applicable, the approved documentation for the alternative design and arrangements (SOLAS 74/00/06 regs.II-1/55 and II-2/17);
 - (CI) 2.1.1.8 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) 2.1.1.9 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 74/00/12 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, 9.3, 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) 2.1.1.10 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) 2.1.1.11 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; FSS Code ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45);
- (CI) 2.1.1.12 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) 2.1.1.13 examining the arrangements for the openings in the shell plating below the freeboard deck, (SOLAS 74/06 reg.II-1/15);
- (CI) 2.1.1.14 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) 2.1.1.15 examining the Cargo Securing Manual for ships carrying cargo units including containers (SOLAS 74/98 reg.VI/5.6);
- (CI) 2.1.1.16 checking for the loading booklet for carriage of cargoes in bulk (SOLAS 74/00 reg.VI/7);
- (CI) 2.1.1.17 examining the loading instrument for bulk carriers of 150 m in length and upwards (SOLAS 74/97/04 reg.XII/11);
- (CI) 2.1.1.18 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) 2.1.1.19 examining the functionality of bilge well alarms to all cargo holds and conveyor tunnels (SOLAS 74/97/04 reg.XII/9);
- (CI) 2.1.1.20 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) 2.1.1.21 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) 2.1.1.22 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) 2.1.1.23 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) 2.1.1.24 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) 2.1.1.25 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) 2.1.1.26 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 74/08 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 74/00/12 regs.II-2/1.6, 4.5.1, 4.5.2, 4.5.9, 9.2.4, 9.3, 9.4, 9.5, 9.6.3 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 74/04 reg.II-1/3-6);
- (CI) 2.1.2.8 examining plans to verify that oil tankers of 150 m in length and above, where appropriate, meet the applicable structural requirements of an organization recognized by the Administration, conforming to the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (SOLAS 74/10 reg. II-1/3-10).
- (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 74/06 reg.II-1/12);
 - (CI) 2.1.3.2 confirming in accordance with the survey plan that bulk carriers of 150 m in length and above, where appropriate, meet the applicable structural requirements of an organization recognized by the Administration, or national standards of the Administration, conforming to the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (SOLAS 74/10 reg. II-1/3.10);
 - (CI) 2.1.3.3 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 74/06 reg.II-1/10 and 11);
 - (CI) 2.1.3.4 confirming that each watertight door has been tested (SOLAS 74/88 reg.II-1/18) (SOLAS 74/06 reg.II-1/16);
 - (CI) 2.1.3.5 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 74/06 reg.II-1/13-1);
 - (CI) 2.1.3.6 confirming by a hose or flooding test the water tightness of watertight decks and trunks, tunnels and ventilators (SOLAS 74/88 reg.II-1/19) (SOLAS 74/06 reg.II-1/16-1);
 - (CI) 2.1.3.7 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 74/05 reg.II-1/35-1);

- (CI) 2.1.3.8 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 74/05 reg.II-1/35-1);
- (CI) 2.1.3.8.1 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 74/08 reg.II-2/20.6.1.5);
- (CI) 2.1.3.9 conducting an inclining test, when this is required (SOLAS 74/88 reg.II-1/22) (SOLAS 74/06 reg.II-1/5);
- (CI) 2.1.3.10 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) 2.1.3.11 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) 2.1.3.12 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) 2.1.3.13 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) 2.1.3.14 confirming that means are provided to ensure that the safe speed is not exceeded where there is the risk of machinery over speeding (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.15 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) 2.1.3.16 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) 2.1.3.17 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) 2.1.3.18 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) 2.1.3.19 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) 2.1.3.20 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) 2.1.3.21 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) 2.1.3.22 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) 2.1.3.23 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) 2.1.3.24 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) 2.1.3.25 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) 2.1.3.26 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) 2.1.3.27 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) 2.1.3.28 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) 2.1.3.29 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) 2.1.3.30 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) 2.1.3.31 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) 2.1.3.32 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) 2.1.3.33 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) 2.1.3.34 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) 2.1.3.35 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) 2.1.3.36 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) 2.1.3.37 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) 2.1.3.38 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (CI) 2.1.3.39 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) 2.1.3.40 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) 2.1.3.41 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);

- (CI) 2.1.3.42 when appropriate, confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-1/36 and SOLAS 74/12 reg.II-1/3-12.2); or confirming that the ship was constructed to reduce on board noise and to protect personnel from noise in accordance with the *Code on noise levels on board ships*, adopted by resolution MSC.337(91), as amended (SOLAS 74/12 reg. II-1/3-12);
- (CI) 2.1.3.43 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) 2.1.3.44 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) 2.1.3.45 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);
- (CI) 2.1.3.46 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) 2.1.3.47 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) 2.1.3.48 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) 2.1.3.49 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) 2.1.3.50 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) 2.1.3.51 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) 2.1.3.52 confirming that the starting arrangements of each emergency generating set are satisfactory (SOLAS 74/88 reg.II-1/44);
- (CI) 2.1.3.53 confirming that precautions have been provided against shock, fire and other hazards of electrical origin (SOLAS 74/88 reg.II-1/45);
- (CI) 2.1.3.54 confirming that the arrangements for periodically unattended machinery spaces are satisfactory (SOLAS 74/88 regs.II-1/46 to 53) and in particular:
- (CI) 2.1.3.55 examining, where applicable, the alternative design and arrangements for machinery or electrical installations, or fire safety, in accordance with the test and inspection requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs.II-1/55 and II-2/17);
- (CI) 2.1.3.55.1 checking the fire precautions and testing alarms, as appropriate;
- (CI) 2.1.3.55.2 checking the means for the protection against flooding;
- (CI) 2.1.3.55.3 checking the means to control the propulsion from the navigating bridge;

- (CI) 2.1.3.55.4 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) 2.1.3.55.5 checking that an alarm system is provided with random testing of functions;
- (CI) 2.1.3.55.6 checking that means are provided to automatically shut down machinery or boiler operations in the event of serious malfunction and testing the alarms;
- (CI) 2.1.3.55.7 ensuring that special requirements for the machinery, boiler and electrical installations, as appropriate, are provided;
- (CI) 2.1.3.56 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 74/00/12 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) 2.1.3.57 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) 2.1.3.58 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; FSS Code ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45) and in particular that:
 - (CI) 2.1.3.58.1 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) 2.1.3.58.2 below the lowest open deck the main means of escape is a stairway (the second being a trunk or a stairway);
 - (CI) 2.1.3.58.3 above the lowest open deck the means of escape are stairways or doors to an open deck or a combination of them;
 - (CI) 2.1.3.58.4 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) 2.1.3.59 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; FSS Code ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45);
- (CI) 2.1.3.60 examining the arrangements for gaseous fuel for domestic purposes (SOLAS 74/00 reg.II-2/4.3);

- (CI) 2.1.3.61 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) 2.1.3.62 confirming that installed materials do not contain asbestos (SOLAS 74/00/09 reg. II-1/3-5);
- (CI) 2.1.3.63 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) 2.1.3.64 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) 2.1.3.65 prior to the review of the coating technical file:
 - (CI) 2.1.3.65.1 checking that the Technical Data Sheet and Statement of Compliance or Type Approval Certificate comply with the Standard;
 - (CI) 2.1.3.65.2 checking that the coating identification on representative containers is consistent with the coating identified in the Technical Data Sheet;
 - (CI) 2.1.3.65.3 checking that the inspector is qualified in accordance with the qualification standards;
 - (CI) 2.1.3.65.4 checking that the inspector's reports of surface preparation and the coating's application indicate compliance with the manufacturer's Technical Data Sheet and Statement of Compliance or Type Approval Certificate; and
 - (CI) 2.1.3.65.5 monitoring the implementation of the coating inspection requirements.
- (CI) 2.1.3.66 reviewing the Coating Technical File (SOLAS 74/00/06/10 regs.II-1/3-2 and II-1/3-11; MSC.215(82) and MSC.288(87));
- (CI) 2.1.3.67 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, SOLAS 74/10 reg.II-1/3-10 and MSC.287(87));
- (CI) 2.1.3.68 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) 2.1.3.69 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) 2.1.3.70 confirming, for bulk carriers, that the loading instrument is on board and functioning (SOLAS 74/97/04 reg.XII/11);
- (CI) 2.1.3.71 confirming that ship's identification number is permanently marked (SOLAS 74/02 reg.XI-1/3);
- (CI) 2.1.3.72 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) 2.1.3.73 confirming, where applicable, that an appropriate portable atmosphere testing instrument or instruments is on board, and that suitable means are provided for the calibration of all such instruments; and checking appropriateness of the testing and calibration (SOLAS 74/14 reg. XI-1/7).

- (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 in accordance with the survey plan that oil tankers of 150 m in length and above, where appropriate, meet the applicable structural requirements of an organization recognized by the Administration, or national standards of the Administration, conforming to the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (SOLAS 74/10 reg. II-1/3-10);
- (CI) 2.1.4.3 confirming that a hull return system of distribution and earthed distribution system are not used (SOLAS 74/88 reg.II-1/45);
- (CI) 2.1.4.4 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 74/00/12 regs.II-2/1.6, 4.5.1, 4.5.2, 4.5.9, 9.2.4, 9.3 and 9.6.3) (SOLAS 74/88 regs.II-2/55 to 58);
- (CI) 2.1.4.5 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) 2.1.4.6 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) 2.1.4.7 confirming that access to bow is arranged in accordance with approved plans (SOLAS 74/00/04 reg.II-1/3-3);
- (CI) 2.1.4.8 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) 2.1.4.9 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) 2.1.4.10 confirming that all cargo oil tanks in crude oil tankers have either:
 - (CI) 2.1.4.10.1 been coated in accordance with MSC.288(87); or
 - (CI) 2.1.4.10.2 been protected by alternative means of corrosion protection or utilization of approved corrosion-resistant material (steel) in accordance with MSC.289(87) (SOLAS 74/10 reg. II-1/3-11).
- (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 except (CI) 2.1.4.2.

- (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 and damage control booklets have been provided (SOLAS 74/88 regs. II-1/22 and 23-1) (SOLAS 74/06 regs. II-1/5-1 and 19);
 - (CI) 2.1.6.2 checking, where applicable, that the noise survey report as required by the Code on noise levels on board ships is available on board (SOLAS 74/12 reg. II-1/3-12);
 - (CI) 2.1.6.3 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);
 - (CI) 2.1.6.4 confirming that the approved Cargo Securing Manual for ships carrying cargo units including containers is provided on board (SOLAS 74/98 reg. VI/5.6);
 - (CI) 2.1.6.5 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) 2.1.6.6 confirming that a set of as-built construction drawings is available on board (SOLAS 74/04 reg.II-1/3-7);
 - (CI) 2.1.6.7 confirming when appropriate that a coating technical file reviewed by the Administration has been provided on board (SOLAS 74/00/06/10 regs.II-1/3-2 and 3-11);
 - (CI) 2.1.6.8 checking the provision of a ship-specific emergency towing procedure (SOLAS 74/08 reg.II-1/3-4);
 - (CI) 2.1.6.9 confirming, for oil tankers and bulk carriers of 150 m in length and above, that the Ship Construction File has been provided (SOLAS 74/10 reg.II-1/3-10 and MSC.290(87));
 - (CI) 2.1.6.10 confirming, when appropriate, that a technical file verified by the Administration has been provided on board (SOLAS 74/10 reg.II-1/3 11 and MSC.289(87));
 - (CI) 2.1.6.11 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 74/00/06 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 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs.6.4 and 6.5);
- (CA) 2.2.1.13 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg.V/14) (SOLAS 74/88 reg.V/13(b));
- (CA) 2.2.1.14 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (CA) 2.2.1.15 checking, where applicable, that the noise survey report as required by the Code on noise levels on board ships is available on board (SOLAS 74/12 reg. II-1/3-12);
- (CA) 2.2.1.16 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 74/00/06 regs.II-1/55 and II-2/17);
- (CA) 2.2.1.17 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) 2.2.1.18 checking the provision of a ship-specific emergency towing procedure (SOLAS 74/08 reg.II-1/3-4);
- (CA) 2.2.1.19 confirming that the stability information, including damage stability, where applicable, and the damage control plans and damage control booklets are on board (SOLAS 74/88 regs.II-1/22, 23 and 25) (SOLAS 74/06 regs.II-1/5-1 and 19);
- (CA) 2.2.1.20 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) 2.2.1.21 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) 2.2.1.22 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) 2.2.1.23 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) 2.2.1.24 confirming, when appropriate, that a complete file of the enhanced survey reports and the Condition Evaluation Report are on board;
- (CA) 2.2.1.25 confirming that suitable Material Safety Data Sheets are available on board;
- (CA) 2.2.1.26 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) 2.2.1.27 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 74/94/97 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) 2.2.1.28 confirming that approved Cargo Securing Manual for ships carrying cargo units including containers is on board (SOLAS 74/98 reg. VI/5.6);
- (CA) 2.2.1.29 confirming that the loading booklet for carriage of cargoes in bulk is on board (SOLAS 74/00 reg.VI/7);
- (CA) 2.2.1.30 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) 2.2.1.31 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) 2.2.1.32 confirming when appropriate that the coating technical file is available on board and maintained (SOLAS 74/00/06/10 regs.II-1/3-2 and 3-11);
- (CA) 2.2.1.33 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) 2.2.1.34 confirming, where appropriate, for crude oil tankers, that a technical file verified by the Administration has been provided on board (SOLAS 74/10 reg. II-1/3-11 and MSC.289(87));
- (CA) 2.2.1.35 confirming, for oil tankers and bulk carriers of 150 m in length and above, that the Ship Construction File is available (SOLAS 74/10 reg. II-1/3-10 and MSC.287(87));
- (CA) 2.2.1.36 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 annex 4 reg.2), when applicable.
- (CA) 2.2.2 For the hull, 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, for bulk carriers of 150 m and above, where appropriate, the ship's structure in accordance with the Ship Construction File, taking into account identified areas that need special attention (SOLAS 74/10 reg. II-1/3-10 and MSC.287(87));
 - (CA) 2.2.2.4 examining the collision and the other watertight bulkheads as far as can be seen (SOLAS 74/88 regs.II-1/11 and 14) (SOLAS 74/06 regs.II-1/10, 11 and 12);

- (CA) 2.2.2.5 examining and testing (locally and remotely) all the watertight doors in watertight bulkheads (SOLAS 74/88 reg.II-1/18) (SOLAS 74/06 reg.II-1/16);
- (CA) 2.2.2.6 examining the arrangements for closing openings in the shell plating below the freeboard deck (SOLAS 74/06 reg.II-1/15);
- (CA) 2.2.2.7 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 74/05 reg.II-1/35-1);
- (CA) 2.2.2.8 confirming that the drainage from enclosed cargo spaces situated on the freeboard deck is satisfactory (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05 reg.II-1/35-1);
- (CA) 2.2.2.8.1 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 74/08 reg.II-2/20.6.1.5);
- (CA) 2.2.2.9 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));
- (CA) 2.2.2.10 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);
- (CA) 2.2.2.11 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);
- (CA) 2.2.2.12 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) 2.2.2.13 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) 2.2.2.14 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) 2.2.2.15 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) 2.2.2.16 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) 2.2.2.17 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) 2.2.2.18 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);
- (CA) 2.2.2.19 when appropriate, confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-1/36 and SOLAS 74/12 reg.II-1/3-12.2); or confirming that the ship was constructed to reduce on board noise and to protect personnel from noise in accordance with the *Code on noise levels on board ships*, adopted by resolution MSC.337(91), as amended (SOLAS 74/12 reg.II-1/3-12);
- (CA) 2.2.2.20 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) 2.2.2.21 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);
- (CA) 2.2.2.22 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) 2.2.2.23 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) 2.2.2.24 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) 2.2.2.25 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) 2.2.2.26 examining, where applicable, the alternative design and arrangements for machinery or electrical installations, or fire safety, in accordance with the test, inspection and maintenance requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs. II-1/55 and II-2/17);
- (CA) 2.2.2.27 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 74/00/12 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) 2.2.2.28 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) 2.2.2.29 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) 2.2.2.30 examining visually the condition of any expansion joints in seawater systems;
- (CA) 2.2.2.31 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) 2.2.2.32 confirming that no new materials containing asbestos were installed on board (SOLAS 74/00/04/09 reg. II-1/3-5);
- (CA) 2.2.2.33 examining the functionality of bilge well alarms to all cargo holds and conveyor tunnels (SOLAS 74/97/04 reg.XII/9);
- (CA) 2.2.2.34 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) 2.2.2.35 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) 2.2.2.36 confirming that ship's identification number is permanently marked (SOLAS 74/02 reg.XI-1/3);
- (CA) 2.2.2.37 confirming, where applicable, that an appropriate portable atmosphere testing instrument or instruments is on board, and that suitable means are provided for the calibration of all such instruments; and checking appropriateness of the testing and calibration (SOLAS 74/14 reg. XI-1/7);
- (CA) 2.2.2.38 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 74/06 reg.II-1/25);
- (CA) 2.2.2.39 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) 2.2.2.40 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) 2.2.2.41 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 hull‡, 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);
 - (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 confirming that the coating system in cargo oil tanks of crude oil tankers, when appropriate, is maintained and that in-service maintenance and repair activities are recorded in the coating technical file (SOLAS 74/10 reg. II-1/3-11 and MSC.288 (87));
- (CA) 2.2.3.17 examining the emergency lighting in all cargo pump rooms of tankers constructed after 1 July 2002 (SOLAS 74/00 reg.II-1/43);
- (CA) 2.2.3.18 examining, for oil tankers of 150 m in length and above, where appropriate, the ship's structure in accordance with the Ship Construction File, taking into account identified areas that need special attention (SOLAS reg. II-1/3-10 and MSC.287 (87));
- (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 except (CA) 2.2.3.16 and (CA) 2.2.3.18.
- (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 gas carriers and ships 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 except (CA) 2.2.3.16 and (CA) 2.2.3.18.
 - (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.
- (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.

**SURVEY GUIDELINES UNDER THE 1966 LL 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 weather tightness 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 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);
- (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 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs.6.4 and 6.5);
- (LA) 1.2.1.13 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg.V/13(b));
- (LA) 1.2.1.14 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (LA) 1.2.1.15 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;
- (LA) 1.2.1.16 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) 1.2.1.17 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.

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 on or 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 survey (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);
- (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 and 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 15 ppm bilge separator and 15 ppm 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 resolution (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;
- (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 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (OA) 1.2.1.11 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) 1.2.1.12 checking the validity of the International Ship Security Certificate;
- (OA) 1.2.1.13 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (OA) 1.2.1.14 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (OA) 1.2.1.15 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) 1.2.1.16 checking the certificates for the type approval of the oil filtering equipment (MARPOL 90/04 Annex I regs.14 and 15);
- (OA) 1.2.1.17 checking, when appropriate, that the Operating and Maintenance manuals for the 15 ppm bilge separator and 15ppm bilge alarm are available on board;
- (OA) 1.2.1.18 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 board;
- (OA) 1.2.1.19 checking whether the appropriate entries have been made in Part I of the Oil Record Book (MARPOL 90/04 Annex I reg.17);

- (OA) 1.2.1.20 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable;
- (OA) 1.2.1.21 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 Report 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 board‡;
 - (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).
- (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.
- (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 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.4.1.3).
- (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.4.1.3).
- (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 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 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (NA) 2.2.1.9 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (NA) 2.2.1.10 checking, when appropriate, the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (NA) 2.2.1.11 checking the validity of the International Ship Security Certificate;
- (NA) 2.2.1.12 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (NA) 2.2.1.13 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (NA) 2.2.1.14 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;
- (NA) 2.2.1.15 confirming that the Procedures and Arrangements Manual is on board (MARPOL 90/04 Annex II reg.14);
- (NA) 2.2.1.16 confirming that the Cargo Record Book is being correctly used (MARPOL 90/04 Annex II reg.15);
- (NA) 2.2.1.17 confirming that the shipboard marine pollution emergency plan is on board (MARPOL 90/04 Annex II reg.17);
- (NA) 2.2.1.18 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.
- (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, regs. 9.1.1 and 9.2.1);
- ((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. 9.1.2);
- (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, regs.9.1.3 and 9.2.2);
- (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, 9.1.1, 9.1.2 and 9.2.1);
 - (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, regs. 9.1.3 and 9.2.2);
 - (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).

SURVEY GUIDELINES UNDER 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 12 ch. 17) and any other special requirements (IBC Code 83/90/00/04 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, firefighting 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 firefighting 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.III, E 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 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs.6.4 and 6.5);
- (DA) 1.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (DA) 1.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (DA) 1.2.1.13 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;
- (DA) 1.2.1.14 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) 1.2.1.15 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) 1.2.1.16 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.III, part G);
- (DA) 1.2.1.17 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) 1.2.1.18 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) 1.2.1.19 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) 1.2.1.20 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) 1.2.1.21 confirming that the Shipboard marine pollution emergency plan is on board (MARPOL 04 Annex II, reg. 17);
- (DA) 1.2.1.22 confirming that the Cargo Record Book is on board and being correctly used (MARPOL 04 Annex II, reg. 15);
- (DA) 1.2.1.23 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.II, part G);

- (DA) 1.2.1.24 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, side scuttles 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 firefighting 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.IIIE);
- (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.IIIE);
- (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.IIIA);
- (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.IIIC);
- (DA) 1.2.2.20 examining the equipment for personnel protection (IBC Code 83/90/00, ch.14) (BCH Code 85/90/00 ch.IIIF) 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.IIIE 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.

- (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, firefighting 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 the designer's threshold values are exceeded, confirming that an investigation and additional testing, such as, thermo graphic or acoustic emission testing, has been carried out, (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 firefighting 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 including its self-contained compressed air breathing apparatus, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (IGC Code 83/90/00 ch.11) (SOLAS 74/00/12 regs.II-2/10.10; FSS Code ch.3);

- (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 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs.6.4 and 6.5);
- (GA) 2.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (GA) 2.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (GA) 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;
- (GA) 2.2.1.14 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) 2.2.1.15 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) 2.2.1.16 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) 2.2.1.17 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) 2.2.1.18 confirming that there are records of the performance of the cargo containment system (IGC Code 83/90/00 ch.4);
- (GA) 2.2.1.19 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, side scuttles 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, firefighting 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 firefighting 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 including its self-contained compressed air breathing apparatus, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (IGC Code 83/90/00 ch.11) (SOLAS 74/00/12 regs.II-2/10.10; FSS Code ch.3);
- (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 (IGC Code 83/90/00 ch.12);
- (GI) 2.1.2.27
- (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.