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MARITIME SAFETY COMMITTEE
83rd session
Agenda item 28

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**REPORT OF THE MARITIME SAFETY COMMITTEE
ON ITS EIGHTY-THIRD SESSION**

Attached are annexes 17, 32 and 35 to the report of the Maritime Safety Committee on its eighty-third session (MSC 83/28).

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(See document MSC 83/28/Add.2 for annexes 1 to 16 and document MSC 83/28/Add.3 for annexes 18 to 31, 33, 34 and 36 to 44)

ANNEX 17**DRAFT ASSEMBLY RESOLUTION****CRITERIA FOR THE PROVISION OF MOBILE SATELLITE
COMMUNICATION SYSTEMS IN THE GLOBAL MARITIME
DISTRESS AND SAFETY SYSTEM (GMDSS)**

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention of the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,

RECALLING ALSO that regulation IV/5 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended in 1988, requires each Contracting Government to undertake to make available, either individually or in co-operation with other Contracting Governments, as they may deem practical and necessary, appropriate shore-based facilities for space and terrestrial radiocommunication services having due regard to the recommendations of the Organization,

TAKING INTO ACCOUNT resolution 322 (Rev.Mob-87) of the World Administrative Radio Conference, 1987, relating to coast stations and coast earth stations assuming watchkeeping responsibilities on certain frequencies in connection with the implementation of distress and safety communications for the GMDSS,

TAKING INTO ACCOUNT ALSO resolution 3, Recommendation on the Early Introduction of the Global Maritime Distress and Safety System (GMDSS) Elements, adopted by the 1988 SOLAS Conference introducing the GMDSS,

NOTING resolution A.801(19) on the Provision of radio services for the GMDSS, as amended,

NOTING ALSO that future mobile satellite communication systems might have the potential to offer maritime distress and safety communications,

NOTING FURTHER the decision of the Maritime Safety Committee, at its eighty-second session, that the oversight of future satellite providers in the GMDSS should be undertaken by IMSO,

RECOGNIZING that mobile satellite communication systems for use in the GMDSS should fulfil performance criteria adopted by the Organization,

RECOGNIZING ALSO the need for the Organization to have in place criteria against which the capabilities and performance of mobile satellite communication systems for use in the GMDSS may be verified and evaluated;

1. ADOPTS the Criteria for the Provision of Mobile Satellite Communication Systems in the GMDSS set out in the Annex to the present resolution;
2. INVITES Governments, when permitting ships flying their countries' flag to carry maritime mobile satellite equipment for use in the GMDSS to require those ships to carry equipment which can utilize only those satellite systems that have been recognized by IMO and conform to the Performance Standards adopted by the Organization for use in the GMDSS, in accordance with the criteria set out in sections 2 to 5 of the Annex;
3. REQUESTS the Maritime Safety Committee to:
 - (a) apply the criteria set out in the Annex to the present resolution, via the procedure set out in section 2 of the Annex, for the evaluation of satellite systems notified by Governments for possible recognition for use in the GMDSS, within the context of the relevant regulations of SOLAS chapter IV; and
 - (b) ensure that mobile satellite communication systems recognized by the Organization for use in the GMDSS are compatible with all appropriate SOLAS requirements, and also that such recognition takes into account existing operational procedures and equipment performance standards;
4. REQUESTS the Maritime Safety Committee to keep this resolution under review and take appropriate action as necessary to secure the long-term integrity of the GMDSS; and
5. REVOKES resolution A.888(21) and MSC/Circ.1077.

ANNEX

CRITERIA FOR THE PROVISION OF MOBILE SATELLITE COMMUNICATION SYSTEMS IN THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)

1 DEFINITIONS

1.1 Mobile Satellite Communication System

The mobile satellite communication system (satellite system) means the space segment, the arrangements for controlling the space segment, the network control facilities controlling the access to the space segment, the earth stations and maritime mobile terminals operating in the system. The satellite system will include, or interface with, the following elements:

- .1 **Earth station** means any fixed satellite communication station acting as a gateway between the space segment and the terrestrial networks.
- .2 **Maritime mobile terminal** means any radiocommunication equipment working through a satellite communication system recognized for use in the GMDSS on board a ship.
- .3 **Space segment** means the satellites and the radiocommunication facilities they carry both for control and to provide GMDSS services and includes the forward and return communication links with the earth.
- .4 **Terrestrial networks** means the communication networks providing land-based subscriber communication facilities such as telephone, facsimile or data communications.

1.2 Mobile Satellite Communication Service means any service which operates through a satellite system and is recognized by the Organization for use in the GMDSS.

1.3 Coverage area

The Coverage Area of the satellite system is the geographical area within which the satellite system provides an availability in accordance with the criteria stated in section 3.5 in the ship-to-shore and shore-to-ship directions, and within which continuous alerting is available.

1.4 Availability

The availability of any mobile satellite communication system or service is defined as the percentage of time in which the system or service as a whole is available for access to and communications through the system, calculated according to the following formula:

$$A = \frac{(\text{scheduled operating time}) - (\text{downtime})}{(\text{scheduled operating time})} \times 100\%$$

where:

Scheduled operating time = 100% of the time period being reported on; and
Downtime = the total time during the period for which the recognized GMDSS system or service was not operationally available.

Note: Definitions and calculations of availabilities of communications circuits in the Maritime Mobile-Satellite Service are given in ITU-R M.828-1.

2 RECOGNITION OF MOBILE SATELLITE COMMUNICATION SYSTEMS FOR USE IN THE GMDSS

2.1 The evaluation and recognition of satellite systems participating, or wishing to participate in the GMDSS is undertaken by the Organization.

2.2 Application for Recognition

2.2.1 Satellite system providers wishing to participate in the GMDSS should apply to the Organization, through a Member State, for recognition as a radio system providing maritime distress and safety satellite communication capabilities for use in the GMDSS. Such applications should be notified to the Organization by Governments, either individually or in co-operation with other Governments. The application will be reviewed by the Maritime Safety Committee (MSC) in relation to its policy for the expansion of satellite services in the GMDSS. If the MSC decides that there are no objections in principle to the application, it will forward the application to the COMSAR Sub-Committee for evaluation. Recognition of the satellite provider to operate in the GMDSS will be undertaken by the Committee on the basis of the evaluation report.

2.2.2 The Governments concerned should make available to the Organization all necessary information to enable it to evaluate the satellite system in relation to the criteria indicated below.

In particular, Governments proposing such satellite systems for possible recognition and use in the GMDSS should provide evidence to show that:

- .1 the satellite system conforms with all the criteria specified in this Annex;
- .2 the charging policies and provisions of resolution A.707(17), as amended, on Charges for distress, urgency and safety messages through the Inmarsat system, are complied with;
- .3 there is a well-founded confidence that the Company concerned will remain viable for the foreseeable future and will remain in a position to deliver the required services over an extended period in keeping with the expectations of the Organization and the maritime industry on the continuity, durability and reliability of the service; and
- .4 the provider of the satellite system is ready to submit any recognized services to oversight by IMSO and sign the required Public Services Agreement (PSA) with that organization.

2.3 Verification and Evaluation

2.3.1 The COMSAR Sub-Committee should verify and—evaluate the information, seeking clarification as required direct from the service provider concerned, and decide whether the satellite system meets the criteria established by in this resolution. In reaching its decision, The COMSAR Sub-Committee should take into account the provisions of the relevant regulations of chapter IV of the 1974 SOLAS Convention, as amended and the criteria established by this resolution.

2.3.2 Recognition by the Organization should be recorded in an MSC Resolution entitled: **Statement of Recognition of Maritime Mobile Satellite Services provided by [Company Name]**, detailing the specific services provided by the Company which have been recognized by the Organization. A copy of the Statement of Recognition should be provided to IMSO.

2.3.3 If, following evaluation, the Organization is unable to recognize the Company or the service(s) offered for the GMDSS, the Organization should communicate this decision to the Company and IMSO in writing, setting out the reasons for the decision and any actions the Company may take to achieve recognition in the future.

2.4 The Public Services Agreement

2.4.1 Recognized services are subject to oversight by IMSO according to the rules and arrangements set out in the Public Services Agreement (PSA) concluded between the Service Provider and IMSO. No maritime satellite system should be used in the GMDSS unless it has first been recognized by the Organization in accordance with the above procedure and the Service Provider has signed a Public Services Agreement with IMSO.

2.4.2 IMSO should conduct its oversight of the recognized services on a continuing basis.

2.4.3 Responsibility for ensuring compliance with the standards established by this annex, other relevant mandatory international instruments and, to the extent necessary, those recommendations, resolutions and procedures of IMO and ITU which are of a recommendatory nature, insofar as they relate to the provision of GMDSS services, rests with IMSO under the terms of the Public Services Agreement.

2.5 Reports

IMSO should, at least once a year, make available to the Organization a report on the availability, performance and other relevant information concerning each recognized service during the period since the preceding report in accordance with section 3.5.2 of the criteria indicated below.

3 CRITERIA AND REQUIREMENTS FOR THE RECOGNIZED MOBILE SATELLITE COMMUNICATION SYSTEM

3.1 Functional requirements*

Satellite systems for maritime distress and safety communication services and forming part of the GMDSS radio systems specified in chapter IV, regulation 5 of the 1974 SOLAS Convention, as amended, should provide capabilities for at least the following maritime distress and safety communications:

- .1 ship-to-shore distress alerts/calls;
- .2 shore-to-ship distress relay alerts/calls;
- .3 ship-to-shore, shore-to-ship and ship-to-ship search and rescue co-ordinating communications;
- .4 ship-to-shore transmissions of Maritime Safety Information;
- .5 shore-to-ship broadcast of Maritime Safety Information; and
- .6 ship-to-shore, shore-to-ship, and ship-to-ship general communications.

3.2 Capacity

The satellite system should be designed for and should provide adequate channel and power capacity for processing effectively, and with an availability as stated in section 3.5, the maritime distress, urgency, safety and general communication traffic estimated to be required by the ships using the system.

3.3 Priority access

3.3.1 Satellite systems in the GMDSS should be capable of processing maritime distress, urgency, safety and routine communications in accordance with the message priority as defined by the ITU Radio Regulations. The order of processing these communications should be:

- .1 distress;
- .2 urgency;

* – Resolution A.801(19) “Provision of Radio Services for the Global Maritime Distress and Safety System (GMDSS)”, Annex 5 “Criteria for use when providing Inmarsat shore-based facilities for use in the GMDSS”;

– Resolution A.887(21) “Establishment, Updating and Retrieval of the Information Contained in the Registration Databases for the Global Maritime Distress and Safety System (GMDSS)”;

– Resolution A.694(17) “General requirements for shipborne radio equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for electronic navigational aids”;

– IMO International SafetyNET Manual;

– Resolution A.664(16) “Performance Standards for Enhanced Group Call Equipment”; and

– Appropriate IEC Standards and ITU Recommendations.

- .3 safety; and
- .4 routine (general communications).

3.3.2 In implementing these four levels of priority:

- .1 Distress alerts and distress calls (level 1) should be given priority treatment by providing immediate access to satellite channels. For store and forward systems, distress alerts and calls should be placed ahead of all other traffic.
- .2 Satellite systems used for providing other mobile satellite communications in addition to maritime communications should be capable of automatically recognizing requests for maritime communications from:
 - maritime mobile terminals; and
 - recognized entities of critical importance for safety at sea, such as MRCCs, hydrographic and meteorological offices, medical centres, etc., registered with the earth station.

The system should process such maritime communications in the ship-to-shore and shore-to-ship directions for levels 1 to 3 with priority over other communications.

- .3 In processing maritime distress, urgency, safety and routine communications, the satellite system and the earth station should be capable of:
 - .1 automatically recognizing the message or access priority for ship-to-shore communications;
 - .2 automatically recognizing the message or access priority for shore-to-ship communications, if any are provided, from, as a minimum, recognized entities of importance for safety at sea, registered by the earth station;
 - .3 preserving and transferring the priority;
 - .4 giving distress alerts and distress calls immediate access, if necessary by pre-emption of ongoing communications of routine priority;
 - .5 automatically recognizing maritime distress communications, and of routing automatically maritime distress alerts and distress calls directly to an associated MRCC, or responsible RCC, if this capability exists; and
 - .6 processing maritime urgency and safety communications in the ship-to-shore and shore-to-ship directions with the required priority, for example by allocating the first vacant channel, if no channel is immediately available.
- .4 Selection and use of message or access priority for urgency and safety transmissions by maritime mobile terminals should preferably be automatic and should be restricted to calls to special, recognized entities such as medical centres, maritime assistance, hydrographic and meteorological offices, etc., registered with

the earth station. The earth station should automatically route such calls directly to the relevant entity.

3.4 Coverage area

3.4.1 The definition of the Coverage Area is given in section 1.3.

3.4.2 The Coverage Area is to be delineated on a map and also described in relation to the sea areas defined in Chapter IV regulation 2 of the SOLAS Convention. Documentation on the coverage area of the satellite system, as defined in section 1.3, should be forwarded to the Organization.

3.4.3 Information on coverage areas for satellite systems forming part of the GMDSS should be published by the Organization in the GMDSS Master Plan.

3.5 Availability

3.5.1 The satellite system should provide continuous availability for maritime distress and safety communications in the ship-to-shore and shore-to-ship directions.

3.5.2 The availability of the space segment, provision of spare satellite capacity and the network control function (i.e. the network availability), as defined in section 1.4 above, should be monitored by IMSO, which should report on the recorded availability of the system to the Organization at least once every year.

3.5.3 Service providers should advise their associated RCCs and IMSO of planned outages of recognized services and advise ships of scheduled downtime and known interruptions in service and any other relevant network information. Service providers should also advise IMSO of unscheduled interruptions in any recognized services, as soon after the commencement of the interruption as possible, and when the recognized services have been restored.

3.5.4 Network availability. The complete mobile satellite communication network, including earth stations for the recognized services is expected to achieve at least 99.9% availability (equivalent to a total of 8.8 hours down time per year).

3.6 Restoration and spare satellites

3.6.1 Spare satellite capacity and arrangements prepared in advance should be provided for ensuring that, in the event of a partial or total satellite failure, the recognized maritime distress and safety communication services can be restored in the area concerned to their normal availability, within no more than one hour after the event of a satellite failure.

3.6.2 Full information on the means and arrangements prepared for restoration of the maritime distress and safety communication services in the event of a satellite failure should be notified to IMSO. IMSO and the Service Provider should conduct exercises from time to time to prove the efficiency and effectiveness of these planned arrangements.

3.7 Identification

The satellite system should be capable of automatically recognizing and preserving the identification of maritime mobile earth stations.

3.8 Information to be made available to SAR authorities

For all distress urgency and safety communications, the maritime mobile terminal identification number or Maritime Mobile Service Identity (MMSI) should be an integral part of the distress alert and provided to the RCC with the alert. When available, all additional registration, commissioning or other data relevant to the search and rescue or prosecution of false alert should be referenced to this number and made available to the proper SAR authority or RCC upon request.

3.9 Reception of distress alerts

The satellite system should allow for addressing a maritime distress alert to a specific MRCC chosen by the ship's operator and covering the area concerned, but should also provide for automatic routing of manually initiated maritime distress alerts. Means should be provided to allow the MRCC to easily identify the system and specific mobile station from which an alert or other priority message has been received, to enable the MRCC to establish shore-to-ship communications with the ship concerned.

3.10 Control of maritime mobile terminals

Access control arrangements for controlling and giving, or temporarily rejecting, access for maritime mobile terminals to the system should at all times allow maritime mobile terminals access for transmission of maritime distress alerts/calls and distress messages.

3.11 Test facilities

The system should provide facilities making it possible for maritime mobile terminals to test the distress capability of their stations without initiating a distress alert/call.

4 CRITERIA AND REQUIREMENTS FOR EARTH STATIONS

4.1 Functional requirements

4.1.1 Earth stations serving the GMDSS should:

- .1 be in continuous operation;
- .2 be connected to an associated RCC;
- .3 keep continuous watch on all appropriate satellite communication channels; and
- .4 be capable of transmission and reception of at least the maritime distress and safety communications services included in paragraph 3.1.

4.2 Priority

4.2.1 The earth station should be capable of automatically recognizing the priority of ship-to-shore and shore-to-ship communications, and should preserve the priority and process maritime mobile communications with the four levels of priority specified in paragraph 3.3.1.

4.2.2 Priority access should be given for distress alerts and calls in real time. In any case, distress alerts and calls should be given priority treatment by providing immediate access to satellite channels, and distress alerts and calls for store and forward systems should be placed ahead of all routine traffic. Any satellite system designed for use in the GMDSS should be able to recognize the four levels of priority and give appropriate access for communications in the ship-to-shore direction and in the shore-to-ship direction for distress, urgency and safety traffic originated by RCCs or other Search and Rescue Authorities.

4.2.3 Limitations in existing public switched networks on facilities for indication and use of priority access codes might necessitate special arrangements such as use of leased lines between, for example, MSI providers and the earth station, until such facilities become available in the public switched network.

4.3 Pre-emption

Satellite systems participating in the GMDSS should make arrangements to ensure that it will always be possible for an MRCC to obtain an immediate connection to a maritime mobile terminal and that the MRCC could use the systems for SAR alerting and communication without any delay. This may be achieved by a process of pre-emption or by other suitable means approved by IMSO.

4.4 Routeing of maritime distress alerts

4.4.1 The satellite system should have reliable communication links to one or more associated MRCCs. These links may be implemented directly between the MRCC and an earth station, or some other suitable point in the system's network. The arrangements between the system and the MRCC are subject to approval by the national administration.

4.4.2 The system's network should be capable of automatically recognizing maritime distress and safety communications and of routeing, as far as possible automatically, the maritime distress alerts/calls directly to the associated MRCC, via a highly reliable communication link. In cases where capability exists, the system may route alerts directly to the responsible RCC as defined in the IAMSAR Manual.

4.4.3 The earth station or other relevant part of the system's network should be provided with an aural and visual alarm to alert a designated responsible person in the event that automatic connection to the MRCC cannot be achieved within 60 seconds. In this case, all necessary action should be taken to immediately inform the MRCC of the details of the distress alert or call. Personnel should always be available to react to such an alarm so as to ensure that the distress alert or call can be forwarded to an MRCC within 5 minutes of the alarm being triggered. All messages with distress or urgency priority should sound an alarm at the earth station or other relevant part of the system's network, which should require manual cancellation.

4.4.4 The MRCC should be provided with reliable communication links to the system's network for efficient handling of shore-to-ship distress alert relays and distress traffic, preferably via dedicated communication links.

4.5 Identification

The system should be capable of automatically identifying ship earth stations. If another identification than the Maritime Mobile Service Identity (MMSI) is used in the system, a means should be provided 24h a day to easily identify the ship and to provide all the appropriate additional information, including the MMSI number where available, to the MRCC necessary for effecting the rescue.

4.6 Voice communication systems

4.6.1 The communication links for mobile-satellite voice communication systems should be connectable to the public switched network in accordance with relevant ITU-T Recommendations.

4.6.2 Satellite systems using the public switched network for routing maritime distress calls and distress traffic to and from MRCCs should, upon receipt of ship-to-shore or shore-to-ship distress alerts/calls or distress traffic, immediately attempt to establish the connection necessary for transfer of the distress alert or distress message.

4.7 Data communication systems

4.7.1 The communication links for mobile-satellite data communication systems should be connectable to the public data communication network in accordance with relevant ITU-T Recommendations. The system should provide capability for transfer of the identity of the calling subscriber to the called subscriber. Maritime distress alerts/calls and distress messages should include the ship identity and the earth station identity or other means of identifying the point of access to the satellite network.

4.7.2 Satellite systems using the public switched network for routing distress alerts/calls and distress traffic to and from MRCCs should, on receipt of ship-to-shore or shore-to-ship distress alerts/calls or distress traffic, immediately attempt to establish the connection necessary for transfer of the distress alert or distress message.

4.8 Store and forward systems

Satellite systems using store and forward communication systems should:

- .1 make an initial attempt to deliver a ship-to-shore or shore-to-ship message within 60 seconds for any maritime distress alert or distress traffic, and 10 minutes for all other maritime messages, from the time the receiving station receives the message. The message should include the ship identity and the earth station or system identity; and
- .2 generate notification of non-delivery immediately once the message is considered non-deliverable, for maritime distress alerts and distress messages not later than 4 minutes after the reception of the alert or message.

4.9 Facilities for broadcast of Maritime Safety Information

4.9.1 Satellite systems forming part of the GMDSS should technically be capable of offering facilities for broadcast of Maritime Safety Information (MSI) from MRCCs and authorized providers of MSI, such as Hydrographic Offices and Meteorological Offices, to ships at sea.

4.9.2 Such facilities for broadcast of MSI should provide for automatic, continuous and reliable reception on board ships and should, as a minimum, fulfil the requirements specified in sections 4.9.3 to 4.9.8 below.

4.9.3 The facilities should provide for recognition of and processing the four levels of priority specified in paragraph 3.3.1.

4.9.4 It should be possible to address the broadcast of MSI to all properly equipped ships within a specified area for at least the following types of areas:

- .1 the entire region covered by the satellite or system over which the transmission is made;
- .2 the NAVAREAs/METAREAs as established by the International Maritime Organization (IMO), the International Hydrographic Organization (IHO) and the World Meteorological Organization (WMO) respectively; and
- .3 a temporary area chosen and specified by the originator of the MSI message, including circular or rectangular user-specified areas appropriate for broadcast of distress alerts relays and search and rescue co-ordinating communications.

4.9.5 The facilities should provide for transmission of at least the types of Maritime Safety Information required by SOLAS, as follows:

- .1 search and rescue co-ordination information, including distress alerts relays;
- .2 navigational warnings; and
- .3 meteorological warnings and forecasts.

4.9.6 The facilities for broadcast of navigational and meteorological warnings should include possibilities for:

- .1 scheduling the broadcast at fixed times or transmitting messages as unscheduled broadcast transmissions; and
- .2 automatic repetition of the broadcast with time intervals and number of broadcast transmissions as specified by the MSI provider, or until cancelled by the MSI provider.

4.9.7 The facilities should provide for marking MSI messages with a unique identity, making it possible for the shipborne equipment for reception of these broadcasts to automatically ignore messages already received.

4.9.8 The broadcast service should in addition provide facilities for broadcasts similar to NAVTEX to coastal areas not covered by the International NAVTEX Service, in accordance with the identification system (i.e., the identification characters B1, B2, B3, B4) used in the International NAVTEX Service.

5 ADDITIONAL RECOMMENDED CAPABILITIES

5.1 Mobile satellite service providers are encouraged to:

- .1 route Automatic Location Identification (ALI) and Automatic Number Identification (ANI) in accordance with appropriate ITU-T Recommendations with distress calls originating from MSS terminals directly to responsible RCCs for voice and data calls;
- .2 automatically route information contained in registration databases in accordance with resolution A.887(21) in a recognizable format with the distress call to the responsible RCC, once means are established for doing so; and
- .3 be capable of retrieving maritime safety information in a timely manner from NAVAREA, METAREA, other relevant co-ordinators, and the International Ice Patrol Service, in a standard format and process established by those co-ordinators.

6 NOVEL TECHNIQUES

Satellite systems may be permitted to use novel techniques to provide any of the capabilities required by this resolution. Approval to use such novel techniques for a period of up to 12 months may be given provisionally by IMO in order to allow early introduction and proper evaluation of the technique. Final recognition of a novel technique may be given by the Organization only after receiving a report allowing full technical and operational evaluation of the technique.

7 LEGACY SERVICES

7.1 All satellite-based systems and services for the GMDSS which were already approved and in use* before the entry into force of this resolution are exempt from the requirements of paragraphs 2.1, 2.2 and 2.3. These systems are:

- .1 Inmarsat-A (due to be withdrawn 31 December 2009)
- .2 Inmarsat-B
- .3 Inmarsat-C
- .4 The International SafetyNET Service

7.2 The services defined in paragraph 7.1 are subject to requirements of paragraph 2.4.

* IMO has decided that Inmarsat Fleet 77 already meets the requirements of Assembly resolution A.888(21) and recommended that Fleet 77 terminals should be used in GMDSS ship installations and by Rescue Co-ordination Centres.

ANNEX 32**DRAFT ASSEMBLY RESOLUTION****REVISED CODE FOR THE IMPLEMENTATION OF MANDATORY
IMO INSTRUMENTS**

THE ASSEMBLY,

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

RECALLING ALSO that, by resolution A.973(24), it adopted the Code for the Implementation of Mandatory IMO Instruments,

RECOGNIZING the need for the above Code to be revised to take account of the amendments to the IMO instruments referred to the above, which have entered into force or become effective since the adoption of resolution A.973(24),

BEING AWARE of the request of the seventh session of the UN Commission on Sustainable Development (CSD 7) to develop measures to ensure that flag States give full and complete effect to the IMO and other relevant conventions to which they are party, so that the ships of all flag States meet international rules and standards,

RECOGNIZING that Parties to the relevant international conventions have, as part of the ratification process, accepted to fully meet their responsibilities and to discharge their obligations under the conventions and other instruments to which they are party,

REAFFIRMING that States have the primary responsibility to have in place an adequate and effective system to exercise control over ships entitled to fly their flag, and to ensure that they comply with relevant international rules and regulations in respect of maritime safety, security and protection of the marine environment,

REAFFIRMING ALSO that States, in their capacity as port and coastal States, have other obligations and responsibilities under applicable international law in respect of maritime safety, security and protection of the marine environment,

NOTING that, while States may realize certain benefits by becoming Parties to instruments aiming at promoting maritime safety, security and the prevention of pollution from ships, these benefits can only be fully realized when all Parties carry out their obligations as required by the instruments concerned,

NOTING ALSO that the ultimate effectiveness of any instrument depends, *inter alia*, upon all States:

- (a) becoming Parties to all instruments related to maritime safety, security and pollution prevention and control;

- (b) implementing and enforcing such instruments fully and effectively;
- (c) reporting to the Organization, as required,

NOTING FURTHER that, in the context of the Voluntary IMO Member State Audit Scheme, the enactment of appropriate legislation, its implementation and enforcement are the three key issues on which a Member State's performance can be measured,

BEARING IN MIND that the Voluntary IMO Member State Audit Scheme contains references to the Code for the implementation of mandatory IMO instruments, as appropriate; and that the Code, in addition to providing guidance for the implementation and enforcement of IMO instruments, forms the basis of the Audit Scheme, in particular concerning the identification of the auditable areas,

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee, at its eighty-third session and by the Marine Environment Protection Committee, at its fifty-sixth session,

1. ADOPTS the Revised Code for the Implementation of Mandatory IMO Instruments, set out in the Annex to the present resolution;
2. URGES Governments of flag States, port States and coastal States to implement the Revised Code on a national basis;
3. REQUESTS the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Revised Code under review and, in co-ordination with the Council, to propose amendments thereto to the Assembly;
4. REVOKES resolution A.973(24).

ANNEX

CODE FOR THE IMPLEMENTATION OF MANDATORY IMO INSTRUMENTS

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PART 1 – COMMON AREAS

Objective

1 The objective of this Code is to enhance global maritime safety and protection of the marine environment.

2 Different Administrations will view this Code according to their own circumstances and will be bound only for the implementation of those instruments referred to in paragraph 6 to which they are Contracting Governments or Parties. By virtue of geography and circumstance some Administrations may have a greater role as a flag State than as a port State or as a coastal State, whilst others may have a greater role as a coastal State or port State than as a flag State. Such imbalances do not diminish, in any way, their duties as a flag, port or coastal State.

Strategy

3 In order for a State to meet the objective of this Code, a strategy should be developed, covering the following issues:

- .1 implementation and enforcement of relevant international mandatory instruments;
- .2 adherence to international recommendations, as appropriate;
- .3 continuous review and verification of the effectiveness of the State in respect of meeting its international obligations; and
- .4 the achievement, maintenance and improvement of overall organizational performance and capability.

In implementing the aforementioned strategy, the guidance given in this Code should be adhered to.

General

4 Under the provisions of the United Nations Convention on the Law of the Sea, 1982 (UNCLOS) and of IMO conventions, Administrations are responsible for promulgating laws and regulations and for taking all other steps which may be necessary to give these instruments full and complete effect so as to ensure that, from the point of view of safety of life at sea and protection of the marine environment, a ship is fit for the service for which it is intended and is manned with competent maritime personnel.

5 In taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another. (UNCLOS, article 195.)

Scope

6 The mandatory IMO instruments addressed in this Code are:

- .1 the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS 1974);

- .2 the Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS PROT 1978);
- .3 the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS PROT 1988);
- .4 the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (MARPOL 73/78);
- .5 the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL PROT 1997);
- .6 the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW 1978);
- .7 the International Convention on Load Lines, 1966 (LL 66);
- .8 the Protocol of 1988 relating to the International Convention on Load Lines, 1966 (LL PROT 1988);
- .9 the International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE 1969); and
- .10 the Convention on the International Regulations for Preventing Collisions at Sea, 1972, as amended (COLREG 1972),

as well as all instruments made mandatory through these conventions and protocols. Non-exhaustive lists of obligations under the above mandatory instruments are found in annexes 1 to 4. A list of the relevant instruments is given in annex 5 and a summary of amendments to mandatory instruments reflected in the Code is given in annex 6.

Initial actions

7 When a new or amended IMO mandatory instrument enters into force for a State, the Government of that State must be in a position to implement and enforce its provisions through appropriate national legislation and to provide the necessary implementation and enforcement infrastructure. This means that the Government of the State must have:

- .1 the ability to promulgate laws which permit effective jurisdiction and control in administrative, technical and social matters over ships flying its flag and, in particular, provide the legal basis for general requirements for registries, the inspection of ships, safety and pollution-prevention laws applying to such ships and the making of associated regulations;
- .2 a legal basis for the enforcement of its national laws and regulations including the associated investigative and penal processes; and
- .3 the availability of sufficient personnel with maritime expertise to assist in the promulgation of the necessary national laws and to discharge all the responsibilities of the State, including reporting as required by the respective conventions.

8 A possible framework for national legislation to give effect to the provisions of relevant IMO instruments can be found in “Guidelines for Maritime Legislation”, a United Nations publication*.

Communication of information

9 The State should communicate its strategy, as referred to in paragraph 3, including information on its national legislation to all concerned.

Records

10 Records, as appropriate, should be established and maintained to provide evidence of conformity to requirements and of the effective operation of the State. Records should remain legible, readily identifiable and retrievable. A documented procedure should be established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.

Improvement

11 States should continually improve the adequacy of the measures which are taken to give effect to those conventions and protocols which they have accepted. Improvement should be made through rigorous and effective application and enforcement of national legislation, as appropriate, and monitoring of compliance.

12 The State should stimulate a culture which provides opportunities to people for improvement of performance in maritime safety and environmental protection activities.

13 Further, the State should take action to identify and eliminate the cause of any non-conformities in order to prevent recurrence, including:

- .1 review and analysis of non-conformities;
- .2 implementation of necessary corrective action; and
- .3 review of the corrective action taken.

14 The State should determine action to eliminate the causes of potential non-conformities in order to prevent their occurrence.

PART 2 – FLAG STATES

Implementation

- 15 In order to effectively discharge their responsibilities and obligations, flag States should:
- .1 implement policies through the issuance of national legislation and guidance which will assist in the implementation and enforcement of the requirements of all

* ST/ESCAP/1076.

safety and pollution prevention conventions and protocols to which they are party;
and

- .2 assign responsibilities within their Administration to update and revise any relevant policies adopted, as necessary.

16 Flag States should establish resources and processes capable of administering a safety and environmental protection programme which, as a minimum, should consist of the following:

- .1 administrative instructions to implement applicable international rules and regulations as well as develop and disseminate any interpretative national regulations that may be needed;
- .2 resources to ensure compliance with the requirements of the mandatory IMO instruments listed in paragraph 6 using an audit and inspection programme independent of any administrative bodies issuing the required certificates and relevant documentation and/or of any entity which has been delegated authority by the flag States to issue the required certificates and relevant documentation;
- .3 resources to ensure compliance with the requirements of the 1978 STCW Convention, as amended. This includes resources to ensure, *inter alia*, that:
 - .3.1 training, assessment of competence and certification of seafarers are in accordance with the provisions of the Convention;
 - .3.2 STCW certificates and endorsements accurately reflect the competencies of the seafarers, using the appropriate STCW terminology as well as terms which are identical to those used in any safe manning document issued to the ship;
 - .3.3 impartial investigation can be held of any reported failure, whether by act or omission, that may pose a direct threat to safety of life or property at sea or to the marine environment, by the holders of certificates or endorsements issued by that Party;
 - .3.4 certificates or endorsements issued by the flag State can be effectively withdrawn, suspended or cancelled when warranted, and when necessary to prevent fraud; and
 - .3.5 administrative arrangements, including those involving training, assessment and certification activities conducted under the purview of another State, are such that the flag State accepts its responsibility for ensuring the competence of masters, officers and other seafarers serving on ships entitled to fly its flag*;
- .4 resources to ensure the conduct of investigations into casualties and adequate and timely handling of cases of ships with identified deficiencies; and

* Regulations I/2, I/9, I/10 and I/11 of the 1978 STCW Convention, as amended.

- .5 the development, documentation and provision of guidance concerning those requirements that are to the satisfaction of the Administration, found in relevant mandatory IMO instruments.

17 Flag States shall ensure that ships entitled to fly their flag are sufficiently and efficiently manned, taking into account the Principles of Safe Manning adopted by IMO.

Delegation of authority

18 Flag States authorizing recognized organizations to act on their behalf in conducting the surveys, inspections, the issue of certificates and documents, the marking of ships and other statutory work required under the IMO conventions must regulate such authorization in accordance with SOLAS regulation XI-1/1 to:

- .1 determine that the recognized organization has adequate resources in terms of technical, managerial and research capabilities to accomplish the tasks being assigned, in accordance with the “Minimum Standards for Recognized Organizations Acting on Behalf of the Administration” set out in the relevant IMO resolution^{*};
- .2 have as its basis a formal written agreement between the Administration and the recognized organization which, as a minimum, includes the elements set out in the relevant IMO resolution^{**}, or equivalent legal arrangements, and which may be based on the model agreement for the authorization of recognized organizations acting on behalf of the Administration^{***};
- .3 issue specific instructions detailing actions to be followed in the event that a ship is found unfit to proceed to sea without danger to the ship or persons on board, or is found to present an unreasonable threat of harm to the marine environment;
- .4 provide the recognized organization with all appropriate instruments of national law and interpretations thereof giving effect to the provisions of the conventions or specify whether the Administration’s standards go beyond convention requirements in any respect; and
- .5 require that the recognized organization must maintain records which will provide the Administration with data to assist in interpretation of convention regulations.

19 Flag States nominating surveyors for the purpose of carrying out surveys and inspections on their behalf should regulate such nominations, as appropriate, in accordance with the guidance provided in paragraph 18, in particular subparagraphs .3 and .4.

* Appendix 1 of resolution A.739(18) “Guidelines for the authorization of organizations acting on behalf of the Administration”.

** Appendix 2 of resolution A.739(18) “Guidelines for the authorization of organizations acting on behalf of the Administration”.

*** (MSC/Circ.710-MEPC/Circ.307).

20 The flag State should establish or participate in an oversight programme with adequate resources for monitoring of, and communication with, its recognized organizations in order to ensure that its international obligations are fully met, by:

- .1 exercising its authority to conduct supplementary surveys to ensure that ships entitled to fly its flag in fact comply with mandatory IMO instruments;
- .2 conducting supplementary surveys as it deems necessary to ensure that ships entitled to fly its flag comply with national requirements which supplement the IMO convention requirements; and
- .3 providing staff who have a good knowledge of the rules and regulations of the flag State and the recognized organizations and who are available to carry out effective field oversight of the recognized organizations.

Enforcement

21 Flag States should take all necessary measures to secure observance of international rules and standards by ships entitled to fly their flag and by entities and persons under their jurisdiction so as to ensure compliance with their international obligations. Such measures should, *inter alia*, include:

- .1 prohibiting ships entitled to fly their flag from sailing until such ships can proceed to sea in compliance with the requirements of international rules and standards;
- .2 the periodic inspection of ships entitled to fly their flag to verify that the actual condition of the ship and its crew is in conformity with the certificates it carries;
- .3 the surveyor ensuring, during the periodic inspection referred to in subparagraph .2, that seafarers assigned to the ships are familiar with:
 - .3.1 their specific duties; and
 - .3.2 ship arrangements, installations, equipments and procedures;
- .4 ensuring that the ship's complement, as a whole, can effectively co-ordinate their activities in an emergency situation and in performing functions vital to safety or to the prevention or mitigation of pollution;
- .5 providing, in national laws and regulations, for penalties of adequate severity to discourage violation of international rules and standards by ships entitled to fly their flag;
- .6 instituting proceedings – after an investigation has been conducted – against ships entitled to fly their flag which have violated international rules and standards, irrespective of where the violation has occurred;
- .7 providing, in national laws and regulations, for penalties of adequate severity to discourage violations of international rules and standards by individuals issued with certificates or endorsements under their authority; and

- .8 instituting proceedings – after an investigation has been conducted – against individuals holding certificates or endorsements who have violated international rules and standards, irrespective of where the violation has occurred.

22 A flag State should consider developing and implementing a control and monitoring programme, as appropriate, in order to:

- .1 provide for prompt and thorough casualty investigations, with reporting to IMO as appropriate;
- .2 provide for the collection of statistical data, so that trend analyses can be conducted to identify problem areas; and
- .3 provide for a timely response to deficiencies and alleged pollution incidents reported by port or coastal States.

23 Furthermore, the flag State should:

- .1 ensure compliance with applicable IMO instruments through national legislation;
- .2 provide an appropriate number of qualified personnel to implement and enforce the national legislation referred to in subparagraph 15.1, including personnel for performing investigations and surveys;
- .3 provide a sufficient number of qualified flag State personnel to investigate incidents where ships entitled to fly its flag have been detained by port States;
- .4 provide a sufficient number of qualified flag State personnel to investigate incidents where the validity of a certificate or endorsement or competence of individuals holding certificates or endorsements issued under its authority are questioned by port States; and
- .5 ensure the training and oversight of the activities of flag State surveyors and investigators.

24 When a State is informed that a ship entitled to fly its flag has been detained by a port State, the flag State should oversee that appropriate corrective measures to bring the ship in question into immediate compliance with the applicable international conventions are taken.

25 A flag State, or a recognized organization acting on its behalf, should only issue or endorse an international certificate to a ship after it has determined that the ship meets all applicable requirements.

26 A flag State should only issue an international certificate of competency or endorsement to a person after it has determined that the person meets all applicable requirements.

Flag State surveyors

- 27 The flag State should define and document the responsibilities, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention.
- 28 Personnel responsible for, or performing, surveys, inspections and audits on ships and companies covered by the relevant IMO mandatory instruments should have as a minimum the following:
- .1 appropriate qualifications from a marine or nautical institution and relevant seagoing experience as a certificated ship officer holding or having held a valid STCW II/2 or III/2 certificate of competency and have maintained their technical knowledge of ships and their operation since gaining their certificate of competency; or
 - .2 a degree or equivalent from a tertiary institution within a relevant field of engineering or science recognized by the State.
- 29 Personnel qualified under 28.1 should have served for a period of not less than three years at sea as an officer in the deck or engine department.
- 30 Personnel qualified under 28.2 should have worked in a relevant capacity for at least three years.
- 31 In addition such personnel should have appropriate practical and theoretical knowledge of ships, their operation and the provisions of the relevant national and international instruments necessary to perform their duties as flag State surveyors obtained through documented training programmes.
- 32 Other personnel assisting in the performance of such work should have education, training and supervision commensurate with the tasks they are authorized to perform.
- 33 Previous relevant experience in the field of expertise should be considered an advantage; in case of no previous experience the Administration should provide appropriate field training.
- 34 Flag States may accredit surveyors through a formalized, detailed training programme that leads to the same standard of knowledge and ability as that required in paragraphs 28 to 31.
- 35 The flag State should have implemented a documented system for qualification of personnel and continuous updating of their knowledge as appropriate to the tasks they are authorized to undertake.
- 36 Depending on the function(s) to be performed the qualifications should encompass:
- .1 knowledge of applicable international and national rules and regulations for ships, their companies, their crew, their cargo and their operation;

- .2 knowledge of the procedures to be applied in survey, certification, control, investigative and oversight functions;
- .3 understanding of the goals and objectives of the international and national instruments dealing with maritime safety and protection of the marine environment, and of related programmes;
- .4 understanding of the processes both on board and ashore, internal as well as external;
- .5 possession of professional competency necessary to perform the given tasks effectively and efficiently;
- .6 full safety awareness in all circumstances, also for one's own safety; and
- .7 training or experience in the various tasks to be performed and, preferably, also in the functions to be assessed.

37 The flag State should issue an identification document for the surveyor to carry when performing his/her tasks.

Flag State investigations

38 Investigations should be carried out following a marine casualty or pollution incident. Casualty investigations should be conducted by suitably qualified investigators, competent in matters relating to the casualty. The flag State should be prepared to provide qualified investigators for this purpose, irrespective of the location of the casualty or incident.

39 The flag State should ensure that individual investigators have working knowledge and practical experience in those subject areas pertaining to their normal duties. Additionally, to assist individual investigators in performing duties outside their normal assignments, the flag State should ensure ready access to expertise in the following areas, as necessary:

- .1 navigation and the Collision Regulations;
- .2 flag State regulations on certificates of competency;
- .3 causes of marine pollution;
- .4 interviewing techniques;
- .5 evidence gathering; and
- .6 evaluation of the effects of the human element.

40 Any accidents involving personal injury necessitating absence from duty of three days or more and any deaths resulting from occupational accidents and casualties to ships of the flag State should be investigated, and the results of such investigations made public.

41 Ship casualties should be investigated and reported in accordance with the relevant IMO conventions, and the guidelines developed by IMO*. The report on the investigation should be forwarded to IMO together with the flag State's observations, in accordance with the guidelines referred to above.

Evaluation and review

42 The flag States should, on a periodic basis, evaluate their performance with respect to the implementation of administrative processes, procedures and resources necessary to meet their obligations as required by the conventions to which they are party.

43 Measures to evaluate the performance of the flag States may include, *inter alia*, port State control detention rates, flag State inspection results, casualty statistics, communication and information processes, annual loss statistics (excluding constructive total losses (CTLs)), and other performance indicators as may be appropriate, to determine whether staffing, resources and administrative procedures are adequate to meet their flag State obligations.

44 Measures may include a regular review of:

- .1 fleet loss and accident ratios to identify trends over selected time periods;
- .2 the number of verified cases of detained ships in relation to the size of the fleet;
- .3 the number of verified cases of incompetence or wrongdoing by individuals holding certificates or endorsements issued under its authority;
- .4 responses to port State deficiency reports or interventions;
- .5 investigations into very serious and serious casualties and lessons learned from them;
- .6 financial, technical and other resources committed;
- .7 results of inspections, surveys and controls of the ships in the fleet;
- .8 investigation of occupational accidents;
- .9 the number of incidents and violations under MARPOL 73/78, as amended; and
- .10 the number of suspensions or withdrawals of certificates, endorsements, approvals, etc.

* Refer to the Code for the Investigation of Marine Casualties and Incidents, adopted by the Organization by resolution A.849(20), and the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) as may be adopted by the Organization, as amended by resolution A.884(21).

PART 3 – COASTAL STATES

Implementation

45 Coastal States have certain rights and obligations under various mandatory IMO instruments. When exercising their rights under the instruments coastal States incur additional obligations.

46 In order to effectively meet their obligations, coastal States should:

- .1 implement policies and guidance which will assist in the implementation and enforcement of their obligations; and
- .2 assign responsibilities within their Administration to update and revise any relevant policies adopted, as necessary.

Enforcement

47 Coastal States should take all necessary measures to ensure their observance of international rules when exercising their rights and fulfilling their obligations.

48 A coastal State should consider developing and implementing a control and monitoring programme, as appropriate, in order to:

- .1 provide for the allocation of statistical data so that trend analyses can be conducted to identify problem areas;
- .2 provide for timely response to pollution incidents in its waters; and
- .3 co-operate with flag States and/or port States, as appropriate, in investigations of maritime casualties.

Evaluation and review

49 Coastal States should periodically evaluate their performance in respect of exercising their rights and meeting their obligations under mandatory IMO instruments.

PART 4 – PORT STATES

Implementation

50 Port States have certain rights and obligations under various mandatory IMO instruments. When exercising their rights under the instruments, port States incur additional obligations.

51 Port States can play an integral role in the achievement of maritime safety and environmental protection, including pollution prevention. The role and responsibilities of the port State with respect to maritime safety and environmental protection is derived from a combination of international treaties, conventions, national laws, as well as in some instances, bilateral and multilateral agreements.

Enforcement

52 Port States should take all necessary measures to ensure their observance of international rules when exercising their rights and fulfilling their obligations.

53 Several IMO conventions contain specific provisions that permit port State control.

54 In this respect, SOLAS, as modified by its 1988 Protocol, MARPOL and STCW also contain provisions that obligate port States to treat non-Parties to those conventions no more favourably than those that are Parties. This means that port States are obliged to impose the conditions of the conventions on Parties as well as on non-Parties.

55 When exercising their right to carry out port State control, a port State should establish processes to administer a port State control programme consistent with the relevant resolution adopted by the Organization*.

56 Port State control should be carried out only by authorized and qualified port State control officers in accordance with the relevant procedures adopted by the Organization*.

57 Port State control officers and persons assisting them should have no commercial interest, either in the port of inspection or the ships inspected, nor should the port State control officers be employed by or undertake work on behalf of recognized organizations or classification societies.

Evaluation and review

58 Port States should periodically evaluate their performance in respect of exercising their rights and meeting their obligations under mandatory IMO instruments.

* Refer to the Procedures for Port State Control (resolution A.787(19), as amended by resolution A.882(21)).

ANNEX 1

OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES

The following table contains a non-exhaustive list of obligations, including those obligations imposed when a right is exercised.

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
TONNAGE 69		
Art. 1	General obligation under the Convention	
Art. 5(2)	Force majeure	
Art. 8	Issue of a certificate by another Government	
Art. 10	Cancellation of certificate	
Art. 11	Acceptance of certificates	
Art. 15	Communication of information	
LL 66 and LL PROT 88*		
Art. 1	General obligation under the Convention	
	General obligations	LL PROT 88 only (Art. I)
Art. 7(2)	Force majeure	
Art. 17	Issue or endorsement of certificates by another Government	amended by LL PROT 88
Art. 20	Acceptance of certificates	
Art. 25	Special rules drawn up by agreement	
Art. 26	Communication of information	
	Communication of information	LL PROT 88 only (Art. III)

* When the obligation does not derive from the International Convention on Load Lines, 1966, but solely from the Protocol of 1988 relating thereto, this is indicated in the "Comments" column.

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
COLREG 72		
Art. I	General obligations	
STCW 78		
Art. I	General obligations under the Convention	
Art. IV	Communication of information	
Art. XI(1)	Promotion of technical co-operation	
Reg. I/3	Principles governing near-coastal waters	
Reg. I/5	National provisions	
Reg. I/6	Training and assessment	
Reg. I/7	Communication of information	
Reg. I/8	Quality standards	
Reg. I/9	Medical standards – Issue and registration of certificates	
SOLAS 74		
Art. I	General obligations under the Convention	in SOLAS PROT 78 and SOLAS PROT 88
Art. III	Communication of information	in SOLAS PROT 78 and SOLAS PROT 88
Art. V(c)	Carriage of persons in emergencies – reporting	
Art. VII	Special rules drawn up by agreement	
Art. XI	Denunciation	in SOLAS PROT 88 (Art. VII)
Reg. I/13	Issue or endorsement of certificates by another Government	in SOLAS PROT 88
Reg. I/17	Acceptance of certificates	also reg. I/19(b)

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
Reg. I/21(b)	Casualties – reporting	
Reg. IV/5	Provision of radiocommunication services and communication of information on such provision	
Reg. IV/5-1	Global maritime distress and safety system identities – ensuring suitable arrangements	
Reg. V/5	Meteorological services and warnings	
Reg. V/6	Ice Patrol Service	
Reg. V/10	Ships' routing	
Reg. V/11	Ship reporting systems	
Reg. V/12	Vessel traffic services	
Reg. V/13	Establishment and operation of aids to navigation	
Reg. V/31.2	Danger messages – bring to the knowledge of those concerned and communicate to other interested Governments	
Reg. V/33.1-1	Distress situations: obligations and procedures – co-ordination and co-operation	
Reg. VI/1.2	Appropriate information on safe carriage of cargoes	
Reg. VII/2.4	Issue of instructions on emergency response, etc.	
Reg. VII/7-1	Issue of instructions on emergency response, etc.	
MARPOL		
Art. 1	General obligations under the Convention	and Art. I of MARPOL PROT 78
Art. 4(2) and (4)	Violation	
Art. 5(1)	Certificates and special rules on inspection of ships – acceptance of certificates	
Art. 5(4)	Certificates and special rules on inspection of ships – no more favourable treatment	

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
Art. 6(1)	Detection of violations and enforcement of the Convention – co-operation	
Art. 6(3)	Detection of violations and enforcement of the Convention – furnishing evidence	
Art. 7	Undue delay to ships	
Art. 8	Reports on incidents involving harmful substances	
Art. 11	Communication of information	
Art. 12(2)	Casualties to ships – information to IMO	
Art. 17	Promotion of technical co-operation	
Annex I		
Reg. 8	Issue or endorsement of a certificate by another Government	
Reg. 15.7	Control of discharge of oil – investigations (Machinery spaces)	
Reg. 34.7	Control of discharge of oil – investigations (Cargo area)	
Annex II		
Reg. 6.3	Categorization and listing of noxious liquid substances and other substances – establish and agree on provisional assessment and notify IMO	
Reg. 9.3.1, 9.3.2, 9.3.3 and 9.3.4	Issue or endorsement of a certificate by another Government	
Reg. 13.4	Control of discharges of residues – exemption for a pre-wash	
Reg. 18.3	Reception facilities and cargo unloading terminal arrangements – agree and establish a date, notify IMO	
Annex III		
Reg. 1.3	Application – issue detailed requirements	

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
Annex IV		
Reg. 6	Issue or endorsement of a certificate by another Government	
Annex VI		
Reg. 7	Issue or endorsement of a certificate by another Government	
Reg. 11(1)	Detection of violations and enforcement – co-operation	
Reg. 11(2)	Detection of violations and enforcement – inspections	
Reg. 11(3)	Detection of violations and enforcement – information to flag State on violations detected	
Reg. 18(7)	Fuel oil quality	
ISM Code		
Para 14.3	Extension of validity of Interim SMC by another Contracting Government	
1994 HSC Code		
Para 1.8.2	Issue of certificates by another Government	
Para 14.2.1.12	Definition of “sea area A1”	as may be defined
Para 14.2.1.13	Definition of “sea area A2”	as may be defined
2000 HSC Code		
Para 1.8.2	Issue of certificates by another Government	
Para 14.2.1.13	Definition of “sea area A1”	as may be defined
Para 14.2.1.14	Definition of “sea area A2”	as may be defined

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
IMDG Code		
Section 1.1.3	Transport of radioactive material – role of Competent Authority	
Section 5.1.5	General provisions for class 7 – role of Competent Authority	
Chapter 6.2	Approval of pressure receptacles, aerosol dispensers and small receptacles containing gas – role of Competent Authority	
Chapter 6.4	Approval of package design and materials for class 7 – role of Competent Authority	
Section 6.5.1.6	Testing, certification and inspection – role of Competent Authority	
Chapter 6.6	Provisions for the construction and testing of large packagings – role of Competent Authority	
Chapter 6.7	Provisions for the design, construction, inspection and testing of portable tanks and multiple-element gas containers – role of Competent Authority	
Chapter 6.8	Provisions for road tank vehicles – role of Competent Authority	
Section 7.1.14	Stowage of goods of class 7 – role of Competent Authority	
Chapter 7.9	Exemptions, approvals and certificates – notification to IMO and recognition of approvals and certificates	
IBC Code		
Para 1.5.3	Maintenance of conditions after survey	
Para 1.5.5.1	Issue or endorsement of International Certificate of Fitness by another Government	
BCH Code		
Para 1.6.4.1	Issue or endorsement of certificate by another Government	

Obligations of Contracting Governments/Parties		
Source	Summary description	Comments
IGC Code		
Para 1.5.5.1	Issue or endorsement of certificate by another Government	
STCW Code, Part A		
Section A-I/6.1	Training and assessment	
Section A-I/6.3	Qualifications of instructors, supervisors and assessors	
Section A-I/6.7	Training and assessment within an institution	
Section A-I/7	Communication of information	
Section A-I/8	Quality standards	
Section A-I/12	Standards governing the use of simulators	
Section A.VIII/2.8	Watchkeeping at sea – direct attention of companies, masters, chief engineer officers and watchkeeping personnel to observe principles in Parts 3-1 and 3-2	

ANNEX 2

SPECIFIC FLAG STATE OBLIGATIONS

The following tables contain a non-exhaustive list of obligations, including those obligations imposed when a right is exercised.

Specific flag State obligations		
Source	Summary description	Comments
TONNAGE 69		
Art. 6	Determination of tonnages	
Art. 7(2)	Issue of certificates	
Annex I, reg. 1(3)	Novel types of craft – determination of tonnage and communication to IMO on method used	
Annex I, reg. 5(3)(b)	Change of net tonnage – Alterations or modifications deemed by the Administration to be of a major character	
Annex I, reg. 7	Measurement and calculation	
LL 66 and LL PROT 88*		
	Existing certificates	LL PROT 88 only (Art.II-2)
Art. 6(3)	Exemptions – reporting	
Art. 8(2)	Equivalents – reporting	
Art. 9(2)	Approvals for experimental purposes – reporting	
Art. 13	Surveys and marking	amended by LL PROT 88
Art. 14	Initial, renewal and annual survey	amended by LL PROT 88
Art. 16(3)	Issue of certificates	
Art. 19	Duration and validity of certificate	amended by LL PROT 88

* When the obligation does not derive from the International Convention on Load Lines, 1966, but solely from the Protocol of 1988 relating thereto, this is indicated in the “Comments” column.

Specific flag State obligations		
Source	Summary description	Comments
Art. 23	Casualties	
Annex I, reg. 1	Strength of hull	
	Strength and intact stability of ships	LL PROT 88 only (Annex I, reg. 1)
Annex I, reg. 2	Application – Assignment of freeboard	amended by LL PROT 88
	Authorization of recognized organizations	LL PROT 88 only (Annex I, reg. 2-1)
Annex I, reg. 8	Details of marking	
Annex I, reg. 10	Stability information – approval	amended by LL PROT 88
Annex I, reg. 12	Doors	amended by LL PROT 88
Annex I, reg. 14	Cargo and other hatchways	amended by LL PROT 88
Annex I, reg. 15	Hatchways closed by portable covers and secured weathertight by tarpaulins and battering devices	amended by LL PROT 88
Annex I, reg. 16(1)	Hatchway coamings – reduced heights	amended by LL PROT 88 (Annex I, reg. 14-1(2))
Annex I, reg. 16(4)	Securing arrangements	amended by LL PROT 88 (Annex I, reg. 16(6))
	Machinery space openings	LL PROT 88 only (Annex I, reg. 17(4))
Annex I, reg. 19	Ventilators	amended by LL PROT 88
Annex I, reg. 20	Air pipes	amended by LL PROT 88
	Cargo ports and other similar openings – applicable national standards	LL PROT 88 only (Annex I, reg. 21(5))
Annex I, reg. 22	Scuppers, inlets and discharges	amended by LL PROT 88
Annex I, reg. 25	Protection of the crew	amended by LL PROT 88
Annex I, reg. 27	Freeboards – Types of ships	amended by LL PROT 88
Annex I, reg. 28	Freeboard tables	amended by LL PROT 88

Specific flag State obligations		
Source	Summary description	Comments
Annex I, reg. 39	Minimum bow height and reserve buoyancy Lashing system	amended by LL PROT 88 LL PROT 88 only (Annex I, reg. 44(6))
COLREG 72		
Annex I, paragraph 14	Approval of construction of lights and shapes and the installation of lights on board	
Annex III, paragraph 3	Approval of construction, performance and installation of sound signal appliances on board	
STCW 78		
Art. VI	Certificates	
Art. VIII(3)	Dispensation – reporting	
Art. IX(2)	Equivalents – reporting	
Reg. I/2	Certificates and endorsements	
Reg. I/10	Recognition of certificates	
Reg. I/11(5)	Revalidation of certificates	
Reg. I/14	Responsibilities of companies	
Reg. IV/1.3	Application	
Reg. V/1.4	Mandatory minimum requirements for the training and qualification of masters, officers and ratings on tankers	
Reg. V/2.9	Mandatory minimum requirements for the training and qualification of masters, officers, ratings and other personnel on ro-ro passenger ships	
Reg. V/3.9	Mandatory minimum requirements for the training and qualification of masters, officers, ratings and other personnel on passenger ships other than ro-ro passenger ships	
Reg. VIII/1	Fitness for duty	

Specific flag State obligations		
Source	Summary description	Comments
Reg. VIII/2	Watchkeeping arrangements and principles to be observed	
SOLAS 74		
Reg. I/4(b)	Exemptions – reporting	
Reg. I/5(b)	Equivalents – reporting	
Reg. I/6	Inspection and survey	in SOLAS PROT 78 and SOLAS PROT 88
Reg. I/7	Survey of passenger ships	in SOLAS PROT 88
Reg. I/8	Survey of life-saving appliances and other equipment of cargo ships	in SOLAS PROT 88
Reg. I/9	Survey of radio installations of cargo ships	in SOLAS PROT 88
Reg. I/10	Survey of structure, machinery and equipment of cargo ships	in SOLAS PROT 88
Reg. I/12	Issue of certificates	in SOLAS PROT 88
	Issue and endorsement of certificates	in SOLAS PROT 88
Reg. I/14	Duration and validity of certificates	in SOLAS PROT 88
Reg. I/15	Forms of certificates and records of equipment	in SOLAS PROT 88
Reg. I/18	Qualification of certificates	
Reg. I/21	Casualties	
Reg. II-1/1.2	Compliance with earlier requirements	revised SOLAS chapter II-I adopted by MSC 80
Reg. II-1/3-2.2	Approval of corrosion prevention systems of seawater ballast tanks	
Reg. II-1/3-3.2	Approval of means of access to tanker bows	
Reg. II-1/3-4.22 and 3-4.3	Approval of emergency towing arrangements on tankers	

Specific flag State obligations		
Source	Summary description	Comments
Reg. II-1/3-6.2.3	Means of access to cargo and other spaces – satisfaction of the Administration as well as survey	
Reg. II-1/3-6.4.1	Approval of Ship Structure Access Manual	
Reg. II-1/9.1	Ballasting of passenger ships	
Reg. II-1/12.2 and 12-1.2	Approval of double bottoms	
Reg. II-1/14.1	Construction and initial testing of watertight bulkheads, etc., in passenger ships and cargo ships	
Reg. II-1/17.2 and .9.4	Openings in the shell plating of passenger ships below the margin line	
Reg. II-1/18.1.1	Construction and initial tests of watertight doors, sidescuttles, etc., in passenger ships and cargo ships	
Reg. II-1/19.1	Construction and initial tests of watertight decks, trunks, etc., in passenger ships and cargo ships	
Reg. II-1/25-1.3	Alternative arrangements – information to IMO	
Reg. II-1/26.2	Consideration of reliability of single essential propulsion components	
Reg. II-1/29.1, .2.1 and .6.3	Steering gear	
Reg. II-1/29.17.2	Adoption of regulations on rudder actuators for tankers, chemical tankers and gas carriers	
Reg. II-1/40.2	Electrical installations – ensuring uniformity	
Reg. II-1/42.1.3	Emergency source of electrical power in passenger ships	
Reg. II-1/43.1.3	Emergency source of electrical power in cargo ships	

Specific flag State obligations		
Source	Summary description	Comments
Reg. II-1/44.2	Approval of automatically starting emergency generating sets	
Reg. II-1/45.3.3, 45.5.3, 45.5.4, 45.9.3, 45.10, and 45.11	Precautions against shock, fire and other hazards of electrical origin	
Reg. II-1/46.2 and .3	Additional requirements for periodically unattended machinery space	
Reg. II-1/53.1	Special requirements for machinery, boiler and electrical installations	
Reg. II-2/1.2.1	Approval of fire protection arrangements in existing ships	
Reg. II-2/1.6.2.1.2 and 1.6.6	Application of requirements for tankers	
Reg. II-2/4.2.2.5.1	Approval of material for oil fuel pipes and their valves and fittings	
Reg. II-2/4.3	Approval of gaseous fuel systems used for domestic purposes	
Reg. II-2/4.5.1.4.4	Installation of cargo oil lines where cargo wing tanks are provided	
Reg. II-2/4.5.3.3	Requirements for safety devices in venting systems	
Reg. II-2/4.5.5.2.1	Requirements for inert gas system on chemical tankers	
Reg. II-2/4.5.6.3	Arrangements for inerting, purging or gas-freeing	see reg. II-2/4.5.5.3.1
Reg. II-2/5.2.2.5	Positioning of controls for any required fire-extinguishing system in passenger ships	see reg. II-2/8.3.3 and II-2/9.5.2.3
Reg. II-2/5.2.3.1	Special consideration to maintaining the fire integrity of periodically unattended machinery spaces	
Reg. II-2/7.3.2	Initial and periodical tests	
Reg. II-2/7.6	Protection of cargo spaces in passenger ships	

Specific flag State obligations		
Source	Summary description	Comments
Reg. II-2/8.3.4	Release of smoke from machinery spaces – passenger ships	
Reg. II-2/9.2.2.1.5.1	Approval of equivalent means of controlling and limiting a fire on ships designed for special purposes	
Reg. II-2/9.2.2.3.1	Fire integrity of bulkheads and decks in ships carrying more than 36 passengers	
Reg. II-2/9.2.2.4.4, 9.2.3.3.4 and 9.2.4.2.4	Fire integrity of bulkheads and decks	see reg. II-2/11.2
Reg. II-2/9.3.4	Approval of structural fire protection details, taking into account the risk of heat transmission	
Reg. II-2/9.5.2.4	Protection of openings in machinery space boundaries	
Reg. II-2/10.2.1.2.1.3	Provisions for fixed water fire-extinguishing arrangements for periodically unattended machinery spaces	
Reg. II-2/10.2.1.2.2.1	Ready availability of water supply	
Reg. II-2/10.2.3.1.1	Approval of non-perishable material for fire hoses	
Reg. II-2/10.2.3.2.1	Number and diameter of fire hoses	
Reg. II-2/10.3.2.1	Arrangement of fire extinguishers	
Reg. II-2/10.6.1.1	Type approval of automatic sprinkler, fire detection and fire alarm system	
Reg. II-2/10.6.3.2	Approval of fire-extinguishing arrangement for flammable liquid lockers	
Reg. II-2/10.7.1.2	Fixed gas fire-extinguishing systems for general cargo	
Reg. II-2/10.7.1.4	Issue of an Exemption Certificate	
Reg. II-2/13.3.1.4	Provision of means of escape from, or access to, radiotelegraph stations	

Specific flag State obligations		
Source	Summary description	Comments
Reg. II-2/13.3.2.5.1	Lighting or photoluminescent equipment to be evaluated, tested and applied in accordance with the FSS Code	
Reg. II-2/13.3.2.6.2	Normally locked doors that form part of an escape route – Quick release mechanisms	
Reg. II-2/13.5.1	Means of escape on passenger ships from special category and open ro-ro spaces to which any passengers carried can have access	
Reg. II-2/17.4.1 and 17.6	Evaluation and approval of the engineering analysis for alternative design and arrangements for fire safety	
Reg. II-2/17.5	Alternative design and arrangements for fire safety – communication of information to IMO	
Reg. II-2/19.4	Provision of document of compliance	
Reg. II-2/20.4.1	Provision and approval of fixed fire detection and fire alarm systems	
Reg. III/4	Evaluation, testing and approval of life-saving appliances and arrangements	
Reg. III/5	Production tests for life-saving appliances	
Reg. III/20.8.1.2	Approval of servicing stations	
Reg. III/20.8.5	Extension of liferaft service intervals – notification to IMO	
Reg. III/20.11.1 and 20.11.2	Periodic servicing of launching appliances and on-load release gear – thorough examination at the annual surveys	
Reg. III/26.2.4	Approval of liferafts on ro-ro passenger ships	
Reg. III/26.3.1 and 26.3.2	Approval of fast rescue boats and their launching appliances on ro-ro passenger ships	
Reg. III/28	Approval of helicopter landing and pick-up areas on ro-ro passenger ships	
Reg. IV/3.3	Exemptions – reporting to IMO	

Specific flag State obligations		
Source	Summary description	Comments
Reg. IV/14.1	Type approval of radio equipment	
Reg. IV/15.5	Ensure radio equipment is maintained	
Reg. IV/16.1	Radio personnel	
Reg. IV/17	Radio records	
Reg. V/3.3	Exemptions and equivalents – reporting to IMO	
Reg. V/14	Ships' manning	
Reg. V/16	Maintenance of equipment	
Reg. V/17	Electromagnetic compatibility	
Reg. V/18.1	Type approval of navigational systems and equipment and voyage data recorder	
Reg. V/18.5	Requirement for quality control system at manufacturers	
Reg. V/23.3.3.1.3	Pilot transfer arrangements	
Reg. V/23.6.1	Type approval of mechanical pilot hoists	
Reg. VI/3.1 and 3.2	Provision of equipment for oxygen analysis and gas detection and training of crews in their use	
Reg. VI/5.6	Approval of Cargo Securing Manual	
Reg. VI/6	Acceptability for shipment	
Reg. VI/9.2	Grain loading information	
Reg. VII/5	Approval of Cargo Securing Manual	
Reg. VII/15.2	Warships – INF cargo	
Reg. VIII/4	Approval of design, construction and standards of inspection and assembly of reactor installations	
Reg. VIII/6	Ensure radiation safety	
Reg. VIII/7(a)	Approval of safety assessment	

Specific flag State obligations		
Source	Summary description	Comments
Reg. VIII/8	Approval of operating manual	
Reg. VIII/10(f)	Issue of certificates	
Reg. IX/4.1	Issue of Document of Compliance (DOC)	
Reg. IX/4.3	Issue of Safety Management Certificate (SMC)	
Reg. IX/6.1	Periodical verification of the safety management system	
Reg. XI-1/1	Authorization of recognized organizations	
Reg. XI-1/2	Enhanced surveys	
Reg. XI-1/3.5.4	Approval of method of marking the ship identification number	
Reg. XI-1/5.3	Issue of Continuous Synopsis Record (CSR)	
Reg. XI-1/5.4.2	Amendments to CSR	
Reg. XI-1/5.4.3	Authorize and require changes to be made to CSR	
Reg. XI-1/5.8	Former flag State to send CSR to new flag State	
Reg. XI-1/5.9	Append previous CSR to new CSR	
Reg. XII/8.1	Endorsement of booklet required by reg. VI/7.2	
Reg. XII/9.2	Approval of bilge well high water level alarms	
Reg. XII/11.3	Loading instrument – approval of software for stability calculations	
MARPOL		
Art. 4(1) and (3)	Violation	
Art. 6(4)	Detection of violations and enforcement of the Convention – investigations	
Art. 12(1)	Casualties to ships – investigations	

Specific flag State obligations		
Source	Summary description	Comments
Annex I		
Reg. 2.6.2	Application – an oil tanker delivered on or before 1 June 1982 engaged in specific trades : agreement with Port States	
Reg. 3.3	Exemptions and waivers – reporting	
Reg. 4.3	Exceptions – discharge of substances containing oil for the purpose of combating pollution incidents	
Reg. 5.2	Equivalents – reporting	
Reg. 6	Surveys	
Reg. 7	Issue or endorsement of certificate	
Reg. 10.9.3	Transfer of flag	
Reg. 12A.12	Oil fuel tank protection – approval of the design and construction of ships	
Reg. 14.3	Oil filtering equipment – volume of oil bilge holding tank	
Reg. 14.4	Oil filtering equipment – ships of less than 400 gross tonnage	
Reg. 14.6 and 14.7	Oil filtering equipment – approval	
Reg. 15.6.2	Control of discharge of oil – ships of less than 400 gross tonnage: design approval	
Reg. 18.8.2, 18.8.3 and 18.8.4	Requirements for product carriers of 40,000 tonnes deadweight and above – arrangement and operation, approval of oil content meter, clean ballast tank operational manual	
Reg. 18.10.1.1	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements: approval	
Reg. 18.10.1.2	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements: agreement with Port States	

Specific flag State obligations		
Source	Summary description	Comments
Reg. 18.10.3	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements: communication to IMO	
Reg. 20.8.1	Double hull and double bottom requirements for oil tankers delivered before 6 July 1996 – communication to IMO	
Reg. 21.8.1	Prevention of oil pollution from oil tankers carrying heavy grade oil as cargo – communication to IMO	
Reg. 23.3.1	Accidental oil outflow performance – Calculation of mean oil outflow parameter	
Reg. 25.5	Hypothetical outflow of oil – information to IMO on accepted arrangements	
Reg. 27.3	Intact stability – approval of written procedures for liquid transfer operation	
Reg. 28.3.4	Subdivision and damage stability – sufficient stability during flooding	
Reg. 29.2.1	Slop tanks – approval	
Reg. 30.6.5.2	Pumping, piping and discharge arrangement – establishment of requirements	
Reg. 30.7	Pumping, piping and discharge arrangement – positive means of loading, transporting or discharging cargo	
Reg. 31.2 and 31.4	Oil discharge monitoring and control system – approval	
Reg. 32	Oil/water interface detector – approval	
Reg. 33.1	Crude oil washing requirement – compliance with requirement	
Reg. 33.2	Crude oil washing requirements – establishment of requirements	
Reg. 35.1	Crude oil washing operations – Operations and Equipment Manual	

Specific flag State obligations		
Source	Summary description	Comments
Reg. 36.9	Oil Record Book, Part II – development of oil record book for ships of less than 150 gross tonnage	
Reg. 37.1	Shipboard oil pollution emergency plan – approval	
Reg. 38.7.2	Reception facilities within special areas: Antarctic area – sufficient capacity	
Reg. 38.8	Reception facilities – Notification on alleged inadequacies of port reception facilities	
Reg. 39.2.2	Special requirements for fixed or floating platforms – approval of record form	
Annex II		
Reg. 3.1.3	Exceptions – approval of discharge of NLS for the purpose of combating pollution incidents	
Reg. 4.1.2	Exemptions – communication to IMO on relaxations	
Reg. 4.3.4	Exemptions – communication to IMO	
Reg. 4.4.5	Exemptions – communication to IMO	
Reg. 5.1	Equivalents – substitution of operational method	
Reg. 5.2	Equivalents – communication to IMO on alternatives	
Reg. 5.3.4 and 5.3.5	Equivalents – pumping and piping arrangement, approval of manual	
Reg. 6.3	Establishment of Tripartite Agreements – Notification to IMO	
Reg. 8	Surveys	
Reg. 9	Issue or endorsement of certificates	
Reg. 10.7	Expiry date of existing certificate	
Reg. 10.9.3	Transfer of flag	

Specific flag State obligations		
Source	Summary description	Comments
Reg. 11.2	Design, construction, equipment and operations – establishment of appropriate measures	
Reg. 12.5	Pumping, piping, unloading arrangements and slop tanks – approval of pumping performance test	
Reg. 13.3	Control of discharges of residues of NLS – approval of ventilation procedure	
Reg. 13.5	Control of discharges of residues of NLS – approval of tank washing procedure	
Reg. 14.1	Procedures and arrangements manual – approval	
Reg. 17.1	Shipboard marine pollution emergency plan for NLS – approval	
Reg. 18.5	Notification on alleged inadequacies of port reception facilities	
Annex IV		
Reg. 4	Surveys	
Reg. 5	Issue or endorsement of certificates	
Reg. 8(8)(2)	Transfer of flag	
Reg. 9	Approval of sewage systems	
Reg. 12(2)	Notification on alleged inadequacies of port reception facilities	
Annex V		
Reg. 5(5)(b)	Disposal of garbage within special areas – Antarctic area	
Reg. 7(2)	Notification on alleged inadequacies of port reception facilities	

Specific flag State obligations		
Source	Summary description	Comments
Annex VI		
Reg. 4(2)	Equivalents – communication to IMO	
Reg. 5	Surveys	
Reg. 6	Issue or endorsement of Certificate	
Reg. 9(9)(c)	Transfer of flag	
Reg. 11	Detection of violations and enforcement – investigations	
Reg. 13(1)(b)(ii)	Nitrogen oxides – alternative control measures	
Reg. 13(2)(b)	Nitrogen oxides – approval of documentation	
Reg. 13(3)(b)	Nitrogen oxides – approvals of exhaust gas cleaning systems or equivalent methods	
Reg. 14(4)(b) and (c)	Sulphur oxides – approvals of exhaust gas cleaning systems or alternatives	
Reg. 14(6)	Sulphur oxides – prescription of log-book	
Reg. 15(5)	Volatile organic compounds – approval of vapour collection systems	
Reg. 16(2)(a)	Shipboard incineration – approvals	
Reg. 17(2)	Notification on alleged inadequacies of port reception facilities	
Res. MSC.133(76), as amended	Technical provisions for means of access for inspections	
Para 3.7	Vertical or spiral ladders – acceptance	
Para 3.9.7	Other means of access – approval and acceptance	
Res. A.739(18)	Guidelines for the authorization of RO	
Para 2	Assignment of authority	
Para 3	Verification and monitoring	

Specific flag State obligations		
Source	Summary description	Comments
ISM Code		
Para 13.2	Issue of DOC	
Para 13.4	Annual verification (DOC)	
Para 13.5	Withdrawal of DOC	
Para 13.7	Issue of SMC	
Para 13.8	Intermediate verification (SMC)	
Para 13.9	Withdrawal of SMC	
Para 14.1	Issue of Interim DOC	
Para 14.2	Issue of Interim SMC	
Para 14.4	Verification required for issuance of an Interim SMC	
Para 15.1	Verification – acceptance of procedures	
Para 16	Forms of certificates	
INF Code		
Para 1.3.2	Issue of certificate	
Para 2.1	Damage stability (INF.1 ship)	
Para 3.1	Fire safety measures (INF.1 cargo)	
Para 4.1.3	Temperature control of cargo spaces (INF.1, 2 and 3 ship)	
Para 6.2	Safe stowage and securing – approval of principles	
Para 7.1	Electrical power supplies (INF.1 ship)	
Chapter 8	Radiological protection	
Chapter 9	Management and training	
Para 10.2	Shipboard emergency plan – approval	

Specific flag State obligations		
Source	Summary description	Comments
FSS Code		
Para 1/4	Use of toxic extinguishing media	
Para 4/2	Type approval of fire extinguishers	
Para 4/3.1.1.2	Determine equivalents of fire extinguishers	
Para 5/2.1.1.4	Containers for the storage of fire-extinguishing medium, etc.	
Para 5/2.1.2.3	Spare parts	
Para 5/2.3	Steam systems	
Para 5/2.5	Equivalent systems – approval	
Para 6/2.2.1.1 and 6/2.3.1.1	Foam concentrates – approval	
Para 7/2.1.1.1	Type approval of spraying nozzles	
Para 7/2.1.1.2	Number and arrangement of nozzles	
Para 7/2.2	Equivalent systems – approval	
Para 8/2.1.2	Equivalent sprinkler systems – approval	
Para 9/2.3.1.3	Heat detectors temperature limits	
Para 9/2.4.1.3	Limiting the number of enclosed spaces included in each section	
Para 10/2.1.2	Sequential scanning – overall response time	
Para 10/2.2.2	Extractor fans – overall response time	
Para 10/2.3.1.1	Means to isolate smoke accumulators	
Para 11/2.1	Low-location lighting – approval	
Para 14/2.2.1.2	Medium expansion ratio foam – application rate, etc.	
Para 15/2.1.2	Inert gas systems – approval	
Para 15/2.2.4.6	Adequate reserve of water	

Specific flag State obligations		
Source	Summary description	Comments
FTP Code		
Para 4.2.1	Recognition of testing laboratories	
Para 5.1.1	Approval procedures	
Para 5.2.2	Requirement of manufactures' quality control system audit	
Para 7.2	Use of equivalents and modern technology – information to IMO	
LSA Code		
Para 1.2.3	Determine the period of acceptability of LSAs subject to deterioration with age	
Para 4.4.1.2	Endorsement of lifeboat certificate of approval	
Para 4.5.4	Fixed two-way VHF radiotelephone apparatus – sheltered space	
Para 5.1.1.4	Rescue boats – combination of rigid and inflatable construction	
Para 5.1.3.8	Rubbing strips on inflated rescue boats	
Paras 6.1.2.9 and 6.1.2.10	Lowering speed of a fully equipped liferaft	
Para 6.2.1.2	MES – strength and construction of passage and platform	
Para 7.2.2.1	Broadcast of messages from other places on board	
1994 HSC Code		
Para 1.3.5	Verification	
Para 1.4.29	Determination of “maximum operational weight”	
Para 1.5.1.2	Specifying intervals for renewal surveys	
Para 1.5.4	Inspection and survey	

Specific flag State obligations		
Source	Summary description	Comments
Para 1.5.5	Recognized organizations and nominated surveyors	
Para 1.5.7	Completeness of survey and inspection	
Para 1.8.1	Issue / endorsement of certificate	
Para 1.9.2	Issue of permit to operate	
Para 1.11.2	Equivalents – reporting	
Para 1.12.1	Adequate information and guidance provided to the craft by the company	
Paras 1.13.2 and 1.13.3	Novel designs	
Para 1.14.1	Investigation reports to IMO	
Paras 2.7.4 and 2.14.2	Inclining and stability information – approval	
Para 3.4	Determination of service life	
Para 3.5	Design criteria	
Para 4.8.3	Documentation and verification of evacuation time	
Para 7.5.6.3	Safe outlets for exhaust fans in fuel tank spaces	
Para 7.7.2.3.2	Sensitivity limits of smoke detectors	
Para 7.7.6.1.5	Additional quantity of fire-extinguishing medium	
Para 7.7.6.1.12	Containers for the storage of fire-extinguishing medium, etc. – design	
Para 7.7.8.5	Maximum length of fire hoses	
Para 8.1	Approval and acceptance of LSA and arrangements	
Para 8.9.7.1.2	Approval of servicing stations	
Para 10.2.4.9	Flexible oil fuel pipes	
Para 10.3.7	Internal diameters of suction branches	

Specific flag State obligations		
Source	Summary description	Comments
Para 12.6.2	Specified voltages to earth	
Para 13.1.2	Navigational equipment and its installation	
Para 13.13	Approval of systems, equipment and performance standards	
Para 14.3.3	Exemptions – reporting	
Para 14.13.1	Type approval	
Para 14.14.5	Ensuring maintenance	
Para 14.15	Radio personnel	
Para 14.16	Radio records	
Para 15.3.1	Operating station – field of vision	
Para 15.7.2	Ensuring clear view through windows	
Para 17.8	Acceleration and deceleration	
Para 18.1.4	Determining maximum allowable distance from a base port or place of refuge	
Para 18.2	Craft documentation	
Paras 18.3.1 to 18.3.7	Training and qualifications	
Chapter 19	Inspection and maintenance requirements	
2000 HSC Code		
Para 1.3.7	Verification	
Para 1.4.36	Determination of “maximum operational weight”	
Para 1.5.1.2	Specifying intervals for renewal surveys	
Para 1.5.4	Inspection and survey	
Para 1.5.5	Recognized organizations and nominated surveyors	

Specific flag State obligations		
Source	Summary description	Comments
Para 1.5.7	Completeness of survey and inspection	
Para 1.7.3	Investigation to determine the need of survey	
Para 1.8.1	Issue/endorsement of certificate	
Para 1.9.2	Issue of permit to operate	
Para 1.11.2	Equivalents – reporting	
Para 1.12.1	Adequate information and guidance provided to the craft by the company	
Paras 1.13.2 and 1.13.3	Novel designs	
Para 1.14.1	Investigation reports to IMO	
Para 2.9.3	Verification of load line marks	
Paras 2.7.4 and 2.14.2	Inclining and stability information – approval	
Para 3.4	Determination of service life	
Para 3.5	Design criteria	
Para 4.2.2	Approval of public address system	
Para 4.8.3	Documentation and verification of evacuation time	
Para 7.3.2	Approval of structural fire protection details	
Para 7.5.6.3	Safe outlets for exhaust fans in fuel tank spaces	
Para 7.7.1.1.8	Limitation of number of enclosed spaces in each section	
Para 7.7.1.3.2	Sensitivity limits of smoke detectors	
Para 7.7.3.2.6	Additional quantity of fire-extinguishing medium	
Para 7.7.5.5	Maximum length of fire hoses	
Para 7.17.1	Reduced requirements for cargo craft of less than 500 GT	

Specific flag State obligations		
Source	Summary description	Comments
Para 7.17.3.3	Smoke detection systems – equivalent protection	
Para 7.17.4	Issue of Document of Compliance for craft carrying dangerous goods	
Para 8.1	Approval and acceptance of LSA and arrangements	
Para 8.9.7.1.2	Approval of servicing stations	
Para 8.9.8	Rotational deployment of marine evacuation systems	
Para 8.9.11	Extension of liferaft service intervals – notification	
Para 8.11	Helicopter pick-up areas – approval	
Para 10.2.4.9	Flexible oil fuel pipes	
Para 10.3.7	Internal diameters of suction branches	
Para 12.6.2	Specified voltages to earth	
Para 13.1.2	Ship borne navigational system and equipment and voyage data recorder and their installation	
Para 13.17	Type approval	
Para 14.3.3	Exemptions – reporting	
Para 14.4.2	GMDSS Identities – suitable arrangements	
Para 14.14.1	Type approval	
Para 14.15.5	Ensuring maintenance	
Para 14.16	Radio personnel	
Para 14.17	Radio records	
Para 15.3.1	Operating station – field of vision	
Para 15.7.2	Ensuring clear view through windows	
Para 17.8	Acceleration and deceleration	

Specific flag State obligations		
Source	Summary description	Comments
Para 18.1.4	Determining maximum allowable distance from a base port or place of refuge	
Para 18.2	Craft documentation	
Paras 18.3.1 to 18.3.7	Training and qualifications	
Chapter 19	Inspection and maintenance requirements	
Res. A.744(18), as amended	Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers	
Annex A – Bulk carriers		
Para 1.3.1	Repair of damage affecting the ship's structural, watertight or weathertight integrity	
Para 1.3.2	Corrosion or structural defects impairing the ship's fitness	
Para 3.3.4	Repairs of cargo hatch securing system	
Para 5.1.1	Survey programme	
Para 5.1.4	Maximum acceptable structural corrosion diminution levels	
Para 5.2.1.1	Provisions for proper and safe access	
Para 6.2.2	Survey report file	
Para 8.1.2	Evaluation of survey report	
Para 8.2.3	Condition evaluation report	
Annex 4B, para 1	Survey planning questionnaire	
Annex 5, para 3.1	Certification of thickness measurement	
Annex 9, para 2.3	Technical assessment in conjunction with the planning of enhanced surveys for bulk carriers	
Annex 13, para 3	Cargo hatch cover securing arrangements	

Specific flag State obligations		
Source	Summary description	Comments
Annex B – Oil tankers		
Part A – Double hull oil tankers		
Para 1.3.1	Repair of damage affecting the ship's structural, watertight or weathertight integrity	
Para 1.3.2	Corrosion or structural defects impairing the ship's fitness	
Para 2.4.3.2	Approval of corrosion prevention system	
Para 5.1.1	Survey programme	
Para 5.1.4	Maximum acceptable structural corrosion diminution levels	
Para 5.2.1.1	Provisions for proper and safe access	
Para 6.2.2	Survey report file	
Para 8.1.3	Evaluation of survey report	
Para 8.2.3	Condition evaluation report	
Annex 6B	Survey planning questionnaire	
Annex 7, para 3.1	Certification of thickness measurement	
Annex 9	Diminution limits of structural members	
Annex 11, para 2.3	Technical assessment in conjunction with the planning of enhanced surveys for oil tankers	
Annex 12	Criteria for longitudinal strength of hull girder for oil tankers	
Part B – Oil tankers other than double hull oil tankers		
Para 1.3.1	Repair of damage affecting the ship's structural, watertight or weathertight integrity	
Para 1.3.2	Corrosion or structural defects impairing the ship's fitness	

Specific flag State obligations		
Source	Summary description	Comments
Para 2.4.3.2	Approval of corrosion prevention system	
Para 5.1.1	Survey programme	
Para 5.1.4	Maximum acceptable structural corrosion diminution levels	
Para 5.2.1.1	Provisions for proper and safe access	
Para 6.2.2	Survey report file	
Para 8.1.3	Evaluation of survey report	
Para 8.2.3	Condition evaluation report	
Annex 6B	Survey planning questionnaire	
Annex 7, para 3.1	Certification of thickness measurement	
Annex 9	Diminution limits of structural members	
Annex 11, para 2.3	Technical assessment in conjunction with the planning of enhanced surveys for oil tankers	
Annex 12	Criteria for longitudinal strength of hull girder for oil tankers	
Res.4 of the 1997 SOLAS Conference		
Section 5	Dimension and selection of weld connections and materials	
Res. MSC.168(79)	Standards and criteria for side structures of bulk carriers of single-side skin construction	
Para 2.1	Applicable national standards	
Para 4.4	Applicable national standards	
Para 4.5	Applicable national standards	

Specific flag State obligations		
Source	Summary description	Comments
NO_x Technical Code		
Para 1.2.2	Full responsibility	
Chapter 2	Survey and certification	
Para 4.3.5	Review selection of parent engine	
Para 4.3.7	Adequate arrangements to ensure effective control of conformity of production	
Para 4.3.9.1	Agree and approve method of selection of parent engine	
Para 4.3.10	Certification of an engine family	
Paras 4.4.3 and 4.4.4	Engine group concept – approval	
Para 5.1.7	Auxiliary loss exceeding 5% – approval	
Para 5.3.2	Test fuels	
Para 5.4.2	Other systems or analysers – approval	
Para 5.10.1	File a certified true copy of test report	
Para 5.12.3.3	Other corrective formulae – approval	
Para 6.2.2.2	Adjustments on settings	
Para 6.2.3.2	Approval of documentation on board	
Para 6.2.3.4.2	Engine technical file – approval	
Para 6.3.1.3	Measurement of torque	
Para 6.3.4.2	Test fuels – approval	
Para 6.3.9	Test cycles – approval	
IBC Code		
Para 1.1.6	Prescribe preliminary suitable conditions for carriage of products not listed in chapter 17 or 18	
Para 1.4.2	Equivalentents – communication to IMO	

Specific flag State obligations		
Source	Summary description	Comments
Section 1.5	Survey and certification	
Para 2.2.2	Intact stability in all seagoing conditions	
Para 2.2.3	Free surface effect in undamaged compartments	
Para 2.4	Conditions of loading	
Para 2.8.1.6	Standard of damage	
Para 2.8.2	Standard of damage – alternative measures	
Para 2.9.2.3	Residual stability during intermediate stages of flooding	
Para 3.4.4	Access to spaces in the cargo area	
Para 3.7.3.5	Alternative arrangements for draining the piping	
Para 3.7.4	Relaxation for small ships	
Para 5.1.6.4	Dimensions for flanges not complying with the standards	
Para 5.2.2	Piping fabrication and joining details	
Para 7.1.1	Cargo temperature control - general	
Para 8.3.6	Devices to prevent the passage of flames into cargo tanks – requirements for the design, testing and locating	
Para 10.1.3	Electrical installations – appropriate steps for uniform implementation	
Para 10.1.4	Electric equipment, cables and wiring which do not conform to the standard	
Para 10.1.5	Electrical equipment in hazardous locations	
Para 11.2.2	Approval of an appropriate fire-extinguishing systems	
Para 11.3.2	Cargo area – additional arrangements	

Specific flag State obligations		
Source	Summary description	Comments
Para 11.3.5.3	Cargo area – minimum capacity of monitor	
Para 11.3.7	Minimum capacity of foam monitor for ships less than 4,000 tonnes deadweight	
Para 11.3.13	Alternative provisions to deck foam system	
Para 13.2.3	Exemption of toxic vapour detection equipment	
Para 14.1.2	Protective equipment	
Chapter 15	Approval of special requirements for specific chemicals	
Para 16.2.2	Cargo information – independent expert	
Para 16.5.1	Stowage of cargo samples – approval	
BCH Code		
Para 1.5.2	Equivalents – communication to IMO	
Section 1.6	Survey requirements	
Section 1.8	New products – establishing suitable conditions – notification to IMO	amended by Res. MEPC.144(54) (in force 1.8.07)
Para 2.2.4	Determination of the ability to survive flooding of the machinery space in Type 3 below 125m in length	
Para 2.2.5	Nature of alternative measures prescribed for small ships – duly noted on certificate	
Para 2.9.5	Access to void spaces, cargo tanks, etc. – approval of smaller dimensions in special circumstances	
Section 2.10	Cargo piping systems – setting standards	
Section 2.12	Cargo hoses – setting standards	
Para 2.14.2	High-velocity vent valves – type approval	

Specific flag State obligations			
Source	Summary description	Comments	
Para 2.15.1	Cargo heating and cooling systems	deleted after 1.8.07 by Res. MEPC.144(54)	
Section 2.17	Structural materials for tank construction, etc.		
Para 3.1.2(f)	Ventilation fans – approval		
Para 3.14.1	Alternative provisions for ships dedicated to the carriage of specific cargoes		
Para 3.14.2	Additional arrangements when foam is not effective or is incompatible		
Para 3.14.7	Foam monitors on ships of less than 4,000 tonnes deadweight – minimum capacity		
Para 3.15.2	Protection of cargo pump-rooms with fire-extinguishing systems – approval		
Para 3.15.5	Products evolving flammable vapours – fire-extinguishing systems – approval		
Chapter IV	Approval of special requirements for specific chemicals		amended by Res. MEPC.144(54) (in force 1.8.07)
Para 5A.3.1	Procedures and Arrangements Manual – approval		deleted after 1.8.07 by Res. MEPC.144(54)
IGC Code			
Para 1.1.6	Establishment of preliminary suitable conditions of carriage and notification		
Para 1.4.2	Equivalents – reporting		
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Para 2.2.2	Stability standard – acceptance		
Para 2.2.3	Method to calculate free surface effect – acceptance		
Para 2.3.3	Automatic non-return valves – acceptance		
Para 2.4	Damage survival capability investigation		

Specific flag State obligations		
Source	Summary description	Comments
Para 2.8.2	Alternative measures – approval	
Para 2.9.1.3	Residual stability during intermediate stages of flooding	
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Para 4.10.8.3	Tightness test	
Para 4.10.9	Type C independent tanks – inspection and NDT	
Para 4.10.10.3.7	Consideration of pneumatic testing	

Specific flag State obligations		
Source	Summary description	Comments
Para 4.11.1	Soaking temperature and holding times	
Para 4.11.2	Alternative to heat treatment – approval	
Paras 5.2.4.4 and 5.2.4.5	Flanges, valves and other fittings	
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Section 15.2	Maximum allowable loading limits – approval of list	
Para 16.5.2	Forced draught system for boilers	

Specific flag State obligations		
Source	Summary description	Comments
Para 16.5.6	Purging of combustion chambers of boilers	
Para 17.14.2.1	Non-acceptance of cargo discharge compressors on board	
Para 17.20.3.1	Valves, flanges, fittings and accessory equipment material – acceptance	
Para 17.20.13.2	Cargo handling plans – approval	
Para 17.20.14	Maximum allowable tank filling limits – approval of list	
STCW Code, Part A		
Section A-I/10.2	Withdrawal of endorsement – information	
Section A-III/4.4	No tables of competence – determine requirements	
Section A-VIII/1.5	Watch schedules to be posted	
Section A-VIII/2.84	Principles to be observed in keeping radio watch – direct attention of companies masters, radio watchkeeping personnel to comply with provisions in Part 3-3 to ensure that and adequate safety radio watch is maintained when the ship is at sea	
Res. MEPC.94(46), as amended	Condition assessment scheme	
Para 4.1	Issue instructions to the recognized organization (RO) for Condition Assessment Scheme (CAS) survey	
Para 4.3	Require oil tankers to remain out of service until Statement of Compliance is issued	
Para 7.1.3	CAS surveyors' requirements	
Para 11	Verification of CAS	
Para 12	Reassessment of ships that have failed	

Specific flag State obligations		
Source	Summary description	Comments
Para 13	Issue, suspension or withdrawal of Statement of Compliance	amended by Res. MEPC.155(55) (in force 1.3.08)
Para 14	Communication to IMO	

ANNEX 3

SPECIFIC COASTAL STATE OBLIGATIONS

The following tables contain a non-exhaustive list of obligations, including those obligations imposed when a right is exercised.

Specific coastal State obligations		
Source	Summary description	Comments
SOLAS 74		
Reg. V/4	Navigation warnings	
Reg. V/7.1	Search and rescue services – necessary arrangements	
Reg. V/7.2	Search and rescue services – information to IMO	
Reg. V/8	Life-saving signals	
Reg. V/9	Hydrographic services	
Reg. VII/6.1 and 7-4.1	Reporting of incidents involving dangerous goods	
MARPOL		
Annex I		
Reg. 4.3	Exceptions – discharge of substances containing oil for the purpose of combating pollution incidents	
Annex II		
Reg. 3.1.3	Exceptions – approval of discharge of NLS for the purpose of combating pollution incidents	
Reg. 13.2.3	Control of discharges of residues of NLS – agreement and communication to IMO	

ANNEX 4

SPECIFIC PORT STATE OBLIGATIONS

The following tables contain a non-exhaustive list of obligations, including those obligations imposed when a right is exercised.

Specific port State obligations		
Source	Summary description	Comments
TONNAGE 69		
Art. 12	Inspection	
LL 66 and LL PROT 88		
Art. 21	Control	amended by LL PROT 88
STCW 78		
Art. X	Control	
Reg. I/4	Control procedures	
SOLAS 74		
Reg. I/6(c)	Ships not allowed to sail	
Reg. I/19	Control	
Reg. VII/7-2.2	Documents relating to carriage of dangerous goods in solid form	
Reg. VIII/11	Special control for nuclear ships	
Reg. XI-1/4	Port State control on operational requirements	
MARPOL		
Art. 5(2)	Certificates and special rules on inspection of ships – port State control	
Art. 5(3)	Certificates and special rules on inspection of ships – denial of entry	

Specific port State obligations		
Source	Summary description	Comments
Art. 6(2)	Detection of violations and enforcement of the Convention – inspection	
Art. 6(5)	Detection of violations and enforcement of the Convention – inspection upon request – reporting	
Annex I		
Reg. 2.6.2	Application – an oil tanker delivered on or before 1 June 1982 engaged in specific trades : agreement with Flag States	
Reg. 2.6.3	Application – an oil tanker delivered on or before 1 June 1982, engaged in specific trades : approval by Port States	
Reg. 11	Port state control on operational requirements	
Reg. 17.7	Oil Record Book, Part I – inspection without undue delay	
Reg. 18.10.1.2	Segregated ballast tanks - oil tanker delivered on or before 1 June 1982 having special ballast arrangements : agreement with Flag States	
Reg. 20.8.2	Denial of entry – communication to IMO	
Reg. 21.8.2	Denial of entry – communication to IMO	
Reg. 36.8	Oil Record Book, Part II – inspection without undue delay	
Reg. 38.1, 38.2 and 38.3	Reception facilities outside special area	
Reg. 38.4 and 38.5	Reception facilities within special area	
Reg. 38.6	Reception facilities within special area – notification to IMO	
Reg. 38.7.1	Reception facilities – B. Reception facilities within special areas: Antarctic area	
Annex II		
Reg. 4.3.3	Exemptions – approval of adequacy of reception facilities	

Specific port State obligations		
Source	Summary description	Comments
Reg. 13.6.1	Control of discharges of residues – endorsement of cargo record book	
Reg. 15.6	Cargo record book – inspection without undue delay	
Reg. 16.1	Measures of control	
Reg. 16.6 and 16.7	Measures of control – exemption granted (endorsement of cargo record book)	
Reg. 16.9	Port state control on operational requirement	
Reg. 18.1 and 18.2	Reception facilities and cargo unloading terminal arrangements	
Reg. 18.4	Cargo unloading terminal arrangements	
Annex III		
Reg. 8	Port State control on operational requirements	
Annex IV		
Reg. 12(1)	Provision of reception facilities	
Reg. 13	Port states control on operational requirements	in force 1.8.07 by resolution MEPC.143(54)
Annex V		
Reg. 5(4)	Reception facilities within special areas	
Reg. 5(5)(a)	Provision of reception facilities – Antarctic area	
Reg. 7(1)	Reception facilities	
Reg. 8	Port State control on operational requirements	
Reg. 9(5)	Inspection of Garbage Record Book	
Annex VI		
Reg. 10	Port State control on operational requirements	
Reg. 14(4)(b)	Discharge criteria – Communication to IMO	

Specific port State obligations		
Source	Summary description	Comments
Reg. 15(2) and (3)	Volatile organic compounds – approvals and notification to IMO	
Reg. 17(1)	Reception facilities	
Reg. 18(5)	Fuel oil quality – inspection of bunker delivery notes	
Reg. 18(8)	Fuel oil quality – information and remedial action	
IBC Code		
Para 15.8.25.3	Certification verifying that the required piping separation	
1994 HSC Code		
Para 1.3.5	Acceptance of the Code	
Para 1.5.6	Provide assistance for surveyors	
Para 1.6	Design approval	
Para 1.9.3	Operational conditions – Permit to Operate	
Para 1.9.4	Port State control	
Para 18.3.8	Training and qualifications	
2000 HSC Code		
Para 1.3.7	Acceptance of the Code	
Para 1.5.6	Provide assistance for surveyors	
Para 1.6	Design approval	
Para 1.9.3	Operational conditions – Permit to Operate	
Para 1.9.4	Port State control	
Para 18.3.8	Training and qualifications	

Specific port State obligations		
Source	Summary description	Comments
Grain Code		
Para 3.4	Document of authorization	
Para 3.5	Document of authorization	
Para 5	Exemptions for certain voyages	
Para 7.2	Stability requirements	

ANNEX 5

INSTRUMENTS MADE MANDATORY UNDER IMO CONVENTIONS

SOLAS 74	Res. MSC.133(76), as amended	reg. II-1/3-6.2.1
	FSS Code	reg. II-2/3.22
	FTP Code	reg. II-2/3.23
	LSA Code	reg. III/3.10
	CSS Code, sub-chapter 1.9	reg. VI/2.1
	Grain Code	reg. VI/8.1
	IMDG Code	reg. VII/1.1
	IBC Code	reg. VII/8.1
	IGC Code	reg. VII/11.1
	INF Code	reg. VII/14.1
	ISM Code	reg. IX/1.1
	1994 HSC Code	reg. X/1.1
	2000 HSC Code	reg. X/1.2
	Res. A.739(18)	reg. XI-1/1
	Res. A.789(19)	reg. XI-1/1
	Res. A.744(18), as amended	reg. XI-1/2
Res. 4 of the 1997 SOLAS Conf.	reg. XII/1.5 (reg. XII/1.7 as of 1.7.06)	
Res. MSC.169(79)	reg. XII/7.2	
Res. MSC.168(79)	reg. XII/14	
MARPOL 73/78	Res. MEPC.94(46), as amended	Annex I, reg. 20.6
	IBC Code	Annex II, reg. 1.4
	BCH Code	Annex II, reg. 1.4
	NO _x Technical Code	Annex VI, reg. 2(5)
STCW 78	STCW Code, Part A	reg. I/1.2.3

ANNEX 6

**SUMMARY OF AMENDMENTS TO MANDATORY INSTRUMENTS
REFLECTED IN THE CODE**

The amendments of mandatory instruments reflected in the annexes 1 through 4 are summarized below to facilitate the amendment of corresponding tables in the future.

SOLAS 1974	up to and including the 2005 amendments (Res. MSC.194(80))
Res. MSC.133(76), as amended	up to and including the 2004 amendments (Res. MSC.158(78))
FSS Code	Res. MSC.98(73)
FTP Code	up to and including the 2004 amendments (Res. MSC.173(79))
LSA Code	Res. MSC.48(66)
CSS Code, sub-chapter 1.9	up to and including the 2002 amendments (MSC/Circ.1026)
GRAIN Code	up to and including the 1991 amendments (Res. MSC.23(59))
IMDG Code	up to and including the 2006 amendments (Res. MSC.205(81))
IBC Code	up to and including the 2004 amendments (Res. MSC.176(79) and MEPC.119(52))
IGC Code	up to and including the 2004 amendments (Res. MSC.177(79))
INF Code	up to and including the 2004 amendments (Res. MSC.178(79))
ISM Code	up to and including the 2004 amendments (Res. MSC.179(79))
1994 HSC Code	up to and including the 2004 amendments (Res. MSC.174(79))
2000 HSC Code	up to and including the 2004 amendments (Res. MSC.175(79))
Res. A.739(18)	
Res. A.789(19)	no amendments yet adopted
Res. A.744(18), amended	up to and including the 2005 amendments (Res. MSC.197(80))
Res. 4 of the 1997 SOLAS Conf.	no amendments yet adopted
Res. MSC.169(79)	no amendments yet adopted
Res. MSC.168(79)	no amendments yet adopted

SOLAS PROT 1978	up to and including the 1988 amendments (Resolution of the 1988 GMDSS-P Conference)
SOLAS PROT 1988	up to and including the 2004 amendments (Res. MSC.171(79))
MARPOL	up to and including the 2006 amendments (Res. MEPC.154(55))
Res. MEPC.94(46), as amended	up to and including the 2006 amendments (Res. MEPC.155(55))
IBC Code	up to and including the 2004 amendments (Res. MEPC.119(52) and MSC.176(79))
BCH Code	up to and including the 2006 amendments (Res. MEPC.144(54) and MSC.212(81))
NO _x Code	up to and including the 2005 amendments (Res. MEPC.132(53))
STCW 1978	up to and including the 1997 amendments (Res. MSC.66(68))
STCW Code Part A	up to and including the 2004 amendments (Res. MSC.180(79))
LL 1966	no amendments yet in force
LL PROT 1988	up to and including the 2004 amendments (Res. MSC.172(79))
TONNAGE 1969	no amendments yet adopted
COLREG 1972	up to and including the 2001 amendments (Res. A.910(22))

ANNEX 35**DRAFT ASSEMBLY RESOLUTION****REVISED SURVEY GUIDELINES UNDER THE HARMONIZED
SYSTEM OF SURVEY AND CERTIFICATION (HSSC)**

THE ASSEMBLY,

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

RECALLING ALSO:

- (a) the adoption by the International Conference on the Harmonized System of Survey and Certification, 1988, of the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974, and the Protocol of 1988 relating to the International Convention on Load Lines, 1966, which, *inter alia*, introduced the harmonized system of survey and certification under the International Convention for the Safety of Life at Sea, 1974 and the International Convention on Load Lines, 1966, respectively,
- (b) the adoption by resolution MEPC.39(29) of amendments to introduce the harmonized system of survey and certification into the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol relating thereto (MARPOL 73/78),
- (c) the adoption by resolution MEPC.132(53) of amendments to introduce the harmonized system of survey and certification to the MARPOL Annex VI, and
- (d) the adoption, by the resolutions given below, of amendments to introduce the harmonized system of survey and certification into:
 - (i) the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), (resolutions MEPC.40(29) and MSC.16(58)),
 - (ii) the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), (resolution MSC.17(58)),
 - (iii) the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code), (resolutions MEPC.41(29) and MSC.18(58)),

RECALLING FURTHER that, by resolution A.948(23), it adopted the Survey Guidelines under the Harmonized System of Survey and Certification, with a view to assisting Governments in the implementation of the requirements of the aforementioned instruments,

RECOGNIZING the need for the Revised Survey Guidelines to be further revised to take account of the amendments to the IMO instruments referred to above, which have entered into force or become effective since the adoption of resolution A.948(23),

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee at its eighty-third session and the Marine Environment Protection Committee at its fifty-sixth session,

1. ADOPTS the Revised Survey Guidelines under the Harmonized System of Survey and Certification set out in the Annex to the present resolution;
2. INVITES Governments carrying out surveys required by the relevant IMO instruments to follow the provisions of the annexed Revised Survey Guidelines;
3. REQUESTS the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Revised Survey Guidelines under review and amend them as necessary;
4. REVOKES resolution A.948(23).

* * *

ANNEX

**REVISED SURVEY GUIDELINES UNDER THE HARMONIZED
SYSTEM OF SURVEY AND CERTIFICATION**

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ANNEX 1

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SURVEY GUIDELINES UNDER THE MANDATORY CODES

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**Appendix 1 THE HARMONIZED SYSTEM OF SURVEY AND CERTIFICATION –
DIAGRAMMATIC ARRANGEMENT**

**Appendix 2 SUMMARY OF AMENDMENTS TO MANDATORY INSTRUMENTS
REFLECTED IN THE SURVEY GUIDELINES UNDER HSSC**

GENERAL

1 INTRODUCTION

- 1.1 These Guidelines supersede the guidelines adopted by resolution A.948(23) and take account of the Harmonized System of Survey and Certification in the following instruments:
- .1 International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974), as modified by its 1988 Protocol and as amended (SOLAS 74/88/00/04);
 - .2 International Convention on Load Lines, 1966 (LLC 1966) as amended and as modified by its 1988 Protocol (LL 66/88/04);
 - .3 International Convention for the Prevention of Pollution from Ships, 1973 and of the Protocol of 1978 relating thereto (MARPOL 73/78), as amended by resolution MEPC.132(53) (MARPOL 90/04);
 - .4 International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), as amended (IBC Code 83/90/00/04);
 - .5 International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), as amended, (IGC Code 83/90/00/04);
 - .6 Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code), as amended (BCH Code 85/90/00);
- 1.2 These Guidelines contain amendments to statutory instruments which have entered into force up to and including 1st August 2007:
- .1 Survey Guidelines under the 1974 SOLAS Convention, as modified by the 1988 Protocol relating thereto (annex 1);
 - .2 Survey Guidelines under the 1966 Load Line Convention, as modified by the 1988 Protocol relating thereto (annex 2);
 - .3 Survey Guidelines under the 1973/78 MARPOL Convention (annex 3); and
 - .4 Survey Guidelines under the mandatory Codes (annex 4).
- 1.3 The harmonized system, a diagrammatic arrangement of which is given in the appendix, provides for:
- .1 a one-year standard interval between surveys, based on initial, annual, intermediate, periodical, renewal surveys as appropriate, except for MARPOL Annex IV which is based on initial and renewal surveys;

- .2 a scheme for providing the necessary flexibility for the execution of each survey with the provision that:
 - the renewal survey may be completed within 3 months before the expiry date of the existing certificate with no loss of its period of validity;
 - a “time window” of 6 months – from 3 months before to 3 months after the anniversary date of the certificate for annual, intermediate and periodical surveys;
 - .3 a maximum period of validity of five years for all certificates for cargo ships;
 - .4 a maximum period of validity of 12 months for the Passenger Ship Safety Certificate;
 - .5 a system for the extension of certificates limited to three months enables a ship to complete its voyage, or one month for ships engaged on short voyages;
 - .6 when an extension has been granted, the period of validity of the new certificate starts from the expiry date of the existing certificate before its extension;
 - .7 a flexible system for inspection of the outside of the ship's bottom on the following conditions:
 - a minimum of two inspections during any five-year period of validity of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - the interval between any two such inspections shall not exceed 36 months;
 - .8 a provision for a Cargo Ship Safety Certificate under SOLAS 74/88/00/04, as an alternative to separate Cargo Ship Safety Construction, Cargo Ship Safety Equipment and Cargo Ship Safety Radio Certificates;
 - .9 a flexible system concerning the frequency and the period of validity of certificates, provided that the minimum pattern of surveys is maintained.
- 1.4 In implementing the harmonized system, the following principal changes have been made to the survey and certification requirements of SOLAS 74/88/00/04:
- .1 unscheduled inspections are no longer included and annual surveys are mandatory for cargo ships;
 - .2 intervals between the periodical surveys of equipment covered by the Cargo Ship Safety Equipment Certificate are alternatively at intervals of two and three years instead of two years;
 - .3 intermediate surveys are required for all ships under the Cargo Ship Safety Construction Certificate;

- .4 inspection of the outside of the ship's bottom are required for all cargo ships;
 - .5 intermediate surveys for the Cargo Ship Safety Construction Certificate are held within three months of either the second or third anniversary date;
 - .6 all cargo ship certificates may be issued for any period of validity up to and including five years;
 - .7 there is provision for a Cargo Ship Safety Certificate;
 - .8 the extension provisions have been reduced from five months to three months to enable a ship to complete its voyage and the extension for one month for a period of grace is limited to ships engaged on short voyages.
- 1.5 With regard to LLC 66/88/04, the principal changes to the requirements for survey and certification are the introduction of similar extension provisions (see 1.4.8) and linking of the period of validity of the new certificate to the expiry date of the previous certificate (see 1.3.6).
- 1.6 With regard to MARPOL 90/04 and the IBC Code 83/90/00/04, the IGC Code 83/90/00/04 and the BCH Code 85/90/00, the main changes are the linking of the period of validity of the new certificate to the expiry date of the previous certificate (see 1.3.6), the holding of the intermediate survey within three months of the second or third anniversary date and the introduction of the same extension provisions (see 1.4.8).

2 TYPES OF SURVEY

The types of surveys used in the harmonized system are as follows:

- (I) 2.1 *An initial survey* is a complete inspection before a ship is put into service of all the items relating to a particular certificate to ensure that the relevant requirements are complied with and that these items are satisfactory for the service for which the ship is intended.
- (P) 2.2 *A periodical survey* is an inspection of the items relating to the particular certificate to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.
- (R) 2.3 *A renewal survey* is the same as a periodical survey but also leads to the issue of a new certificate.
- (In) 2.4 *An intermediate survey* is an inspection of specified items relevant to the particular certificate to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.
- (A) 2.5 *An annual survey* is a general inspection of the items relating to the particular certificate to ensure that they have been maintained and remain satisfactory for the service for which the ship is intended.

- (B) 2.6 *An inspection of the outside of the ship's bottom* is an inspection of the underwater part of the ship and related items to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.
- (Ad) 2.7 *An additional survey* is an inspection, either general or partial according to the circumstances, to be made after a repair resulting from investigations or whenever any important repairs or renewals are made.

2.8 List of types of surveys in conventions and codes

(I) 2.8.1 *Initial surveys*

SOLAS 74/88/04, chapter I, regulation 7(a)(i)
chapter I, regulation 8(a)(i)
chapter I, regulation 9(a)(i)
chapter I, regulation 10(a)(i)
LLC 66/88/04, article 14(1)(a)
MARPOL 90/04, Annex I, regulation 6.1.1
MARPOL 90/04, Annex II, regulation 8.1.1
MARPOL Annex IV, regulation 4.1.1
MARPOL Annex VI, regulation 5(1)(a)
IBC Code 83/90/04, regulation 1.5.2.1.1
IGC Code 83/90/04, regulation 1.5.2.1.1
BCH Code 85/90/00, regulation 1.6.2.1.1

(P) 2.8.2 *Periodical surveys*

SOLAS 74/88/04, chapter I, regulation 8(a)(iii)
chapter I, regulation 9(a)(iii)

(R) 2.8.3 *Renewal surveys*

SOLAS 74/88/04, chapter I, regulation 7(a)(ii)
chapter I, regulation 8(a)(ii)
chapter I, regulation 9(a)(ii)
chapter I, regulation 10(a)(ii)
LLC 66/88/04 article 14(1)(b)
MARPOL 90/04, Annex I, regulation 6.1.2
MARPOL 90/04, Annex II, regulation 8.1.2
MARPOL Annex IV, regulation 4.1.2
MARPOL Annex VI, regulation 5(1)(b)
IBC Code 83/90/04, regulation 1.5.2.1.2
IGC Code 83/90/04, regulation 1.5.2.1.2
BCH Code 85/90/00, regulation 1.6.2.1.2

(In) 2.8.4 *Intermediate surveys*

SOLAS 74/88/04, chapter I, regulation 10(a)(iii)
MARPOL 90/04, Annex I, regulation 6.1.3
MARPOL 90/04, Annex II, regulation 8.1.3

MARPOL Annex VI, regulation 5(1)(c)
IBC Code 83/90/04, regulation 1.5.2.1.3
IGC Code 83/90/04, regulation 1.5.2.1.3
BCH Code 85/90/00, regulation 1.6.2.1.3

(A) 2.8.5 *Annual surveys*

SOLAS 74/88, chapter I, regulation 8(a)(iv), regulation 10(a)(iv)
LLC 66/88, article 14(1)(c)
MARPOL 90/04, Annex I, regulation 6.1.4
MARPOL 90/04, Annex II, regulation 8.1.4
MARPOL Annex VI, regulation 5(1)(d)
IBC Code 83/90, regulation 1.5.2.1.4
IGC Code 83/90, regulation 1.5.2.1.4
BCH Code 85/90, regulation 1.6.2.1.4

(B) 2.8.6 *Inspection of the outside of the ship's bottom*

SOLAS 74/88, chapter I, regulation 10(a)(v)

(Ad) 2.8.7 *Additional surveys*

SOLAS 74/88/04, chapter I, regulation 8(a)(iv)
chapter I, regulation 10(a)(iv)
LLC 66/88/04, article 14(1)(c)
MARPOL 90/04, Annex I, Regulation 6.1.5
MARPOL 90/04, Annex II, regulation 8.1.5
MARPOL Annex IV, regulation 4.1.3
MARPOL Annex VI, regulation 5(1)(d)
IBC Code 83/90/04, regulation 1.5.2.1.4
IGC Code 83/90/04, regulation 1.5.2.1.4
BCH Code 85/90/00, regulation 1.6.2.1.4

3 APPLICATION AND ARRANGEMENT OF THE GUIDELINES

- 3.1 The Guidelines provide a general framework upon which Administrations will be able to base their arrangements for carrying out surveys. It is recognized that survey provisions contained in the Guidelines are not necessarily applicable to all types and sizes of ship.
- 3.2 Whilst the Guidelines are intended to cover instruments listed in 1.1, they should be applied, as appropriate, to drilling rigs and other platforms covered by MARPOL 90/04, Annex I, regulation 39 and Annex VI, regulation 19.
- 3.3 A description of the various types of survey is given in section 4 and, as shown on the contents page, this is followed by the detailed requirements for the various surveys for each of the certificates.
- 3.4 When appropriate, the detailed requirements for the various surveys contain a section that is applicable to all cargo ships followed by a section that only applies to oil tankers.

- 3.5 Whilst the Convention or Code references are included, when possible, it should be noted that, in general, it has not been possible to indicate where there are differing requirements dependent upon the ship's year of build. Consequently, care should be taken in applying specific requirements, particularly where there have been amendments that are only applicable to ships built after a certain date.
- 3.6 Although part of the requirements for the Cargo Ship Safety Construction Certificate, a separate section is provided for inspection of the outside of the ship's bottom.
- 3.7 SOLAS 74/88/04, regulation I/12(v) provides for a Cargo Ship Safety Certificate to be issued as an alternative to the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Construction Certificate and the Cargo Ship Safety Radio Certificate. Consequently, the surveys for the issue and renewal of the Cargo Ship Safety Certificate should be in accordance with the certificates it replaces and, similarly, the surveys for the annual and intermediate should be the same as those required for the replaced certificates and the appropriate sections of the Cargo Ship Safety Certificate endorsed accordingly.
- 3.8 On the left hand side of each item to be surveyed may be found two letters in brackets, the first indicating the certificate to which the survey relates, as follows:
- (E) for the Cargo Ship Safety *Equipment* Certificate;
 - (C) for the Cargo Ship Safety *Construction* Certificate;
 - (R) for the Cargo Ship Safety *Radio* Certificate;
 - (L) for the International *Load Line* Certificate;
 - (O) for the International *Oil Pollution* Prevention Certificate;
 - (N) for the International Pollution Prevention Certificate for Carriage of *Noxious Liquid Substances* in Bulk;
 - (S) for the International Sewage Pollution Prevention Certificate;
 - (A) for the International Air Pollution Prevention Certificate;
 - (D) for the International Certificate of Fitness for the Carriage of *Dangerous Chemicals* in Bulk or the Certificate of Fitness for the Carriage of *Dangerous Chemicals* in Bulk;
 - (G) for the International Certificate of Fitness for the Carriage of Liquefied *Gases* in Bulk;
 - (P) for the *Passenger Ship* Safety Certificate;
- and the second for the type of survey, as follows:
- (I) for the *initial* survey;

- (A) for the *annual* survey;
- (In) for the *intermediate* survey;
- (P) for the *periodical* survey;
- (R) for the *renewal* survey;
- (B) for inspection of the outside of the *ship's bottom*;
- (Ad) for *additional* survey.

Consequently, for example, “(EI)”, “(OIn)” and “(PR)” indicate the initial survey for the Cargo Ship Safety Equipment Certificate, the intermediate survey for the International Oil Pollution Prevention Certificate and the renewal survey for the Passenger Ship Safety Certificate respectively.

3.9 The amplification of various terms and conditions are given in section 5.

4 DESCRIPTION OF THE VARIOUS TYPES OF SURVEYS

(I) 4.1 Initial surveys

4.1.1 Frequency

4.1.1.1 The initial survey, as required by the relevant regulations (see 2.8.1), should be held before the ship is put in service and the appropriate certificate is issued for the first time.

4.1.2 General

4.1.2.1 The initial survey before the ship is put into service should include a complete inspection, with tests when necessary, of the structure, machinery and equipment to ensure that the requirements relevant to the particular certificate are complied with and that the structure, machinery and equipment are fit for the service for which the ship is intended.

4.1.2.2 The initial survey should consist of:

- .1 an examination of the plans, diagrams, specifications, calculations and other technical documentation to verify that the structure, machinery and equipment comply with the requirements relevant to the particular certificate;
- .2 an inspection of the structure, machinery and equipment to ensure that the materials, scantlings, construction and arrangements, as appropriate, are in accordance with the approved plans, diagrams, specifications, calculations and other technical documentation and that the workmanship and installation are in all respects satisfactory;

- .3 a check that all the certificates, record books, operating manuals and other instructions and documentation specified in the requirements relevant to the particular certificate have been placed on board the ship.

4.1.3 *Examination of plans and designs*

4.1.3.1 An application for an initial survey should be accompanied by plans and designs referred to in sections 1, 2, 4 and 5 of Annex 1 and in Annexes 2, 3 and 4, as appropriate, together with:

- .1 the particulars of the ship;
- .2 any exemptions sought;
- .3 any special conditions.

(A) **4.2 Annual surveys**

4.2.1 *Frequency*

4.2.1.1 The annual survey, as required by the relevant regulations (see 2.8.5) and as shown diagrammatically in the appendix, should be held within three months before or after each anniversary date of the certificate.

4.2.2 *General*

4.2.2.1 An annual survey should enable the Administration to verify that the condition of the ship, its machinery and equipment is being maintained in accordance with the relevant requirements.

4.2.2.2 In general, the scope of the annual survey should be as follows:

- .1 it should consist of certificate examination, of a visual examination of a sufficient extent of the ship and its equipment and of certain tests to confirm that their condition is being properly maintained;
- .2 it should also include a visual examination to confirm that no unapproved modifications have been made to the ship and its equipment;
- .3 the content of each annual survey is given in the respective guidelines. The thoroughness and stringency of the survey should depend upon the condition of the ship and its equipment;
- .4 should any doubt arise as to the maintenance of the condition of the ship or its equipment, further examination and testing should be conducted as considered necessary.

4.2.3 Where an annual survey has not been carried out within the due dates, reference should be made to 5.6.

(In) **4.3 Intermediate surveys**

4.3.1 *Frequency*

4.3.1.1 The intermediate survey, as required by the relevant regulations (see 2.8.4) and as shown diagrammatically in the appendix, should be held within three months before or after the second anniversary date or within three months before or after the third anniversary date of the appropriate certificate and should take the place of one of the annual surveys.

4.3.2 *General*

4.3.2.1 The intermediate survey should be an inspection of items relevant to the particular certificate to ensure that they are in a satisfactory condition and are fit for the service for which the ship is intended.

4.3.2.2 When specifying items of hull and machinery for detailed examination, due account should be taken of any continuous survey schemes that may be applied by classification societies.

4.3.2.3 Where an intermediate survey has not been carried out within the due dates, reference should be made to 5.6.

(P) **4.4 Periodical surveys**

4.4.1 *Frequency*

4.4.1.1 The periodical survey, as required by the relevant regulations (see 2.8.2) and as shown diagrammatically in the appendix, should be held within three months before or after the second anniversary date or within three months before or after the third anniversary date in the case of the cargo ship safety equipment certificate and should take the place of one of the annual surveys and within three months before or after each anniversary date in the case of the cargo ship safety radio certificate.

4.4.2 *General*

4.4.2.1 The periodical survey should consist of an inspection, with tests when necessary, of the equipment to ensure that requirements relevant to the particular certificate are complied with and that they are in a satisfactory condition and are fit for the service for which the ship is intended.

4.4.2.2 The periodical survey should also consist of a check that all the certificates, record books, operating manuals and other instructions and documentation specified in the requirements relevant to the particular certificate are on board the ship.

4.4.2.3 Where a periodical survey has not been carried out within the due dates, reference should be made to 5.6.

(R) **4.5 Renewal surveys**

4.5.1 *Frequency*

4.5.1.1 The renewal survey, as required by the relevant regulations (see 2.8.3) and as shown diagrammatically in the appendix, should be held before the appropriate certificate is renewed.

4.5.2 *General*

4.5.2.1 The renewal survey should consist of an inspection, with tests when necessary, of the structure, machinery and equipment to ensure that the requirements relevant to the particular certificate are complied with and that they are in a satisfactory condition and are fit for the service for which the ship is intended.

4.5.2.2 The renewal survey should also consist of a check that all the certificates, record books, operating manuals and other instructions and documentation specified in the requirements relevant to the particular certificate are on board the ship.

(B) **4.6 Inspections of the outside of the ship's bottom of cargo ships**

4.6.1 *Frequency*

4.6.1.1 There should be a minimum of two inspections of the outside of the ship's bottom during any five year period (see 5.7), except where SOLAS 74/88/04, regulation I/14(e) or (f) is applicable. One such inspection should be carried out on or after the fourth annual survey in conjunction with the renewal of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate. Where the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate has been extended under SOLAS 74/88/04, regulation I/14(e) or (f), this five-year period may be extended to coincide with the validity of the certificate. In all cases the interval between any two such inspections should not exceed 36 months.

4.6.2 *General*

4.6.2.1 The inspection of the outside of the ship's bottom and the survey of related items (see 5.1) should include an inspection to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.

4.6.2.2 Inspections of the outside of the ship's bottom should normally be carried out with the ship in a dry dock. However, consideration may be given to alternate inspections being carried out with the ship afloat. Special consideration should be given before ships of 15 years of age and over other than bulk carriers and oil tankers are permitted to have such surveys afloat. Inspection of the outside of the ship's bottom of bulk carriers and oil tankers of 15 years of age and over should be carried out with the ship in dry dock. Inspections with the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably trained staff are available. For ships subject to enhanced survey, the

provisions of paragraphs 2.2.2* of Annexes A or B, as applicable, of resolution A.744(18), as amended, should apply.

- 4.6.3 Where an inspection of the ships bottom has not been carried out before the due dates reference should be made to 5.6.

(Ad) **4.7 Additional surveys**

- 4.7.1 Whenever an accident occurs to a ship or a defect is discovered which affects the safety or integrity of the ship or the efficiency or completeness of its equipment, the master or owner should make a report at the earliest opportunity to the Administration, the nominated surveyor or recognized organization responsible for issuing the relevant certificate. The Administration, the nominated surveyor or recognized organization responsible for issuing the relevant certificate should then initiate an investigation to determine whether a survey, as required by the regulations applicable to the particular certificate, is necessary. This additional survey, which may be general or partial according to the circumstances, should be such to ensure that the repairs and any renewals have been effectively made and that the ship and its equipment continue to be fit for the service for which the ship is intended.

4.8 Completion of surveys

- 4.8.1 If a survey shows that the condition of the ship or its equipment is unsatisfactory, the officer of the Administration, nominated surveyor or recognized organization should be guided by the requirements of SOLAS 74/88/04, regulation I/6(c), MARPOL 90/04, Annex I, regulation 3.4, MARPOL 90/04 Annex II, regulation 8.2.5, MARPOL Annex IV regulation 4.5, MARPOL Annex VI, regulation 6(1), the IBC Code 83/90/04, regulation 1.5.1.3, the IGC Code 83/90/04 regulation 1.5.1.3 and the BCH Code 85/90/00, regulation 1.6.1.3. These instruments require that corrective action be taken immediately and the Administration notified in due course. In cases where the corrective action has not been undertaken the relevant certificate should be withdrawn and the Administration notified immediately. If the ship is in the port of another Party, the appropriate authorities of the port State also notified immediately.
- 4.8.2 Although LLC 66/88/04 does not contain specific requirements, if a load line survey shows the condition of the ship or its equipment is unsatisfactory, the officer of the Administration, nominated surveyor or recognized organization should, nevertheless, be guided by 4.8.1.

* 2.2.2 For ships of 15 years of age and over, inspection of the outside of the ship's bottom should be carried out with the ship in dry dock. For ships of less than 15 years of age, alternate inspections of the ship's bottom not conducted in conjunction with the renewal survey may be carried out with the ship afloat. Inspections with the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably trained staff are available.

5 AMPLIFICATION OF TERMS AND CONDITIONS

5.1 Definition of related items

Reference: SOLAS 74/88/04, regulation I/10(b)(v).

Related items mean those items which may only be inspected when the ship is in dry dock or undergoing an in-water examination of the outside of its bottom. For oil tankers, chemical tankers and gas carriers, this may mean that the ship has to be specially prepared by, for example, being cleaned and gas-freed. Then the survey of items such as the internal examination of cargo tanks, as referred to in (CIn) 2.3.2 and (CIn) 2.3.3 in Annex 1 may be undertaken at the same time.

5.2 Extending to five years a certificate issued for less than five years

References: SOLAS regulation I/14(c), LLC 66/88/04, A.19(3), MARPOL 90/04, Annex I, regulation 10.3, MARPOL 90/04 Annex II, regulation 10.3, MARPOL Annex IV, regulation 8.1, MARPOL Annex VI, regulation 9(3), the IBC Code 83/90/04, regulation 1.5.6.3, the IGC Code 83/90/04, regulation 1.5.6.3, BCH Code 85/90/00, regulation 1.6.6.3.

Where a certificate has been issued for a period of less than five years, it is permissible under these regulations or article to extend the certificate so that its maximum period of validity is five years provided that the pattern of surveys for a certificate with a five-year period of validity is maintained (see appendix). This means that, for example, if a request is made to extend a two-year Cargo Ship Safety Equipment Certificate to five years, then a periodical and two further annual surveys, as detailed in SOLAS 74/88/04, regulation I/8, would be required. Also, for example, if it was intended to extend a four-year Cargo Ship Safety Construction Certificate to five years, then an additional annual survey would be required, as detailed in SOLAS 74/88/04, regulation I/10. Where a certificate has been so extended, it is still permissible to also extend the certificate under SOLAS 74/88/04 regulations I/14(e) and (f), LLC 66/88/04 articles 19(5) and (6), MARPOL 90/04, Annex I, regulation 10.5 and .6, MARPOL 90/04 Annex II regulations 10.5 and 6, MARPOL Annex IV regulation 8.5 and 8.6, MARPOL Annex VI regulation 9(4) and (5), the IBC Code 83/90/04 regulations 1.5.6.5 and 1.5.6.6, the IGC Code 83/90/04, regulations 1.5.6.5 and 1.5.6.6, the BCH Code 85/90/00 regulations 1.6.6.5 and 1.6.6.6, when no additional surveys would be required but, of course, the new certificate issued after the renewal survey would date from the five-year expiry of the existing certificate, in accordance with SOLAS 74/88/04 regulation I/14(b)(ii), LLC 66/88/04 article 19(2)(b), MARPOL 90/04, Annex I, regulation 10.2.2, MARPOL 90/04 Annex II regulation 10.2.2, MARPOL Annex VI, regulation 8.2.2, , MARPOL Annex VI regulation 9(2)(b), the IBC Code 83/90/04, regulation 1.5.6.6.2, the IGC Code 83/90/04, regulation 1.5.6.2.2 and the BCH Code 85/90/00, regulation 1.6.6.2.2.

5.3 Extending the period between inspections of the outside of the ship's bottom

Reference: SOLAS 74/88/04, regulation I/10(a)(v).

This permits the period of five years in which two inspections of the ship's bottom are to be carried out to be extended when the cargo ship safety construction Certificate is extended under regulation I/14(e) and (f). However, no extension should be permitted on the period of 36 months between any two such inspections. If the first ship's bottom inspection is carried

out between 24 and 27 months then the thirty-sixth-month limitation may prevent the certificate being extended by the periods permitted in regulation I/14(e) and (f).

5.4 Definition of short voyage

SOLAS 74/88/04, regulation I/14(f), LLC 66/88 /04, article 19(6), MARPOL 90/04, Annex I, regulation 10.6, MARPOL 90/04, Annex II regulation 10.6, MARPOL Annex IV regulation 8.6, MARPOL Annex VI regulation 9(6), the IBC Code 83/90/04, regulation 1.5.6.6, the IGC Code 83/90/04, regulation 1.5.6.6, the BCH Code 85/90/00, regulation 1.6.6.6.

For the purpose of these regulations or article, a “short voyage” means a voyage where neither the distance from the port in which the voyage begins and the final port of destination nor the return voyage exceeds 1,000 miles.

5.5 Application of “special circumstances”

References: SOLAS 74/88/04 regulation I/14(g), LLC 66/88, article 19(7), MARPOL 90/04, Annex I, Regulation 10.7, MARPOL 90/04 Annex II regulation 10.7, MARPOL Annex IV, regulation 8.7, MARPOL Annex VI, regulation 9(7), the IBC Code 83/90/04, regulation 1.5.6.7, the IGC Code 83/90/04, regulation 1.5.6.7 and the BCH Code 85/90/00, regulation 1.6.6.7.

The purpose of these regulations or article is to permit Administrations to waive the requirement that a certificate issued following a renewal survey that is completed after the expiry of the existing certificate should be dated from the expiry date of the existing certificate. The special circumstances when this could be permitted are where the ship has been laid-up or has been out of service for a considerable period because of a major repair or modification. Whilst the renewal survey would be as extensive as if the ship had continued in service, the Administration should consider whether additional surveys or examinations are required depending on how long the ship was out of service and the measures taken to protect the hull and machinery during this period. Where this regulation is invoked, it is reasonable to expect an examination of the outside of the ship's bottom to be held at the same time as the renewal survey when it would not be necessary to include any special requirements for cargo ships for the continued application of SOLAS 74/88, regulation I/10(a)(v).

5.6 Revalidation of certificates

References: SOLAS 74/88/04 regulation I/14(i)(i), LLC 66/88/04, article 19(9)(a), MARPOL 90/04, Annex I, Regulation 10.9.1, MARPOL 90/04 Annex II regulation 10.9.1, MARPOL Annex IV regulation 8.8, MARPOL Annex VI regulation 9(8)(a), the IBC Code 83/90/04 regulation 1.5.6.9.1, the IGC Code 83/90/04 regulation 1.5.6.9.1 and the BCH Code 85/90/00, regulation 1.6.6.9.1.

A certificate ceases to be valid if the periodical, intermediate or annual survey, as appropriate, or the inspection of the outside of the ship's bottom is not completed within the periods specified in the relevant regulation or article. The validity of the certificate should be restored by carrying out the appropriate survey which, in such circumstances, should consist of the requirements of the survey that was not carried out, but its thoroughness and stringency should have regard to the time this survey was allowed to lapse. The Administration concerned should then ascertain why the survey was allowed to lapse and to consider further action.

5.7 Meaning of “any five-year period”

Reference: SOLAS 74/88/04, regulation I/10(a)(v).

Any five-year period is the five-year period of validity of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate.

5.8 Surveys required after transfer of the ship to the flag of another State

The certificates cease to be valid when a ship transfers to the flag of another State and it is required that the Government of the State to which the ship transfers shall not issue new certificates until it is fully satisfied that the ship is being properly maintained and that there have been no unauthorized changes made to the structure, machinery and equipment. When so requested, the Government of the State whose flag the ship was formally entitled to fly is obliged to forward, as soon as possible, to the new Administration copies of certificates carried by the ship before the transfer and, if available, copies of the relevant survey reports and records, such as record of safety equipment and conditions of assignment for load line. When fully satisfied by an inspection that the ship is being properly maintained and that there have been no unauthorized changes, in order to maintain the harmonization of the surveys the new Administration may give due recognition to initial and subsequent surveys carried out by, or on behalf of, the former Administration and issue new certificates having the same expiry date as the certificates that ceased to be valid because of the change of flag.

5.9 Recommended conditions for extending the period of validity of a certificate

In SOLAS and other mandatory IMO instruments the following provision applies: “If a ship at the time when a certificate expires is not in a port in which it is to be surveyed, the Administration may extend the period of validity of a certificate but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases *where it appears proper and reasonable to do so*. No certificate shall be extended for a period longer than three months, and a ship to which an extension is granted shall not, on its arrival in the port in which is to be surveyed, be entitled by virtue of such extension to leave that port without having a new certificate.”

If a ship is in a port where the required survey cannot be completed, and where the Convention allows the Administration to extend the certificate when it is proper and reasonable to do so, the Administration should be guided by the following:

- .1 an additional survey, equivalent to at least the same scope of an annual survey required by the relevant certificate(s) should be carried out;
- .2 the renewal survey should be progressed to the maximum extent possible;
- .3 in cases where a dry docking is required, but cannot be carried out, an underwater inspection of the ship’s bottom should be carried out;
- .4 in cases where an underwater inspection is not possible (e.g. poor water visibility, draft restrictions, excessive current, refusal by the port Authority), an internal inspection of the ship’s bottom structure, to the maximum extent practicable, should be carried out;

- .5 the ship should be allowed to sail directly to a named final agreed cargo discharge port and then directly to a named agreed port to complete the survey and/or dry docking;
- .6 the extension period should be for the minimum amount of time needed to complete the survey and/or dry docking under the relevant certificate(s);
- .7 the condition of the ship found by the surveys indicated above should be considered in determining the duration, distance and operational restrictions, if any, of the voyage needed to complete the survey and/or dry docking; and
- .8 the extension period of the relevant statutory certificate(s) should not exceed the period of validity of the certificate which may be issued to document compliance with the structural, mechanical and electrical requirements of the recognized classification society.

5.10 Inspection of the outside of the passenger ships' bottom

As a minimum two of the inspections of the outside of the ship's bottom during any five-year period should be conducted in dry-dock. In all cases, the maximum interval between any two dry-dock bottom inspections should not exceed 36 months.

Note: The definition of "any five-year period" is the five-year period of validity of the International Load Line Certificate.

Inspections of the ship's bottom required for the renewal survey that are not conducted in dry-dock may be carried out with the ship afloat. The bottom inspection, regardless of method, should be carried out within the allowable time window for the Passenger Ship Safety Certificate renewal survey (i.e. within the 3 months time window before the expiry date of the certificate). Additionally, inspections of the outside of the ship's bottom conducted afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably qualified staff is available. Rudder bearing clearances specified in (PR) 5.2.2.1 need not be taken at the afloat inspections.

Special consideration should be given to ships of 15 years of age or over before being permitted to credit inspections afloat.

If a survey in dry-dock is not completed within the maximum intervals referred to above, the Passenger Ship Safety Certificate should cease to be valid until the survey in dry-dock is completed.

5.11 Survey of radio installations

The survey of the radio installation, including those used in life-saving appliances, should always be carried out by a qualified radio surveyor who has necessary knowledge of the requirements of the 1974 SOLAS Convention, the International Telecommunication Union's Radio Regulations and the associate performance standards for radio equipment. The radio survey should be carried out using suitable test equipment capable of performing all the relevant measurements required by these guidelines. On the satisfactory completion of the survey, the radio surveyor should forward a report of the survey, which should also state the organization he presents, to the

authorities responsible for the issue of the ship's Cargo Ship Safety Radio Certificate or Passenger Ship Safety Certificate.

5.12 Survey of the automatic identification system (AIS)

The survey of the automatic identification system should always be carried out by a qualified radio surveyor who has necessary knowledge of the requirements of the 1974 SOLAS Convention, the International Telecommunication Union's Radio Regulations and the associated performance standards for radio equipment. The survey of the automatic identification system should be carried out using suitable test equipment capable of performing all the relevant measurements required by these guidelines.

ANNEX 1

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

- (E) 1 **GUIDELINES FOR SURVEYS FOR THE CARGO SHIP SAFETY EQUIPMENT CERTIFICATE**
- (EI) 1.1 **Initial surveys** – see part “General” section 4.1.
- (EI) 1.1.1 For the life-saving appliances and the other equipment of cargo ships the examination of plans and designs should consist of:
- (EI) 1.1.1.1 examining the plans for the fire pumps, fire mains, hydrants, hoses and nozzles and the international shore connection (SOLAS 74/00, regs.II-2/10.2 and 10.4.4 and FSSC, chs. 2 and 12);
- (EI) 1.1.1.2 checking the provision, specification and arrangements of the fire extinguishers (SOLAS 74/00 reg.II-2/10.3) (SOLAS 74/88 reg.II-2/6);
- (EI) 1.1.1.3 checking the provision, specification and arrangements of the fire fighters’ outfits and emergency escape breathing devices – EEBDs – (SOLAS 74/00, regs.II-2/10.10, 13.3.4 and 13.4.3; FSSC ch.3) (SOLAS 74/88, reg. II-2/17);
- (EI) 1.1.1.4 examining the plans for the fire-extinguishing arrangements in the machinery spaces -(SOLAS 74/00, regs.II-2/10.4 and 10.5 (except 10.5.5); FSSC chs.5, 6 and 7) (SOLAS 74/88, reg.II-2/7);
- (EI) 1.1.1.5 examining the plans for the special arrangements in the machinery spaces (SOLAS 74/00, regs.II-2/5.2, 8.3 and 9.5) (SOLAS 74/88, reg.II-2/11);
- (EI) 1.1.1.6 checking the provision of a fixed fire detection and fire alarm system for machinery spaces including periodically unattended machinery spaces (SOLAS 74/00 regs.II-2/7.2, 7.3 and 7.4) (SOLAS 74/88 regs.II-2/13 and 14);
- (EI) 1.1.1.7 checking the provision of a fixed fire detection and fire alarm system and/or an sprinkler, fire detection and fire alarm system in accommodation and service spaces and control stations (SOLAS 74/00 regs.II-2/7.2, 7.3, 7.5.5, 7.7 and 10.6.2; FSSC chs.8 and 9) (SOLAS 74/88 reg.II-2/52);
- (EI) 1.1.1.8 checking the provision of a fire-extinguishing system for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5 and 7) (SOLAS 74/88, regs.II-2/18.7);
- (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); FSSC chs.5, 6, 7, 9 and 10) (SOLAS 74/88, regs.II-2/37, 38 and 53);
- (EI) 1.1.1.12 examining the plans for the helicopter facilities (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88, regs.II-2/18.8);
- (EI) 1.1.1.13 examining the plans for the special arrangements for the carriage of dangerous goods, when appropriate, including water supplies, electrical equipment and wiring, fire detection, ventilation, bilge pumping, personnel protection and any water spray system (SOLAS 74/00 reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4); FSSC chs.9 and 10) (SOLAS 74/88, reg.II-2/54);
- (EI) 1.1.1.14 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) 1.1.1.15 examining the design of the survival craft, including their equipment, launching and recovery appliances and embarkation and launching arrangements (SOLAS 74/96 regs.III/16, 31, 32 to 33; LSAC sections. 3.2, 4.1 to 4.9, 6.1 and 6.2);
- (EI) 1.1.1.16 examining the design of the rescue boats, including their equipment and launching and recovery appliances and arrangements (SOLAS 74/00, regs.III/17 and 31; LSAC sections 5.1 and 6.1);
- (EI) 1.1.1.17 examining the provision, specification and stowage of two-way VHF radiotelephone apparatus and radar transponders. (SOLAS 74/88, reg.III/6);
- (EI) 1.1.1.18 examining the provision, specification and stowage of the distress flares and the line-throwing appliance and the provision of on board communications equipment and the general alarm system (SOLAS 74/00, reg. II-2/12.1 and 12.2, and regs.III/6 and 18; and LSAC sections 3.1, 7.1 and 7.2);
- (EI) 1.1.1.19 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, anti-exposure suits and thermal protective aids (SOLAS 74/00 regs.III/7 and 32; LSAC sections 2.1 to 2.5 and 3.1 to 3.3);

- (EI) 1.1.1.20 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) 1.1.1.21 examining the plans for the positioning of, and the specification for, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea (COLREG) in force, regs.20 to 24, 27 to 30 and 33);
- (EI) 1.1.1.22 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 12);
- (EI) 1.1.1.23 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, ECDIS including back-up arrangements, a pelorus or compass bearing device and means for correcting heading and bearings (SOLAS 74/00, reg.V/19);
- (EI) 1.1.1.24 checking the provision and specification of voyage data recorder (SOLAS 74/00, reg.V/20);
- (EI) 1.1.1.25 checking the provision and specification of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/88, reg.V/23).
- (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 oil 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, 4.5.7 and 10.8; FSSC chs.14 and 15) (SOLAS 74/88, regs.II-2/60 and 62); and
 - (EI) 1.1.2.2 examining the plans for protection of the cargo pump rooms (SOLAS 78/00, regs. II-2/4.5.10 and 10.9) (SOLAS 74/88, reg.II-2/63).
- (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 (SOLAS 74/00 reg.II-2/10.2; FSSC 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; FSSC ch.4) (SOLAS 74/88, reg.II-2/17);
- (EI) 1.1.3.3 examining the fire fighters' outfits and emergency escape breathing devices – EEBDs – (SOLAS 74/00 regs.II-2/10.10, 13.3.4 and 13.4.3; FSSC ch.3) (SOLAS 74/88, reg.II-2/17);
- (EI) 1.1.3.4 checking the operational readiness and maintenance of fire-fighting systems (SOLAS 74/00, reg.II-2/14 1) (SOLAS 74/88, reg.II-2/21);
- (EI) 1.1.3.5 examining the fixed fire-fighting system for the machinery, cargo, vehicle, special category and ro-ro spaces, as appropriate, and confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/00 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSSC chs.5 to 7) (SOLAS 74/88, regs.II-2/7 and 53);
- (EI) 1.1.3.6 examining the fire-extinguishing and special arrangements in the machinery spaces and confirming, as far as practicable and as appropriate, the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00 regs.II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88 regs.II-2/7 and 11);
- (EI) 1.1.3.7 examining any fire detection and alarm system and any automatic sprinkler, fire detection and fire alarm system and confirming that installation tests have been satisfactorily completed (SOLAS 74/00, regs.II-2/7.2, 7.3, 7.4, 7.5.1, 7.5.5, 19.3.3 and 20.4; FSSC ch.9) (SOLAS 74/88, regs. II-2/11, 13, 14, 53 and 54);
- (EI) 1.1.3.8 examining the fire-extinguishing system for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces and confirming that installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/00, regs.II-2/10.6.3 and 10.6.4; FSSC chs.4 to 7) (SOLAS 74/88 reg.II-2/18.7);
- (EI) 1.1.3.9 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) 1.1.3.10 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) 1.1.3.11 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 reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4); FSSC chs.9 and 10) (SOLAS 74/88, reg.II-2/54);
- (EI) 1.1.3.12 checking the provision and disposition of the survival craft, where applicable, marine evacuation systems and rescue boats (SOLAS 74/88 regs.III/11 to 16 and 31; LSAC section 6.2);
- (EI) 1.1.3.13 deployment of 50% of the MES after installation (LSAC paragraph 6.2.2.2);
- (EI) 1.1.3.14 examining each survival craft, including its equipment (SOLAS 74/88, reg.III/31; LSAC sections 2.5, 3.1 to 3.3 and 4.1 to 4.9);
- (EI) 1.1.3.15 examining the embarkation arrangements for each survival craft and the testing of each launching appliance, including overload tests, tests to establish the lowering speed and the lowering of each survival craft to the water with the ship at its lightest sea-going draught, and, where applicable, launching underway at 5 knots, checking the recovery of each lifeboat (SOLAS 74/00, regs.III/11, 12, 13, 16, 31 and 33; LSAC section 6.1);
- (EI) 1.1.3.16 examining the embarkation arrangements for each marine evacuation device, where applicable, and the launching arrangements, including inspection for lack of side shell opening between the embarkation station and waterline, review of distance to the propeller and other life-saving appliances and ensuring that the stowed position is protected from heavy weather damage, as much as practicable (SOLAS 74/00, reg.III/15; LSAC section 6.2);
- (EI) 1.1.3.17 examining each rescue boat, including its equipment (SOLAS 74/88 reg.III/31; LSAC sections 2.5, 5.1 and 6.1);
- (EI) 1.1.3.18 examining the embarkation and recovery arrangements for each rescue boat and testing each launching and recovery appliance, including overload tests, tests to establish the lowering and recovery speeds and ensuring that each rescue boat can be lowered to the water and recovered with the ship at its lightest sea-going draught, launching underway at 5 knots (SOLAS 74/88, regs.III/14, 17 and 31; LSAC section 6.1);

- (EI) 1.1.3.19 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) 1.1.3.20 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) 1.1.3.21 examining the provision and stowage and checking the operation of portable on board communications equipment, if provided, and two-way VHF radiotelephone apparatus and radar transponders (SOLAS 74/88, regs. II-2/12.2 and III/6);
- (EI) 1.1.3.22 examining the provision and stowage of the distress flares and the line-throwing appliance, checking the provision and operation of fixed on board communications equipment, if provided, and testing the means of operation of the general alarm system (SOLAS 74/00 regs.III/6 and 18; LSAC sections 3.1, 7.1 and 7.2);
- (EI) 1.1.3.23 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 thermal protective aids (SOLAS 74/00, regs.III/7 and 32 to 37; LSAC sections 2.1, 2.5 and 3.3);
- (EI) 1.1.3.24 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) 1.1.3.25 examining the provision and positioning and checking the operation of, as appropriate, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea (COLREG) in force, regs. 20 to 24, 27 to 30 and 33);
- (EI) 1.1.3.26 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) 1.1.3.27 checking the electromagnetic compatibility of electrical and electronic equipment on or in the vicinity of the bridge (SOLAS 74/00, reg.V/17);
- (EI) 1.1.3.28 checking, as appropriate, the provision and operation of the following shipborne navigational systems equipment (SOLAS 74/00, reg.V/19):
 - (EI) 1.1.3.28.1 the magnetic compass, including examining the siting, movement, illumination and a pelorus or compass bearing device (SOLAS 74/00, reg.V/19);

- (EI) 1.1.3.28.2 nautical charts and nautical publications necessary for the intended voyage are available and have been updated, and, where electronic systems are used, the electronic charts have been updated and the required back-up system is provided and updated (SOLAS 74/00, reg.V/19);
- (EI) 1.1.3.28.3 global navigation satellite system receiver or terrestrial radionavigation system;
- (EI) 1.1.3.28.4 sound reception system, when bridge is totally enclosed;
- (EI) 1.1.3.28.5 means of communication to emergency steering position, where provided;
- (EI) 1.1.3.28.6 spare magnetic compass;
- (EI) 1.1.3.28.7 daylight signalling lamp;
- (EI) 1.1.3.28.8 echo sounding device;
- (EI) 1.1.3.28.9 spare magnetic compass;
- (EI) 1.1.3.28.10 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) 1.1.3.28.11 electronic plotting aid, automatic tracking aid or automatic radar plotting aid as appropriate, using the appropriate test facilities;
- (EI) 1.1.3.28.12 speed and distance measuring devices “through the water” and “over the ground”;
- (EI) 1.1.3.28.13 transmitting heading device providing heading information to radar, plotting aids and automatic identification system equipment and voyage data recorder;
- (EI) 1.1.3.28.14 automatic identification system;
- (EI) 1.1.3.28.15 gyrocompass, including examining the alignment of the master and all repeaters;
- (EI) 1.1.3.28.16 rudder angle indicator;
- (EI) 1.1.3.28.17 propeller rate of revolution indicator;
- (EI) 1.1.3.28.18 propeller, operational mode, thrust, and pitch indicator;
- (EI) 1.1.3.28.19 rate-of-turn indicator;
- (EI) 1.1.3.28.20 heading or track control system;
- (EI) 1.1.3.29 checking for the provision and operation of the voyage data recorder (SOLAS 74/00, reg.V/20);

- (EI) 1.1.3.30 checking record of the voyage data recorder annual performance test (SOLAS 74/00, reg.V/18);
- (EI) 1.1.3.31 checking navigation bridge visibility (SOLAS 74/00, reg.V/22);
- (EI) 1.1.3.32 checking the provision and, as appropriate, the deployment or operation of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00, reg.V/23).
- (EI) 1.1.4 For the life-saving appliances and the other equipment of cargo ships for the additional requirements for oil tankers the survey during construction and after installation should consist of:
 - (EI) 1.1.4.1 checking the deck foam system, including the supplies of foam concentrate, and testing that the minimum number of jets of water at the required pressure in the fire main is obtained (see (EI) 1.1.3.1) when the system is in operation (SOLAS 74/00, reg.II-2/10.88; FSSC ch.15) (SOLAS 74/88, reg. II-2/61);
 - (EI) 1.1.4.2 examining the inert gas system (SOLAS 74/00, reg. II-2/4.5.5; FSSC ch.15) (SOLAS 74/88, reg.II-2/62) and in particular:
 - (EI) 1.1.4.2.1 examining externally for any sign of gas or effluent leakage;
 - (EI) 1.1.4.2.2 confirming the proper operation of both inert gas blowers;
 - (EI) 1.1.4.2.3 observing the operation of the scrubber-room ventilation system;
 - (EI) 1.1.4.2.4 checking the deck water seal for automatic filling and draining;
 - (EI) 1.1.4.2.5 examining the operation of all remotely operated or automatically controlled valves and, in particular, the flue gas isolating valves;
 - (EI) 1.1.4.2.6 observing a test of the interlocking feature of soot blowers;
 - (EI) 1.1.4.2.7 observing that the gas pressure-regulating valve automatically closes when the inert gas blowers are secured;
 - (EI) 1.1.4.2.8 checking, as far as practicable, the following alarms and safety devices of the inert gas system using simulated conditions where necessary:
 - (EI) 1.1.4.2.8.1 high oxygen content of gas in the inert gas main;
 - (EI) 1.1.4.2.8.2 low gas pressure in the inert gas main;
 - (EI) 1.1.4.2.8.3 low pressure in the supply to the deck water seal;
 - (EI) 1.1.4.2.8.4 high temperature of gas in the inert gas main;
 - (EI) 1.1.4.2.8.5 low water pressure or low water-flow rate;

- (EI) 1.1.4.2.8.6 accuracy of portable and fixed oxygen-measuring equipment by means of calibration gas;
- (EI) 1.1.4.2.8.7 high water level in the scrubber;
- (EI) 1.1.4.2.8.8 failure of the inert gas blowers;
- (EI) 1.1.4.2.8.9 failure of the power supply to the automatic control system for the gas regulating valve and to the instrumentation for continuous indication and permanent recording of pressure and oxygen content in the inert gas main;
- (EI) 1.1.4.2.8.10 high pressure of gas in the inert gas main;
- (EI) 1.1.4.2.9 checking the proper operation of the inert gas system on completion of the checks listed above;
- (EI) 1.1.4.3 examining the fixed fire-fighting system for the cargo pump room, confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/00 reg. II-2/10.9; FSSC chs. 5, 6, 7 and 8, as applicable) and, when appropriate, checking the operation of the remote means for closing the various openings;
- (EI) 1.1.4.4 examining the protection of the cargo pump-rooms and confirming that the installation tests have been satisfactorily completed (SOLAS 74/00, reg. II-2/4.5.10) (SOLAS 74/88, regs. II-2/55 to 58).
- (EI) 1.1.5 For the life-saving appliances and the other equipment of cargo ships the check that the required documentation has been placed on board should consist of:
 - (EI) 1.1.5.1 confirming that the fire control plans are permanently exhibited or, alternatively, emergency booklets have been provided and that a duplicate of the plans or the emergency booklet are available in a prominently marked enclosure external to the ship's deckhouse (SOLAS 74/00, reg. II-2/15.2.4) (SOLAS 74/88, reg. II-2/20);
 - (EI) 1.1.5.2 confirming that maintenance plans have been provided (SOLAS 74/00, regs. II-2/14.2.2 and 14.4);
 - (EI) 1.1.5.3 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/00 regs. II-2/15.2.3, 16.2 and 16.3);
 - (EI) 1.1.5.4 confirming, where appropriate, that the ship is provided with a document indicating compliance with the special requirement for carrying dangerous goods (SOLAS 74/00, reg. II-2/19.4) (SOLAS 74/88, reg. II-2/54(3));

- (EI) 1.1.5.5 confirming that emergency instructions are available for each person on board, that the muster list is posted in conspicuous places and they are in a language understood by the persons on board (SOLAS 74/00, regs. III/8 and 37);
- (EI) 1.1.5.6 confirming that the training manual and training aids for the life-saving appliances have been provided (SOLAS 74/00, reg. III/35);
- (EI) 1.1.5.7 confirming that the instructions for on board maintenance of the life-saving appliances have been provided (SOLAS 74/88, reg.III/36);
- (EI) 1.1.5.8 confirming that a table or curve of residual deviations for the magnetic compass has been provided, and that a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00, reg.V/19);
- (EI) 1.1.5.9 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (EI) 1.1.5.10 checking that the charts and nautical publications necessary for the intended voyage are available and have been updated (SOLAS 74/88, reg.V/27);
- (EI) 1.1.5.11 checking that the International Code of Signals and a copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02, reg. V/21);
- (EI) 1.1.5.12 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03, reg. V/28);
- (EI) 1.1.5.13 checking that the life-saving signals to be used by ships, aircraft or persons in distress are available (SOLAS 74/00, reg.V/29);
- (EI) 1.1.5.14 confirming that continuous synopsis record is provided. (SOLAS 74/02, reg. XI-1/5);
- (EI) 1.1.6 For the life-saving appliances and the other equipment of cargo ships for the additional requirements for oil tankers the check that the required documentation has been placed on board should consist of:
 - (EI) 1.1.6.1 confirming, when appropriate, that the instruction manuals for the inert gas system have been provided (FSSC ch.15 paragraph 2.4.4) (SOLAS 74/88, reg. II-2/62.21).
- (EI) 1.1.7 For the life-saving appliances and the other equipment of cargo ships the completion of the initial survey should consist of:
 - (EI) 1.1.7.1 after a satisfactory survey, the Cargo Ship Safety Equipment Certificate and its associated Record of Equipment (Form E) should be issued.

- (EA) **1.2** **Annual surveys** – see part “General” section 4.2.
- (EA) 1.2.1 For the life-saving appliances and the other equipment of cargo ships the examination of current certificates and other records should consist of:
- (EA) 1.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (EA) 1.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (EA) 1.2.1.3 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (EA) 1.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;
- (EA) 1.2.1.5 checking the certificates of class, if the ship is classed with a classification society;
- (EA) 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;
- (EA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (EA) 1.2.1.8 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (EA) 1.2.1.9 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (EA) 1.2.1.10 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (EA) 1.2.1.11 checking that the ship’s complement complies with the Minimum Safe Manning Document (SOLAS 74/00, reg.V/14);
- (EA) 1.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (EA) 1.2.1.13 checking the manning and supervision of survival craft (SOLAS 74/00, reg. III/10);
- (EA) 1.2.1.14 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate;

- (EA) 1.2.1.15 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);
- (EA) 1.2.1.16 confirming that the maintenance plans have been provided (SOLAS 74/00, regs. II-2/14.2.2 and 14.4);
- (EA) 1.2.1.17 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) 1.2.1.18 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) 1.2.1.19 checking, when appropriate, that the ship is provided with a document indicating compliance with the special requirements for carrying dangerous goods (SOLAS 74/00, reg. II-2/19.4) (SOLAS 74/88, reg. II-2/54(3));
- (EA) 1.2.1.20 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) 1.2.1.21 confirming, when appropriate, that the instruction manuals for the inert gas system have been provided and checking from the records of the pressure and oxygen content that the inert gas system is being operated correctly (FSSC ch.15) (SOLAS 74/88, reg. II-2/62);
- (EA) 1.2.1.22 checking that log-book entries are being made (SOLAS 74/00, regs.III/19 and 20) and in particular:
- (EA) 1.2.1.22.1 the date when the last full muster of the crew for boat and fire drill took place;
- (EA) 1.2.1.22.2 the records indicating that the lifeboat equipment was examined at that time and found to be complete;
- (EA) 1.2.1.22.3 the last occasion when the lifeboats were swung out and when each one was lowered into the water;
- (EA) 1.2.1.22.4 the records indicating that crew members have received the appropriate on board training;
- (EA) 1.2.1.23 confirming that the training manual and training aids for the life-saving appliances are on board (SOLAS 74/00, reg. III/35);
- (EA) 1.2.1.24 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) 1.2.1.25 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) 1.2.1.26 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00, reg. V/16);
- (EA) 1.2.1.27 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) 1.2.1.28 checking that the International Code of Signals and a copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02, reg. V/21);
- (EA) 1.2.1.29 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) 1.2.1.30 checking that records of navigational activities and daily reporting have been maintained (SOLAS 74/00/04, reg. V/28);
- (EA) 1.2.1.31 confirming that continuous synopsis record is provided (SOLAS 74/02, reg. XI-1/5);
- (EA) 1.2.2 For the life-saving appliances and the other equipment of cargo ships the annual survey should consist of:
 - (EA) 1.2.2.1 examining the fire pumps, fire main, hydrants, hoses and nozzles and the international shore connection and checking that each fire pump, including the emergency fire pump, can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main (SOLAS 74/00, reg.II-2/10.2; FSSC chs.2 and 12) (SOLAS 74/88, regs. II-2/4 and 19);
 - (EA) 1.2.2.2 checking the provision and randomly examining the condition of the portable and non-portable fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSSC ch.4) (SOLAS 74/88, reg. II-2/6);
 - (EA) 1.2.2.3 confirming that the fire fighters' outfits and emergency escape breathing devices – EEBDs – are complete and in good condition and that the cylinders, including the spare cylinders, of any required self-contained breathing apparatus are suitably charged (SOLAS 74/00, regs.II-2/10.10, 13.3.4 and 13.4.3; FSSC ch.3) (SOLAS 74/88, reg.II-2/17);
 - (EA) 1.2.2.4 checking the operational readiness and maintenance of fire-fighting systems (SOLAS 74/00, reg.II-2/14) (SOLAS 74/88/91 reg.II-2/21);

- (EA) 1.2.2.5 examining the fixed fire-fighting system for the machinery, cargo, vehicle, special category and ro-ro spaces, as appropriate, and confirming that its means of operation is clearly marked (SOLAS 74/00 regs. II-2/10.4, 10.5, 10.7 and 20.6.1; FSSC chs.5 to 7) (SOLAS 74/88, regs. II-2/7 and 53);
- (EA) 1.2.2.6 examining the fire-extinguishing and special arrangements in the machinery spaces and confirming, as far as practicable and as appropriate, the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00, regs. II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88, regs. II-2/7 and 11);
- (EA) 1.2.2.7 examining, as far as possible, and testing, as feasible, any fire detection and alarm system (SOLAS 74/00, regs.II-2/7.2, 7.3, 7.4, 7.5.1, 7.5.5, 19.3.3 and 20.4; FSSC ch.9) (SOLAS 74/88, regs. II-2/11, 13, 14, 53 and 54);
- (EA) 1.2.2.8 examining the fire-extinguishing systems for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5 to 7) (SOLAS 74/88, reg. II-2/18.7);
- (EA) 1.2.2.9 examining the helicopter facilities (SOLAS 74/00, reg.II-2/18) (SOLAS 74/88, reg. II-2/18.8);
- (EA) 1.2.2.10 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, regs. II-2/4.2.2.3.4) (SOLAS 74/88, reg. II-2/15.2.5);
- (EA) 1.2.2.11 examining and testing of the general emergency alarm system (SOLAS 74/88, reg.III/20);
- (EA) 1.2.2.12 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) 1.2.2.13 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, reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4)) (SOLAS 74/88, reg. II-2/54);

- (EA) 1.2.2.14 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) 1.2.2.15 examining each survival craft, including its equipment and, when fitted, the on-load release and hydrostatic lock and, for inflatable liferafts, the hydrostatic release unit and float-free arrangements. Checking that the hand-held flares are not out of date (SOLAS 74/00, regs. III/20 and 31; LSAC sections 2.5, 3.1 to 3.3);
- (EA) 1.2.2.16 checking that the falls used in launching have been turned end for end in the previous 30 months and renewed in the past 5 years or have been subject to periodic inspection and been renewed within 4 years (SOLAS 74/00, reg. III/20);
- (EA) 1.2.2.17 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. A check that the thorough examination of launching appliances, including the dynamic testing of the winch brake, and servicing of lifeboat on-load release gear have been carried out (SOLAS 74/00, regs.III/11, 12, 13, 16, 20 and 31; LSAC section 6.1);
- (EA) 1.2.2.18 examining each rescue boat, including its equipment (SOLAS 74/00, reg. III/31; LSAC sections 2.5 and 5.1);
- (EA) 1.2.2.19 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) 1.2.2.20 examining the embarkation and recovery arrangements for each rescue boat. If practicable, the rescue boat(s) should be lowered to the water and its recovery demonstrated (SOLAS 74/00, regs.III/14, 17 and 31; LSAC section 6.1);
- (EA) 1.2.2.21 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern;
- (EA) 1.2.2.22 examining and checking the operation of two-way VHF radiotelephone apparatus and radar transponders (SOLAS 74/88, reg. III/6);
- (EA) 1.2.2.23 examining the line-throwing appliance and checking that its rockets and the ship's distress signals are not out of date, and examining and checking

the operation of on board communications equipment and the general emergency alarm system (SOLAS 74/00, regs.II-2/12.2 and III/6 and 18; LSAC sections 3.1, 7.1 and 7.2);

- (EA) 1.2.2.24 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, lifejackets and their whistles and lights, immersion suits, anti-exposure suits and thermal protective aids and that their associated batteries are not out of date (SOLAS 74/88, regs. III/7 and 32, LSAC sections 2.2 and 2.5);
- (EA) 1.2.2.25 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) 1.2.2.26 checking that the required the navigation lights, shapes and sound signalling equipment are in order (International Regulations for Preventing Collisions at Sea (COLREG) in force, regs. 20 to 24, 27 to 30 and 33);
- (EA) 1.2.2.27 checking that the following items of navigation equipment are in working order, as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and distance measuring device(s), rudder angle indicator, propeller rate of revolution indicator, variable-pitch propeller pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, means of communication with emergency steering position, ECDIS including back-up arrangements, a pelorus or compass bearing device and means for correcting heading and bearings. Items that cannot be checked with the ship in port should be verified from records (SOLAS 74/00, reg.V/19);
- (EA) 1.2.2.28 checking that the International Code of Signals is available (SOLAS 74/00 reg.V/21);
- (EA) 1.2.2.29 rotational deployment of MES (SOLAS 74/88, reg. III/20.8.2; LSAC section 6.2.2.2);
- (EA) 1.2.2.30 checking the provision, specification, operation and annual performance test of the voyage data recorder, where fitted (SOLAS 74/00/04 reg. V/20);
- (EA) 1.2.2.31 checking the provision, operation and the annual test has been carried out for the automatic identification system, where fitted (SOLAS 74/00/04 reg. V/19);
- (EA) 1.2.2.32 checking the provision and specification of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00, reg. V/23).

- (EA) 1.2.3 For the life-saving appliances and the other equipment of cargo ships for the additional requirements for oil tankers the annual survey should consist of:
 - (EA) 1.2.3.1 checking the deck foam system, including the supplies of foam concentrate and testing that the minimum number of jets of water at the required pressure in the fire main is obtained (see (EA) 1.2.2.1) when the system is in operation (SOLAS 74/00, reg.II-2/10.8; FSSC ch.14) (SOLAS 74/88, reg. II-2/61);
 - (EA) 1.2.3.2 examining the inert gas system (SOLAS 74/00 reg.II-2/4.5.5; FSSC ch.15) (SOLAS 74/88, reg. II-2/62), and in particular:
 - (EA) 1.2.3.2.1 examining externally for any sign of gas or effluent leakage;
 - (EA) 1.2.3.2.2 confirming the proper operation of both inert gas blowers;
 - (EA) 1.2.3.2.3 observing the operation of the scrubber-room ventilation system;
 - (EA) 1.2.3.2.4 checking the deck water seal for automatic filling and draining;
 - (EA) 1.2.3.2.5 examining the operation of all remotely operated or automatically controlled valves and, in particular, the flue gas isolating valves;
 - (EA) 1.2.3.2.6 observing a test of the interlocking feature of soot blowers;
 - (EA) 1.2.3.2.7 observing that the gas pressure regulating valve automatically closes when the inert gas blowers are secured;
 - (EA) 1.2.3.2.8 checking, as far as practicable, the following alarms and safety devices of the inert gas system using simulated conditions where necessary:
 - (EA) 1.2.3.2.8.1 high oxygen content of gas in the inert gas main;
 - (EA) 1.2.3.2.8.2 low gas pressure in the inert gas main;
 - (EA) 1.2.3.2.8.3 low pressure in the supply to the deck water seal;
 - (EA) 1.2.3.2.8.4 high temperature of gas in the inert gas main;
 - (EA) 1.2.3.2.8.5 low water pressure or low water-flow rate;
 - (EA) 1.2.3.2.8.6 accuracy of portable and fixed oxygen-measuring equipment by means of calibration gas;
 - (EA) 1.2.3.2.8.7 high water level in the scrubber;
 - (EA) 1.2.3.2.8.8 failure of the inert gas blowers;

- (EA) 1.2.3.2.8.9 failure of the power supply to the automatic control system for the gas regulating valve and to the instrumentation for continuous indication and permanent recording of pressure and oxygen content in the inert gas main;
- (EA) 1.2.3.2.8.10 high pressure of gas in the inert gas main;
- (EA) 1.2.3.3 checking, when practicable, the proper operation of the inert gas system on completion of the checks listed above (FSSC ch.15) (SOLAS 74/88, reg. II-2/62);
- (EA) 1.2.3.4 examining the fixed fire-fighting system for the cargo pump rooms, (SOLAS 74/00, reg.II-2/10.9) (SOLAS 74/88, reg. II-2/63) and confirming, as far as practicable and when appropriate, the operation of the remote means for closing the various openings;
- (EA) 1.2.3.5 checking condition and operation of water spray and air supply systems that are in totally enclosed lifeboats and have self-contained air support systems (LSAC sections 4.4 and 4.6 to 4.9);
- (EA) 1.2.3.6 checking protection of cargo pump room (SOLAS 74/00, reg. II-2/4.5.10), and in particular:
 - (EA) 1.2.3.6.1 checking temperature sensing devices for bulkheads glands and alarms;
 - (EA) 1.2.3.6.2 checking interlock between lighting and ventilation;
 - (EA) 1.2.3.6.3 checking gas detection system;
 - (EA) 1.2.3.6.4 checking bilge level monitoring devices and alarms.
- (EA) 1.2.4 For the life-saving appliances and the other equipment of cargo ships the completion of the annual survey should consist of:
 - (EA) 1.2.4.1 after a satisfactory survey, the Cargo Ship Safety Equipment Certificate should be endorsed;
 - (EA) 1.2.4.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part “General”, section 4.8.
- (EP) **1.3 Periodical surveys** – see part “General” section 4.4.
 - (EP) 1.3.1 For the life-saving appliances and the other equipment of cargo ships the examination of current certificates and other records should consist of:
 - (EP) 1.3.1.1 the provisions of (EA) 1.2.1.
 - (EP) 1.3.2 For the life-saving appliances and the other equipment of cargo ships the periodical survey should consist of:
 - (EP) 1.3.2.1 the provisions of (EA) 1.2.2;

- (EP) 1.3.2.2 confirming during the examination of the fixed fire-fighting system for the machinery, cargo, vehicle, special category and ro-ro spaces that, as appropriate, any foam compounds and the CO₂ capacity have been checked and that the distribution pipework has been proved clear (SOLAS 74/00, regs. II-2/10.4, 10.5, 10.7 and 20.6.1; FSSC chs.5 to 7) (SOLAS 74/88, regs. II-2/7 and 53);
- (EP) 1.3.2.3 testing the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00, regs. II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88, reg. II-2/11);
- (EP) 1.3.2.4 testing any fire detection and alarm system (SOLAS 74/00, regs. II-2/7.2, 7.3, 7.4, 7.5.5, 19.3.3 and 20.4; FSSC ch.9) (SOLAS 74/88, regs. II-2/11, 13 14, 53 and 54);
- (EP) 1.3.2.5 testing, as feasible, the fire-extinguishing system for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00, regs. II-2/10.6.3 and 10.6.4; FSSC chs.5 to 7) (SOLAS 74/88, reg. II-2/18.7);
- (EP) 1.3.2.6 testing the remote closing of valves for oil fuel, lubricating oil and other flammable oils and the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/00, reg. II-2/4.2.2.3.4) (SOLAS 74/88, reg. II-2/15.2.5);
- (EP) 1.3.2.7 testing the operation of the means of control provided for closing the various openings for the cargo, vehicle, special category and ro-ro spaces (SOLAS 74/00, regs. II-2/5.2 and 20.3) (SOLAS 74/88, reg. II-2/53);
- (EP) 1.3.2.8 testing, as feasible, the helicopter facilities (SOLAS 74/00, reg. II-2/18) (SOLAS 74/88, reg. II-2/18.8).
- (EP) 1.3.3 For the life-saving appliances and the other equipment for the additional requirements for oil tankers the periodical survey should consist of:
- (EP) 1.3.3.1 the provisions of (EA) 1.2.3;
- (EP) 1.3.3.2 confirming during the examination of the fixed fire-fighting system for the cargo pump rooms that, as appropriate, any foam compounds have been checked and that the distribution pipework has been proved clear (SOLAS 74/00, reg. II-2/10.9; FSSC chs. 5 to 7) (SOLAS 74/88, reg. II-2/63) and checking the operation of the remote means for closing the various openings.
- (EP) 1.3.4 For the life-saving appliances and the other equipment of cargo ships the completion of the periodical survey should consist of:

- (EP) 1.3.4.1 after a satisfactory survey, the cargo Ship Safety Equipment Certificate should be endorsed;
- (EP) 1.3.4.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part “General”, section 4.8.
- (ER) **1.4** **Renewal surveys** – see part “General” section 4.5
- (ER) 1.4.1 For the life-saving appliances and the other equipment of cargo ships the examination of current certificates and other records should consist of:
- (ER) 1.4.1.1 the provisions of (EA) 1.2.1, except for the validity of the Cargo Ship Safety Equipment Certificate.
- (ER) 1.4.2 For the life-saving appliances and 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 for the additional requirements for oil tankers the renewal survey should consist of:
- (ER) 1.4.3.1 the provisions of (EP) 1.3.3;
- (ER) 1.4.3.2 examining the deck water seal for the inert gas system internally and checking the condition of the non-return valve (FSSC ch.15, paragraphs 2.2.4 and 2.3.1.4) (SOLAS 74/88, reg. II-2/62).
- (ER) 1.4.4 For the life-saving appliances and the other equipment of cargo ships the completion of the renewal survey should consist of:
- (ER) 1.4.4.1 after a satisfactory survey, the cargo Ship Safety Equipment Certificate should be issued.
- (C) **2** **GUIDELINES FOR SURVEYS FOR THE CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE**
- (CI) **2.1** **Initial surveys** – see part “General”, section 4.1.
- (CI) 2.1.1 For the hull, machinery and equipment of cargo ships the examination of plans and designs should consist of:
- (CI) 2.1.1.1 examining the plans for the hull (SOLAS 74/88, regs. II-1/11, 12.1, 14, 18 and 19);
- (CI) 2.1.1.2 examining the plans for the bilge pumping (SOLAS 74/88, reg. II-1/21);
- (CI) 2.1.1.3 examining the stability information and the damage control plans (SOLAS 74/88/00, regs. II-1/22, 23-1 and 25);
- (CI) 2.1.1.4 examining the plans for the machinery installation (SOLAS 74/88, regs. II-1/26 to 36);

- (CI) 2.1.1.5 examining the plans for the electrical installation (SOLAS 74/88, regs. II-1/40, 41, 43, 44 and 45);
- (CI) 2.1.1.6 examining 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) 2.1.1.7 examining the plans for the structural fire protection, including ventilation systems, in accommodation and service spaces, control stations and machinery spaces and oil fuel and lubricating oil systems (SOLAS 74/00, regs. II-2/4.4, 4.2.2, 4.2.2.3, 4.2.2.4, 4.2.2.5, 5.2, 5.3.1, 5.3.2, 6.2, 6.3, 7.5.5, 7.7, 8.2, 8.4, 9.2.1, 9.2.2, 9.3, 9.5, 9.7.1, 9.7.2, 9.7.3, 9.7.5.2, 11.2, 11.3, 11.4, 11.5 and 17) (SOLAS 74/88 regs. II-2/42 to 52 (except 45 and 51)).
- (CI) 2.1.1.8 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-1/42 to 54);
- (CI) 2.1.1.9 examining the plans for the means of escape (SOLAS 74/00 regs. II-2/13.2, 13.3.1, 13.3.3, 13.4.2 and 13.6; FSSC ch.13 paragraph 3) (SOLAS 74/88 reg. II-1/45);
- (CI) 2.1.1.10 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-1/ 51);
- (CI) 2.1.1.11 examining the plans for helicopter facilities for ships fitted with such facilities (SOLAS 74/00 reg. II-2/18) (SOLAS 74/88 reg. II-1/18.8);
- (CI) 2.1.1.12 examining the Cargo Securing Manual for ships carrying cargo units including containers (SOLAS 74/98 reg. VI/5.6);
- (CI) 2.1.1.13 checking for the loading booklet for carriage of cargoes in bulk (SOLAS 74/00 reg. VI/7);
- (CI) 2.1.1.14 examining the loading instrument for bulk carriers of 150 m in length and upwards (SOLAS 74/97 reg. XII/11);
- (CI) 2.1.1.15 confirming that bulk carriers constructed on or after 1 July 1999 of 150 m in length and upwards of single skin construction designed to carry solid bulk cargoes having a density of 1,000 kg/m³ and above have sufficient strength to withstand flooding of any cargo hold (SOLAS 74/97 reg. XII/5);
- (CI) 2.1.1.16 examining the functionality of bilge well alarms to all cargo holds and conveyor tunnels (SOLAS 74/97 reg. XII/9);
- (CI) 2.1.1.17 confirming that the ship is constructed in accordance with the requirements of a recognized classification society of with equivalent national standards (SOLAS 74/00 reg. II-1/3-1);

- (CI) 2.1.1.18 confirming that a corrosion prevention system is fitted in dedicated ballast water tanks of oil tankers and bulk carriers (SOLAS 74/ reg.II-1/3-2).
- (CI) 2.1.1.19 examining, for oil tankers and bulk carriers when appropriate, the Ship Structure Access Manual (SOLAS 74/00/02 reg. II-1/3-6(4));
- (CI) 2.1.1.20 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) 2.1.1.21 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) 2.1.1.22 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) 2.1.2 For the hull, machinery and equipment of cargo ships 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 reg.II-2/1.6, 4.5.1, 4.5.2, 4.5.9, 9.2.4, 9.3, 9.4, 9.5, 9.6.5 and 11.6) (SOLAS 74/88 regs.II-2/55 to 58);
 - (CI) 2.1.2.4 examining the plans for the cargo tank venting, cargo tank purging and gas-freeing and other ventilation arrangements and protection of the cargo tank structure against pressure or vacuum (SOLAS 74/00 reg.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 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 reg.II-1/3-4);
 - (CI) 2.1.2.7 checking the access to spaces in the cargo area of oil tankers (SOLAS 74/00, reg.II-1/12-2) (SOLAS 74/88/92 reg.II-1/12-2).
- (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);
- (CI) 2.1.3.2 confirming that the subdivision bulkheads are constructed and tested as watertight up to the freeboard deck or margin line, as applicable (SOLAS 74/88 reg.II-1/14);
- (CI) 2.1.3.3 confirming that each watertight door has been tested (SOLAS 74/88 reg.II-1/18);
- (CI) 2.1.3.4 confirming that the arrangements for operating any watertight doors are generally in accordance with the requirements for passenger ships and carrying out similar tests, (see (PI) 5.1.2.5 to (PI) 5.1.2.7) (SOLAS 74/88 reg.II-1/15);
- (CI) 2.1.3.5 confirming by a hose or flooding test the watertightness of watertight decks and trunks, tunnels and ventilators (SOLAS 74/88 reg.II-1/19);
- (CI) 2.1.3.6 confirming that each bilge pump and the bilge pumping system provided for each watertight compartment is working efficiently (SOLAS 74/88 reg.II-1/21);
- (CI) 2.1.3.7 confirming that the drainage system of enclosed cargo spaces situated on the freeboard deck is working efficiently (SOLAS 74/88 reg.II-1/21);
- (CI) 2.1.3.8 conducting an inclining test, when this is required (SOLAS 74/88 reg.II-1/22);
- (CI) 2.1.3.9 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are installed and protected 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 reg.II-1/26) (SOLAS 74/88 reg.II-2.15 (except 15.25));
- (CI) 2.1.3.10 confirming that the normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (SOLAS 74/88 reg.II-1/26);
- (CI) 2.1.3.11 confirming that means are provided so that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88 reg.II-1/26);
- (CI) 2.1.3.12 confirming that the boilers, all parts of the machinery, all steam, hydraulic, pneumatic and other systems and their associated fittings which are under internal pressure have been subjected to the appropriate tests, including a pressure test as may be specified in the requirements of the Administration or the classification societies (SOLAS 74/88 reg.II-1/26);

- (CI) 2.1.3.13 confirming that means is provided to ensure that the safe speed is not exceeded where there is the risk of machinery overspeeding (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.14 confirming that, where practicable, means are provided to protect against overpressure in the parts of main, auxiliary and other machinery that are subject to internal pressure and may be subject to dangerous overpressure (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.15 confirming that, when required, crankcase explosion relief devices are fitted to internal combustion engines and that they are arranged so as to minimize the possibility of injury to personnel (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.16 confirming that main turbine propulsion machinery and, where applicable, main internal combustion propulsion machinery and auxiliary machinery are provided with automatic shut-off arrangements in the case of failures, such as lubricating oil supply failure, which could rapidly lead to a complete breakdown, serious damage or explosion (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.17 confirming and recording the ability of the machinery to reverse the direction of the thrust of the propeller in sufficient time and to bring the ship to rest within a reasonable distance, including the effectiveness of any supplementary means of manoeuvring or stopping the ship (SOLAS 74/88 reg.II-1/28);
- (CI) 2.1.3.18 confirming that the main and auxiliary steering gear are so arranged that the failure of one of them does not render the other inoperative (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.19 confirming that, where appropriate, essential components of the steering gear are permanently lubricated or provided with lubrication fittings (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.20 confirming that relief valves are fitted to any part of a steering gear hydraulic system which can be isolated and in which pressure can be generated from the power source or from external forces and that these relief valves are set to a pressure not exceeding the design pressure (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.21 confirming that the main steering gear is capable of steering the ship at maximum ahead service speed and is capable of putting the rudder over from 35° on one side to 35° on the other side with the ship at its deepest seagoing draught and running ahead at maximum ahead service speed and, under the same conditions, from 35° on either side to 30° on the other side in not more than 28 s (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.22 confirming that the auxiliary steering gear is capable of steering the ship at navigable speed and of being brought speedily into action in an emergency and that it is capable of putting the rudder over from 15° on one side to 15°

on the other side in not more than 60 s with the ship at its deepest seagoing draught and running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater (SOLAS 74/88 reg.II-1/29);

- (CI) 2.1.3.23 confirming that the main and auxiliary steering gear power units restart automatically when power is restored after a power failure, that they are capable of being brought into operation from a position on the navigating bridge and that, in the event of a power failure to any one of the steering gear power units, an audible and visual alarm is given on the navigating bridge (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.24 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, a defect can be isolated so that steering capability can be maintained or speedily regained after a single failure in its piping system or in one of the power units (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.25 confirming that the control systems for the main steering gear from both the navigating bridge and the steering gear compartment are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.26 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, the two independent control systems from the navigating bridge are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.27 confirming that the control system for the auxiliary steering gear in the steering gear compartment and, if this gear is power operated, from the navigating bridge are operating satisfactorily and that the latter is independent of the control system for the main steering gear (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.28 confirming that the control system for any main and auxiliary steering gear control system operable from the navigating bridge is capable of being brought into operation from a position on the navigating bridge, that means are provided in the steering gear compartment for disconnecting it from the steering gear that it serves and that an audible and visual alarm is given on the navigating bridge in the event of a failure of electrical power supply (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.29 confirming that the electric power circuits and steering gear control systems, together with their associated components, cables and pipes, are separated, as far as practicable, throughout their length (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.30 confirming that the means of communication between the bridge and the steering gear compartment is operating satisfactorily and that, with ships having emergency steering positions, a telephone or other means of communication for relaying heading information and supplying visual compass readings to the emergency steering position are provided (SOLAS 74/00 reg.V/19.2.1) (SOLAS 74/88 reg.II-1/29);

- (CI) 2.1.3.31 confirming that the angular position of the rudder is indicated independently of the steering control system on the navigating bridge if the main steering gear is power-operated and that this angular position is given in the steering gear compartment (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.32 confirming that with a hydraulic power-operated steering gear the audible and visual low-level alarms on the navigating bridge and in the machinery space for each hydraulic fluid reservoir are operating satisfactorily and that at least one power actuating system including the reservoir can be recharged from a position within the steering gear compartment by means of a fixed storage tank (to which a contents gauge is fitted) with fixed piping (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.33 confirming that the steering gear compartment is readily accessible, that it is separated, as far as practicable, from machinery spaces and is provided with suitable arrangements to ensure working access to steering gear machinery and controls under safe conditions (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.34 confirming that with electric and electro-hydraulic steering gear the means for indicating on the navigating bridge and at a main machinery control position that the motors are running and that the overload alarm and alarm for the loss of a phase in a three phase supply located at the main machinery control position are operating satisfactorily (SOLAS 74/88 reg.II-1/30);
- (CI) 2.1.3.35 confirming that the main and auxiliary machinery essential for propulsion and the safety of the ship are provided with the effective means for its operation and control (SOLAS 74/88 reg.II-1/31);
- (CI) 2.1.3.36 confirming that appropriate means are provided where it is intended that the propulsion machinery should be remotely controlled from the navigating bridge, including, where necessary, the control, monitoring, reporting, alert and safety actions. (SOLAS 74/00/02 reg. II-1/31);
- (CI) 2.1.3.37 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (CI) 2.1.3.38 confirming that, in general, means are provided for manually overriding automatic controls and that a failure does not prevent the use of the manual override (SOLAS 74/88 reg.II-1/31);
- (CI) 2.1.3.39 confirming that oil-fired and exhaust gas boilers, unfired steam generators, steam pipe systems and air pressure systems are fitted with the appropriate safety features (SOLAS 74/88 regs.II-1/32, 33 and 34);
- (CI) 2.1.3.40 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);
- (CI) 2.1.3.41 confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-1/36);

- (CI) 2.1.3.42 confirming that the engine room telegraph giving visual indication of the orders and answers both in the machinery space and on the navigating bridge is operating satisfactorily (SOLAS 74/88, reg.II-1/37);
- (CI) 2.1.3.43 confirming that the second means of communication between the navigation bridge and machinery space is also operating satisfactorily and that appropriate means are provided to any other positions from which the engines are controlled (SOLAS 74/88 reg.II-1/37);
- (CI) 2.1.3.44 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);
- (CI) 2.1.3.45 confirming that precautions, taken to prevent any oil that may escape under pressure from any pump, filter or heater from coming into contact with heated surfaces, are efficient;
- (CI) 2.1.3.46 confirming that the means of ascertaining the amount of oil contained in any oil tank are in good working condition;
- (CI) 2.1.3.47 confirming that the devices provided to prevent overpressure in any oil tank or in any part of the oil system, including the filling pipes, are in good working condition (SOLAS 74/00 reg.II-2/4.2.2.4);
- (CI) 2.1.3.48 confirming that forepeak tanks are not intended for carriage of oil fuel, lubrication oil and other flammable oils;
- (CI) 2.1.3.49 confirming that the electrical installations, including the main source of power and lighting systems, are installed in accordance with the approved plans (SOLAS 74/88 regs.II-1/40 and 41);
- (CI) 2.1.3.50 confirming that a self-contained emergency source of electrical power has been provided and that the appropriate systems are satisfactorily supplied (SOLAS 74/88 reg.II-1/43);
- (CI) 2.1.3.51 confirming that starting arrangements of each emergency generating set are satisfactory (SOLAS 74/88 reg.II-1/44);
- (CI) 2.1.3.52 confirming that precautions have been provided against shock, fire and other hazards of electrical origin (SOLAS 74/88 reg.II-1/45);
- (CI) 2.1.3.53 confirming that the arrangements for periodically unattended machinery spaces are satisfactory (SOLAS 74/88 regs.II-1/46 to 53) and in particular:
 - (CI) 2.1.3.53.1 checking the fire precautions and testing alarms, as appropriate;
 - (CI) 2.1.3.53.2 checking the means for the protection against flooding;
 - (CI) 2.1.3.53.3 checking the means to control the propulsion from the navigating bridge;

- (CI) 2.1.3.53.4 ensuring that a means of vocal communication between the main machinery control room or its control position, as appropriate, and the navigating bridge and engineer officer's accommodation is provided and is effective;
- (CI) 2.1.3.53.5 checking that an alarm system is provided with random testing of functions;
- (CI) 2.1.3.53.6 checking that means are provided to automatically shut down machinery or boiler operations in the event of serious malfunction and testing the alarms;
- (CI) 2.1.3.53.7 ensuring that special requirements for the machinery, boiler and electrical installations, as appropriate, are provided;
- (CI) 2.1.3.54 confirming that all aspects of the structural fire protection, including the ventilation systems, in accommodation and service spaces, control stations and machinery spaces are installed in accordance with the approved plans, testing the operation of the means of closing the main inlets and outlets of all ventilation systems and proving that the power ventilation is capable of being stopped from outside the space served (SOLAS 74/00 regs.II-2/4.4, 5.2, 5.3.1, 5.3.2, 6.2, 6.3, 7.5.5, 7.7, 8.2, 8.4, 9.2.1, 9.3, 9.4.2, 9.5, 9.7.1, 9.7.2, 9.7.3, 9.7.5.2, 11.2, 11.3, 11.4 and 11.5) (SOLAS 74/88 regs.II-2/42 to 44, 46 to 50 and 52);
- (CI) 2.1.3.55 confirming that all aspects of the structural fire protection, including the ventilation systems, in cargo spaces are installed in accordance with the approved plans, testing the operation of the means of closing the main inlets and outlets of all ventilation systems and proving that the power ventilation is capable of being stopped from outside the space served (SOLAS 74/00 regs.II-2/5.2.1, 11.2, 11.3, 11.5, 19.3.8, 19.3.10, 20.2.1 and 20.3) (SOLAS 74/88 regs.II-2/42 to 44, 46 to 50 and 52 to 54);
- (CI) 2.1.3.56 confirming that stairways and ladders are so arranged to provide a means of escape from all accommodation spaces and from spaces in which the crew is normally employed, other than machinery spaces, to the open deck and thence to the lifeboats and liferafts (SOLAS 74/00 regs.II-2/13.2, 13.3.1, 13.3.3 and 13.6; FSSC ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45) and in particular that:
 - (CI) 2.1.3.56.1 at all levels of accommodation there are provided at least two widely separated means of escape from each restricted space or group of spaces;
 - (CI) 2.1.3.56.2 below the lowest open deck the main means of escape is a stairway (the second being a trunk or a stairway);
 - (CI) 2.1.3.56.3 above the lowest open deck the means of escape are stairways or doors to an open deck or a combination of them;

- (CI) 2.1.3.56.4 the radiotelegraph station has direct access to the open deck or is provided with two means of access or egress, one of which is a porthole or window of sufficient size;
- (CI) 2.1.3.57 confirming that two widely separated means of escape and, when appropriate, a fire shelter from the lower part of the space, are provided from each machinery space of Category A and that suitable escape routes are provided from other machinery spaces (SOLAS 74/00 reg.II-2/13.4.2; FSSC ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45);
- (CI) 2.1.3.58 examining the arrangements for gaseous fuel for domestic purposes (SOLAS 74/00 reg.II-2/4.3);
- (CI) 2.1.3.59 confirming, when appropriate, that all aspects of the helicopter facilities are installed in accordance with the approved plans (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8);
- (CI) 2.1.3.60 confirming that asbestos is not used on board unless for applications where its use is allowed (SOLAS 74/00 reg.II-1/3-5);
- (CI) 2.1.3.61 confirming, for bulk carriers, that dedicated sea water ballast tanks have an efficient corrosion protection system such as hard coating (SOLAS 74/00 reg.II-1/3-2).
- (CI) 2.1.3.62 confirming 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 reg. II-1/3-6);
- (CI) 2.1.3.63 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) 2.1.3.64 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) 2.1.3.65 confirming that ship's identification number is permanently marked (SOLAS 74/02, reg. XI-1/3);
- (CI) 2.1.3.66 confirming that the towing and mooring equipment is properly marked with any restriction associated with its safe operation (SOLAS 74/04 reg. II-1/3-8).
- (CI) 2.1.4 For the hull, machinery and equipment of cargo ships for the additional requirements for oil tankers the survey during construction and after installation should consist of:

- (CI) 2.1.4.1 confirming, when appropriate, that the main steering gear comprises the necessary two or more identical power units and the requisite arrangements to regain steering capability in the event of the prescribed single failure (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.4.2 confirming that a hull return system of distribution and earthed distribution system are not used (SOLAS 74/88 reg.II-1/45);
- (CI) 2.1.4.3 confirming that all aspects of the location of spaces and the structural fire protection, including the special arrangements when the ship is a combination carrier, are in accordance with the approved plans (SOLAS 74/00 regs.II-2/1.6, 4.5.1, 4.5.2, 4.5.9, 9.2.4, 9.3 and 9.6.5) (SOLAS 74/88 regs.II-2/55 to 58);
- (CI) 2.1.4.4 confirming that permanent approved gastight lighting enclosures for illuminating cargo pump rooms, having adequate strength and not impairing the integrity and gas tightness of the bulkheads or decks, are fitted in bulkheads and decks separating cargo pump rooms and other spaces;
- (CI) 2.1.4.5 confirming that all aspects of the cargo tank venting, cargo tank purging and gas-freeing and other ventilation arrangements and protection of the cargo tank structure against pressure or vacuum are in accordance with the approved plans (SOLAS 74/00 regs.II-2/4.5.3, 4.5.4, 4.5.6, 4.5.8 and 11.6) (SOLAS 74/88 regs.II-2/59 and 62.13.1 to 62.13.3);
- (CI) 2.1.4.6 confirming that access to bow is arranged in accordance with approved plans (SOLAS 74/00 reg.II-1/3-3);
- (CI) 2.1.4.7 confirming, for tankers of not less than 20,000 tonnes deadweight, that emergency towing is arranged in accordance with approved plans (SOLAS 74/00 reg.II-1/3-4);
- (CI) 2.1.4.8 confirming that dedicated sea water ballast have an efficient corrosion protection system such as hard coating (SOLAS 74/00 reg.II-1/3-2).
- (CI) 2.1.5 For the hull, machinery and equipment of cargo ships for the additional requirements for chemical tankers and gas carriers the survey during construction and after installation should consist of:
 - (CI) 2.1.5.1 the provisions of (CI) 2.1.4.
- (CI) 2.1.6 For the hull, machinery and equipment of cargo ships the check that the required documentation has been placed on board should consist of:
 - (CI) 2.1.6.1 confirming that the stability information and the damage control plans have been provided (SOLAS 74/88 regs.II-1/22 and 23-1);

- (CI) 2.1.6.2 confirming that the manoeuvring booklet has been provided and that the manoeuvring information has been displayed on the navigating bridge (SOLAS 74/88 reg.II-1/28);
- (CI) 2.1.6.3 confirming that the approved Cargo Securing Manual for ships carrying cargo units including containers is provided on board (SOLAS 74/94 reg.VI/5.6);
- (CI) 2.1.6.4 confirming that the approved loading instrument on bulk carriers of 150 m in length and upwards is provided on board (SOLAS 74/97 reg.XII/11).
- (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 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) 2.1.7 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 Load Line Certificate or International Load Line Exemption Certificate;
 - (CA) 2.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;
 - (CA) 2.2.1.5 checking the certificates of class, if the ship is classed with a classification society;
 - (CA) 2.2.1.6 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;

- (CA) 2.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (CA) 2.2.1.8 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (CA) 2.2.1.9 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (CA) 2.2.1.10 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (CA) 2.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00 reg.V/14) (SOLAS 74/88 reg.V/13(b));
- (CA) 2.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (CA) 2.2.1.13 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (CA) 2.2.1.14 confirming that the stability information, including damage stability, where applicable, and the damage control plans are on board (SOLAS 74/88/00 regs.II-1/22, 23 and 25);
- (CA) 2.2.1.15 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) 2.2.1.16 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) 2.2.1.17 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) 2.2.1.18 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) 2.2.1.19 confirming, when appropriate, that a complete file of the enhanced survey reports and the Condition Evaluation Report are on board*;

* See the Guidelines on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers (resolution A.744(18)).

- (CA) 2.2.1.20 confirming, for bulk carriers, that the loading/unloading booklet required in SOLAS regulation VI/7 is on board (SOLAS 74/97 reg.XII/8.1);
- (CA) 2.2.1.21 confirming, for bulk carriers with restrictions imposed with respect to the carriage of cargoes with a density of 1,780 kg/m³ above, that a triangle is permanently marked at midship (SOLAS 74/97 reg.XII/8.3);
- (CA) 2.2.1.22 confirming, for bulk carriers, that the loading instrument is on board and functioning (SOLAS 74/97 reg.XII/11);
- (CA) 2.2.1.23 confirming, for bulk carriers of 150 m in length and upwards of single skin construction designed to carry solid bulk cargoes having a density of 1,780 kg/m³ above constructed before 1 July 1999 have after the implementation date given in SOLAS 94/97 reg.XII/3 sufficient stability and strength to withstand flooding of the foremost cargo hold (SOLAS 74/97 reg.XII/3, 4, 5 and 6);
- (CA) 2.2.1.24 confirming approved Cargo Securing Manual for ships carrying cargo units including containers is on board (SOLAS 74/94 reg.VI/5.6);
- (CA) 2.2.1.25 confirming that the loading booklet for carriage of cargoes in bulk is on board (SOLAS 74/00 reg.VI/7);
- (CA) 2.2.1.26 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) 2.2.1.27 confirming that structural alterations performed, if any, has 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) 2.2.2 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 the collision and the other watertight bulkheads as far as can be seen (SOLAS 74/88 regs.II-1/11 and 14);

* See also the Guidelines on the Enhanced Programme of Inspections During Surveys of Bulk Carriers (resolution A.744(18), annex A).

- (CA) 2.2.2.4 examining and testing (locally and remotely) all the watertight doors in watertight bulkheads (SOLAS 74/88 reg.II-1/18);
- (CA) 2.2.2.5 examining each bilge pump and confirming that the bilge pumping system for each watertight compartment is satisfactory (SOLAS 74/88 reg.II-1/21);
- (CA) 2.2.2.6 confirming that the drainage from enclosed cargo spaces situated on the freeboard deck is satisfactory (SOLAS 74/88 reg.II-1/21);
- (CA) 2.2.2.7 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are installed and protected 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 reg.II-2/15 (except 15.2.5));
- (CA) 2.2.2.8 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) 2.2.2.9 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) 2.2.2.10 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) 2.2.2.11 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) 2.2.2.12 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);
- (CA) 2.2.2.13 confirming that with ships having emergency steering positions there are means of relaying heading information and, when appropriate, supply visual compass readings to the emergency steering position (SOLAS 74/88 regs.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) 2.2.2.14 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) 2.2.2.15 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) 2.2.2.16 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);
- (CA) 2.2.2.17 confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-1/36);
- (CA) 2.2.2.18 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) 2.2.2.19 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);
- (CA) 2.2.2.20 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) 2.2.2.21 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) 2.2.2.22 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) 2.2.2.23 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) 2.2.2.24 confirming, as far as practicable, that no changes have been made in the structural fire protection, examining any manual and automatic fire doors and proving their operation, testing the means of closing the main inlets and outlets of all ventilation systems and testing the means of stopping power ventilation systems from outside the space served (SOLAS 74/00 regs.II-2/4.4, 5.2, 5.3.2, 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) 2.2.2.25 confirming that the means of escape from accommodation, machinery and other spaces are satisfactory (SOLAS 74/00 reg. II-2/13.2, 13.3.1, 13.3.3, 13.4.2 and 13.6) (SOLAS 74/88 reg.II-2/45);
- (CA) 2.2.2.26 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) 2.2.2.27 examining visually the condition of any expansion joints in seawater systems;
- (CA) 2.2.2.28 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 remains in good condition. (SOLAS 74/00/02 reg. II-1/3-6);
- (CA) 2.2.2.29 confirming that new equipment containing asbestos was not fitted on board since last survey (SOLAS 74/00 reg.II-1/3-5);
- (CA) 2.2.2.30 examining the functionality of bilge well alarms to all cargo holds and conveyor tunnels (SOLAS 74/97 reg.XII/9);
- (CA) 2.2.2.31 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) 2.2.2.32 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) 2.2.2.33 confirming that ship's identification number is permanently marked (SOLAS74/02, reg. XI-1/3);
- (CA) 2.2.2.34 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).
- (CA) 2.2.3 For the hull^{*}, machinery and equipment of cargo ships for 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;

* See also the Guidelines on the Enhanced Programme of Inspections During Surveys of Oil Tankers (resolution A.744(18), annex B).

- (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 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 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 is maintained (SOLAS 74/00 reg.II-1/3-2);
- (CA) 2.2.3.16 examining the emergency lighting in all cargo pump rooms of tankers constructed after 1 July 2002 (SOLAS 74/00 reg.II-1/43).

- (CA) 2.2.4 For the hull, machinery and equipment of cargo ships for the additional requirements for chemical tankers and gas carriers the annual survey should consist of:
- (CA) 2.2.4.1 the provisions of (CA) 2.2.3.1.
- (CA) 2.2.5 For the hull, machinery and equipment of cargo ships the completion of the annual survey should consist of:
- (CA) 2.2.5.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be endorsed;
- (CA) 2.2.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part “General”, section 4.8.
- (CIn) **2.3 Intermediate surveys** – see part “General”, section 4.3
- (CIn) 2.3.1 For the hull, machinery and equipment of cargo ships the examination of current certificates and other records should consist of:
- (CIn) 2.3.1.1 the provisions of (CA) 2.2.1.
- (CIn) 2.3.2 For the hull, machinery and equipment of cargo ships the intermediate survey should consist of:
- (CIn) 2.3.2.1 the provisions of (CA) 2.2.2;
- (CIn) 2.3.2.2 for ships over 5 years of age, an internal examination of representative spaces used for water ballast;
- (CIn) 2.3.2.3 for ships over 10 years of age, other than ships engaged in the carriage of dry cargoes only, an internal examination of selected cargo spaces;
- (CIn) 2.3.2.4 for ships over 15 years of age, engaged in the carriage of dry cargoes only, an internal examination of selected cargo spaces.
- (CIn) 2.3.3 For the hull, machinery and equipment of cargo ships for the additional requirements for oil tankers the intermediate survey should consist of:
- (CIn) 2.3.3.1 the provisions of (CA) 2.2.3;
- (CIn) 2.3.3.2 should there be any doubt as to its condition when examining the various piping systems, the piping may be required to be pressure tested, gauged or both. Particular attention is to be paid to repairs such as welded doublers;
- (CIn) 2.3.3.3 for ships over ten 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 for the additional requirements for chemical tankers and gas carriers the intermediate survey should consist of:
- (CIn) 2.3.4.1 the provisions of (CA) 2.2.3.1.
- (CIn) 2.3.5 For the hull, machinery and equipment of cargo ships the completion of the intermediate survey should consist of:
- (CIn) 2.3.5.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be endorsed;
- (CIn) 2.3.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part “General”, section 4.8.
- (CR) **2.4** **Renewal surveys** – see part “General”, section 4.5
- (CR) 2.4.1 For the hull, machinery and equipment of cargo ships the examination of current certificates and other records should consist of:
- (CR) 2.4.1.1 the provisions of (CA) 2.2.1, except for the validity of the Cargo Ship Safety Construction Certificate.
- (CR) 2.4.2 For the hull, machinery and equipment of cargo ships the renewal survey should consist of:
- (CR) 2.4.2.1 the provisions of (CIn) 2.3.2;
- (CR) 2.4.2.2 examination of sea valves and their connections to the hull;
- (CR) 2.4.2.3 examination of anchoring and mooring equipment for which purpose the anchors should be lowered and raised using the windlass.
- (CR) 2.4.3 For the hull, machinery and equipment of cargo ships for 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 for the additional requirements for chemical tankers and gas carriers the renewal survey should consist of:
- (CR) 2.4.4.1 the provisions of (CA) 2.2.3.1.

- (CR) 2.4.5 For the hull, machinery and equipment of cargo ships for the additional requirements for bulk carriers, the renewal survey should consist of the provisions of (CI) 2.1.3.63.
- (CR) 2.4.5.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be issued.
- (B) 3 GUIDELINES FOR THE INSPECTION OF THE OUTSIDE OF THE SHIP'S BOTTOM OF CARGO SHIPS**
- (CB) 3.1 For the inspection of the outside of the ship's bottom of cargo ships the inspection should consist of:
- (CB) 3.1.1 examination of the ship's shell including bottom and bow plating, keel, bilge keels, stem, stern frame and rudder;
- (CB) 3.1.2 noting the clearances measured in the rudder bearings;
- (CB) 3.1.3 examination of the propeller and shaft seals, as far as practicable;
- (CB) 3.1.4 noting the clearance measured in the propeller shafts, as far as practicable;
- (CB) 3.1.5 examination of sea chests and strainers;
- (CB) 3.1.6 the survey of related items inspected at the same time (see part "General" section 5.1).
- (CB) 3.2 For the inspection of the outside of the ship's bottom of cargo ships the completion of the inspection should consist of:
- (CB) 3.2.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be endorsed;
- (CB) 3.2.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General" section 4.8.
- (R) 4 GUIDELINES FOR SURVEYS FOR THE CARGO SHIP SAFETY RADIO CERTIFICATE**
- (RI) 4.1 Initial surveys – see part "General" section 4.1**
- (RI) 4.1.1 For the radio installations, including those used in life-saving appliances, of cargo ships the examination of plans and design should consist of:
- (RI) 4.1.1.1 establishing the sea areas declared for operation, the equipment installed to fulfil the functional requirements for the sea areas of operation, the methods adopted to ensure the availability of the functional requirements and the arrangements for supply of an emergency source of energy (if any) (SOLAS 74/88 reg. II-1/43 and IV/1 to 15);

- (RI) 4.1.1.2 establishing which radio equipment is to be surveyed and, if duplication of equipment is used as a means of ensuring the availability of the functional requirements, establishing which is the “basic equipment” and which the “duplicated equipment” (SOLAS 74/88 reg.IV/15) (Additional radiocommunications equipment provided other than for SOLAS compliance should be noted);
- (RI) 4.1.1.3 confirming all SOLAS equipment complies with appropriate performance standards not inferior to those adopted by IMO (SOLAS 74/88 reg.IV/14);
- (RI) 4.1.1.4 examining the plans for the provision and position of the radio installation, including sources of energy and antennas (SOLAS 74/88 regs. II-1/43, IV/6, IV/14 and V/19);
- (RI) 4.1.1.5 examining the plans for the provision and positioning of the radio life-saving appliances (SOLAS 74/88 reg.III/6).
- (RI) 4.1.2 For the radio installations, including radio life-saving appliances, of cargo ships the survey during construction and after installation should consist of:
 - (RI) 4.1.2.1 examining the position, physical and electromagnetic protection and illumination of each radio installation (SOLAS 74/88 reg.IV/6);
 - (RI) 4.1.2.2 confirming the provision of equipment for the radio installation with due regard to the declared sea areas in which the ship will trade and the declared means of maintaining availability of functional requirements (SOLAS 74/88 regs.III/6, IV/7 to 11, 14 and 15);
 - (RI) 4.1.2.3 confirming the ability to initiate the transmission of ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service, from the position from which the ship is normally navigated (SOLAS 74/88 regs.IV/4, 7 to 11);
 - (RI) 4.1.2.4 examining all antennas, including:
 - (RI) 4.1.2.4.1 visually checking all antennas, including INMARSAT antennas, and feeders for satisfactory siting and absence of defects (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.4.2 checking insulation and safety of all antennas;
 - (RI) 4.1.2.5 examining the reserve source of energy, including:
 - (RI) 4.1.2.5.1 checking there is sufficient capacity to operate the basic or duplicated equipment for 1 hour or 6 hours, as appropriate (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.5.2 and if the reserve source of energy is a battery:

- (RI) 4.1.2.5.2.1 checking its siting and installation (SOLAS 74/88 reg.IV/13);
- (RI) 4.1.2.5.2.2 where appropriate, checking its condition by specific gravity measurement or voltage measurement;
- (RI) 4.1.2.5.2.3 with the battery off charge, and the maximum required radio installation load connected to the reserve source of energy, checking the battery voltage and discharge current;
- (RI) 4.1.2.5.2.4 checking that the charger(s) are capable of re-charging the reserve battery within 10 hours (SOLAS 74/88 reg.IV/13);
- (RI) 4.1.2.5.2.5 checking that information of ship's position is provided continuously and automatically to all two-way communication equipment (SOLAS 74/88 reg.IV/18);
- (RI) 4.1.2.6 examining the VHF transceiver(s), including:
 - (RI) 4.1.2.6.1 checking for operation on channels 6, 13 and 16 (SOLAS 74/88 regs.IV/7 and 14);
 - (RI) 4.1.2.6.2 checking frequency tolerance, transmission line quality and radio frequency power output (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.6.3 checking for correct operation of all controls including priority of control units (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.6.4 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.6.5 checking the operation of the VHF control unit(s) or portable VHF equipment provided for navigational safety (SOLAS 74/88 reg.IV/6);
 - (RI) 4.1.2.6.6 checking for correct operation by on-air contact with a coast station or other ship;
- (RI) 4.1.2.7 examining the VHF DSC controller and channel 70 DSC watch receiver, including:
 - (RI) 4.1.2.7.1 performing an off-air check confirming the correct Maritime Mobile Service Identity is programmed in the equipment (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.7.2 checking for correct transmission by means of a routine or test call to a coast station, other ship, on board duplicate equipment or special test equipment;
 - (RI) 4.1.2.7.3 checking for correct reception by means of a routine or test call from a coast station, other ship, on board duplicate equipment or special test equipment;

- (RI) 4.1.2.7.4 checking the audibility of the VHF/DSC alarm;
- (RI) 4.1.2.7.5 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
- (RI) 4.1.2.8 examining the MF/HF radiotelephone equipment, including:
 - (RI) 4.1.2.8.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.8.2 checking the antenna tuning in all appropriate bands;
 - (RI) 4.1.2.8.3 checking the equipment is within frequency tolerance on all appropriate bands (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.8.4 checking for correct operation by contact with a coast station and/or measuring transmission line quality and radio frequency output;
 - (RI) 4.1.2.8.5 checking receiver performance by monitoring known stations on all appropriate bands;
 - (RI) 4.1.2.8.6 if control units are provided outside the navigating bridge, checking the control unit on the bridge has first priority for the purpose of initiating distress alerts (SOLAS 74/88 regs.IV/9, 10, 11 and 14);
- (RI) 4.1.2.9 examining the HF radiotelex equipment, including:
 - (RI) 4.1.2.9.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.9.2 confirming that the correct selective calling number is programmed in the equipment;
 - (RI) 4.1.2.9.3 checking correct operation by inspection of recent hard copy or by a test with a coast radio station (SOLAS 74/88 regs.IV/10 and 11);
- (RI) 4.1.2.10 examining the MF/HF DSC controller(s), including:
 - (RI) 4.1.2.10.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.10.2 confirming that the correct Maritime Mobile Service Identity is programmed in the equipment;
 - (RI) 4.1.2.10.3 checking the off-air self-test programme;
 - (RI) 4.1.2.10.4 checking operation by means of a test call on MF and/or HF to a coast radio station if the rules of the berth permit the use of MF/HF transmissions (SOLAS 74/88 regs.IV/9, 10 and 11);

- (RI) 4.1.2.10.5 checking the audibility of the MF/HF DSC alarm;
- (RI) 4.1.2.11 examining the MF/HF DSC watch receiver(s), including:
 - (RI) 4.1.2.11.1 confirming that only distress and safety DSC frequencies are being monitored (SOLAS 74/88 regs.IV/9 to 12);
 - (RI) 4.1.2.11.2 checking that a continuous watch is being maintained whilst keying MF/HF radio transmitters (SOLAS 74/88 reg.IV/12);
 - (RI) 4.1.2.11.3 checking for correct operation by means of a test call from a coast station or other ship;
- (RI) 4.1.2.12 examining the radiotelephone distress frequency watch receiver (SOLAS regs.IV/7 and 14), including:
 - (RI) 4.1.2.12.1 checking the mute/demute function;
 - (RI) 4.1.2.12.2 checking receiver sensitivity against known stations;
 - (RI) 4.1.2.12.3 checking the audibility of the loudspeaker;
- (RI) 4.1.2.13 examining the INMARSAT Ship Earth Station(s), including:
 - (RI) 4.1.2.13.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy, and that where an uninterrupted supply of information from the ship's navigational or other equipment is required ensuring such information remains available in the event of failure of the ship's main or emergency source of electrical power (SOLAS 74/88 regs.IV/13 and 14);
 - (RI) 4.1.2.13.2 checking the distress function by means of an approved test procedure where possible (SOLAS 74/88 regs. IV/10, 12 and 14);
 - (RI) 4.1.2.13.3 checking for correct operation by inspection of recent hard copy or by test call;
- (RI) 4.1.2.14 if appropriate, examining the NAVTEX equipment (SOLAS 74/88 regs. IV/7, 12 and 14), including:
 - (RI) 4.1.2.14.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (RI) 4.1.2.14.2 running the self-test programme if provided;
- (RI) 4.1.2.15 examining the Enhanced Group Call equipment (SOLAS 74/88 regs. IV/7 and 14), including:
 - (RI) 4.1.2.15.1 checking for correct operation and area by monitoring incoming messages or by inspecting recent hard copy;

- (RI) 4.1.2.15.2 running the self-test programme if provided;
- (RI) 4.1.2.16 if appropriate, examining the radio equipment for receipt of maritime safety information by HF NBDP (SOLAS 74/88 regs.IV/7, 12 and 14), including:
 - (RI) 4.1.2.16.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (RI) 4.1.2.16.2 running the self-test programme if provided;
- (RI) 4.1.2.17 examining the 406 MHz satellite EPIRB (SOLAS 74/88 regs.IV/7 and 14), including:
 - (RI) 4.1.2.17.1 checking position and mounting for float free operation;
 - (RI) 4.1.2.17.2 carrying out visual inspection for defects;
 - (RI) 4.1.2.17.3 carrying out the self-test routine;
 - (RI) 4.1.2.17.4 checking that the EPIRB ID is clearly marked on the outside of the equipment and, where possible, decoding the EPIRB identity number confirming it is correct;
 - (RI) 4.1.2.17.5 checking the battery expiry date;
 - (RI) 4.1.2.17.6 if provided, checking the hydrostatic release and its expiry date;
 - (RI) 4.1.2.17.7 checking the emission on operational frequencies, coding and registration on the 406 MHz signal without transmission of a distress call to the satellite;
 - (RI) 4.1.2.17.8 checking that the EPIRB has been subject to maintenance at intervals not exceeding five years at an approved shore-based maintenance facility (SOLAS 74/00 reg.IV/15.9);
 - (RI) 4.1.2.17.9 if possible, checking the emission on operational frequencies, coding and registration on the 121.5 MHz homing signal without transmission of a distress call to the satellite;
- (RI) 4.1.2.18 examining the two-way VHF radiotelephone apparatus (SOLAS 74/88 reg.III/6), including:
 - (RI) 4.1.2.18.1 checking for correct operation on Channel 16 and one other by testing with another fixed or portable VHF installation;
 - (RI) 4.1.2.18.2 checking the battery charging arrangements where re-chargeable batteries are used;

- (RI) 4.1.2.18.3 checking the expiry date of primary batteries where used;
- (RI) 4.1.2.18.4 where appropriate, checking any fixed installation provided in a survival craft;
- (RI) 4.1.2.19 examining the radar transponder(s) (SOLAS 74/88 regs.III/6, IV/7 and 14), including:
 - (RI) 4.1.2.19.1 checking the position and mounting;
 - (RI) 4.1.2.19.2 monitoring response on ship's 9 GHz radar;
 - (RI) 4.1.2.19.3 checking the battery expiry date;
- (RI) 4.1.2.20 examining the test equipment and spares carried to ensure carriage is adequate in accordance with the sea areas in which the ship trades and the declared options for maintaining availability of the functional requirements (SOLAS 74/88 reg.IV/15).
- (RI) 4.1.3 For the radio installations, including those used in life-saving appliances, the check that documentation, etc., has been placed on board should consist of:
 - (RI) 4.1.3.1 checking for a valid radio licence issued by the flag Administration (ITU RR Art.24);
 - (RI) 4.1.3.2 checking the radio operator's certificates of competence (SOLAS 74/88 reg.IV/16 and ITU RR Art.56);
 - (RI) 4.1.3.3 checking the radio record (log) (SOLAS 74/88 reg.IV/17 and ITU RR App.11);
 - (RI) 4.1.3.4 checking the carriage of up-to-date ITU publications (ITU RR App.11);
 - (RI) 4.1.3.5 checking the carriage of operating manuals for all equipment (SOLAS 74/88 reg.IV/15);
 - (RI) 4.1.3.6 checking the carriage of service manuals for all equipment when at-sea maintenance is the declared option (SOLAS 74/88 reg.IV/15).
- (RI) 4.1.4 For the radio installations, including those used in life-saving appliances, of cargo ships the completion of the initial survey should consist of:
 - (RI) 4.1.4.1 the surveyor preparing and forwarding a report of survey, indicating clearly the organization he represents, to the relevant authorities detailing results of the survey and recording omissions and deficiencies who, if satisfied, should issue a Cargo Ship Safety Radio Certificate and the associated Record of Equipment (form R).

- (RP) **4.2** **Periodical surveys** – see part “General” section 4.4
- (RP) 4.2.1 For radio installations, including radio life-saving appliances, on cargo ships the examination of current certificates and other records should consist of:
- (RP) 4.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (RP) 4.2.1.2 checking the validity, where appropriate, of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (RP) 4.2.1.3 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (RP) 4.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;
- (RP) 4.2.1.5 checking the certificates of class, if the ship is classed with a classification society;
- (RP) 4.2.1.6 checking, where appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (RP) 4.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (RP) 4.2.1.8 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (RP) 4.2.1.9 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (RP) 4.2.1.10 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (RP) 4.2.1.11 checking that the ship’s complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/13(b));
- (RP) 4.2.1.12 checking that adequate information is on board to enable the equipment to be properly operated and maintained;
- (RP) 4.2.1.13 checking that the master, officers and ratings are certificated as required by the STCW Convention;

- (RP) 4.2.1.14 confirming that any new equipment has been properly approved before installation and that no changes have been made such as would affect the validity of the certificate;
- (RP) 4.2.1.15 confirming that a record has been kept in the period since the last survey to the satisfaction of the Administration and as required by the Radio Regulations (SOLAS 74/88 reg.IV/17);
- (RP) 4.2.1.16 checking documentary evidence that the actual capacity of the battery has been proved in port within the last 12 months (SOLAS 74/88 reg.IV/13);
- (RP) 4.2.1.17 confirming that the provisions of (RI) 4.1.3 have been met;
- (RP) 4.2.1.18 checking that the annual test has been carried out for the Satellite EPIRB and, if applicable, shore based maintenance has been carried out at intervals not exceeding five years (SOLAS 74/04 reg. IV/15).
- (RP) 4.2.2 For radio installations, including radio life-saving appliances, of cargo ships the periodical survey should consist of:
- (RP) 4.2.2.1 the provisions of (RI) 4.1.2.
- (RP) 4.2.3 For radio installations, including those used in radio life-saving appliances, of cargo ships the completion of the periodical survey should consist of:
- (RP) 4.2.3.1 after a satisfactory survey, the Cargo Ship Safety Radio Certificate should be endorsed;
- (RP) 4.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part “General” section 4.8.
- (RR) **4.3** **Renewal surveys** – see part “General” section 4.5
- (RR) 4.3.1 For the radio installations, including those used in life-saving appliances, of cargo ships the examination of current certificates and other records should consist of:
- (RR) 4.3.1.1 the provisions of (RP) 4.2.1, except for the validity of the Cargo Ship Safety Radio Certificate.
- (RR) 4.3.2 For the radio installations, including those used in radio life-saving appliances, on cargo ships the renewal survey should consist of:
- (RR) 4.3.2.1 the provisions of (RI) 4.1.2.
- (RR) 4.3.3 For the radio installations, including those used in radio life-saving appliances, on cargo ships the completion of the renewal survey should consist of:

- (RR) 4.3.3.1 after a satisfactory survey, issuing the Cargo Ship Safety Radio Certificate as per the provisions of (RI) 4.1.4.
- (P) 5 **GUIDELINES FOR SURVEYS FOR THE PASSENGER SHIP CERTIFICATE**
- (PI) 5.1 **Initial surveys** – see part “General” section 4.1.
- (PI) 5.1.1 For the hull, machinery and equipment of passenger ships the examination of plans and designs should consist of:
- (PI) 5.1.1.1 examining the subdivision and stability (SOLAS 74/88/95 regs.II-1/4 to 8, 8-1, 8-2, 8-3, 13 and 16);
- (PI) 5.1.1.2 examining the ballasting arrangements (SOLAS 74/88 reg.II-1/9);
- (PI) 5.1.1.3 examining the arrangement of the bulkheads, their construction and the openings therein, including the disposition and means of operation of the watertight doors (SOLAS 74/88 regs.II-1/10, 14, and 15);
- (PI) 5.1.1.4 examining the arrangement of the double bottoms (SOLAS 74/88 reg.II-1/12);
- (PI) 5.1.1.5 examining the arrangements for the openings in the shell plating below the margin line, the construction of the watertight doors, sidescuttles, watertight decks, trunks, etc., and the watertight integrity above the margin line (SOLAS 74/88 regs.II-1/17, 18, 19 and 20);
- (PI) 5.1.1.6 examining the plans for the bilge pumping (SOLAS 74/88 regs.II-1/21 and 39);
- (PI) 5.1.1.7 examining, when appropriate, the means of indicating the status of any bow doors and the leakage there from (SOLAS 74/88 reg.II-1/23-2);
- (PI) 5.1.1.8 examining the plans for the machinery installation (SOLAS 74/88 regs.II-1/26 to 36 and 54);
- (PI) 5.1.1.9 examining the plans for the electrical installation (SOLAS 74/88 regs.II-1/39, 40, 41, 42, 44 and 45);
- (PI) 5.1.1.10 checking, when appropriate, the provision of supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PI) 5.1.1.11 examining the plans for the fire pumps, fire mains, hydrants, hoses and nozzles and the international shore connection (SOLAS 74/88 reg.II-1/39 and SOLAS 74/00 reg.II-2/10.2; FSSC chs.2 and 12) (SOLAS 74/88 reg.II-1/39 and regs.II-2/4 and 19);
- (PI) 5.1.1.12 checking the provision and specification of the fire extinguishers and the fireman’s outfits (SOLAS 74/88 regs.II-2/6 and 17);

- (PI) 5.1.1.13 examining the plans for the fire extinguishing and special arrangements in the machinery spaces (SOLAS 74/88 reg.II-1/39 and regs.II-2/7 and 11);
- (PI) 5.1.1.14 examining the arrangements for oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.3) (SOLAS 74/88 reg.II-2/15);
- (PI) 5.1.1.15 examining the plans for the structural fire protection, including the means of escape (SOLAS 74/00 regs.II-2/4.4.4, 5.2, 5.3, 7.5, 7.8.2, 8.4, 8.5, 9, 10.6, 11, 13, 17, 20; FSSC ch.13 sect56ns 1 and 2) (SOLAS 74/88 regs.II-2/23 to 36);
- (PI) 5.1.1.16 examining the plans for the protection of special category spaces and other cargo spaces (SOLAS 74/88 regs.II-2/37, 38 and 39);
- (PI) 5.1.1.17 examining the plans for the fixed fire detection and alarm system, the crew alarm and the public address system or other effective means of communication (SOLAS 74/00 reg.II-2/12) (SOLAS 74/88 reg.II-2/40);
- (PI) 5.1.1.18 examining the plans for the special arrangements for the carriage of dangerous goods, when appropriate, including water supplies, electrical equipment and wiring, fire detection, bilge pumping and personnel protection (SOLAS 74/88 regs.II-2/41 and 54);
- (PI) 5.1.1.19 examining the provision and disposition of the survival craft and rescue boats and the arrangements for mustering passengers (SOLAS 74/00 regs.III/11 to 17, 21 and 24);
- (PI) 5.1.1.20 examining the design of the survival craft, including their equipment, launching and recovery appliances and embarkation and launching arrangements (SOLAS 74/88 regs.III/20 to 24, 36, 38 to 44 and 48);
- (PI) 5.1.1.21 examining the design of the rescue boats, including their equipment and launching and recovery appliances and arrangements (SOLAS 74/88 regs.III/16, 20, 47 and 48);
- (PI) 5.1.1.22 examining the provision, specification and stowage of two-way VHF radiotelephone apparatus and radar transponders (SOLAS 74/88 reg.III/6);
- (PI) 5.1.1.23 examining the provision, specification and stowage of the distress flares and the line-throwing appliance and the provision of on board communications equipment and the general alarm system (SOLAS 74/88 regs.III/6, 17, 35, 49 and 50);
- (PI) 5.1.1.24 examining the provision, specification and stowage of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets, immersion suits and thermal protective aids (SOLAS 74/88 regs.III/7, 21 and 31 to 37);

- (PI) 5.1.1.25 examining the plans for the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including the supply from the emergency source of power (SOLAS 74/88 regs.II-1/42 and III/11);
- (PI) 5.1.1.26 examining the plans for the positioning of, and the specification for, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea (COLREG) in force regs.20 to 24, 27 to 30 and 33);
- (PI) 5.1.1.27 examining the plans relating to the bridge design and arrangement of navigational systems and equipment and bridge procedures (SOLAS 74/00 reg.V/15);
- (PI) 5.1.1.28 checking the provision and specification of the following navigation equipment as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), automatic identification system, electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and distance indicator, rudder angle indicator, propeller rate of revolution indicator, variable pitch propeller pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, ECDIS including back-up arrangements, a pelorus or compass bearing device and means for correcting heading and bearings (SOLAS 74/00 reg. V/19);
- (PI) 5.1.1.29 checking the provision and specification of the voyage data recorder (SOLAS 74/00 reg.V/20);
- (PI) 5.1.1.30 checking navigation bridge visibility (SOLAS 74/00 reg.V/22);
- (PI) 5.1.1.31 checking the provision and specification of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00 reg.V/23);
- (PI) 5.1.1.32 establishing the sea areas declared for operation, the equipment installed to fulfil the functional requirements for the sea areas of operation, the methods adopted to ensure the availability of the functional requirements and the arrangements for supply of an emergency source of energy (if any) (SOLAS 74/88 reg. II-1/42 and IV/1 to 15);
- (PI) 5.1.1.33 establishing which radio equipment is to be surveyed and, if duplication of equipment is used as a means of ensuring the availability of the functional requirements, establishing which is the “basic equipment” and which the “duplicated equipment” (SOLAS 74/88 reg.IV/15) (Additional radiocommunication equipment provided other than for SOLAS compliance should be noted);

- (PI) 5.1.1.34 confirming all SOLAS equipment complies with appropriate performance standards not inferior to those adopted by IMO (SOLAS 74/88 reg.IV/14);
- (PI) 5.1.1.35 examining the plans for the provision and positioning of the radio installation including sources of energy and antennas. (SOLAS 74/88 regs.II-1/42, IV/6 and 14);
- (PI) 5.1.1.36 examining the plans for the provision and positioning of the radio life-saving appliances (SOLAS 74/88 reg.III/6);
- (PI) 5.1.1.37 if applicable, checking that a list of all limitations on the operation of a passenger ship is kept on board and kept updated.
- (PI) 5.1.2 For the hull, machinery and equipment of passenger ships the survey during construction and after installation should consist of:
 - (PI) 5.1.2.1 examining the outside of the ship's bottom, including the bottom and bow plating, keel, bilge keels, stem, stern frame, the rudder, sea chests and strainers (SOLAS 74/88 reg.I/7(b)(i));
 - (PI) 5.1.2.2 confirming the arrangements for the 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);
 - (PI) 5.1.2.3 checking the ballasting arrangements (SOLAS 74/88 reg.II-1/9);
 - (PI) 5.1.2.4 confirming the arrangement of the bulkheads, their construction and the openings therein, confirming that the collision bulkhead is watertight up to the freeboard deck, that the valves fitted on the pipes piercing the collision bulkhead are operable from above the freeboard deck and that there are no doors, manholes, ventilation ducts or any other openings, confirming that the other bulkheads, as required for the ship's subdivision, are watertight up to the bulkhead deck and confirming the construction of the watertight doors and that they have been tested (SOLAS 74/88 regs.II-1/10, 14, 15 and 18);
 - (PI) 5.1.2.5 confirming that the watertight integrity has been maintained where pipes, scuppers, etc., pass through subdivision watertight bulkheads (SOLAS 74/88 reg.II-1/15);
 - (PI) 5.1.2.6 confirming that a diagram is provided on the navigating bridge showing the location of the watertight doors together with indicators showing whether the doors are open or closed and confirming that the watertight doors and their means of operation have been installed in accordance with the approved plans (SOLAS 74/88 reg.II-1/15);
 - (PI) 5.1.2.7 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) and, in particular, that:

- (PI) 5.1.2.7.1 they are operable locally from each side of the bulkhead;
- (PI) 5.1.2.7.2 provided with devices giving an indication of whether the door is open or closed at all remote operating positions;
- (PI) 5.1.2.7.3 provided with an audible alarm that is distinct from any other alarm in the area and, when appropriate, an intermittent visual signal;
- (PI) 5.1.2.7.4 control handles are provided on each side of the bulkhead so that a person may hold both handles in the open position and pass safely through the watertight door without accidentally setting the power closing mechanism into operation;
- (PI) 5.1.2.8 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);
- (PI) 5.1.2.9 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);
- (PI) 5.1.2.10 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);
- (PI) 5.1.2.11 confirming the arrangements for closing sidescuttles and their deadlights, also scuppers, sanitary discharges and similar openings and other inlets and discharges in the shell plating below the margin line (SOLAS 74/88 reg.II-1/17);
- (PI) 5.1.2.12 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);
- (PI) 5.1.2.13 confirming that gangway, cargo and coaling ports fitted below the margin line may be effectively closed and that the inboard end of any ash or rubbish chutes are fitted with an effective cover (SOLAS 74/88 reg.II-1/17);
- (PI) 5.1.2.14 confirming by a hose or flooding test the watertightness of watertight decks and trunks, tunnels and ventilators (SOLAS 74/88 reg.II-1/19);
- (PI) 5.1.2.15 confirming the arrangements to maintain the watertight integrity above the margin line (SOLAS 74/88 reg.II-1/20);
- (PI) 5.1.2.16 confirming the arrangements for the bilge pumping and that each bilge pump and the bilge pumping system provided for each watertight compartment is working efficiently (SOLAS 74/88 reg.II-1/21);

- (PI) 5.1.2.17 confirming that the drainage system of enclosed cargo spaces situated on the freeboard deck is working efficiently (SOLAS 74/88 reg.II-1/21);
- (PI) 5.1.2.18 conducting an inclining test (SOLAS 74/88 reg.II-1/22);
- (PI) 5.1.2.19 checking, when appropriate, the means of indicating the status of any bow doors and any leakage therefrom (SOLAS 74/88 reg.II-1/23-2);
- (PI) 5.1.2.20 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are installed and protected as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/88 reg.II-1/26);
- (PI) 5.1.2.21 confirming that the normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (SOLAS 74/88 reg.II-1/26);
- (PI) 5.1.2.22 confirming that means are provided so that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88 reg.II-1/26);
- (PI) 5.1.2.23 confirming that the boilers, all parts of the machinery, all steam, hydraulic, pneumatic and other systems and their associated fittings which are under internal pressure have been subjected to the appropriate tests, including a pressure test (SOLAS 74/88 reg.II-1/26);
- (PI) 5.1.2.24 confirming that means is provided to ensure that the safe speed is not exceeded where there is the risk of machinery overspeeding (SOLAS 74/88 reg.II-1/27);
- (PI) 5.1.2.25 confirming that, where practicable, means are provided to protect against overpressure in the parts of main, auxiliary and other machinery that are subject to internal pressure and may be subject to dangerous overpressure (SOLAS 74/88 reg.II-1/27);
- (PI) 5.1.2.26 confirming that, when required, crankcase explosion relief devices are fitted to internal combustion engines and that they are arranged so as to minimize the possibility of injury to personnel (SOLAS 74/88 reg.II-1/27);
- (PI) 5.1.2.27 confirming that main turbine propulsion machinery and, where applicable, main internal combustion propulsion machinery and auxiliary machinery are provided with automatic shut-off arrangements in the case of failures, such as lubricating oil supply failure, which could rapidly lead to a complete breakdown, serious damage or explosion (SOLAS 74/88 reg.II-1/27);
- (PI) 5.1.2.28 confirming and recording the ability of the machinery to reverse the direction of the thrust of the propeller in sufficient time and to bring the ship to rest within a reasonable distance, including the effectiveness of any

supplementary means of manoeuvring or stopping the ship (SOLAS 74/88 reg.II- 1/28);

- (PI) 5.1.2.29 confirming that the main and auxiliary steering gear are so arranged that the failure of one of them does not render the other inoperative (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.30 confirming that, where appropriate, essential components of the steering gear are permanently lubricated or provided with lubrication fittings (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.31 confirming that relief valves are fitted to any part of a steering gear hydraulic system which can be isolated and in which pressure can be generated from the power source or from external forces and that these relief valves are set to a pressure not exceeding the design pressure (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.32 confirming that the main steering gear is capable of steering the ship at maximum ahead service speed and is capable of putting the rudder over from 35 degrees on one side to 35 degrees on the other side with the ship at its deepest seagoing draught and running ahead at maximum ahead service speed and, under the same conditions, from 35 degrees on either side to 30 degrees on the other side in not more than 28 seconds (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.33 confirming that the auxiliary steering gear is capable of steering the ship at navigable speed and of being brought speedily into action in an emergency and that it is capable of putting the rudder over from 15 degrees on one side to 15 degrees on the other side in not more than 60 seconds with the ship at its deepest seagoing draught and running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.34 confirming that the main or auxiliary steering gear power units restart automatically when power is restored after a power failure, that they are capable of being brought into operation from a position on the navigating bridge and that, in the event of a power failure to any one of the steering gear power units, an audible and visual alarm is given on the navigating bridge (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.35 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, a defect can be isolated so that steering capability can be maintained or speedily regained after a single failure in its piping system or in one of the power units (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.36 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);

- (PI) 5.1.2.37 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, the two independent control systems from the navigating bridge are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.38 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);
- (PI) 5.1.2.39 confirming that the control system for any main and auxiliary steering gear control system operable from the navigating bridge is capable of being brought into operation from a position on the navigating bridge, that means are provided in the steering gear compartment for disconnecting it from the steering gear that it serves and that an audible and visual alarm is given on the navigating bridge in the event of a failure of electrical power supply (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.40 confirming that the electric power circuits and steering gear control system, together with their associated components, cables and pipes, are separated, as far as practicable, throughout their length (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.41 confirming that the means of communication between the bridge and the steering gear is operating satisfactorily and that, with ships having emergency steering positions, a telephone or other means of communication for relaying heading information and supplying visual compass readings to the emergency steering position are provided (SOLAS 74/88 regs.II-1/29 and V/12);
- (PI) 5.1.2.42 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, ch. V, reg. 5/12);
- (PI) 5.1.2.43 confirming that with a hydraulic power-operated steering gear the audible and visual low-level alarms on the navigating bridge and in the machinery space for each hydraulic fluid reservoir are operating satisfactorily and that at least one power actuating system including the reservoir can be recharged from a position within the steering gear compartment by means of a fixed storage tank to which a contents gauge is fitted with fixed piping (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.44 confirming that the steering gear compartment is readily accessible, that it is separated, as far as practicable, from machinery spaces and is provided with suitable arrangements to ensure working access to steering gear machinery and controls under safe conditions (SOLAS 74/88 reg.II-1/29);

- (PI) 5.1.2.45 confirming that with electric and electro-hydraulic steering gear the means for indicating on the navigating bridge and at a main machinery control position that the motors are running and that the overload alarm and alarm for the loss of a phase in a three phase supply located at the main machinery control position are operating satisfactorily (SOLAS 74/88 reg.II-1/30);
- (PI) 5.1.2.46 confirming that the main and auxiliary machinery essential for propulsion and the safety of the ship are provided with the effective means for its operation and control (SOLAS 74/88 reg.II-1/31);
- (PI) 5.1.2.47 confirming that appropriate means are provided where it is intended that the propulsion machinery should be remotely controlled from the navigating bridge, including, where necessary, the control, monitoring, reporting, alert and safety actions (SOLAS 74/00/02 reg. II-1/31);
- (PI) 5.1.2.48 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (PI) 5.1.2.49 confirming that, in general, means are provided for manually overriding automatic controls and that a failure does not prevent the use of the manual override (SOLAS 74/88 reg.II-1/31);
- (PI) 5.1.2.50 confirming that oil-fired and exhaust gas boilers, unfired steam generators, steam pipe systems and air pressure systems are fitted with the appropriate safety features (SOLAS 74/88 regs.II-I/32, 33 and 34);
- (PI) 5.1.2.51 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-I/35);
- (PI) 5.1.2.52 confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-I/36);
- (PI) 5.1.2.53 confirming that the engine room telegraph giving visual indication of the orders and answers both in the machinery space and on the navigating bridge is operating satisfactorily (SOLAS 74/88, regulation II-1/37);
- (PI) 5.1.2.54 confirming that the second means of communication between the navigation bridge and machinery space is also operating satisfactorily and that appropriate means are provided to any other positions from which the engines are controlled (SOLAS 74/88 regulation II-1/37);
- (PI) 5.1.2.55 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88, regulation II-1/38);
- (PI) 5.1.2.56 confirming that precautions, taken to prevent any oil than may escape under pressure from any pump, filter or heater from coming into contact with heated surfaces, are efficient;
- (PI) 5.1.2.57 confirming that the means of ascertaining the amount of oil contained in any oil tank are in good working condition;

- (PI) 5.1.2.58 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;
- (PI) 5.1.2.59 confirming that forepeak tanks are not intended for carriage of oil fuel, lubrication oil and other flammable oils;
- (PI) 5.1.2.60 confirming that the electrical installations, including the main source of power and lighting systems, are installed in accordance with the approved plans (SOLAS 74/88 regs.II-1/40 and 41);
- (PI) 5.1.2.61 confirming that a self-contained emergency source of electrical power has been provided and that the appropriate systems are satisfactorily supplied (SOLAS 74/88 reg.II-1/42);
- (PI) 5.1.2.62 confirming that starting arrangements of each emergency generating set is satisfactory (SOLAS 74/88 reg.II-1/44);
- (PI) 5.1.2.63 checking, when appropriate, the disposition of and testing the supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PI) 5.1.2.64 confirming that precautions have been provided against shock, fire and other hazards of electrical origin (SOLAS 74/88 reg.II-1/45);
- (PI) 5.1.2.65 confirming, when appropriate, that the arrangements for the machinery spaces being periodically unattended are satisfactory (SOLAS 74/88 reg.II-1/54);
- (PI) 5.1.2.66 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 74/88 regs.II-2/4 and 19);
- (PI) 5.1.2.67 examining the provision and disposition of the fire extinguishers and the fireman's outfits (SOLAS 74/88 regs.II-2/6 and 17);
- (PI) 5.1.2.68 checking the operational readiness and maintenance of fire-fighting systems (SOLAS 74/00 reg.II-2/14) (SOLAS 74/88 regs.II-2/6 and 17);
- (PI) 5.1.2.69 examining the fixed fire fighting system for the machinery and cargo spaces, as appropriate, and confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/88 regs.II-2/7 and 53);
- (PI) 5.1.2.70 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 74/88 regs.II-2/7 and 11);

- (PI) 5.1.2.71 examining the arrangements for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/88 reg.II-2/15);
- (PI) 5.1.2.72 examining any fire detection and alarm system and confirming that installation tests have been satisfactorily completed; (SOLAS 74/88 regs.II-2/11, 12, 13, 14, 36 and 41);
- (PI) 5.1.2.73 confirming that all aspects of the installation of the structural fire protection, including the structure, fire integrity, protection of stairways and lifts, openings in 'A' and 'B' Class divisions, ventilation systems and windows and sidescuttles, and the use of combustible material are in accordance with the approved plans (SOLAS 74/00 regs.II-2/4.4.4, 5.2, 5.3, 7.5, 7.8.2, 8.4, 8.5, 9, 10.6, 11, 13, 17, 20 and FSSC ch.13 sections 1 and 2) (SOLAS 74/88 regs.II-2/23 to 35);
- (PI) 5.1.2.74 testing any manual and automatic fire doors, including the means of closing the openings in 'A' and 'B' Class divisions (SOLAS 74/88 regs.II-2/30 and 31);
- (PI) 5.1.2.75 testing the means of closing the main inlets and outlets of all ventilation smoke extraction systems and proving that the power ventilation is capable of being stopped from outside the space served (SOLAS 74/88 reg.II-2/32);
- (PI) 5.1.2.76 confirming that stairways and ladders are so arranged to provide a means of escape to the lifeboat and liferaft and liferaft embarkation deck from all passenger and crew spaces and from those spaces in which the crew is normally employed (SOLAS 74/00 reg. II- 2/13.7) and in particular that:
 - (PI) 5.1.2.76.1 below the bulkhead deck there are two means of escape from each watertight compartment, one being independent of watertight doors;
 - (PI) 5.1.2.76.2 above the bulkhead deck two means of escape from each vertical zone or similar such area, one leading directly to a stairway forming a vertical escape;
 - (PI) 5.1.2.76.3 the radiotelegraph station, if provided, has direct access to the open deck or is provided with two means of access or egress, one of which is a porthole or window of sufficient size;
- (PI) 5.1.2.77 confirming that the means of escape from any special category spaces are generally in accordance with (PI) 5.1.2.76 (SOLAS 74/88 reg.II-2/28);

- (PI) 5.1.2.78 confirming that in the machinery spaces there are two widely separated means of escape leading to the lifeboat and liferaft embarkation decks, including, when from a space below the bulkhead deck, a continuous fire shelter (SOLAS 74/88 reg.II-2/28);
- (PI) 5.1.2.79 confirming the fire protection arrangements for special category spaces and other cargo spaces and testing, as appropriate, the operation of the means for closing the various openings (SOLAS 74/88 regs.II-2/37, 38 and 39);
- (PI) 5.1.2.80 confirming and testing, as appropriate, the fixed fire detection and alarm system, the special alarm and the public address system or other effective means of communication (SOLAS 74/88 reg.II-2/40);
- (PI) 5.1.2.81 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring and boundary insulation, the provision of protective clothing and portable appliances and the testing of the water supply, bilge pumping and any water spray system (SOLAS 74/88 regs.II-2/41 and 54);
- (PI) 5.1.2.82 checking the provision and disposition of the survival craft and rescue boats and the arrangements for mustering passengers (SOLAS 74/88 regs.III/11 to 16, 20 and 24);
- (PI) 5.1.2.83 examining each survival craft, including its equipment and that the required number of radar transponders are fitted in liferafts and those liferafts are clearly marked (SOLAS 74/88/00/02 reg. III/20, 21, 26, 33, 34, 36 and 38 to 44);
- (PI) 5.1.2.84 examining the embarkation arrangements for each survival craft and the testing of each launching appliance, including overload tests, tests to establish the lowering speed and the lowering of each survival craft to the water with the ship at its lightest sea-going draught, checking the recovery of each lifeboat (SOLAS 74/88 regs.III/11, 12, 13, 15, 20 and 48);
- (PI) 5.1.2.85 deployment of 50% of the MES after installation (LSAC section 5.1 and MSC/Circ.809);
- (PI) 5.1.2.86 examining each rescue boat, including its equipment (SOLAS 74/00 regs.III/21 and 26.3; LSAC section 5.1 and MSC/Circ.809);
- (PI) 5.1.2.87 examining the embarkation and recovery arrangements for each rescue boat and testing each launching and recovery appliances, 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 (SOLAS 74/88 regs.III/14, 16, 20 and 48);
- (PI) 5.1.2.88 examining the arrangements for mustering passengers (SOLAS 74/88 reg.III/24);

- (PI) 5.1.2.89 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern;
- (PI) 5.1.2.90 confirming that there are posters or signs in the vicinity of survival craft and their launching stations (SOLAS 74/88 reg.III/9);
- (PI) 5.1.2.91 examining the provision and stowage and checking the operation of two-way VHF radiotelephone apparatus and radar transponders, (SOLAS 74/88 reg.III/6);
- (PI) 5.1.2.92 examining the provision and stowage of the distress flares and the line-throwing appliance, checking the provision and operation of on board communications equipment and testing the means of operation of the general alarm system (SOLAS 74/88 reg.III/6);
- (PI) 5.1.2.93 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 thermal protective aids (SOLAS 74/88 regs.III/7, 21 and 31 to 37);
- (PI) 5.1.2.94 checking the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including when supplied from the emergency source of power (SOLAS 74/88 regs.II-1/42 and III/11);
- (PI) 5.1.2.95 checking that means of rescue is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/26.4);
- (PI) 5.1.2.96 checking that a helicopter pick-up area is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/28);
- (PI) 5.1.2.97 checking that a decision support system is provided for the Master (SOLAS 74/00 reg. III/29);
- (PI) 5.1.2.98 checking the electromagnetic compatibility of electrical and electronic equipment on or in the vicinity of the bridge (SOLAS 74/00 reg.V/17);
- (PI) 5.1.2.99 examining the provision and positioning and checking the operation of, as appropriate, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea in force, regs.20 to 24, 27 to 30 and 33);
- (PI) 5.1.2.100 checking the provision and specification of a daylight signalling lamp (SOLAS 74/88 reg.V/11);
- (PI) 5.1.2.101 checking, as appropriate, the provision and operation of the following equipment (SOLAS 74/00 reg.V/19):
 - (PI) 5.1.2.101.1 checking the magnetic compass, including examining the siting, movement, illumination and a pelorus or compass bearing device (SOLAS 74/00 reg.V/19);

- (PI) 5.1.2.101.2 nautical charts and nautical publications necessary for the intended voyage are available and have been updated and where electronic systems are used (ECDIS), the electronic charts have been updated and the required back-up system is provided and updated (SOLAS 74/00 reg.V/19);
- (PI) 5.1.2.101.3 global navigation satellite receiver or terrestrial radionavigation system;
- (PI) 5.1.2.101.4 sound reception system, when bridge is totally enclosed;
- (PI) 5.1.2.101.5 means of communication to emergency steering position, where provided;
- (PI) 5.1.2.101.6 spare magnetic compass;
- (PI) 5.1.2.101.7 daylight signalling lamp;
- (PI) 5.1.2.101.8 echo sounding device, including examining the display for good access, viewing and lighting;
- (PI) 5.1.2.101.9 radar(s), including examining the waveguide and cable runs for routing and protection and the display unit confirming lighting, plotting facilities, correct operation of all controls, functions and the true-motion facility if provided;
- (PI) 5.1.2.101.10 electronic plotting aid, automatic tracking aid or automatic radar plotting aid as appropriate, using the appropriate test facilities;
- (PI) 5.1.2.101.11 speed and distance measuring device;
- (PI) 5.1.2.101.12 transmitting heading device providing heading information to radar, plotting aids and automatic identification system equipment and distance devices;
- (PI) 5.1.2.101.13 heading or track control system;
- (PI) 5.1.2.102 checking for the provision, specification, operation and annual performance test of the voyage data recorder (SOLAS 74/00/04 reg. V/20);
- (PI) 5.1.2.103 checking that the International Code of Signals and a copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02 reg. V/21);
- (PI) 5.1.2.104 checking the provision and, as appropriate, the deployment or operation of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00 reg.V/23);
- (PI) 5.1.2.105 examining the position, physical and electromagnetic protection and illumination of each radio installation (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.106 confirming the provision of equipment for the radio installation with due regard to the declared sea areas in which the ship will trade and the

declared means of maintaining availability of functional requirements (SOLAS 74/88 regs.III/6, IV/7 to 11, 14 and 15);

- (PI) 5.1.2.107 confirming the ability to initiate the transmission of ship-to-shore distress alerts by at least two separate and independent means, each using a different radio communication service, from the position from which the ship is normally navigated (SOLAS 74/88 regs.IV/4,7 to 11);
- (PI) 5.1.2.108 examining all antennas, including:
 - (PI) 5.1.2.108.1 visually checking all antennas, including INMARSAT antennas, and feeders for satisfactory sitting and absence of defects (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.108.2 checking insulation and safety of all antennas;
- (PI) 5.1.2.109 examining the reserve source of energy, including:
 - (PI) 5.1.2.109.1 checking there is sufficient capacity to operate the basic or duplicated equipment for 1 hour or 6 hours, as appropriate (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.109.2 and, if the reserve source of energy is a battery:
 - (PI) 5.1.2.109.2.1 checking its sitting and installation (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.109.2.2 where appropriate, checking its condition by specific gravity measurement or voltage measurement;
 - (PI) 5.1.2.109.2.3 with the battery off charge, and the maximum required radio installation load connected to the reserve source of energy, checking the battery voltage and discharge current;
 - (PI) 5.1.2.109.2.4 checking that the charger(s) are capable of re-charging the reserve battery within 10 hours (SOLAS 74/88 reg.IV/13);
- (PI) 5.1.2.110 examining the VHF transceiver(s), including:
 - (PI) 5.1.2.110.1 checking for operation on channels 6, 13 and 16 (SOLAS 74/88 regs.IV/7 and 14);
 - (PI) 5.1.2.110.2 checking frequency tolerance, transmission line quality and radio frequency power output (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.110.3 checking for correct operation of all controls including priority of control units (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.110.4 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);

- (PI) 5.1.2.110.5 checking the operation of the VHF control unit(s) or portable VHF equipment provided for navigational safety (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.110.6 checking for correct operation by on-air contact with a coast station or other ship;
- (PI) 5.1.2.111 examining the VHF DSC controller and channel 70 DSC watch receiver, including:
 - (PI) 5.1.2.111.1 performing an off-air check confirming the correct Maritime Mobile Service Identity is programmed in the equipment (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.111.2 checking for correct transmission by means of a routine or test call to a coast station, other ship, on board duplicate equipment or special test equipment;
 - (PI) 5.1.2.111.3 checking for correct reception by means of a routine or test call from a coast station, other ship, on board duplicate equipment or special test equipment;
 - (PI) 5.1.2.111.4 checking the audibility of the VHF/DSC alarm;
 - (PI) 5.1.2.111.5 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
- (PI) 5.1.2.112 examining the MF/HF radiotelephone equipment, including:
 - (PI) 5.1.2.112.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.112.2 checking the antenna tuning in all appropriate bands;
 - (PI) 5.1.2.112.3 checking the equipment is within frequency tolerance on all appropriate bands (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.112.4 checking for correct operation by contact with a coast station and/or measuring transmission line quality and radio frequency output;
 - (PI) 5.1.2.112.5 checking receiver performance by monitoring known stations on all appropriate bands;
 - (PI) 5.1.2.112.6 if control units are provided outside the navigating bridge, checking the control unit on the bridge has first priority for the purpose of initiating distress alerts (SOLAS 74/88 regs.IV/9, 10, 11 and 14);
 - (PI) 5.1.2.112.7 checking the correct operation of the radiotelephone alarm signal generating device on a frequency other than 2182 kHz;

- (PI) 5.1.2.113 examining the HF radiotelex equipment, including:
 - (PI) 5.1.2.113.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.113.2 confirming that the correct selective calling number is programmed in the equipment;
 - (PI) 5.1.2.113.3 checking correct operation by inspection of recent hard copy or by a test with a coast radio station (SOLAS 74/88 regs.IV/10 and 11);
- (PI) 5.1.2.114 examining the MF/HF DSC controller(s), including:
 - (PI) 5.1.2.114.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.114.2 confirming that the correct Maritime Mobile Service Identity is programmed in the equipment;
 - (PI) 5.1.2.114.3 checking the off-air self test programme;
 - (PI) 5.1.2.114.4 checking operation by means of a test call on MF and/or HF to a coast radio station if the rules of the berth permit the use of MF/HF transmissions (SOLAS 74/88 regs.IV/9 to 11);
 - (PI) 5.1.2.114.5 checking the audibility of the MF/HF DSC alarm;
- (PI) 5.1.2.115 examining the MF/HF DSC watch receiver(s), including:
 - (PI) 5.1.2.115.1 confirming that only distress and safety DSC frequencies are being monitored (SOLAS 74/88 regs.IV/9 to 12);
 - (PI) 5.1.2.115.2 checking that a continuous watch is being maintained whilst keying MF/HF radio transmitters (SOLAS 74/88 reg.IV/12);
 - (PI) 5.1.2.115.3 checking for correct operation by means of a test call from a coast station or other ship;
- (PI) 5.1.2.116 examining the radiotelephone distress frequency watch receiver (SOLAS regs.IV/7 and 14), including:
 - (PI) 5.1.2.116.1 checking the mute/demute function;
 - (PI) 5.1.2.116.2 checking receiver sensitivity against known stations;
 - (PI) 5.1.2.116.3 checking the audibility of the loudspeaker;
- (PI) 5.1.2.117 examining the INMARSAT ship earth station(s), including:

- (PI) 5.1.2.117.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy, and that where an uninterrupted supply of information from the ship's navigational or other equipment is required ensuring such information remains available in the event of failure of the ship's main or emergency source of electrical power. (SOLAS 74/88 regs.IV/13 and 14);
- (PI) 5.1.2.117.2 checking the distress function by means of an approved test procedure where possible (SOLAS 74/88 reg. IV/10, 12 and 14);
- (PI) 5.1.2.117.3 checking for correct operation by inspection of recent hard copy or by test call;
- (PI) 5.1.2.118 if appropriate, examining the NAVTEX equipment (SOLAS 74/88 regs.IV/7, 12 and 14), including:
 - (PI) 5.1.2.118.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (PI) 5.1.2.118.2 running the self-test programme if provided;
- (PI) 5.1.2.119 examining the enhanced group call equipment (SOLAS 74/88 regs.IV/7 and 14), including:
 - (PI) 5.1.2.119.1 checking for correct operation and area by monitoring incoming messages or by inspecting recent hard copy;
 - (PI) 5.1.2.119.2 running the self-test programme if provided;
- (PI) 5.1.2.120 if appropriate, examining the radio equipment for receipt of maritime safety information by HF NBDP (SOLAS 74/88 regs.IV/7, 12 and 14), including:
 - (PI) 5.1.2.120.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (PI) 5.1.2.120.2 running the self-test programme if provided;
- (PI) 5.1.2.121 examining the 406 MHz EPIRB (SOLAS 74/88 regs.IV/7 and 14), including:
 - (PI) 5.1.2.121.1 checking position and mounting for float free operation;
 - (PI) 5.1.2.121.2 carrying out visual inspection for defects;
 - (PI) 5.1.2.121.3 carrying out the self-test routine;
 - (PI) 5.1.2.121.4 checking that the EPIRB ID is clearly marked on the outside of the equipment and, where possible, decoding the EPIRB identity number confirming it is correct;

- (PI) 5.1.2.121.5 checking the battery expiry date;
- (PI) 5.1.2.121.6 if provided, checking the hydrostatic release and its expiry date;
- (PI) 5.1.2.122 examining the two-way VHF radiotelephone apparatus (SOLAS 74/88 reg.III/6), including:
 - (PI) 5.1.2.122.1 checking for correct operation on channel 16 and one other by testing with another fixed or portable VHF installation (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.122.2 checking the battery charging arrangements where re-chargeable batteries are used (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.122.3 checking the expiry date of primary batteries where used (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.122.4 where appropriate, checking any fixed installation provided in a survival craft (SOLAS 74/88 reg.IV/14);
- (PI) 5.1.2.123 examining the radar transponder(s) (SOLAS 74/88 reg.III/6 and regs.IV/7 and 14), including:
 - (PI) 5.1.2.123.1 checking the position and mounting;
 - (PI) 5.1.2.123.2 monitoring response on ship's 9 GHz radar;
 - (PI) 5.1.2.123.3 checking the battery expiry date;
- (PI) 5.1.2.124 examining the test equipment and spares carried to ensure carriage is adequate in accordance with the sea areas in which the ship trades and the declared options for maintaining availability of the functional requirements (SOLAS 74/88 reg.IV/15);
- (PI) 5.1.2.125 checking the distress panel installed at the conning position; or, where applicable, an additional EPIRB is placed near the conning position (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.126 checking that positional information is provided continuously and automatically to all communications equipment included in the initial distress alert (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.127 checking the distress alarm panel installed at the conning position and its visual and aural indications of received distress alerts (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.128 checking the provision and operation of the means for two-way on-scene communication for search and rescue purposes and its operation on 121.5 MHz and 123.1 MHz from the position from which the ship is normally navigated (SOLAS 74/88 reg.IV/7);

- (PI) 5.1.2.129 confirming that ship's identification number is permanently marked. (SOLAS 74/02, reg. XI-1/3);
- (PI) 5.1.2.130 checking the provision, operation and the annual test has been carried out for the automatic identification system (SOLAS 74/00/04, reg. V/19).
- (PI) 5.1.3 For the hull, machinery and equipment of passenger ships the check that the required documentation has been placed on board should consist of:
- (PI) 5.1.3.1 confirming that the stability information and damage control plans have been provided (SOLAS 74/88 regs. II-1/22 and 23);
- (PI) 5.1.3.2 confirming that the manoeuvring booklet has been provided and that the manoeuvring information has been displayed on the navigating bridge (SOLAS 74/88 reg.II-1/28);
- (PI) 5.1.3.3 confirming that the fire control plans are permanently exhibited or, alternatively, emergency booklets have been provided to each officer 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 regs.II-2/15.2.4 and 15.3.2) (SOLAS 74/88 reg.II-2/20). The fire control plan is in the language req4ired by the Administration;
- (PI) 5.1.3.4 confirming that the maintenance plans have been provided (SOLAS 74/88 reg. II-1/14.2.2 and 14.3);
- (PI) 5.1.3.5 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/88 reg. II- 1/15.2.3 and 16.2);
- (PI) 5.1.3.6 confirming, when appropriate, that the ship is provided with a document indicating compliance with the special requirements for carrying dangerous goods (SOLAS 74/00 reg.II-2/19.4) (SOLAS 74/88 regs. II-2/41 and 54(3));
- (PI) 5.1.3.7 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 53);
- (PI) 5.1.3.8 confirming that the training manual for the life-saving appliances has been provided (SOLAS 74/00 reg.III/35);
- (PI) 5.1.3.9 confirming that the checklist and instructions for MES, if provided, and on board maintenance of the life-saving appliances have been provided (SOLAS 74/00 reg.III/36);
- (PI) 5.1.3.10 confirming that a table or curve of residual deviations for the magnetic compass have been provided, and that a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00 reg.V/19);

- (PI) 5.1.3.11 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 regs.V/16 and 19);
- (PI) 5.1.3.12 checking that the charts and nautical publications necessary for the intended voyage are available and have been up-dated (SOLAS 74/00 regs.V/19 and 27);
- (PI) 5.1.3.13 checking that the International Code of Signals is available where the ship is required to carry a radio installation (SOLAS 74/88 reg.V/21);
- (PI) 5.1.3.14 confirming that a list showing the operational limitations imposed to the ship is kept on board (SOLAS 74/00 reg.V/30);
- (PI) 5.1.3.15 checking that the life-saving signals to be used by ships, aircraft or persons in distress (SOLAS 74/00 reg.V/29);
- (PI) 5.1.3.16 checking the carriage of operating manuals for all equipment (SOLAS 74/88 reg.IV/15);
- (PI) 5.1.3.17 checking the carriage of service manuals for all equipment when at-sea maintenance is the declared option (SOLAS 74/88 reg.IV/15);
- (PI) 5.1.3.18 checking for a valid radio licence issued by the flag Administration (ITU RR Art.24);
- (PI) 5.1.3.19 checking the radio operators' certificates of competence (ITU RR Art.55);
- (PI) 5.1.3.20 checking the emission on operational frequencies, coding and registration on the 406 MHz signal without transmission of a distress call to the satellite;
- (PI) 5.1.3.21 checking the radio log (SOLAS 74/88 text in force prior to 1 February 1992 reg.IV/19 and ITU RR App.11);
- (PI) 5.1.3.22 checking the carriage of up-to-date ITU publications (ITU RR App.11);
- (PI) 5.1.3.23 checking that the EPIRB has been subject to maintenance at intervals not exceeding five years at an approved shore-based maintenance facility;
- (PI) 5.1.3.24 if possible, checking the emission on operational frequencies, coding and registration on the 121.5 MHz homing signal without transmission of the satellite system;
- (PI) 5.1.3.25 confirming that continuous synopsis record is provided (SOLAS 74/02, reg. XI-1/5);
- (PI) 5.1.3.26 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg. V/28).

- (PI) 5.1.4 For the hull, machinery and equipment of passenger ships the completion of the initial survey should consist of:
- (PI) 5.1.4.1 after a satisfactory survey, the Passenger Ship Safety Certificate and its associated Record of Equipment (Form P) should be issued.
- (PR) **5.2** **Renewal surveys** – see part “General”, section 4.5
- (PR) 5.2.1 For the hull, machinery and equipment of passenger ships the examination of current certificates and other records should consist of:
- (PR) 5.2.1.1 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (PR) 5.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (PR) 5.2.1.3 checking the validity of the International Oil Pollution Prevention Certificate;
- (PR) 5.2.1.4 checking the certificates of class, if the ship is classed with a classification society;
- (PR) 5.2.1.5 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (PR) 5.2.1.6 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (PR) 5.2.1.7 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (PR) 5.2.1.8 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/13(b));
- (PR) 5.2.1.9 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (PR) 5.2.1.10 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;
- (PR) 5.2.1.11 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) 5.2.1.12 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) 5.2.1.13 confirming that the opening and the closing and locking of side scuttles positioned below the margin line are being recorded in the log-book (SOLAS 74/88 reg.II-1/17);
- (PR) 5.2.1.14 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);
- (PR) 5.2.1.15 confirming that the stability information and damage control plans are readily available (SOLAS 74/88 regs.II-1/22 and 23);
- (PR) 5.2.1.16 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 reg. II-1/24 and 25);
- (PR) 5.2.1.17 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) 5.2.1.18 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 74/88 reg.II-2/20);
- (PR) 5.2.1.19 confirming that the maintenance plans have been provided (SOLAS 74/00 reg. II-2/14.2.2 and 14.3);
- (PR) 5.2.1.20 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/00 reg. II-2/15.2.3 and 16.2);
- (PR) 5.2.1.21 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 and the entries into the ship's log-book;
- (PR) 5.2.1.22 checking, when appropriate, that the ship is provided with a document indicating compliance with the special requirements for carrying dangerous goods (SOLAS 74/00 reg.II-2/19.4) (SOLAS 74/88 reg.II-2/54(3));
- (PR) 5.2.1.23 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);
- (PR) 5.2.1.24 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);

- (PR) 5.2.1.25 checking that log-book entries are being made (SOLAS 74/00 regs.III/19 and 20) and in particular:
 - (PR) 5.2.1.25.1 the date when the last full muster of the passengers and crew for boat and fire drill took place;
 - (PR) 5.2.1.25.2 the records indicating that the lifeboat equipment was examined at that time and found to be complete;
 - (PR) 5.2.1.25.3 the last occasion when the lifeboats were swung out and when each one was lowered into the water;
 - (PR) 5.2.1.25.4 the records indicating that crew members have received the appropriate on board training;
- (PR) 5.2.1.26 confirming that the training manual and training aids for the life-saving appliances is on board (SOLAS 74/00 reg.III/35);
- (PR) 5.2.1.27 confirming that the instructions for on board maintenance of the life-saving appliances is on board (SOLAS 74/00 reg.III/36);
- (PR) 5.2.1.28 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) 5.2.1.29 confirming that a table or curve of residual deviations for the magnetic compass and that a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00 reg.V/19);
- (PR) 5.2.1.30 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (PR) 5.2.1.31 checking that the charts and nautical publications necessary for the intended voyage are available and have been up-dated (SOLAS 74/00 reg.V/27);
- (PR) 5.2.1.32 checking that the compass deviation book is properly maintained (SOLAS 74/00 reg.V/19);
- (R) 5.2.1.33 confirming that a list showing the operational limitations imposed to the ship is kept on board (SOLAS 74/00 reg.V/30);
- (R) 5.2.1.34 checking that the life-saving signals to be used by ships, aircraft or persons in distress (SOLAS 74/00 reg.V/29);
- (PR) 5.2.1.35 the provisions of (PI) 5.1.3.11 to (PI) 5.1.3.16;
- (PR) 5.2.1.36 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) 5.2.1.37 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) 5.2.1.38 if applicable, checking that a list of all limitations on the operation of a passenger ship is kept on board and updated;
- (PR) 5.2.1.39 confirming that continuous synopsis record is provided (SOLAS74/02, reg. XI-1/5);
- (PR) 5.2.1.40 checking that the annual test has been carried out for the Satellite EPIRB and, if applicable, shore based maintenance has been carried out at intervals not exceeding five years;
- (PR) 5.2.1.41 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg. V/28).
- (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 the 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);
 - (PR) 5.2.2.3 checking the ballasting arrangements (SOLAS 74/88 reg.II-1/9);
 - (PR) 5.2.2.4 examining the collision and other watertight bulkheads required for the ship's subdivision (SOLAS 74/88 regs.II-1/10, 14, 15 and 18);
 - (PR) 5.2.2.5 confirming that the watertight integrity has been maintained where pipes, scuppers, etc., pass through subdivision watertight bulkheads (SOLAS 74/88 reg. II- 1/15);
 - (PR) 5.2.2.6 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);
 - (PR) 5.2.2.7 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) and, in particular, that:
 - (PR) 5.2.2.7.1 they are operable locally from each side of the bulkhead;
 - (PR) 5.2.2.7.2 provided with devices giving an indication of whether the door is open or closed at all remote operating positions;

- (PR) 5.2.2.7.3 provided with an audible alarm that is distinct from any other alarm in the area and, when appropriate, an intermittent visual signal;
- (PR) 5.2.2.7.4 control handles are provided 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) 5.2.2.8 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);
- (PR) 5.2.2.9 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);
- (PR) 5.2.2.10 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);
- (PR) 5.2.2.11 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) 5.2.2.12 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);
- (PR) 5.2.2.13 confirming that gangway, cargo and coaling ports fitted below the margin line may be effectively closed and that the inboard end of any ash or rubbish chutes are fitted with an effective cover (SOLAS 74/88 reg. II-1/17);
- (PR) 5.2.2.14 examining the arrangements to maintain the watertight integrity above the margin line (SOLAS 74/88 reg.II-1/20);
- (PR) 5.2.2.15 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);
- (PR) 5.2.2.16 confirming that the drainage system of enclosed cargo spaces situated on the freeboard deck is working efficiently (SOLAS 74/88 reg.II-1/21);
- (PR) 5.2.2.17 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) 5.2.2.18 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) 5.2.2.19 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);
- (PR) 5.2.2.20 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) 5.2.2.21 examining, where practicable, the means 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);
- (PR) 5.2.2.22 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) 5.2.2.23 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) 5.2.2.24 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) 5.2.2.25 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) 5.2.2.26 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) 5.2.2.27 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) 5.2.2.28 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) 5.2.2.29 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) 5.2.2.30 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) 5.2.2.31 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) 5.2.2.32 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) 5.2.2.33 confirming that the means of communication between the bridge and the steering gear is operating satisfactorily and that, with ships having emergency steering positions, a telephone or other means of communication for relaying heading information and supplying visual compass readings to the emergency steering position are provided (SOLAS 74/00 regs.II-1/29 and V/19);
- (PR) 5.2.2.34 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, reg.V/19);
- (PR) 5.2.2.35 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) 5.2.2.36 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) 5.2.2.37 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) 5.2.2.38 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) 5.2.2.39 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (PR) 5.2.2.40 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) 5.2.2.41 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) 5.2.2.42 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/78 reg.II-I/35);
- (PR) 5.2.2.43 confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/78 reg. II- I/36);
- (PR) 5.2.2.44 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);
- (PR) 5.2.2.45 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) 5.2.2.46 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88, reg.II-1/38);
- (PR) 5.2.2.47 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) 5.2.2.48 confirming that the means of ascertaining the amount of oil contained in any oil tank are in good working condition;

- (PR) 5.2.2.49 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;
- (PR) 5.2.2.50 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) 5.2.2.51 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) 5.2.2.52 confirming that starting arrangements of each emergency generating set is satisfactory (SOLAS 74/88 reg.II-1/44);
- (PR) 5.2.2.53 checking, when appropriate, the disposition of and testing the supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PR) 5.2.2.54 confirming that precautions provided against shock, fire and other hazards of electrical origin are being maintained (SOLAS 74/88 reg.II-1/45);
- (PR) 5.2.2.55 confirming, when appropriate, that the arrangements for the machinery spaces being periodically un- attended are satisfactory (SOLAS 74/88 reg.II-1/54);
- (PR) 5.2.2.56 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 can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main (SOLAS 74/00 reg.II-2/10.2; FSSC chs.2 and 12) (SOLAS 74/88 regs.II-2/4 and 19);
- (PR) 5.2.2.57 examining the provision and randomly examining the condition of the portable and non-portable fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSSC ch.4) (SOLAS 74/88 reg.II-2/6);
- (PR) 5.2.2.58 examining the fixed fire extinguishing system for the machinery spaces and confirming that its means of operation are clearly marked (SOLAS 74/00 regs.II-2/10.4 and 10.5; FSSC chs.2 and 12) (SOLAS 74/88 regs.II-2/5, 7, 9, 10 and 53);
- (PR) 5.2.2.59 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) 5.2.2.60 examining the fire extinguishing arrangements in control stations, accommodation and service spaces (SOLAS 74/00 reg.II-2/10.6.1; FSSC ch.8) (SOLAS 74/88 reg.II-2/36);
- (PR) 5.2.2.61 examining the provision of fire extinguishing systems for the spaces containing flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5, 6 and 7) (SOLAS 74/88 ch.II-2);
- (PR) 5.2.2.62 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) 5.2.2.63 examining and testing, as far as practicable, any fire detection and fire alarm arrangements in machinery spaces, if applicable, accommodation and service spaces and control spaces (SOLAS 74/00 reg.II-2/27 (except 7.5.5, 7.6 and 7.9); FSSC ch.9) (SOLAS 74/88 regs.II-2/11, 12, 13, 13-1, 14, 36 and 41);
- (PR) 5.2.2.64 confirming that the fire fighter's outfits and the emergency escape breathing devices – EEBD – are complete and in good condition and that the cylinders, including the spare cylinders, of the self-contained breathing apparatus, are suitably charged (SOLAS 74/00 regs.II-2/10.10, 13.3.4 and 13.4.3; FSSC ch.3) (SOLAS 74/88 reg. II-2/17);
- (PR) 5.2.2.65 checking the operational readiness and maintenance of fire-fighting systems (SOLAS 74/00 reg.II-2/14) (SOLAS 74/88/91 reg.II- 2/21);
- (PR) 5.2.2.66 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, openings in 'A' and 'B' Class divisions, ventilation systems and windows and side scuttles, and the use of combustible material (SOLAS 74/00 regs.II-2/5.2, 5.3, 6, 8.2, 8.5, 9.2.1, 9.2.2, 9.3, 9.4.1, 9.5, 9.6 (except 9.6.5), 9.7 and 11 (except 11.6)) (SOLAS 74/88 regs.II-2/11, 16, 18, 23 to 35 and 37);
- (PR) 5.2.2.67 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) 5.2.2.68 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) 5.2.2.69 examining and testing 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 reg.II-2/5.2.1) (SOLAS 74/88 regs.II-2/16 and 32);

- (PR) 5.2.2.70 confirming that the stairways and ladders, including the low-location lighting system, arranged to provide a means of escape to the lifeboat and liferaft and liferaft embarkation deck from all passenger and crew spaces and from those spaces in which the crew is normally employed are being maintained (SOLAS 74/00 regs.II-2/13.2, 13.3.1, 13.3.2 and 13.7; FSSC chs.11 and 13 (except paragraph 3)) (SOLAS 74/88 reg.II-2/28);
- (PR) 5.2.2.71 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) 5.2.2.72 confirming that 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) 5.2.2.73 examining the fire extinguishing arrangements including fire detection in cargo spaces for general cargo and dangerous goods and testing, as far as practicable and as appropriate, the operation of the means for closing the various openings (SOLAS 74/00 regs.II-2/7.6 and 10.7; FSSC ch.5) (SOLAS 74/88 reg.II-2/39);
- (PR) 5.2.2.74 examining the fire extinguishing arrangements including fire detection in vehicle, special category and ro-ro spaces and testing, as far as practicable and as appropriate, the operation of the means for closing the various openings (SOLAS 74/00 reg.II-2/20 (except 20.5); FSSC chs.5, 6, 7, 9 and 10) (SOLAS 74/88 regs.II-2/37, 38 and 38-1);
- (PR) 5.2.2.75 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 reg. II-2/7.9 and 12; LSAC ch.7) (SOLAS 74/88 reg.II-2/40);
- (PR) 5.2.2.76 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring, fire detection, ventilation, the provision of personnel protection clothing and portable appliances and testing, as far as practicable, the water supply, bilge pumping and any water spray system (SOLAS 74/00 reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4); FSSC chs.3, 4, 7, 9 and 10) (SOLAS 74/88 regs.II-2/41 and 54);
- (PR) 5.2.2.77 examining, when appropriate, the helicopter facilities (SOLAS 74/00 regs. II-2/18, III/28) (SOLAS 74/88 reg.II-2/18.8);
- (PR) 5.2.2.78 checking the requirement for passenger ships carrying more than 36 passengers constructed before 1 October 1994 (SOLAS 74/88/91 reg. II-2/41-1 and 41-2);

- (PR) 5.2.2.79 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) 5.2.2.80 checking that the falls used in launching have been turned end for end in the previous 30 months and renewed in the past 5 years or have been subject to periodic inspection and been renewed within 4 years (SOLAS 74/96 reg. III/20);
- (PR) 5.2.2.81 examining each survival craft, including its equipment and, when fitted, the on-load release and hydrostatic lock, and for inflatable liferafts, the hydrostatic release unit and float free arrangements, including the date of servicing or replacement. Checking that the hand-flares are not out of date and that the required number of radar transponders are fitted in liferafts and those liferafts are clearly marked (SOLAS 74/96/00/02 reg. III/20, 21, 23, 24, 26, 34, 36 and 44; LSAC sections 2.3 to 2.5, 3.2 and 4.1 to 4.6);
- (PR) 5.2.2.82 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. A check that the thorough examination of launching appliances, including the dynamic testing of the winch brake, and servicing of lifeboat on-load release gear have been carried out (SOLAS 74/96 regs.III/11, 12, 13, 15, 16, 20, 21 and 23; LSAC sections 6.1 and 6.2);
- (PR) 5.2.2.83 rotational deployment of MES (SOLAS 74/88 reg. III/20.8.2 ; LSAC section 6.2.2.2);
- (PR) 5.2.2.84 examining each rescue boat, including its equipment (SOLAS 74/88 regs.III/17, 21, 26.3 and 34);
- (PR) 5.2.2.85 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 while underway at 5 knots (SOLAS 74/88 regs.III/14, 16, 17, 20 and 21; LSAC section 6.1);
- (PR) 5.2.2.86 checking the arrangements for mustering passengers (SOLAS 74/96 regs.III/11, 24 and 25);
- (PR) 5.2.2.87 confirming that a means of rescue is provided on ro-ro passenger ships (SOLAS 74/00 regs.III/11, 26.4);
- (PR) 5.2.2.88 confirming that a helicopter pick-up area is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/28);

- (PR) 5.2.2.89 confirming that a decision support system is provided for the Master (SOLAS 74/88 reg.III/29);
- (PR) 5.2.2.90 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) 5.2.2.91 examining and checking the operation of two-way VHF radiotelephone apparatus and radar transponders (SOLAS 74/88 regs.III/6, IV/7 and 14);
- (PR) 5.2.2.92 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 alarm system (SOLAS 74/96 regs.III/6, 18 and 35; LSAC sections 3.1 and 7.1);
- (PR) 5.2.2.93 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, immersion suits, anti-exposure suits and thermal protective aids and that their associated batteries are not out of date (SOLAS 74/88 regs.III/7, 21, 22 and 31; LSAC sections 2.1 to 2.5 and 3.1 to 3.3);
- (PR) 5.2.2.94 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) 5.2.2.95 checking that the required navigation lights, shapes and sound signalling equipment are in order (International Regulations for Preventing Collisions at Sea in force (COLREG), regs.20 to 24, 27 to 30 and 33);
- (PR) 5.2.2.96 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, ECDIS including back-up arrangements, a pelorus or compass bearing device and means for correcting heading and bearings. Items that cannot be checked with the ship in port should be verified from records (SOLAS 74/00 reg. V/19);
- (PR) 5.2.2.97 checking for the provision, specification operation and annual performance test of the voyage data recorder (SOLAS 74/00/04 reg. V/20);
- (PR) 5.2.2.98 checking that the International Code of Signals and a copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02 reg. V/21);

- (PR) 5.2.2.99 checking the provision, operation and the annual test has been carried out for the automatic identification system, where fitted (SOLAS 74/00/04, reg. V/19);
- (PR) 5.2.2.100 checking the provision and specification of the pilot ladders and hoists/pilot transfer arrangements (SOLAS 74/00 reg.V/17);
- (PR) 5.2.2.101 the provisions of (PI) 5.1.2.105 to (PI) 5.1.2.126;
- (PR) 5.2.2.102 the provisions of (PI) 5.1.2.127 to (PI) 5.1.2.131;
- (PR) 5.2.2.103 confirming that ship's identification number is permanently marked. (SOLAS 74/02, reg. XI-1/3).
- (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, the Passenger Ship Safety Certificate and its associated Record of Equipment (Form P) should be issued.

ANNEX 2

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

- (L) 1 **GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL LOAD LINE CERTIFICATE OR INTERNATIONAL LOAD LINE EXEMPTION CERTIFICATE**
- (LI) 1.1 **Initial surveys** – see part “General” section 4.1
- (LI) 1.1.1 For the load line the examination of plans and designs should consist of:
 - (LI) 1.1.1.1 examining the structural strength at the draft corresponding to the assigned freeboard (LLC 66/88 reg.1);
 - (LI) 1.1.1.2 examining the intact stability, and, where applicable, the damaged stability information and the loading and ballasting information that is to be supplied to the master, and, where not dispensed by the Administration, inclining experimental data (LLC 66/88 reg.10);
 - (LI) 1.1.1.3 determining the freeboard, including specifying and the consideration of the conditions of assignment for the freeboard (LLC 66/88/05 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, the ship has been constructed in accordance with the approved plans (LLC 66/88 reg.1);
 - (LI) 1.1.2.2 confirming that the deck line and load line mark are properly positioned (LLC 66/88 regs.4 to 9);
 - (LI) 1.1.2.3 witnessing the inclining experiment or lightweight survey (LLC 66/88/03 reg.10);
 - (LI) 1.1.2.4 examining the superstructure end bulkheads and the openings therein (LLC 66/88 regs.11 and 12);
 - (LI) 1.1.2.5 examining the means of securing the weathertightness of cargo hatchways, other hatchways and other openings on the freeboard and superstructure decks (LLC 66/88 reg. 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 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 reg.24, 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 reg.25, 25-1);
- (LI) 1.1.2.14 special requirements for ships permitted to sail with type “A” or type “B-minus” freeboards (LLC 66/88/03 reg.26, 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, the International Load Line Certificate or International Load Line Exemption Certificate should be issued.
- (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 Load Line Certificate or International Load Line Exemption Certificate;
 - (LA) 1.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;

- (LA) 1.2.1.5 checking the certificate of class, if the ship is classed with a classification society;
- (LA) 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;
- (LA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (LA) 1.2.1.8 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (LA) 1.2.1.9 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (LA) 1.2.1.10 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (LA) 1.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/14);
- (LA) 1.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (LA) 1.2.1.13 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (LA) 1.2.1.14 checking that the stability and, where applicable, the loading and ballasting information is available (LLC 66/88 reg.10).
- (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 spurling pipes and cable 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 reg.24, 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 reg.25, 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 reg.26, 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, the International Load Line Certificate or International Load Line Exemption Certificate should be endorsed;
 - (LA) 1.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (LR) **1.3** **Renewal surveys** – see part "General", section 4.5
 - (LR) 1.3.1 For the load line the examination of current certificates and other records should consist of:
 - (LR) 1.3.1.1 the provisions of (LA) 1.2.1, except for the validity of the International Load Line Certificate or International Load Line Exemption Certificate.
 - (LR) 1.3.2 For the load line the renewal survey should consist of:

- (LR) 1.3.2.1 the provisions of (LA) 1.2.2;
- (LR) 1.3.2.2 examining the hull to ensure that its strength is sufficient for the draft corresponding to the freeboard assigned (LLC 66/88 reg.1).
- (LR) 1.3.3 For the load line the completion of the renewal survey should consist of:
 - (LR) 1.3.3.1 after a satisfactory survey, the International Load Line Certificate or International Load Line Exemption Certificate should be issued.

ANNEX 3

SURVEY GUIDELINES UNDER THE 1973/78 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 sludge tank and standard discharge arrangements (MARPOL 90/04 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) 1.1.2 For the oil pollution prevention for 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 & 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 for 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 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) 1.1.2.11 examining the arrangements of oil/water interface detector (MARPOL 90/04 Annex I reg.32);
- (OI) 1.1.2.12 examining, for oil tanker of 5,000 deadweight and above delivered after 1 February 2002, the intact stability. (MARPOL 90/04 Annex I reg.27);
- (OI) 1.1.2.13 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) 1.1.2.14 examining the accidental oil outflow performance (MARPOL 90/04 Annex I reg.23), as applicable.
- (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 oily 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 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 the oil pollution prevention for 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 survey¹ (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

¹ Resolution A.586(14) or MEPC.108(49), as applicable.

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 & 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 communications 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 to observe 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 (E1) 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 the arrangements for the part flow system, where fitted, are satisfactory (MARPOL 90/04 Annex I reg. 30);
- (OI) 1.1.4.16 confirming that closing devices installed in the cargo transfer system and cargo piping as appropriate are satisfactory (MARPOL 90/04 Annex I regs. 23 & 26);
- (OI) 1.1.4.17 confirming that the subdivision and stability arrangements, in addition to the provision of (OI) 1.1.4.16, to prevent progressive flooding are satisfactory (MARPOL 90/04 Annex I regs. 23 & 26);
- (OI) 1.1.4.18 confirming the arrangements for cargo pump-room bottom protection (double bottom where required) (MARPOL 90/04 Annex I reg.22).
- (OI) 1.1.5 For the oil pollution prevention the check that the documentation has been placed on board cargo ships should consist of:
- (OI) 1.1.5.1 confirming that certificates for type approval for the oil filtering equipment and oil content meters are available (MARPOL 90/04 Annex I reg. 14);

- (OI) 1.1.5.2 confirming that the Oil Record Book (Part I) has been provided (MARPOL 90/04 Annex I reg. 17);
- (OI) 1.1.5.3 confirming that the shipboard oil pollution emergency plan or in the case of a chemical/product tanker a shipboard marine pollution emergency plan has been provided (MARPOL 90/04 Annex I reg. 37);
- (OI) 1.1.5.4 confirming, as appropriate, that the Operating and Maintenance manuals for the 15ppm bilge separator and 15ppm bilge alarm are available.
- (OI) 1.1.6 For the oil pollution prevention the check that the documentation has been placed on board oil tankers should additionally consist of:
- (OI) 1.1.6.1 confirming that, if applicable, a Dedicated Clean Ballast Tank Operation Manual has been provided (MARPOL 90/04 Annex I reg. 18);
- (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 Resolution² (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 an Oil Record Book (Part II) has been provided (MARPOL 90/04 Annex I reg. 36);
- (OI) 1.1.6.6 confirming that the instructions for the operation of the part flow system have been provided or included in the ship's cargo and ballast handling manuals (MARPOL 90/04 Annex I reg. 30.6.5);
- (OI) 1.1.6.7 confirming that the information and data concerning the subdivision and damage stability has been provided (MARPOL 90/04 Annex I reg. 28);
- (OI) 1.1.6.8 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) 1.1.6.9 confirming, for oil tanker of 5,000 deadweight and above delivered on/after 1 February 2002, the intact stability has been approved (MARPOL 90/04 Annex I reg.27);

² Resolution A.586(14) or MEPC.108(49), as applicable.

- (OI) 1.1.6.10 confirming, for oil tankers of 5,000 deadweight and above that arrangements are in place to provide prompt access to shore based damage stability and residual structural strength computerized calculation programmes (MARPOL 90/04 Annex I reg. 37.4).
- (OI) 1.1.7 For the oil pollution prevention the completion of initial survey should consist of:
- (OI) 1.1.7.1 after satisfactory survey, the International Oil Pollution Prevention Certificate should be issued.
- (OA) **1.2 Annual surveys** – see part “General”, section 4.2
- (OA) 1.2.1 For the 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 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;

- (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 74/88/2000 reg. V/14.2);
- (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, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (OA) 1.2.1.16 checking from 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 15ppm 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 board³;
- (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) 1.2.2 For the 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 that, when appropriate, the approved operational procedures for existing oil tankers having special ballast arrangements are on board (MARPOL 90/04 Annex I reg. 18);
Note: This requirement will be obsolete with effect from June 2008 as all such tankers will be phased out under reg. 20.

³ For installations complying with resolution MEPC.107(49).

- (OA) 1.2.2.3 confirming, when appropriate, that a CAS Statement of Compliance together with the CAS Final Report⁴ are on board (MARPOL 90/04, Annex I, regulations 20.6, 20.7 & 21.6);
- (OA) 1.2.2.4 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) 1.2.2.5 confirming that a valid calibration certificate of the oil discharge monitoring equipment is available on board⁵;
- (OA) 1.2.2.6 checking whether the appropriate entries have been made in Part II of the Oil Record Book (MARPOL 90/04 Annex I reg. 36);
- (OA) 1.2.2.7 confirming that for oil tankers of 5,000 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) 1.2.2.8 confirming that subdivision and damage stability in an approved form, where applicable, is on board (MARPOL 90/04 Annex I reg.28);
- (OA) 1.2.2.9 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) 1.2.2.10 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) 1.2.2.11 checking that the ship is allowed continued operation according to the phase-out scheme of MARPOL 90/04 Annex I reg.20).
- (OA) 1.2.3 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 reg. 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);

⁴ Refer to resolution MEPC.94(46) as amended – Condition Assessment Scheme.

⁵ For installations complying with resolution MEPC.108(49).

- (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 bulkheads (MARPOL 90/04 Annex I reg. 16);
- (OA) 1.2.3.4 checking that the arrangement of oily 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 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 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 Deadweight and above, that arrangements are in place to provide prompt access to shore based damage stability and residual structural strength computerized calculation programmes (MARPOL 90/04 Annex I reg. 37.4).
- (OA) 1.2.5 For the oil pollution prevention the completion of the annual survey should consist of:
 - (OA) 1.2.5.1 after a satisfactory survey, the International Oil Pollution Prevention Certificate should be endorsed;
 - (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 the 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 the 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 & 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 operation 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 to check the record or calibration of the meter when done in accordance with the manufacturer's operation 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 (Cm) 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 & 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, the International Oil Pollution Prevention Certificate should be endorsed;

- (OIn) 1.3.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory; see part “General”, section 4.8.
- (OR) **1.4** **Renewal surveys** – see part “General” section 4.5
- (OR) 1.4.1 For the oil pollution prevention the examination of current certificates and other records should consist of:
- (OR) 1.4.1.1 the provisions of (OA) 1.2.1, except for the validity of the International Oil Pollution Prevention Certificate;
- (OR) 1.4.1.2 verifying that, if applicable, the 15ppm bilge alarm has been calibrated by the manufacturer or a person authorized by the manufacturer and that a valid calibration certificate is available on board⁶.
- (OR) 1.4.2 For the 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 board⁷.
- (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. 15);
- (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. 15);
- (OR) 1.4.3.4 confirming the satisfactory operation of the alarm for the oil filtering system (MARPOL 90/04 Annex I reg. 15);
- (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 oily residue (sludge) tank is approved on the basis of such installations (MARPOL 90/04 Annex I reg.12).

⁶ For installations complying with resolution MEPC.107(49).

⁷ For installations complying with resolution MEPC.108(49).

- (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 reg. 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 deadweight and above that arrangements are in place to provide prompt access to shore based damage stability and residual structural strength computerized calculation programmes (MARPOL 90/04 Annex I reg. 37.4).
- (OR) 1.4.5 For the oil pollution prevention the completion of the renewal survey should consist of:
- (OR) 1.4.5.1 after a satisfactory survey, the International Oil Pollution Prevention Certificate should be issued.”
- (N) **2 GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL POLLUTION PREVENTION CERTIFICATE FOR THE CARRIAGE OF NOXIOUS SUBSTANCES IN BULK**
- (NI) **2.1 Initial surveys** – see part General section 4.1
- (NI) 2.1.1 For the carriage of noxious liquid substances in bulk the examination of plans and designs (as applicable to the cargoes the ship is to be certified to carry) should consist of:
- (NI) 2.1.1.1 drawing up the list of noxious liquid substances it is proposed the ship will be certified to carry (MARPOL 90/04 Annex II reg. 6);
- (NI) 2.1.1.2 examining the pumping system (MARPOL 90/04 Annex II reg. 12);
- (NI) 2.1.1.3 examining the stripping system (MARPOL 90/04 Annex II reg. 12);
- (NI) 2.1.1.4 examining the tank washing system and equipment (MARPOL 90/04 Annex II reg. 14 and App.4);

- (NI) 2.1.1.5 examining the underwater discharge arrangements (MARPOL 90/04 Annex II reg. 12);
- (NI) 2.1.1.6 examining the ventilation equipment for residue removal (MARPOL 90/04 Annex II reg. 13 and App.7);
- (NI) 2.1.1.7 examining the heating system for solidifying and high viscosity substances (MARPOL 90/04 Annex II reg. 14 and App.4);
- (NI) 2.1.1.8 examining the Procedures and Arrangements Manual (including cargo carriage requirements to meet Annex II regulations) (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.1.9 examining the shipboard marine pollution emergency plan (MARPOL 90/04 Annex II reg. 17);
- (NI) 2.1.1.10 examining if applicable the construction and arrangements of a ship certified to carry individually identified vegetable oils under exemption from the carriage requirements (MARPOL 90/04 Annex II reg. 4.3).
- (NI) 2.1.2 For the carriage of noxious liquid substances in bulk the survey during construction and after installation (as applicable to the cargoes the ship is to be certified to carry) should consist of:
 - (NI) 2.1.2.1 confirming that the pumping and stripping systems are satisfactory and that portable pipes or bends in sufficient number, if required, are on board (MARPOL 90/04 Annex II reg.12);
 - (NI) 2.1.2.2 conducting the water test for assessing the stripping quantity (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 & App.7);
- (NI) 2.1.2.9 confirming that the heating system for solidifying and high viscosity substances is installed in accordance with the approved plan (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.2.10 confirming if applicable the construction and arrangements of a ship certified to carry individually identified vegetable oils under exemption from the carriage requirements (MARPOL 90/04 Annex II reg. 4.3).
- (NI) 2.1.3 For the carriage of noxious liquid substances in bulk the check that the required documentation has been placed on board cargo ships (as applicable to the cargoes the ship is to be certified to carry) should consist of:
- (NI) 2.1.3.1 confirming that Procedures and Arrangements Manual has been provided (MARPOL 90/04 Annex II reg. 14);
- (NI) 2.1.3.2 confirming that the Cargo Record Book has been provided (MARPOL 90/04 Annex II reg. 15);
- (NI) 2.1.3.3 confirming the shipboard marine pollution emergency plan is provided (MARPOL 90/04 Annex II reg. 17).
- (NI) 2.1.4 For the carriage of noxious liquid substances in bulk the completion of initial survey should consist of:
- (NI) 2.1.4.1 after satisfactory survey, the International Certificate for the Carriage of Noxious Liquid Substances in Bulk should be issued.
- (NA) **2.2 Annual surveys** – see part “General”, section 4.2
- (NA) 2.2.1 For the carriage of noxious liquid substances in bulk the examination of current certificates and other records should consist of:
- (NA) 2.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (NA) 2.2.1.2 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;

- (NA) 2.2.1.3 checking the validity of the International Oil Pollution Prevention Certificate;
- (NA) 2.2.1.4 checking the certificates of class, if the ship is classed with a classification society;
- (NA) 2.2.1.5 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (NA) 2.2.1.6 checking the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (NA) 2.2.1.7 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (NA) 2.2.1.8 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (NA) 2.2.1.9 checking, when appropriate, the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (NA) 2.2.1.10 checking the validity of the International Ship Security Certificate;
- (NA) 2.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88/2000 reg.V/ 14.2);
- (NA) 2.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (NA) 2.2.1.13 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (NA) 2.2.1.14 confirming that the Procedures and Arrangements Manual is on board (MARPOL 90/04 Annex II reg. 14);
- (NA) 2.2.1.15 confirming that the Cargo Record Book is being correctly used (MARPOL 90/04 Annex II reg. 15);
- (NA) 2.2.1.16 confirming that the shipboard marine pollution emergency plan is on board (MARPOL 90/04 Annex II reg. 17).
- (NA) 2.2.2 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 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 Liquids 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, the International Certificate for the Carriage of Noxious Liquid Substances in Bulk should be endorsed;
 - (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 reg. 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, the International Certificate for the Carriage of Noxious Liquid Substances in Bulk should be endorsed;
- (NIn) 2.3.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part “General”, section 4.8.
- (NR) **2.4** **Renewal surveys** – see part “General”, section 4.4
- (NR) 2.4.1 For the carriage of noxious liquid substances in bulk the examination of current certificates and other records should consist of:
- (NR) 2.4.1.1 the provisions of (NA) 2.2.1, except for the validity of the International Certificate for the Carriage of Noxious Liquid Substances in Bulk.
- (NR) 2.4.2 For the carriage of noxious liquid substances in bulk the renewal survey should consist of:
- (NR) 2.4.2.1 the provisions of (NIn) 2.3.2;
- (NR) 2.4.2.2 confirming that the pumping and stripping systems are satisfactory and that portable pipes or bends in sufficient number, if required, are on board (MARPOL 90/04 Annex II reg. 12);
- (NR) 2.4.2.3 conducting the water test for assessing the stripping quantity (MARPOL 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 reg. 12, 14 and App.4);

- (NR) 2.4.2.8 confirming that means are provided in the common discharge piping to isolate openings provided above the waterline (MARPOL 73/78/90 Annex II);
- (NR) 2.4.2.9 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) 2.4.2.10 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 reg. 12, 14 and App.4);
- (NR) 2.4.2.11 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 reg. 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, the International Certificate for the Carriage of Noxious Liquid Substances in Bulk should be issued.”
- (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 the sewage pollution prevention the examination of plans and designs should consist of:
- (SI) 3.1.1.1 examining as appropriate the arrangements for the provision of a sewage treatment plant, or of a sewage comminuting and disinfecting system, or of a sewage holding tank (MARPOL Annex IV reg.9);
- (SI) 3.1.1.2 if a sewage treatment plant is fitted, checking that it is type approved by the administration in accordance with the appropriate resolution (MARPOL Annex IV reg.9.1);
- (SI) 3.1.1.3 if a sewage comminuting and disinfecting system is fitted, checking that it is approved by the administration and that facilities for the temporary storage of sewage are provided (MARPOL Annex IV reg.9.2);
- (SI) 3.1.1.4 if a sewage holding tank is fitted, checking its capacity having regard to the number of person on board (MARPOL Annex IV reg.9.1.3);
- (SI) 3.1.1.5 examining the arrangements for the provision of a standard discharge connection (MARPOL Annex IV reg.10);
- (SI) 3.1.1.6 examining the arrangements for the provision of a pipeline for the discharge of sewage to a reception facility (MARPOL Annex IV reg. 10).

- (SI) 3.1.2 For the sewage pollution prevention the survey during construction and after installation should consist of:
 - (SI) 3.1.2.1 checking externally, as applicable, the sewage treatment plant or the sewage comminuting and disinfecting system, and confirming their operation (MARPOL Annex IV regs.4.1.1 and 9);
 - (SI) 3.1.2.2 if a sewage holding tank is fitted, checking that it has been constructed in a satisfactory manner, and checking that the holding tank has a means to indicate visually the amount of its contents (MARPOL Annex IV reg.9.1.3);
 - (SI) 3.1.2.3 confirming that a standard discharge connection is provided (MARPOL Annex IV reg.10);
 - (SI) 3.1.2.4 confirming that a pipeline for the discharge of sewage to a reception facility is provided (MARPOL Annex IV reg.10).
- (SR) **3.2 Renewal surveys** – See “General”, section 4.5
 - (SR) 3.2.1 For the sewage pollution prevention the examination of current certificates and other records should consist of:
 - (SR) 3.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate or Passenger Ship Safety Certificate;
 - (SR) 3.2.1.2 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (SR) 3.2.1.3 checking the validity of the International Oil Pollution Prevention Certificate;
 - (SR) 3.2.1.4 checking the validity of the International Air Pollution Prevention Certificate;
 - (SR) 3.2.1.5 checking the validity of the International Ship Security Certificate;
 - (SR) 3.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
 - (SR) 3.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in bulk or the Certificate of Fitness for the Carriage of Dangerous Chemical in Bulk;
 - (SR) 3.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;

- (SR) 3.2.1.9 checking when appropriate the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (SR) 3.2.1.10 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/13(b));
- (SR) 3.2.1.11 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (SR) 3.2.1.12 checking the validity of the Safety management certificate(SMC) and that a copy of the Document of Compliance (DOC) is on board, where applicable;
- (SR) 3.2.1.13 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the certificate.
- (SR) 3.2.2 For the sewage pollution prevention the renewal survey should consist of:
 - (SR) 3.2.2.1 confirming that no change has been made nor any new equipment installed which would affect the validity of the certificate (MARPOL Annex IV reg.4.8);
 - (SR) 3.2.2.2 examining externally the sewage pollution prevention system and confirming, as far as practicable its satisfactory operation.
- (SR) 3.2.3 For the sewage pollution prevention the completion of the renewal survey should consist of:
 - (SR) 3.2.3.1 after satisfactory survey the International Sewage Prevention Certificate should be issued.
- (A) 4 **GUIDELINES FOR THE SURVEYS FOR THE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE AND THE NO_x TECHNICAL CODE**
- (AI) 4.1 **Initial surveys** – see part “General”, section 4.1
 - (AI) 4.1.1 For air pollution prevention the examination of plans and designs should consist of:
 - (AI) 4.1.1.1 examining the arrangements for systems using ozone-depleting substances (regulation 12 of Annex VI);
 - (AI) 4.1.1.2 examining the arrangements for Sulphur Oxides exhaust gas cleaning systems or other technological methods, if applicable (regulation 14 of Annex VI);
 - (AI) 4.1.1.3 examining the arrangements for vapour collection systems, if applicable (regulation 15 of Annex VI and MSC/Circ.585);

- (AI) 4.1.1.4 examining the arrangements for shipboard incinerators, if applicable (regulation 16 of Annex VI).
- (AI) 4.1.2 For air pollution prevention the survey should consist of:
 - (AI) 4.1.2.1 Ozone-depleting substances (regulation 12 of Annex VI):
 - (AI) 4.1.2.1.1 confirming the satisfactory installation and operation of systems using ozone depleting substances and there are no emissions of ozone depleting substances.
 - (AI) 4.1.2.2 Nitrogen oxide emissions from Diesel engines (regulation 13 of Annex VI):
 - (AI) 4.1.2.2.1 confirmed that all engines which are required to be certified are pre-certified in accordance with section 2.2 of the NO_x Technical Code.
 - (AI) 4.1.2.2.1.1 *If engine parameter check method is used:*
 - (AI) 4.1.2.2.1.1.1 an on-board verification survey in accordance with paragraph 6.2 of the NO_x Technical Code.
 - (AI) 4.1.2.2.1.2 *If the simplified method is used:*
 - (AI) 4.1.2.2.1.2.1 an on-board verification survey in accordance with paragraph 6.3 of the NO_x Technical Code.
 - (AI) 4.1.2.3 Sulphur Oxides (regulation 14 of Annex VI):
 - (AI) 4.1.2.3.1 confirming the satisfactory installation and operation of the fuel switching arrangements when tanks are provided for low and normal sulphur content fuel;
 - (AI) 4.1.2.3.2 confirming the satisfactory installation and operation of the exhaust gas cleaning system (if fitted);
 - (AI) 4.1.2.4 Volatile Organic Compounds (regulation 15 of Annex VI) (if applicable):
 - (AI) 4.1.2.4.1 confirming the satisfactory installation of the vapour collection piping;
 - (AI) 4.1.2.4.2 confirming the satisfactory installation and operation of the means provided to eliminate the collection of condensation in the system, such as drains in low points of the line end;
 - (AI) 4.1.2.4.3 confirming the satisfactory installation of the piping to ensure it is electrically continuous and electrically bonded to the hull;
 - (AI) 4.1.2.4.4 confirming the satisfactory installation and operation of the isolation valves at the vapour manifolds;

- (AI) 4.1.2.4.5 confirming that the ends of each line are properly identified as vapour collection lines;
- (AI) 4.1.2.4.6 confirming that the vapour collection flanges are in accordance with the IMO guidelines and industrial standards;
- (AI) 4.1.2.4.7 confirming that where portable vapour lines are provided that they are electrically continuous;
- (AI) 4.1.2.4.8 confirming the satisfactory installation and operation of the closed gauging system and the readouts in the cargo control area;
- (AI) 4.1.2.4.9 confirming the satisfactory installation and operation of the overflow control system;
- (AI) 4.1.2.4.10 confirming the satisfactory installation and operation of both the audible and visual alarms, that the alarms are properly labelled; that the power failure alarm operates and that there is a means to check the operation of the alarms;
- (AI) 4.1.2.4.11 confirming the satisfactory installation and operation of the high and low pressure alarms provided for each main vapour line and that these alarms operate at the correct set points;
- (AI) 4.1.2.5 Shipboard Incinerators (regulation 16 of Annex VI) (installed on or after 1 January 2000):
 - (AI) 4.1.2.5.1 confirming the satisfactory installation and operation of each incinerator;
 - (AI) 4.1.2.5.2 confirming that warning and instruction plates are satisfactorily secured in prominent positions on or near the incinerator;
 - (AI) 4.1.2.5.3 confirming that the manufacturers name, incinerator model number/type and capacity in heat units per hour is permanently marked on the incinerator;
 - (AI) 4.1.2.5.4 confirming the satisfactory operation of the following alarms and safety devices are in good condition and fully operational;
 - (AI) 4.1.2.5.4.1 flue gas high temperature alarms and shutdowns;
 - (AI) 4.1.2.5.4.2 combustion temperature controls and shutdowns;
 - (AI) 4.1.2.5.4.3 combustion chamber negative pressure;
 - (AI) 4.1.2.5.4.4 flame safeguard control, alarms and shutdowns;
 - (AI) 4.1.2.5.4.5 all alarms both visual and audible are functioning and they indicate the cause of their failure;

- (AI) 4.1.2.5.4.6 power loss alarms and auto shutdown arrangements;
- (AI) 4.1.2.5.4.7 charging arrangements;
- (AI) 4.1.2.5.4.8 low fuel oil pressure alarm/shutdown;
- (AI) 4.1.2.5.4.9 emergency stop switch and electrical isolating arrangements;
- (AI) 4.1.2.5.4.10 interlocks;
- (AI) 4.1.2.5.5 confirming the satisfactory installation of drip trays under each burner, pump, and strainer.
- (AI) 4.1.3 For air pollution prevention the check that certificates and other relevant documentation have been placed on board should consist of:
 - (AI) 4.1.3.1 review (AA) 3.2.2.2 except for the bunker delivery notes and the records required in (AA) 3.2.2.2.3 and (AA) 3.2.2.2.7;
- (AI) 4.1.4 or air pollution prevention the completion of the initial survey should consist of:
 - (AI) 4.1.4.1 after satisfactory survey the International Air Pollution Prevention Certificate should be issued.
- (AA) **4.2** **Annual surveys** – see “General”, section 4.2
 - (AA) 4.2.1 For air pollution prevention the examination of current certificates and other records should consist of:
 - (AA) 4.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - (AA) 4.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board, where applicable;
 - (AA) 4.2.1.3 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (AA) 4.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;
 - (AA) 4.2.1.5 checking the certificates of class, if the ship is classed with a classification society;
 - (AA) 4.2.1.6 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;

- (AA) 4.2.1.7 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88, regulation V/13(b));
- (AA) 4.2.1.8 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (AA) 4.2.1.9 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate.
- (AA) 4.2.2 For air pollution prevention the annual survey should consist of:
- (AA) 4.2.2.1 General:
- (AA) 4.2.2.1.1 confirm that no changes have been made or any new equipment installed which would affect the validity of the certificate;
- (AA) 4.2.2.2 Documentation:
- (AA) 4.2.2.2.1 confirm that there are Engine International Air Pollution Prevention (EIAPP) Certificates for each engine, required to be certified, as described in Chapter 2.1 of the NO_x Technical Code;
- (AA) 4.2.2.2.2 confirm that there is on board an approved technical file for each engine required to be certified;
- (AA) 4.2.2.2.3 confirm that there are bunker delivery notes on board and fuel oil samples are kept under the ships control (regulation 18 of Annex VI);
- (AA) 4.2.2.2.4 confirm that there is for each Exhaust Gas Cleaning System (EGCS)-SO_x either a SO_x Emission Control Area (SECA) Compliance Certificate for the EGCS-SO_x, or an Onboard Monitoring Manual (OMM) as appropriate, plus in either cases a SECA Compliance Plan (regulation 14(4)(b) of Annex VI);
- (AA) 4.2.2.2.5 confirm that there is an IMO Type Approval Certificate for each incinerator on board (regulation 16(2)(a) of Annex VI);
- (AA) 4.2.2.2.6 confirm that there is a record book of engine parameters for each engine required to be certified in the case where the engine parameter check method is used as a mean of onboard NO_x verification (NO_x Technical Code, paragraph 6.2.3);
- (AA) 4.2.2.2.7 confirm that there is a record of fuel change over this record should take form of a log-book as described by the Administration (regulation 14.6 of Annex VI)*;

* This information could be contained in the engine room log-book, the deck log-book, the official log-book, the oil record book or a separate log-book solely for this purpose.

- (AA) 4.2.2.2.8 confirm that there is a transfer procedure for the VOC collection system;
- (AA) 4.2.2.2.9 confirm that there is an instruction manual for each incinerator if required (regulation 16(7) of Annex VI);
- (AA) 4.2.2.3 Ozone-depleting substances:
 - (AA) 4.2.2.3.1 confirm that no new installation or equipment except those covered by (AA) 3.2.2.3.1 have been fitted to the ship after 19 May 2005. (regulation 12.1 of Annex VI);
 - (AA) 4.2.2.3.2 confirm that no installations containing hydrochlorofluocarbons (HCFCs) have been fitted after 1 January 2020;
 - (AA) 4.2.2.3.3 examine externally any installation or equipment as far as practicable to satisfactory maintenance to ensure that there are no emission of ozone-depleting substances.
- (AA) 4.2.2.4 Nitrogen oxide emissions from each Diesel engine:
 - (AA) 4.2.2.4.1 *If engine parameter check method is used:*
 - (AA) 4.2.2.4.1.1 review engine documentation contained in the technical file and the record book of engine parameters to check, as far as practicable, engine rating, duty and limitation/restrictions as given in the technical file;
 - (AA) 4.2.2.4.1.2 confirm that the engine has not undergone any modifications or adjustments outside the options and ranges permitted in the technical file since the last survey;
 - (AA) 4.2.2.4.1.3 conduct survey as detailed in the technical file;
 - (AA) 4.2.2.4.2 *If the simplified method is used:*
 - (AA) 4.2.2.4.2.1 review engine documentation contained in the technical file;
 - (AA) 4.2.2.4.2.2 confirm that the test procedure has been approved by the Administration;
 - (AA) 4.2.2.4.2.3 confirm that the analysers, engine performance sensors, ambient condition measurement equipment, span check gases and other test equipment are the correct type and have been calibrated in accordance with the NO_x Technical Code;
 - (AA) 4.2.2.4.2.4 confirm that the correct test cycle, as defined in the engine's technical file, is used for this onboard confirmation test measurements;
 - (AA) 4.2.2.4.2.5 ensure that a fuel sample is taken during the test and submitted for analysis;

- (AA) 4.2.2.4.2.6 witness the test and confirm that a copy of the test report has been submitted for approval on completion of the test.
- (AA) 4.2.2.4.3 *If the direct measurement and monitoring method is used:*
- (AA) 4.2.2.4.3.1 review engine documentation method and technical file and verify that the direct measurement and monitoring manual is approved by the Administration;
- (AA) 4.2.2.4.3.2 the procedures to be checked in the direct monitoring and measure method and the data obtained as given in the approved onboard monitoring manual should be followed;
- (AA) 4.2.2.5 Sulphur Oxides:
- (AA) 4.2.2.5.1 review bunker notes for the use of the correct sulphur content fuel for the area of operation;
- (AA) 4.2.2.5.2 confirm that where there are tanks fitted for low and normal sulphur content fuel that fuel switching arrangement or procedures are provided and operational;
- (AA) 4.2.2.5.3 verify that there are records of the change over to and from low sulphur fuel during transit through a SO_x emission control area;
- (AA) 4.2.2.5.4 alternative to .2 and .3 above, where EGCS-SO_x or other equivalent devices are fitted, confirmation from the approved procedures for the equipment that it is in a satisfactory condition and operated in accordance with the required documentation.
- (AA) 4.2.2.6 Volatile Organic Compounds (VOCs):
- (AA) 4.2.2.6.1 confirm that the vapour collect system, if required, is approved taking into account MSC/Circ.585 “Standards for Vapour Emission Control Systems”;
- (AA) 4.2.2.6.2 confirm from a general examination that the vapour collection piping is in a satisfactory condition;
- (AA) 4.2.2.6.3 confirm that there is a means provided to eliminate the collection of condensation in the system, such as drains in low points of the line end. The drains should be checked to ensure they function correctly;
- (AA) 4.2.2.6.4 confirm that the piping is electrically bonded to the hull and that the bonding is intact;
- (AA) 4.2.2.6.5 confirm that the isolation valves at the vapour manifolds are operational and that the valve position indicators operate correctly;
- (AA) 4.2.2.6.6 confirm that the ends of each line is properly identified as vapour collection lines;

- (AA) 4.2.2.6.7 confirm that the vapour collection flanges are in accordance with the IMO guidelines and industrial standards;
- (AA) 4.2.2.6.8 confirm that where portable vapour lines are provided that they are in good condition;
- (AA) 4.2.2.6.9 confirm that the closed gauging system is operational and the readouts in the cargo control area are functional;
- (AA) 4.2.2.6.10 confirm that there is an overflow control system provided and that it is operational;
- (AA) 4.2.2.6.11 confirm that the alarm system is operational, both audible and visual alarms operate, the alarms are properly labelled; the power failure alarm operates and that there is a means to check the operation of the alarms and that this means is operational;
- (AA) 4.2.2.6.12 confirm that there are high and low pressure alarms provided for each main vapour line and that these alarms operate at the correct set points;
- (AA) 4.2.2.6.13 confirm that the high level and high high level (overflow) alarms act independently of each other.
- (AA) 4.2.2.7 Incinerators (installed on or after 1 January 2000):
 - (AA) 4.2.2.7.1 confirm from an external examination that each incinerator is in a generally satisfactory condition and free from leaks of gas or smoke;
 - (AA) 4.2.2.7.2 confirm that the warning and instruction plates are legible and secured in prominent positions on or near the incinerator;
 - (AA) 4.2.2.7.3 confirm that the manufacturers name, incinerator model number/type and capacity in heat units per hour is permanently marked on the incinerator;
 - (AA) 4.2.2.7.4 confirm that the incinerator casing insulation arrangements are in good condition;
 - (AA) 4.2.2.7.5 confirm as far as it is practicable, that the following alarms and safety devices are in good condition and fully operational:
 - (AA) 4.2.2.7.5.1 flue gas high temperature alarms and shutdowns;
 - (AA) 4.2.2.7.5.2 combustion temperature controls and shutdowns;
 - (AA) 4.2.2.7.5.3 combustion chamber negative pressure;
 - (AA) 4.2.2.7.5.4 flame safeguard control, alarms and shutdowns;
 - (AA) 4.2.2.7.5.5 all alarms both visual and audible are functioning and they indicate the cause of their failure;

- (AA) 4.2.2.7.5.6 power loss alarms and auto shutdown arrangements;
- (AA) 4.2.2.7.5.7 charging arrangements;
- (AA) 4.2.2.7.5.8 low fuel oil pressure alarm/shutdown;
- (AA) 4.2.2.7.5.9 emergency stop switch and electrical isolating arrangements;
- (AA) 4.2.2.7.5.10 interlocks;
- (AA) 4.2.2.7.6 confirm that drip trays are fitted under each burner, pump, and strainer and that they are in good condition.
- (AA) 4.2.3 For air pollution prevention the completion of the annual survey should consist of:
 - (AA) 4.2.3.1 after a satisfactory survey, the International Prevention of Air Pollution certificate should be endorsed;
 - (AA) 4.2.3.2 if a survey shows that the condition of the ship or its equipment is unsatisfactory – see “General”, section 4.8.
- (Ain) **4.3 Intermediate surveys** – see “General”, section 4.3
 - (Ain) 4.3.1 For air pollution prevention the examination of current certificates and other records should consist of:
 - (Ain) 4.3.1.1 the provisions of (AA) 3.2.1.
 - (Ain) 4.3.2 For air pollution prevention the intermediate survey should consist of:
 - (Ain) 4.3.2.1 the provisions of (AA) 3.2.2.
 - (Ain) 4.3.3 For air pollution prevention the completion of the intermediate survey should consist of:
 - (Ain) 4.3.3.1 after a satisfactory survey, the International Prevention of Air Pollution Certificate should be endorsed;
 - (Ain) 4.3.3.2 if a survey shows that the condition of the ship or its equipment is unsatisfactory see “General”, section 4.4.
- (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) 1.2.1 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) 3.2.2;
 - (AR) 4.4.2.2 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the vapour collection systems' closed gauging system and associated readouts;
 - (AR) 4.4.2.3 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the vapour collection systems' overflow control and it's audible and visual alarms;
 - (AR) 4.4.2.4 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the vapour collection systems' high and low pressure alarms for each main vapour line;
 - (AR) 4.4.2.5 confirm that the vapour collection systems piping is electrically continuous;
 - (AR) 4.4.2.6 confirm that the portable vapour lines are electrically continuous;
 - (AR) 4.4.2.7 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the following alarms and safety devices;
 - (AR) 4.4.2.7.1 flue gas high temperature alarms and shutdowns;
 - (AR) 4.4.2.7.2 combustion temperature controls and shutdowns;
 - (AR) 4.4.2.7.3 combustion chamber negative pressure;
 - (AR) 4.4.2.7.4 flame safeguard control, alarms and shutdowns;
 - (AR) 4.4.2.7.5 all alarms both visual and audible are functional and they indicate the cause of their failure;
 - (AR) 4.4.2.7.6 power loss alarms and auto shutdown arrangements;
 - (AR) 4.4.2.7.7 charging arrangements;
 - (AR) 4.4.2.7.8 low fuel oil pressure alarm/shutdown;
 - (AR) 4.4.2.7.9 emergency stop switch and electrical isolating arrangements;
 - (AR) 4.4.2.7.10 interlocks.
- (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 Prevention of Air Pollution Certificate should be issued.

ANNEX 4

SURVEY GUIDELINES UNDER THE MANDATORY CODES

- (D) 1 **GUIDELINES FOR THE SURVEYS FOR THE INTERNATIONAL CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK AND THE CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK**
- (DI) 1.1 **Initial surveys** – see part “General” section 4.1
- (DI) 1.1.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of plans and designs of the structure, equipment, fittings, arrangements and materials should consist of:
- (DI) 1.1.1.1 determining the products that it is intended that the ship will be permitted to carry and noting the corresponding minimum special requirements (IBC Code 83/90/00, ch.17) and any other special requirements (IBC Code 83/90/00, ch.15);
- (DI) 1.1.1.2 examining the plans for the ship type, location of the cargo tanks, cargo containment, materials of construction, cargo temperature control, cargo tank vent systems, environmental control, electrical installations, fire protection and fire extinction, instrumentation and the provision, specification and stowage of the equipment for personnel protection (IBC Code 83/90/00, chs.2, 4, 6, 7, 8, 9, 10, 11, 13 and 14);
- (DI) 1.1.1.3 examining the plans for the freeboard and intact stability, discharges below the bulkhead deck and survival capability (IBC Code 83/90/00, ch.2);
- (DI) 1.1.1.4 examining the plans for the ship arrangements IBC Code 83/90/00, ch.3);
- (DI) 1.1.1.5 examining the plans for the cargo transfer IBC Code 83/90/00, ch.5);
- (DI) 1.1.1.6 examining the plans for the mechanical ventilation in the cargo area (IBC Code 83/90/00, ch.12);
- (DI) 1.1.1.7 the provisions of (NI) 2.1.1 in Annex 3.
- (DI) 1.1.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the survey during construction and after installation of the structure, equipment, fittings, arrangements and materials should consist of:
- (DI) 1.1.2.1 confirming that tanks containing cargo or residues of cargo are suitably segregated from accommodation, service and machinery spaces and from drinking water and stores for human consumption, that cargo piping does not pass through any accommodation, service or machinery space other

than cargo pump rooms or pump rooms and that cargoes are not to be carried in either the fore or the aft peak tank (IBC Code 83/90/00, ch.3);

- (DI) 1.1.2.2 examining the air intakes and openings into the accommodation, service and machinery spaces in relation to the cargo piping and vent systems and their entrances, air inlets and openings in relation to the cargo area (IBC Code 83/90/00, ch.3);
- (DI) 1.1.2.3 examining the arrangements of the cargo pump rooms (IBC Code 83/90/00, ch.3);
- (DI) 1.1.2.4 examining the accesses to spaces in the cargo area (IBC Code 83/90/00, ch.3);
- (DI) 1.1.2.5 examining the bilge and ballast arrangements and confirming that pumps and pipelines are identified (IBC Code 83/90/00, ch.3);
- (DI) 1.1.2.6 examining, when applicable, the bow or stern loading and unloading arrangements with particular reference to the air inlets and entrances to the accommodation, machinery and service spaces, the electrical equipment, fire-fighting arrangements and means of communication and testing the remote shut down for the cargo pumps (IBC Code 83/90/00, ch.3);
- (DI) 1.1.2.7 confirming that the cargo tank types are arranged and installed in accordance with the approved plans, internally examining the cargo tanks, water ballast tanks and other spaces in the cargo area and pressure testing the boundaries (IBC Code 83/90/00, ch.4);
- (DI) 1.1.2.8 examining the cargo transfer arrangements and confirming that any hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IBC Code 83/90/00, ch.5);
- (DI) 1.1.2.9 examining and testing any cargo heating and cooling systems (IBC Code 83/90/00, ch.7);
- (DI) 1.1.2.10 confirming that the cargo tank vent systems have been installed in accordance with the approved plans (IBC Code 83/90/00, ch.8);
- (DI) 1.1.2.11 confirming that high-level alarms, or overflow control systems or spill valves or other equivalent means provided to control possible liquid rising in the venting system, are operating satisfactorily (IBC Code 83/90/00, ch.8);
- (DI) 1.1.2.12 confirming that suitable provision is made for drainage of vent lines and that no shut-off valves or other means of stoppage, including spectacle or blank flanges, are fitted either to the individual vents or to the header, if the vents are combined or either above or below pressure/vacuum relief valves with closed vent systems (IBC Code 83/90/00, ch.8);

- (DI) 1.1.2.13 confirming that suitable provisions are made for primary and secondary means (or alternative measures) for controlled tank venting (MSC.102(73), MEPC.79(43), chapter 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 the environmental control, including the means of storing or generating and drying an inert gas (IBC Code 83/90/00, ch.9);
- (DI) 1.1.2.16 examining the electrical installations and confirming that, when appropriate, special materials have been used and that the electrical equipment installed in hazardous locations, as permitted, is certified by a recognized authority for the cargoes to be carried (IBC Code 83/90/00, ch.10);
- (DI) 1.1.2.17 confirming that independent cargo tanks are electrically bonded to the hull and that all gasketed cargo pipe joints and hose connections are electrically bonded (IBC Code 83/90/00, ch.10);
- (DI) 1.1.2.18 examining the arrangements for the fire protection and fire extinction (IBC Code 83/90/00, ch.11);
- (DI) 1.1.2.19 examining the fixed fire fighting system for the cargo pump room and confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (IBC Code 83/90/00, ch.11);
- (DI) 1.1.2.20 checking the deck foam system for the cargo area, including the supplies of foam concentrate, and testing that the minimum number of jets of water at the required pressure in the fire main is obtained, see (EI) 1.1.3.1 in Annex 1, when the system is in operation (IBC Code 83/90/00, ch.11);
- (DI) 1.1.2.21 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) 1.1.2.22 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) 1.1.2.22.1 it may be controlled from outside the space;
 - (DI) 1.1.2.22.2 warning notices concerning its use have been posted;

- (DI) 1.1.2.22.3 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) 1.1.2.22.4 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) 1.1.2.22.5 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) 1.1.2.23 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces normally entered other than those covered by (DI) 1.1.2.21 (IBC Code 83/90/00, ch.12);
- (DI) 1.1.2.24 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) 1.1.2.22.5 (IBC Code 83/90/00, ch.12);
- (DI) 1.1.2.25 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) 1.1.2.26 checking the provision of equipment for personnel protection (IBC Code 83/90/00, ch.14) and in particular that:
 - (DI) 1.1.2.26.1 suitable protective clothing is available for the crew engaged in loading and discharging operations and that suitable storage is provided;
 - (DI) 1.1.2.26.2 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) 1.1.2.26.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment are provided;
 - (DI) 1.1.2.26.4 arrangements have been made for the antidotes for the cargoes actually carried to be on board;
 - (DI) 1.1.2.26.5 decontamination arrangements and eyewashes are operational;
 - (DI) 1.1.2.26.6 the required gas detection instruments are on board and that arrangements have been made for the supply of the appropriate vapour detection tubes;

- (DI) 1.1.2.26.7 the stowage for cargo samples is satisfactory;
- (DI) 1.1.2.27 the provisions of (NI) 2.1.2 in annex 3.
- (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 together with the measures to be taken in an accident have been provided (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 to material of construction, protective linings and coating is provided onboard. (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 the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk should be issued.

- (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 Load Line Certificate or International Load Line Exemption Certificate;
- (DA) 1.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;
- (DA) 1.2.1.5 checking the certificates of class, if the ship is classed with a classification society;
- (DA) 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;
- (DA) 1.2.1.7 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (DA) 1.2.1.8 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (DA) 1.2.1.9 checking that the ship’s complement complies with the Minimum Safe Manning Document (SOLAS 74/88, reg.V/13(b));
- (DA) 1.2.1.10 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (DA) 1.2.1.11 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;
- (DA) 1.2.1.12 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) 1.2.1.13 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) 1.2.1.14 confirming that a table giving the filling ratios for the cargo tanks at various densities has been provided (IBC Code 83/90/00, ch.16) (BCH Code 85/90/00, ch.IIIG);
- (DA) 1.2.1.15 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) 1.2.1.16 confirming that information relating to the chemical and physical properties of the products to be carried has been provided together with the measures to be taken in an accident have been provided (IBC Code 83/90/00, ch.16) (BCH Code 85/90/00, ch.V);
- (DA) 1.2.1.17 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) 1.2.1.18 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) 1.2.1.19 confirming that the Shipboard marine pollution emergency plan is on board (MARPOL 73/78 – 02, Annex II reg.16);
- (DA) 1.2.1.20 confirming that the Cargo Record Book is on board and being correctly used (MARPOL 73/78 – 91/97/02, Annex II reg.9);
- (DA) 1.2.1.21 confirming that compatibility information to material of construction, protective linings and coating is provided onboard. (IBC Code 83/04 Ch 6).
- (DA) 1.2.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the annual survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (DA) 1.2.2.1 confirming that wheelhouse doors and windows, sidescuttles and windows in superstructure and deckhouse ends facing the cargo area are in a satisfactory condition (IBC Code 83/90/00, ch.3) (BCH Code 85/90/00, ch.IIC);

- (DA) 1.2.2.2 confirming that potential sources of ignition in or near the cargo pump room are eliminated, such as loose gear, combustible materials, etc., that there are no signs of undue leakage and that access ladders are in a satisfactory condition (IBC Code 83/90/00, ch.3) (BCH Code 85/90/00, ch.IIC);
- (DA) 1.2.2.3 confirming that removable pipe lengths or other approved equipment necessary for cargo separation are available in the pump room and are in a satisfactory condition (IBC Code 83/90/00, ch.3) (BCH Code 85/90/00, ch.IIC);
- (DA) 1.2.2.4 examining all pump room bulkheads for signs of cargo leakage or fractures and, in particular, the sealing arrangements of all penetrations of pump room bulkheads (IBC Code 83/90/00, ch.3) (BCH Code 85/90/00, ch.IIC);
- (DA) 1.2.2.5 confirming that the remote operation of the cargo pump bilge system is satisfactory (IBC Code 83/90/00, ch.3) (BCH Code 85/90, ch.IIC);
- (DA) 1.2.2.6 examining the bilge and ballast arrangements and confirming that pumps and pipelines are identified (IBC Code 83/90/00, ch.3) (No BCH Code 85/90/00 reference);
- (DA) 1.2.2.7 confirming, when applicable, that the bow or stern loading and unloading arrangements are in order and testing the means of communication and the remote shut down for the cargo pumps (IBC Code 83/90/00, ch.3) (No BCH Code 85/90/00 reference);
- (DA) 1.2.2.8 examining the cargo transfer arrangements and confirming that any hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IBC Code 83/90/00, ch.5) (BCH Code 85/90/00, ch.IID);
- (DA) 1.2.2.9 examining, when applicable, the cargo heating or cooling systems, including any sampling arrangements, and confirming that the means for measuring the temperature and associated alarms are operating satisfactorily (IBC Code 83/90/00, ch.7) (BCH Code 85/90/00, ch.IIF);
- (DA) 1.2.2.10 examining, as far as practicable, the cargo tank vent system, including the pressure/vacuum valves and secondary means to prevent over- or under pressure and devices to prevent the passage of flame (IBC Code 83/90/00, MSC.102(73), MEPC.79(43), ch.8) (BCH Code 85/90/00 and MEPC.80(43), ch.IIE);
- (DA) 1.2.2.11 examining the gauging devices, high-level alarms and valves associated with overflow control (IBC Code 83/90/00, ch.8) (BCH Code 85/90/00, ch.IIE);
- (DA) 1.2.2.12 confirming that arrangements for sufficient gas to be carried or generated to compensate for normal losses and that the means provided for

monitoring ullage spaces are satisfactory (IBC Code 83/90/00, ch.9)
(BCH Code 85/90/00, ch.IIH);

- (DA) 1.2.2.13 confirming that arrangements are made for sufficient medium to be carried where drying agents are used on air inlets to cargo tanks (IBC Code 83/90/00, ch.9) (BCH Code 85/90/00, ch.IIH);
- (DA) 1.2.2.14 confirming that all electrical equipment in dangerous zones is suitable for such locations is in satisfactory condition and has been properly maintained (IBC Code 83/90/00, ch.10) (BCH Code 85/90/00, ch.IIIB);
- (DA) 1.2.2.15 examining the fixed fire-fighting system for the cargo pump room and the deck foam system for the cargo area and confirming that their means of operation are clearly marked (IBC Code 83/90/00, ch.11) (BCH Code 85/90/00, ch.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 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) 1.2.2.18 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) 1.2.2.19 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) 1.2.2.19.1 the protective clothing for crew engaged in loading and discharging operations and its stowage is in a satisfactory condition;
- (DA) 1.2.2.19.2 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) 1.2.2.19.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment are in a satisfactory condition;
- (DA) 1.2.2.19.4 arrangements have been made for the antidotes for the cargoes actually carried to be on board;
- (DA) 1.2.2.19.5 decontamination arrangements and eyewashes are operational;

- (DA) 1.2.2.19.6 the required gas detection instruments are on board and that arrangements have been made for the supply of the appropriate vapour detection tubes;
- (DA) 1.2.2.19.7 the arrangements for the stowage of cargo samples are satisfactory;
- (DA) 1.2.2.20 the provisions of (NA) 2.2.2 in annex 3.
- (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 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 should be endorsed;
- (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 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 should be endorsed;
- (DIn) 1.3.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory – see part “General”, section 4.8.
- (DR) 1.4 **Renewal surveys** – see part “General” section 4.4
- (DR) 1.4.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of current certificates and other records should consist of:
- (DR) 1.4.1.1 the provisions of (DA) 1.2.1, except the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk.
- (DR) 1.4.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the renewal survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (DR) 1.4.2.1 the provisions of (DIn) 1.3.3;
- (DR) 1.4.2.2 the provisions of (NR) 2.4.2 in annex 3.
- (DR) 1.4.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the completion of the renewal survey should consist of:

- (DR) 1.4.3.1 after a satisfactory survey 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 should be issued.
- (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 the fire protection and fire extinction (IGC Code 83/90/00, ch.11);
- (GI) 2.1.1.11 examining the plans for the mechanical ventilation in the cargo area (IGC Code 83/90/00, ch.12);

- (GI) 2.1.1.12 examining the plans for the instrumentation (gauging, gas detection) (IGC Code 83/90/00, ch.13);
- (GI) 2.1.1.13 examining, when applicable, the plans for the use of cargo as fuel (IGC Code 83/90/00, ch.16).
- (GI) 2.1.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the survey during construction and after installation of the structure, equipment, fittings, arrangements and materials should consist of:
 - (GI) 2.1.2.1 confirming that the segregation in the cargo area and the arrangement of the accommodation, service and machinery spaces are in accordance with the approved plans (IGC Code 83/90/00, ch.3);
 - (GI) 2.1.2.2 examining the arrangements of the cargo pump rooms and cargo compressor rooms (IGC Code 83/90/00, ch.3);
 - (GI) 2.1.2.3 confirming that the manually operated emergency shutdown system together with the automatic shutdown of the cargo pumps and compressors are satisfactory (IGC Code 83/90/00, ch.3);
 - (GI) 2.1.2.4 examining the arrangement of the cargo control room (IGC Code 83/90/00, ch.3);
 - (GI) 2.1.2.5 examining the accesses to spaces in the cargo area (IGC Code 83/90/00, ch.3);
 - (GI) 2.1.2.6 confirming the arrangements for the air locks (IGC Code 83/90/00, ch.3);
 - (GI) 2.1.2.7 examining the bilge, ballast and oil fuel arrangements (IGC Code 83/90/00, ch.3);
 - (GI) 2.1.2.8 examining, when applicable, the bow or stern loading and unloading arrangements with particular reference to the air inlets and entrances to the accommodation, machinery and service spaces, the electrical equipment, fire-fighting arrangements and means of communication between the cargo control room and the shore location (IGC Code 83/90/00, ch.3);
 - (GI) 2.1.2.9 confirming that the cargo tanks are arranged and installed in accordance with the approved plans, internally examining the cargo tanks, water ballast tanks and other spaces in the cargo area, ensuring that the appropriate non-destructive and pressure testing are carried out (IGC Code 83/90/00, ch.4);
 - (GI) 2.1.2.10 for containment systems with glued secondary barriers, confirming that a tightness test has been carried out in accordance with the approved procedures of the system manufacturer before and after the initial cool down. Where significant differences in the results before and after cool down for each tanks or between tanks have been observed, confirming that

an investigation has been carried out including additional testing such as differential pressure, thermo graphic or acoustic emission testing where necessary (IGC Code 83/90/00, ch.4);

- (GI) 2.1.2.11 examining during the initial cool down, loading and discharging of the first cargo, of the overall performance of the cargo containment system and confirmation that the system is in compliance with the design parameters. For vessels carrying liquefied natural gas, the examination includes witnessing of 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, pressures 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 spot following the first loaded voyage (IGC Code 83/90/00, ch. 4);
- (GI) 2.1.2.13 examining the cargo and process piping, including the expansion arrangements, insulation from the hull structure, pressure relief and drainage arrangements and carrying out a leak detection test (IGC Code 83/90/00, ch.5);
- (GI) 2.1.2.14 confirming that the cargo system valving arrangements are in accordance with the approved plans (IGC Code 83/90/00, ch.5);
- (GI) 2.1.2.15 confirming that any liquid and vapour hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IGC Code 83/90/00, ch.5);

- (GI) 2.1.2.16 examining the arrangements for the cargo pressure/temperature control including, when fitted, any refrigeration system and confirming that any associated alarms are satisfactory (IGC Code 83/90/00, ch.7);
- (GI) 2.1.2.17 confirming that the cargo tank vent systems, including, when appropriate, any additional pressure relieving system for liquid level control and vacuum pressure systems, have been installed in accordance with the approved plans (IGC Code 83/90/00, ch.8);
- (GI) 2.1.2.18 examining the arrangements for the environmental control, including the means of storing or generating and drying an inert gas (IGC Code 83/90/00, ch.9);
- (GI) 2.1.2.19 examining the electrical installations with particular reference to the certified safe type equipment fitted in gas-dangerous spaces and zones (IGC Code 83/90/00, ch.10);
- (GI) 2.1.2.20 examining the arrangements for the fire protection and fire extinction (IGC Code 83/90/00, ch.11);
- (GI) 2.1.2.21 examining the fixed fire-fighting system for the cargo pump room and confirming that the installation tests have been satisfactorily completed and that its means of operation is clearly marked (IGC Code 83/90/00, ch.11);
- (GI) 2.1.2.22 examining the fire water main with particular reference to the provision of hydrants and isolation arrangements, checking that the two jets of water reach all areas of the cargo and containment area at the required pressure and testing the remote means of starting one main fire pump (IGC Code 83/90/00, ch.11);
- (GI) 2.1.2.23 examining and testing the water spray system for cooling, fire protection and crew protection and confirming that its means of operation is clearly marked (IGC Code 83/90/00, ch.11);
- (GI) 2.1.2.24 examining the dry chemical powder fire-extinguishing system for the cargo area, seeing that the fixed piping has been properly installed and has been proved clear and confirming that its means of operation is clearly marked (IGC Code 83/90/00, ch.11);
- (GI) 2.1.2.25 examining the carbon dioxide system for the cargo compressor and pump rooms and confirming that the installation tests have been satisfactorily completed and that its means of operation is clearly marked (IGC Code 83/90/00, ch.11);
- (GI) 2.1.2.26 confirming the provision and examining the disposition of the fire fighter's outfits (IGC Code 83/90/00, ch.11);

- (GI) 2.1.2.27 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces in the cargo area normally entered during cargo handling operations (IGC Code 83/90/00, ch.12) and checking in particular that:
 - (GI) 2.1.2.27.1 it may be controlled from outside the space;
 - (GI) 2.1.2.27.2 warning notices concerning its use have been posted;
 - (GI) 2.1.2.27.3 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 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) 2.1.2.30 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) 2.1.2.24 (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 the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk should be issued.
- (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 Load Line Certificate or International Load Line Exemption Certificate;
- (GA) 2.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;
- (GA) 2.2.1.5 checking the certificates of class, if the ship is classed with a classification society;
- (GA) 2.2.1.6 checking the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (GA) 2.2.1.7 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (GA) 2.2.1.8 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (GA) 2.2.1.9 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/13(b));
- (GA) 2.2.1.10 checking that the master, officers and ratings are certificated as required by the STCW Convention;

- (GA) 2.2.1.11 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;
- (GA) 2.2.1.12 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) 2.2.1.13 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) 2.2.1.14 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) 2.2.1.15 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) 2.2.1.16 confirming that there are records of the performance of the cargo containment system (IGC Code 83/90/00, ch. 4).
- (GA) 2.2.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the annual survey of the structure, equipment, fittings, arrangements and materials should consist of:
 - (GA) 2.2.2.1 confirming that any special arrangements to survive conditions of damage are in order (IGC Code 83/90/00, ch.2);
 - (GA) 2.2.2.2 confirming that the wheelhouse doors and windows, sidescuttles and windows in superstructure and deckhouse ends in the cargo area are in a satisfactory condition (IGC Code 83/90/00, ch.3);
 - (GA) 2.2.2.3 examining the cargo pump rooms and cargo compressor rooms (IGC Code 83/90/00, ch.3);
 - (GA) 2.2.2.4 confirming that the manually operated emergency shutdown system together with the automatic shutdown of the cargo pumps and compressors are satisfactory (IGC Code 83/90/00, ch.3);
 - (GA) 2.2.2.5 examining the cargo control room (IGC Code 83/90/00, ch.3);
 - (GA) 2.2.2.6 examining the gas detection arrangements for cargo control rooms and the measures taken to exclude ignition sources where such spaces are not gas-safe (IGC Code 83/90/00, ch.3);

- (GA) 2.2.2.7 confirming the arrangements for the air locks are being properly maintained (IGC Code 83/90/00, ch.3);
- (GA) 2.2.2.8 examining, as far as practicable, the bilge, ballast and oil fuel arrangements (IGC Code 83/90/00, ch.3);
- (GA) 2.2.2.9 examining, when applicable, the bow or stern loading and unloading arrangements with particular reference to the electrical equipment, fire-fighting arrangements and means of communication between the cargo control room and the shore location (IGC Code 83/90/00, ch.3);
- (GA) 2.2.2.10 confirming that the sealing arrangements at the gas domes are satisfactory (IGC Code 83/90/00, ch.4);
- (GA) 2.2.2.11 confirming that portable or fixed drip trays or deck insulation for cargo leakage is in order (IGC Code 83/90/00, ch.4);
- (GA) 2.2.2.12 examining the cargo and process piping, including the expansion arrangements, insulation from the hull structure, pressure relief and drainage arrangements (IGC Code 83/90/00, ch.5);
- (GA) 2.2.2.13 confirming that the cargo tank and interbarrier space pressure and relief valves, including safety systems and alarms, are satisfactory (IGC Code 83/90/00, ch.5);
- (GA) 2.2.2.14 confirming that any liquid and vapour hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IGC Code 83/90/00, ch.5);
- (GA) 2.2.2.15 examining the arrangements for the cargo pressure/temperature control including, when fitted, any refrigeration system and confirming that any associated alarms are satisfactory (IGC Code 83/90/00, ch.7);
- (GA) 2.2.2.16 examining the cargo, bunker, ballast and vent piping systems, including vent masts and protective screens, as far as practicable (IGC Code 83/90/00, ch.8);
- (GA) 2.2.2.17 confirming that arrangements are made for sufficient inert gas to be carried to compensate for normal losses and that means are provided for monitoring the spaces (IGC Code 83/90/00, ch.9);
- (GA) 2.2.2.18 confirming that the use of inert gas has not increased beyond that needed to compensate for normal losses by examining records of inert gas usage (IGC Code 83/90/00, ch.9);
- (GA) 2.2.2.19 confirming that any air-drying system and any interbarrier and hold space purging inert gas system are satisfactory (IGC Code 83/90/00, ch.9);

- (GA) 2.2.2.20 confirming that electrical equipment in gas-dangerous spaces and zones is in a satisfactory condition and is being properly maintained (IGC Code 83/90/00, ch.10);
- (GA) 2.2.2.21 examining the arrangements for the fire protection and fire extinction and testing the remote means of starting one main fire pump (IGC Code 83/90/00, ch.11);
- (GA) 2.2.2.22 examining the fixed fire-fighting system for the cargo pump room and confirming that its means of operation is clearly marked (IGC Code 83/90/00, ch.11);
- (GA) 2.2.2.23 examining the water spray system for cooling, fire protection and crew protection and confirming that its means of operation is clearly marked (IGC Code 83/90/00, ch.11);
- (GA) 2.2.2.24 examining the dry chemical powder fire-extinguishing system for the cargo area and confirming that its means of operation is clearly marked (IGC Code 83/90/00, ch.11);
- (GA) 2.2.2.25 examining the fixed installation for the gas-dangerous spaces and confirming its means of operation is clearly marked (IGC Code 83/90/00, ch.11);
- (GA) 2.2.2.26 confirming the provision and examining the condition of the fire fighter's outfits (IGC Code 83/90/00, ch.11);
- (GA) 2.2.2.27 examining, as far as practicable, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces in the cargo area normally entered during cargo handling operations (IGC Code 83/90/00, ch.12);
- (GA) 2.2.2.28 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces normally entered other than those covered by (GI) 2.1.2.24 (IGC Code 83/90/00, ch.12);
- (GA) 2.2.2.29 examining, and testing as appropriate and as far as practicable, the liquid level indicators, overflow control, pressure gauges, high pressure and, when applicable, low pressure alarms, and temperature indicating devices for the cargo tanks (IGC Code 83/90/00, ch.13);
- (GA) 2.2.2.30 examining, and testing as appropriate, the gas detection equipment (IGC Code 83/90/00, ch.13);
- (GA) 2.2.2.31 confirming that two sets of portable gas detection equipment suitable for the cargoes to be carried and a suitable instrument for measuring oxygen levels have been provided (IGC Code 83/90/00, ch.13);

- (GA) 2.2.2.32 checking the provision of equipment for personnel protection (IGC Code 83/90/00, ch.14) and in particular that:
 - (GA) 2.2.2.32.1 two complete sets of safety equipment each permitting personnel to enter and work in a gas-filled space are provided and are properly stowed;
 - (GA) 2.2.2.32.2 the requisite supply of compressed air is provided and examining, when applicable, the arrangements for any special air compressor and low-pressure air line system;
 - (GA) 2.2.2.32.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment and antidotes, when available, for the products to be carried are provided;
 - (GA) 2.2.2.32.4 respiratory and eye protection suitable for emergency escape purposes are provided;
 - (GA) 2.2.2.32.5 decontamination arrangements and eyewashes are operational;
 - (GA) 2.2.2.32.6 examining, when applicable, the arrangements to protect personnel against the effects of a major cargo release by a special suitably designed and equipped space within the accommodation area;
- (GA) 2.2.2.33 examining, when applicable, the arrangements for the use of cargo as fuel and testing, as far as practicable, that the gas supply to the machinery space is cut off should the exhaust ventilation not be functioning correctly and that master gas fuel valve may be remotely closed from within the machinery space (IGC Code 83/90/00, ch.16).
- (GA) 2.2.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the completion of the annual survey should consist of:
 - (GA) 2.2.3.1 after a satisfactory survey the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk should be endorsed;
 - (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:

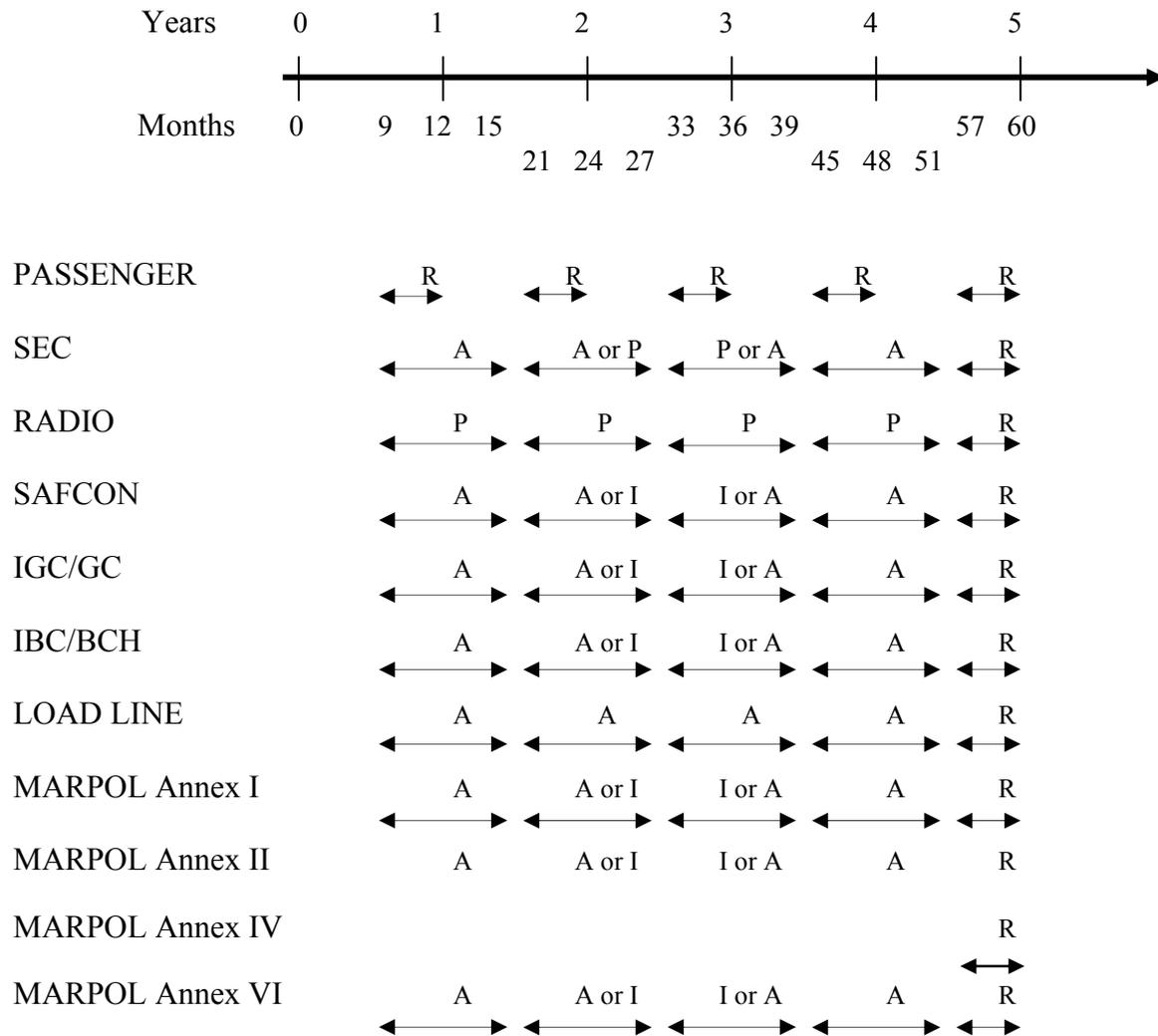
- (GIn) 2.3.2.1 the provisions of (GA) 2.2.2;
- (GIn) 2.3.2.2 confirming, where applicable, that pipelines and independent cargo tanks are electrically bonded to the hull (IGC Code 83/90/00, ch.10);
- (GIn) 2.3.2.3 generally examining the electrical equipment and cables in dangerous zones such as cargo 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 the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk should be endorsed;
 - (GIn) 2.3.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory – see part “General” section 4.8.
- (GR) **2.4** **Renewal surveys** – see part “General”, section 4.4.
 - (GR) 2.4.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the examination of current certificates and other records should consist of:
 - (GR) 2.4.1.1 the provisions of (GA) 2.2.1, except the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk.
 - (GR) 2.4.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the renewal survey of the structure, equipment, fittings, arrangements and materials should consist of:
 - (GR) 2.4.2.1 the provisions of (GIn) 2.3.3;
 - (GR) 2.4.2.2 examining the insulation and means of support of the cargo tanks and confirming that the secondary barrier remains effective (IGC Code 83/90/00, ch.4).

- (GR) 2.4.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the completion of the renewal survey should consist of:
- (GR) 2.4.3.1 after a satisfactory survey the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk should be issued.

APPENDIX

THE HARMONIZED SYSTEM OF SURVEY AND CERTIFICATION

DIAGRAMMATIC ARRANGEMENT



Code of types of survey:

- R - Renewal
- P - Periodical
- I - Intermediate
- A - Annual