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OF IMO INSTRUMENTS
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**REPORT TO THE MARITIME SAFETY COMMITTEE AND THE
MARINE ENVIRONMENT PROTECTION COMMITTEE**

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1 GENERAL

1.1 The Sub-Committee on Implementation of IMO Instruments (III) held its second session from 13 to 17 July 2015 under the chairmanship of Captain D. Hutchinson (Bahamas). The Vice-Chairman, Mrs. J. Gascon (Canada), was also present.

1.2 The session was attended by delegations from Member Governments and Associate Members of IMO, representatives from the United Nations and specialized agencies and observers from intergovernmental organizations and non-governmental organizations in consultative status, as listed in document III 2/INF.1.

1.3 In accordance with rule 45 of the Rules of Procedure, experts representing the managers of the IMO ship and company/registered owner identification number schemes and the Management Unit of Equasis attended the meeting.

Opening address of the Secretary-General

1.4 The Secretary-General welcomed participants and delivered his opening address, the full text of which can be downloaded from the IMO website at the following link:
<http://www.imo.org/MediaCentre/SecretaryGeneral/Secretary-GeneralsSpeechesToMeetings>

Chairman's remarks

1.5 The Chairman thanked the Secretary-General for his opening address and stated that his words of encouragement as well as his advice and requests would be given every consideration in the deliberations of the Sub-Committee.

Adoption of the agenda

1.6 The Sub-Committee adopted the agenda (III 2/1) and agreed, in general, to be guided in its work by the annotations to the provisional agenda contained in document III 2/1/1. The agenda, as adopted, with the list of documents considered under each agenda item, is set out in document III 2/INF.29.

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the decisions and comments pertaining to its work made by MSC 94, MSC 95, MEPC 67, MEPC 68, SDC 2, HTW 2 and NCSR 2, as reported in documents III 2/2, III 2/2/1, and III 2/2/2 (Secretariat) and orally, and took them into account in its deliberations when dealing with the relevant agenda items.

3 NON-MANDATORY INSTRUMENTS ON REGULATIONS FOR NON-CONVENTION SHIPS

3.1 The Sub-Committee recalled the following sequence of decisions and activities that had led to the current review of GlobalReg:

- .1 C/ES.24, in 2007, agreed with the need for greater emphasis to be put on the safety of non-convention ships;
- .2 the high-level action plans for the biennia 2008-2009, 2010-2011, 2012-2013 and 2014-2015 included a planned output for a new non-mandatory instrument on regulations for non-convention ships;

- .3 the ITCP for the 2010-2011 biennium included "promoting and enhancing maritime safety aspects relating to non-convention vessels, including small fishing vessels and domestic passenger ferries". A modular set of standards and harmonized regulations and model national legislation for ships not covered by the 1974 SOLAS Convention (GlobalReg) was developed through consultancy, as well as a basic model course in the framework of technical cooperation;
- .4 FSI 20, in 2012, supported the initial proposal by France to develop GlobalReg as a draft non-mandatory instrument prior to its detailed technical review by all relevant sub-committees;
- .5 MEPC 64, since the MSC had been assigned as the sole parent organ for the relevant planned output, concurred with the views that it would not be appropriate to extend the scope of the planned output;
- .6 MSC 91 agreed that the non-mandatory instrument on safety standards for non-convention ships should be limited to the common general regulations and to the specific regulations applicable to "non-convention" passenger ships. Concerns were expressed regarding the magnitude of the task;
- .7 MSC 92 agreed that the future GlobalReg should not be subject to routine and normal amendments; and that it was not intended to undermine existing regional, bilateral and national standards;
- .8 the Secretariat implemented two activities in cooperation with the Secretariat of the Pacific Community (SPC) to align the Pacific regulations for non-convention vessels (including fishing vessels) (2000) (PIM Laws) and GlobalReg; and the Working Group nominated to review the Code of Safety for Small Commercial Vessels (SCV/WG) to align the SCV Code and GlobalReg;
- .9 the Secretary-General, in his opening speech for III 1, hoped that the efforts of the Sub-Committee would be combined with his own initiative, which led, later on, to the Conference on the Enhancement of Safety of Ships Carrying Passengers on Non-international Voyages (Manila, the Philippines, April 2015); and
- .10 following III 1, work was undertaken on the basis of the two-tier system, as presented in document III 1/3/4, which has led to the finalization of tier I.

3.2 The Sub-Committee was informed that TC 65, while considering the outcome of the Manila Conference on the Enhancement of Safety of Ships Carrying Passengers on Non-international Voyages, noted, in particular, that the Organization would continue to assist Member States on matters relating to the enhancement of the safety of ships carrying passengers on non-international voyages and that the Secretariat was working on matters about which the Conference had requested action from the Organization.

3.3 The Sub-Committee considered document III 2/3 (Secretariat) on the development of a draft generic set of global non-mandatory regulations for passenger ships not covered by SOLAS, containing a request for it to review, in general, the draft guide for regulating the safety of passenger ships not covered by SOLAS, to decide whether circulation of the draft guide, as may be amended, constitutes the completion of tier I, and to recommend a way to make the outcome of tier I available to interested Member States for referral to the MSC for approval of the process.

3.4 During the ensuing discussion, all of the delegations that spoke expressed their appreciation and support for the development of the draft guide for regulating the safety of passenger ships not covered by SOLAS, as the completion of tier I, and the Sub-Committee noted, in particular, the following views expressed:

- .1 the process followed for the development of the draft generic guide highlighted the potential need to consider how such guidelines should be developed in the future, in particular regarding the current absence of a validation procedure by the Organization;
- .2 despite the alignment with the SCV Code, there might be the need to consider the potential effect of the draft guide on the adoption of the SCV Code in domestic legislations;
- .3 dissemination by means of a circular might be in conflict with the absence of technical review and validation by the Organization and thereby create a precedent;
- .4 outreach efforts might need to be considered in order to make as many potential beneficiary countries as possible aware of the availability of the draft guide;
- .5 the draft guide might have deviated from the original principle to develop standards for ships which are not covered by SOLAS, since paragraph 1.1 of chapter 1 and paragraph 3.5 of chapter 12 refer to "foreign ships when in national waters" and "ships arriving from a foreign port", respectively, while all passenger ships on international voyages need to carry a passenger ship safety certificate, unless they operate under the Special Trade Passenger Ships Agreement, 1971 (or regional agreements); and
- .6 requirements for accommodation areas in chapter 11 might raise some compatibility issues for countries that are Parties to the Maritime Labour Convention (MLC), 2006.

3.5 Following detailed consideration of the aforementioned points, the Sub-Committee agreed that the draft guide, as amended, should be disseminated as an annex to this report, on IMODOCS and as part of an IMO model course, if developed under tier II.

3.6 The Sub-Committee also agreed to insert the following text in the preamble of the draft guide:

"The Guide for regulating the safety of passenger ships not covered by SOLAS is not intended to be used where existing regional regulations are in place."

3.7 Regarding the need for outreach efforts, the Sub-Committee requested the Secretariat to consider using all existing networks of regional representation of the Organization, as well as opportunities in the implementation of technical cooperation activities, in order to disseminate relevant information on the purpose and availability of the draft guide.

3.8 Having endorsed the non-validated *Guide for regulating the safety of passenger ships not covered by SOLAS: generic principles and functional requirements* for devising national or regional regulations for passenger ship safety certification as the completion of tier I, the Sub-Committee invited interested Member States to use it as a tool containing a generic set of general safety principles and functional requirements and as a potential minimum safety level to be attained when developing national or regional safety regulations for passenger ships not covered by the 1974 SOLAS Convention, and to provide any relevant feedback.

3.9 The Sub-Committee invited the MSC to endorse the dissemination of the *Guide for regulating the safety of passenger ships not covered by SOLAS: generic principles and functional requirements*, as set out in annex 1 and on IMODOCS, without detailed technical review. The Sub-Committee recommended that the Guide be included in an IMO model course, if developed under tier II, and communicated to potential beneficiaries through outreach efforts.

3.10 The MSC was also invited to agree that similar work for other types of ships was not considered as being necessary at this stage, since a predominant part of the content of any further work for other types of ships could be very similar to the current tier I.

3.11 With regard to the completion of the proposed tier II, the Sub-Committee recommended to the MSC to agree that an IMO model course be developed on the basis of the existing draft documents which are currently available in IMODOCS, including the completion of the Procedural Guide. In this context, the Sub-Committee requested the Secretariat to harmonize this work with matters about which the Conference on the enhancement of safety of ships carrying passengers on non-international voyages had requested action from the Organization, as appropriate.

3.12 Having completed its work under output 5.2.1.16, the Sub-Committee, taking into account the outcome of HTW 2, recommended that the output be moved to the Committee's post-biennial agenda.

4 REQUIREMENTS FOR ACCESS TO, OR ELECTRONIC VERSIONS OF, CERTIFICATES AND DOCUMENTS, INCLUDING RECORD BOOKS REQUIRED TO BE CARRIED ON SHIPS

4.1 The Sub-Committee was advised that FAL 39 had approved the *Guidelines for the use of electronic certificates* (FAL.5/Circ.39/Rev.1) and had agreed that electronic certificates viewed on a computer should be considered as meeting the requirements to be "on board", provided that the certificates and the website used to access them conform to the guidelines approved by the Organization.

4.2 The Sub-Committee was also advised that MEPC 67 and MSC 94, in this context, had instructed III 2 to consider amending FAL.2/Circ.127-MEPC.1/Circ.817-MSC.1/Circ.1462 on "List of certificates and documents required to be carried on board ships" so as to reflect this understanding.

4.3 In this context, the Sub-Committee, having noted that the Global Integrated Shipping Information System (GISIS) module on Survey and Certification had been further developed in order to allow the recording of e-certificate-related information, agreed that the existing FAL.2/Circ.127-MEPC.1/Circ.817-MSC.1/Circ.1462 is not in conflict with the use of e-certificates and that there is no need to align the above-mentioned circular with FAL.5/Circ.39/Rev.1 at this time.

4.4 Nevertheless, such a need might arise later, based on the outcome of the consideration by MEPC 69 of the use of electronic record books under MARPOL and the work of the Correspondence Group on Electronic Access to Certificates and Documents, established by FAL 39. The Sub-Committee invited the Committees to endorse the outcome of its consideration of the matter.

5 CONSIDERATION AND ANALYSIS OF REPORTS ON ALLEGED INADEQUACY OF PORT RECEPTION FACILITIES

Annual enforcement reports on port reception facilities for 2013 and 2014

5.1 The Sub-Committee recalled that the compliance of ships with the discharge requirements of MARPOL depends largely on the availability of adequate port reception facilities, especially within Special Areas, and that the Government of each Party is required to notify the Organization, for transmission to the Parties concerned, of all cases where the facilities are alleged to be inadequate.

5.2 The Sub-Committee also recalled that the standard consolidated format for reporting alleged inadequacies of port reception facilities, as set out in MEPC.1/Circ.469/Rev.2, has been revised and expanded to include, in addition to oil wastes (MARPOL Annex I) and noxious liquid substances (NLS) (MARPOL Annex II), also garbage (MARPOL Annex V), sewage (MARPOL Annex IV), ozone-depleting substances and exhaust gas-cleaning system residues (MARPOL Annex VI) and new NLS categories X, Y and Z (MARPOL Annex II).

5.3 Having considered document III 2/5 (Secretariat) containing summaries of annual enforcement reports on port reception facilities as posted in GISIS for the reporting years of 2013 and 2014, the Sub-Committee noted that for 2013:

- .1 there were 74 reported cases of alleged inadequacies of port reception facilities received from nine flag States, one Associate Member and two territories of the United Kingdom, of which 64 referred to alleged inadequacies of reception facilities under the requirements of Annex V, one under Annex, one under Annex II, and 14 under Annex I. Of the 74 reports, three covered more than one waste category;
- .2 total waste types reported were 84 and covered 26 port States, one Territory of the United Kingdom, one Territory of the Netherlands and three coastal States (non-Parties to MARPOL); and
- .3 seven port Administrations responded on actions taken on alleged inadequacy reports, covering 9.45% of the total reports submitted by flag Administrations for 2013.

5.4 The Sub-Committee also noted that for 2014:

- .1 there were 78 reports received from six flag States and two territories of the United Kingdom, of which 69 referred to alleged inadequacies of reception facilities under the requirements of Annex V, four under Annex VI, two under Annex IV, one under Annex II and 16 under Annex I. Of the 78 reports, 13 covered more than one waste category, of which four reports covered more than one waste type under Annex I;
- .2 total waste types reported were 98 and covered 29 port States, one Territory of the Netherlands, one Territory of France and one coastal State (non-Party to MARPOL); and
- .3 four port Administrations responded on actions taken on alleged inadequacy reports, covering 7.7% of the total reports submitted by flag Administrations for 2014.

5.5 The Sub-Committee noted the low response rate from port Administrations to reports on alleged inadequacies of port reception facilities as a major concern and pointed out that it is an obligation of port Administrations to respond to such reports.

5.6 The Sub-Committee reminded Member States of their obligation under the MARPOL Convention to respond to reports by flag Administrations on alleged inadequacies of port reception facilities.

Proposal to include "response" costs in a mandatory reporting system under MARPOL

5.7 The Sub-Committee considered document III 2/5/1 (Islamic Republic of Iran) proposing to include "response costs recovered from polluting vessels" as a separate line in Part 4: Sections 3(a) and (b) of the annex to *Formats for a mandatory reporting system under MARPOL 73/78* (MEPC/Circ.318), introducing a more rigorous measure of implementing MARPOL and suggesting the levying and early collection of "response costs" as a deterrent to detention.

5.8 Having noted that there was no support for the aforementioned proposal, the Sub-Committee did not agree to include "response costs" in a mandatory reporting system under MARPOL.

Outcome of MEPC 67 and MEPC 68

5.9 The Sub-Committee, having noted the decisions of MEPC 67 and MEPC 68 (III 2/2/1) with regard to its work, took appropriate action under the relevant agenda items and noted that MEPC 68 had:

- .1 agreed to establish a drafting group at MEPC 69 to finalize a comprehensive manual on port reception facilities, entitled "Port reception facilities – How to do it"; and
- .2 requested the Secretariat to circulate the Regional Reception Facilities Plan (RRFP) for the Small Island Developing States in the Pacific Region (MEPC 68/11/1) to all Parties as required by article 11(2) of MARPOL by means of MEPC.1/Circ.859, having noted that the RRFP will take effect on 1 May 2016.

Mandatory reporting system under MARPOL 73/78

5.10 The Sub-Committee, having recalled that the assessment of mandatory reports under MARPOL is issued as an annual MEPC.1 circular:

- .1 urged all Parties to MARPOL to submit mandatory reports in accordance with MEPC.1/Circ.318 to the Secretariat by the closing date for the receipt of mandatory reports for 2014 on 31 December 2015;
- .2 reminded Member States that they will not need to complete Parts 3(a) and 3(b) of the reports (Annual enforcement report on reception facilities) as the relevant data will be extracted from GISIS by the Secretariat; and
- .3 urged all Parties to MARPOL to provide and/or update their respective contact details in the Port Reception Facilities module of GISIS to facilitate notification of port States by flag States reporting on alleged inadequacies in accordance with the procedures in the *Consolidated guidance for port reception facility providers and users* (MEPC.1/Circ.834).

6 ANALYSIS OF CASUALTY AND PSC DATA TO IDENTIFY TRENDS AND DEVELOP KNOWLEDGE AND RISK-BASED RECOMMENDATIONS

GENERAL

6.1 The Sub-Committee considered document III 2/6 containing the report of the Correspondence Group on Casualty Analysis (CG), and noted the casualty-related outcome of other IMO bodies as referenced in documents III 2/2 and III 2/2/1 (Secretariat).

6.2 The Sub-Committee also considered the following documents:

- .1 III 2/6/1 (Secretariat) containing the list of reports of investigations into casualties, which had been reviewed by the CG for the current session of the Sub-Committee;
- .2 III 2/6/2 (Secretariat) reporting on consultations with the International Civil Aviation Organization (ICAO) for the identification of any practical lessons, which might be learned from the submission and dissemination of aviation accident reports;
- .3 III 2/6/3 (Secretariat) providing information on data generated by the GISIS Marine Casualties and Incident (MCI) module regarding very serious marine casualties involving ships covered by SOLAS; and
- .4 III 2/INF.5 (Secretariat) providing information on access, via IMODOCS, to the analyses carried out by the CG for this session of the Sub-Committee.

COMMENTS MADE BY THE PLENARY ON DOCUMENTS SUBMITTED FOR CONSIDERATION

6.3 While considering the above-mentioned documents for referral to the working group to be established under this agenda item, the Sub-Committee noted the following views expressed:

- .1 with regard to the issue of a potentially limited public access to final marine safety investigation reports raised in the context of submission and dissemination of marine casualty data, the observer from IFSMA made a statement, which is set out in annex 16;
- .2 concerning the draft Countries Survey Questionnaire annexed to the report of the CG, there would be a need to reduce the number of questions and to define what objectives of the questionnaire, e.g. to assess the level of implementation of the *Code of international standards and recommended practices for a safety investigation into a marine casualty or marine incident* (Casualty Investigation Code) or its effectiveness, or to serve as a means to establish the profile of a country's marine investigation capacity, could be used for technical cooperation on the subject;
- .3 the procedures for the casualty analysis process, established in 2009 at FSI 17, are due for review to bring them in line with current operating methods;
- .4 the draft in-the-field-job aid for investigators was well developed and was appropriate for dissemination;

- .5 the current design of Lessons Learned for Presentation to Seafarers was not suitable to fulfil the request to develop risk-based recommendations, and there was need to identify ways to satisfy such a request while also stressing the need to implement the new taxonomy in the GISIS MCI module (MSC-MECP.3/Circ.4/Rev.1); and
- .6 enhancement of the image of shipping could benefit from increased transparency, which could be addressed through new facilities on the IMO public website, in particular regarding major casualties and including links to national websites, which the Secretariat could be requested to investigate.

6.4 Having considered the current design of Lessons Learned for Presentation to Seafarers, the Sub-Committee agreed to remove the reference to "risk-based recommendations" from their title.

ONE-DAY TRAINING COURSE ON CASUALTY INVESTIGATION FOR MANAGERS AND MARINE ADMINISTRATORS

6.5 The Sub-Committee noted with appreciation the information contained in document III 2/INF.2 (MAIIF) regarding the one-day training course on casualty investigation for managers and marine administrators conducted in the margin of the session of the Sub-Committee.

6.6 Following the conduct of the above-mentioned one-day training course, the observer from MAIIF thanked the Sub-Committee for supporting the delivery of the course, which was attended by 93 delegates. Taking into account the very positive feedback received, he recommended that the Secretariat consider using the validated training material of the one-day training course for technical cooperation activities.

ESTABLISHMENT OF THE WORKING GROUP ON CASUALTY ANALYSIS

6.7 As agreed by III 1, the Sub-Committee established the Working Group on Casualty Analysis, which started its work on the morning of the first day of the meeting under .1 to .3 of the following terms of reference. In addition, the Sub-Committee further instructed the working group, under .4 to .7 of the terms of reference, taking into account comments and decisions made in plenary, to:

- .1 confirm or otherwise the findings of the CG based on the analysis of individual casualty investigation reports and GISIS, for the Sub-Committee's approval and authorization of their release to the public on GISIS;
- .2 consider and advise whether those reports reviewed by the analysts and considered by the group, and which might be of interest to the relevant Committees and sub-committees, should be referred to them; in doing so, the working group should submit supporting information derived from the casualty analysis procedure (FSI 17/20, paragraph 6.22 and FSI 17/WP.1, annex 2) used to develop recommendations for consideration by the committees and sub-committees;
- .3 consider and advise on:
 - .1 the draft Country Survey Questionnaire;
 - .2 possible ways to disseminate Lessons Learned for Presentation to Seafarers; and
 - .3 the draft in-the-field job aid for investigators;

- .4 consider and advise on the relevant casualty-related decisions of other IMO bodies, in particular issues raised at MSC 94 in relation to the consideration of Formal Safety Assessment (III 2/2);
- .5 make recommendations on means to assist Parties to SOLAS to comply with the provisions of paragraph 14.4 of the Casualty Investigation Code in accordance with the facilities supported by resolution A.1074(28) on Notification and circulation through GISIS, as appropriate;
- .6 consider the information contained in document III 2/6/3 and provide the Sub-Committee with the relevant recommendations, in particular concerning the information on very serious casualties; the status of reports on, and analyses of, very serious marine casualties (VSMC) involving ships covered by SOLAS; and the option in GISIS for Parties to SOLAS to concur and be associated with other reporting States' reports already uploaded to the GISIS MCI module, as appropriate; and
- .7 advise on the re-establishment of the CG and prepare its draft terms of reference, as appropriate.

REPORT OF THE WORKING GROUP ON CASUALTY ANALYSIS

6.8 Having approved the report of the Working Group on Casualty Analysis (III 2/WP.3), in general, the Sub-Committee took decisions as reflected in the following paragraphs.

Casualty-related decisions of other IMO bodies

6.9 Regarding the casualty-related decisions of other IMO bodies as referenced in document III 2/2, the Sub-Committee noted:

- .1 the decisions of MSC 94 regarding:
 - .1 the incidents of the Costa Concordia, Danny F II and Swanland (MSC 94/21, paragraphs 10.6 to 10.8);
 - .2 the adoption of resolution MSC.390(94) on Amendments to the Code of the international standards and recommended practices for a safety investigation into a marine casualty or marine incident (Casualty Investigation Code), (MSC 94/21, paragraph 10.10); and
 - .3 concurrence with the decision of MEPC 67 (MEPC 67/20, paragraph 12.15) endorsing the recommendations of III 1 that casualty and incident data should be available in any of the three IMO working languages; and that preliminary information on very serious casualties should be provided by the flag State not later than six months after their occurrence (MSC 94/21, paragraph 10.11);
- .2 the conclusions of LEG 102 concerning the implementation of the 2006 Guidelines on fair treatment of seafarers in the event of a maritime accident, adopted jointly by IMO and ILO (LEG 102/12, section 4);

- .3 the information provided to PPR 2 (PPR 2/21, annex 20) that a marine safety investigation had been opened on the following very serious marine casualties involving the:
 - .1 Italian passenger ship **Norman Atlantic**;
 - .2 Bahamas ship **Bulk Jupiter**; and
 - .3 Cyprus cement carrier ship **Cemfjord**; and
- .4 the decision of MSC 95 to encourage interested Member Governments to submit to MSC 96 justifications for any unplanned outputs to be taken forward as detailed in table 1 of the updated action plan for long-term work on passenger ship safety (MSC 95/22, paragraph 6.5).

Casualty analysis and statistics

6.10 The Sub-Committee agreed, subject to endorsement by the MSC and the MEPC, to bring the observations made by the CG on the feedback on the quality of the 25 investigation reports analysed (III 2/6, paragraph 11) to the attention of Administrations by means of III.3/Circ.3, with the objective of improving future investigation reports.

6.11 Regarding the comments made by the CG on the identification of which annexes in GISIS had been filled in for the marine investigations in addition to the investigation report submitted through GISIS, (III 2/6, paragraphs 12 and 13), the Sub-Committee invited reporting Administrations to provide and to complete all necessary information when uploading marine safety investigation reports into GISIS, in accordance with MSC-MEPC.3/Circ.4/Rev.1.

6.12 The Sub-Committee approved the editorial amendments to, and rewording of, the draft casualty analyses proposed by the working group, as well as the following changes to the consolidated text of analyses available in electronic form on IMODOCS (III 2/INF.5) on the analysis of the marine casualty investigation reports:

- .1 incident 1, in the name of flag Administration, "Japan" was replaced with "Panama"; and
- .2 incident 14 was deleted because it was an apparent deliberate act and not a marine casualty as defined by paragraph 2.9 of the Casualty Investigation Code (resolution MSC.255(84)).

6.13 The Sub-Committee agreed to the consolidated text of analyses available in electronic form on IMODOCS (III 2/INF.5), as amended, and authorized the release of the analyses to the public on the GISIS MCI module.

Lessons Learned for Presentation to Seafarers

6.14 The Sub-Committee noted the comments made by the CG that the draft text of Lessons Learned for Presentation to Seafarers had been prepared using the methodology hitherto used intersessionally by the group. Although the lessons learned, as presented, could form the basis for the potential development of risk-based recommendations, they relate to safety issues arising from individual marine casualties and are thus not the result of a risk-based assessment (see paragraph 6.4).

6.15 Based on the outcome of the consideration of Lessons Learned for Presentation to Seafarers by the working group, including a number of amendments to the text to improve accuracy, clarity and readability, the Sub-Committee agreed to delete the fifth lesson learned because it was an apparent deliberate act and not a marine casualty as defined by paragraph 2.9 of the Casualty Investigation Code (resolution MSC.255(84)) (see paragraph 6.12.2).

6.16 The Sub-Committee approved the amended Lessons Learned for Presentation to Seafarers, having changed its title to Lessons Learned from Marine Casualties (see paragraphs 6.4 and 6.26), as set out in annex 2, for release on the IMO website, following the review to be carried out by the Secretariat in cooperation with the chairmen of the relevant sub-committees.

Safety issues for further consideration

6.17 The Sub-Committee noted that the working group had considered the analysis of the marine safety investigation report concerning the incidents of the **Nireas** and **Bunga Alpinia** (III 2/6/5, paragraphs 7 and 8).

NIREAS

6.18 An engineer on board the bulk carrier **Nireas** (C0008952-RO1) was carrying out a routine task of draining water from the ship's main air receiver when the air receiver drainage pot observation window exploded. The engineer was fatally injured by flying debris from the observation window. At the time of delivery, the shipyard, at the owner's request had modified the original open-top drainage pot whereby a toughened glass observation panel was fitted to allow observation of the drainage without any splash-back. The analysis noted that the modification, which was not submitted for approval by the classification society or the flag Administration, did not allow for the extent of build-up pressure within the pot. The Australian Maritime Safety Authority has since issued a marine notice requesting appropriate safety action to be taken where similar systems are encountered, and the Australian Transport Safety Bureau has issued a safety advisory notice to all classification societies.

6.19 The Sub-Committee, having noted that the investigation and report had identified modifications of equipment that had been done using materials that were not suitable for their intended purpose, also noted the benefits of informing the relevant parties of the critical safety issues identified during the investigation as soon as possible.

BUNGA ALPINIA

6.20 The chemical/product tanker **Bunga Alpinia** (C0008839-RO1) was loading methanol when a fire was reported at a tank P/V valve. Loading was stopped. However, shortly afterwards, there were a number of tank explosions, resulting in fatal injuries to five crew members. The cause of the explosions was a lightning-strike on the P/V valves of tanks 1 and 2. The P/V valves and associated flame arresters did not prevent the passage of flame into the tanks. Paragraph 1.2.7 of MSC.1/Circ.677 on *Revised Standards for the Design, Testing and Location of Devices to Prevent the Passage of Flame into Cargo Tanks in Tankers* states: "These Standards do not include consideration of sources of ignition such as lightning discharges."

6.21 The Sub-Committee expressed its appreciation for the submission of the report on the incident of the **Bunga Alpinia** and the clarifications provided during the presentation of the incident details made by the delegation of Malaysia during the session. Additionally, the delegation of Malaysia provided information regarding the tests conducted on similar valves, after the incident, which was not included in the final version of the report submitted to the Organization.

6.22 During its consideration of the analysis of the report of the incident, in particular the wall wash test, first foot sample of the cargo, and explosive atmosphere (as a result of not inerting prior to loading), the working group could not identify any planned output addressing the safety issues in the agenda of the sub-committees (resolution A.1061(28)). However, since the information had been provided by Malaysia regarding the results of P/V valve testing following the **Bunga Alpinia** VSMC, the Sub-Committee invited Malaysia to inform relevant IMO bodies of the results of the testing of the suspect P/V valve, taking into account MSC.1/Circ.1324. The Sub-Committee urged all Administrations that identify safety issues with type approved equipment and performance standards to bring such information to the attention of the relevant IMO bodies and to the marine industry, as appropriate.

6.23 The delegation of Malaysia, regarding the presentation of the **Bunga Alpinia** investigation, indicated that they will pursue this matter through proper channels and procedures of the Organization and make submission to the relevant parent Committee, while seeking advice from the Secretariat in this regard.

Consideration of ways to more effectively develop risk-based recommendations

6.24 The Sub-Committee noted the discussion and comments made by the working and correspondence groups on the dissemination of draft lessons learned and on ways to develop more effectively risk-based recommendations (III 2/6, paragraphs 14 to 19), including the need to develop a methodology for risk-based recommendations.

6.25 The Sub-Committee, having endorsed the need to update the casualty analysis procedure, as set out in annex 2 of document FSI 17/WP.1, discussed the distinction between lessons learned as a means of disseminating knowledge to the marine industry, and risk-based recommendations as a way to address safety issues to bring to the attention of relevant IMO bodies. The Sub-Committee also noted the need for implementation of the redesign of the GISIS MCI module using the new taxonomy (MSC-MECP.3/Circ.4/Rev.1).

Possible new ways to disseminate draft lessons learned

6.26 In discussing possible new ways to disseminate the draft Lessons Learned for Presentation to Seafarers, the Sub-Committee noted that the working group had considered paragraphs 20 to 24 of document III 2/6, as well as decisions and comments of the plenary, and agreed to retitle the relevant document as "Lessons Learned from Marine Casualties", given that some of the lessons learned could benefit organizations and people other than seafarers.

6.27 In endorsing the recommendations of the working group, which had noted the existence of lessons to be learned by type of incident on the IMO webpage, the Sub-Committee:

- .1 requested the Secretariat to consider redesigning the IMO webpage in order to make Lessons Learned from Marine Casualties more visible on the home page;
- .2 urged Member States to link Lessons Learned from Marine Casualties on the IMO webpage to their own webpages in order to facilitate national access; and
- .3 invited Member States to provide feedback from their national unions, education centres and industry, on possible options to improve dissemination of Lessons Learned from Marine Casualties.

6.28 Recognizing that shipping companies and the maritime industry in general are in an excellent position to promote the dissemination of Lessons Learned from Marine Casualties, the Sub-Committee invited Member States to encourage their national fleets and maritime industry to include it as part of their Safety Management System, or equivalent, with a view to contributing to the safety of the crew and the safe operation of ships.

Countries survey questionnaire

6.29 The Sub-Committee noted the views of the working group that the survey questionnaire will assist Member States in identifying potential problem areas for carrying out and reporting on an investigation on VSMC and that it was an exploratory questionnaire, and not an audit activity. Also, confidentiality of the information provided by Member States would be maintained by making it anonymous.

6.30 Having agreed to the Countries Survey Questionnaire, as amended, as set out in annex 3, subject to approval by the MSC and the MEPC, the Sub-Committee requested the Secretariat to forward the questionnaire to Member States, as appropriate, under the following terms:

- .1 allow Member States 60 days to reply by appropriate electronic means; and
- .2 preserve information provided by Member States as anonymous.

6.31 The Sub-Committee, having noted that questionnaires would not be collected and submitted to the CG in time to report to III 3, agreed to consider the issue of analysing the anonymous information collated by the Secretariat, based on the surveys completed by Member States, at a future session, including its referral to a possible group for analysis.

In-the-field job aid for investigators

6.32 With regard to the in-the-field job aid for investigators, as set out in annex 4, the Sub-Committee approved it and authorized its release to the public on the GISIS MCI module, subject to agreement by the MSC and the MEPC.

6.33 The Sub-Committee also approved, subject to agreement by the Committees, the inclusion of the in-the-field job aid for investigators, as reference material, in training programme based on IMO Model Course 3.11, as well as in a future revision of the course.

Practical lessons that might be learned from ICAO

6.34 As instructed by MSC 92, the Sub-Committee considered the comparative analysis carried out by the Secretariat (III 2/6/2), in cooperation with the ICAO Secretariat, within the specific framework of the instructions received, to identify any practical lessons that might be learned from ICAO on the submission and dissemination of accident reports.

6.35 Having noted and agreed to the findings from the analysis, the Sub-Committee invited MSC 96 to endorse its findings that there is no pertinent lesson to be learnt from the submission and dissemination of accident reports under ICAO's Convention or from how accident reports are handled by the ICAO Secretariat, compared with the relevant provisions of IMO instruments and the procedures being followed by the Secretariat.

Status of reports and analyses on very serious marine casualties (VSMC)

6.36 Following consideration of document III 2/6/3, as prepared by the Secretariat to address the requests by III 1 in relation to the status of reports on and analyses of VSMC, involving ships covered by SOLAS, the working group noted that information on whether the ships involved are covered by SOLAS or not at the time of the incidents is not currently requested from flag and other reporting Administrations or the Secretariat when recording the information on VSMC, marine casualties and marine incidents into the GISIS-MCI module. Consequently, the Secretariat manually reviewed all VSMC that had occurred from 1 January 2010 to March 2015, as registered in the GISIS MCI module, and tentatively identified the SOLAS or non-SOLAS condition of the ships at the time of the occurrences.

6.37 The working group, while noting that the Secretariat had created in the GISIS MCI module the option to identify the condition of the ship at the time of the occurrence with regard to SOLAS (i.e. "SOLAS", "Non-SOLAS" or "Unknown/Unspecified", the latter being the option by default), agreed that the tentative identification of the SOLAS or non-SOLAS condition of the ships, conducted by the Secretariat, raised the need for this information to be validated by the flag and other reporting Administrations involved, as appropriate.

6.38 In this context, the Sub-Committee endorsed the working group's recommendations and:

- .1 invited flag and/or other reporting Administrations to review existing records and to validate the condition of the ships with regard to SOLAS, in particular, for very serious marine casualties, which have occurred since 1 January 2010;
- .2 invited flag and other reporting Administrations to select one of the three above-mentioned options when recording new occurrences in GISIS-MCI, in order to maintain accurate records in the GISIS MCI module in the future; and
- .3 requested the Secretariat to review periodically those records showing the "Unknown/Unspecified" option as a secondary measure to assist in maintaining the classification as accurate as possible.

6.39 Furthermore, the Sub-Committee, having noted that the working group had agreed that a declaration of cooperation page provides concurrence with the findings, conclusions and recommendations of the investigation and is associated with other reporting States' reports already uploaded into the GISIS MCI module, requested the Secretariat to include the words "conclusions and recommendations" after "findings" in the option created in the module and to include the presentation on "How to do it" into the IMO webpage, in order to assist reporting Administrations.

Compliance with the provisions of paragraph 14.4 of the Casualty Investigation Code in accordance with the facilities supported by resolution A.1074(28)

6.40 The Sub-Committee noted that the working group had considered the relevant mandatory requirements of paragraph 14.4 that "the final marine safety investigation report shall be made available to the public and the shipping industry by the marine safety investigating State(s)" and had also recalled that resolution A.1074(28) states that "notification through GISIS should be considered as one effective way for Contracting Governments or Parties to IMO instruments to fulfil their reporting obligations under the various mandatory IMO instruments."

6.41 In this context, the Sub-Committee noted the following views expressed in the group that:

- .1 some investigating Administrations have legislation in place preventing the use of the investigation reports in civil, criminal or administrative proceedings, and protections to prevent evidence obtained from a person in an investigation or contained in the investigation report being used against that person;
- .2 there are instances where marine safety investigating Administrations do not make the final marine safety investigation reports public, protective legislation is absent, reports are improperly used by third parties including parties beyond the jurisdiction of the investigating Administration, in civil or criminal proceedings, which are obstacles to making reports publically available; and
- .3 some investigating Administrations make summaries of their investigation reports public to communicate the safety issues, findings and recommendations.

6.42 Having considered the outcome of the group's deliberations on the issue, the Sub-Committee encouraged reporting Administrations to consider the adoption and enforcement of national legislation in order to facilitate the availability to the public and the shipping industry of their final marine safety investigation reports in accordance with paragraph 14.4 of the Casualty Investigation Code.

CORRESPONDENCE GROUP ON CASUALTY ANALYSIS

6.43 The Sub-Committee, taking into account the work completed at this session, established the Correspondence Group on Casualty Analysis, under the coordination of the United Kingdom*, to continue its work intersessionally under the following terms of reference:

- .1 based on the information received from Administrations on investigations into casualties, to conduct a review of the relevant casualty reports referred to the group by the Secretariat, prioritizing very serious casualties occurred since 1 January 2010 involving SOLAS ships, and, where appropriate, to prepare draft lessons learned from marine casualties;
- .2 to identify safety issues that need further consideration and make recommendations following the procedure adopted by MSC 92 (MSC 92/26, paragraphs 22.28 and 22.29);
- .3 to review the current process set out in annex 2 of document FSI 17/WP.1, taking into consideration the relevant decisions of IMO bodies and paragraphs 14 to 19 of document III 2/6, and to submit the results of its review with recommendations for consideration; and
- .4 submit a report to III 3.

*

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Working Group on Casualty Analysis

6.44 The Sub-Committee agreed that the Working Group on Casualty Analysis should start work the morning of the first day of III 3, in accordance with MSC MEPC.1/Circ.4/Rev.4 on *Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies, as amended*, under the following provisional terms of reference, subject to further instructions to be received from plenary:

- .1 confirm or otherwise the findings of the correspondence group based on the analysis of individual casualty investigation reports and GISIS, for the Sub-Committee's approval and authorization of their release to the public on GISIS;
- .2 confirm or otherwise the draft text of Lessons Learned from Marine Casualties, for the Sub-Committee's approval and authorization of release on the IMO website in accordance with the agreed procedure;
- .3 consider and advise whether those reports reviewed by the analysts and considered by the working group and which are of interest to them should be referred to the relevant committees and sub-committees. In doing so, the working group should submit supporting information derived from the casualty analysis procedure used to develop recommendations for consideration by the committees and sub-committees according to agreed procedures; and
- .4 consider and advise on the review of the current process conducted by the correspondence group.

REMINDER FOR SUBMISSION OF CASUALTY-RELATED DATA

6.45 The Sub-Committee reminded Member States to:

- .1 submit reports of investigation as required by the Casualty Investigation Code (resolution MSC.255(84)), particularly on VSMC, in order to assist a more global analysing process;
- .2 provide and complete all necessary information on reports on marine casualties and incidents when uploading marine safety investigation reports into GISIS, in accordance with MSC-MEPC.3/Circ.4/Rev.1, bearing in mind that information can be directly reported through GISIS (resolution A.1074(28) *on Notification and circulation through the Global Integrated Shipping Information System (GISIS)*), including the facilities to attach the electronic version of full investigation reports and to make a declaration of cooperation to concur with the findings, conclusions and recommendations of the investigation and to be associated with other reporting States' reports already uploaded into the GISIS MCI module;
- .3 encourage the reporting of near-miss occurrences and promote a safe culture as recommended in MSC-MEPC.7/Circ.7; and
- .4 ensure the accuracy of the country information in the GISIS Contact Points module, in accordance with MSC-MEPC.6/Circ.13, as amended.

7 MEASURES TO HARMONIZE PORT STATE CONTROL (PSC) ACTIVITIES AND PROCEDURES WORLDWIDE

GUIDELINES AND PROCEDURES FOR PORT STATE CONTROL

7.1 The Sub-Committee noted the list of relevant new requirements which had been adopted since FSI 21, as set out in the annexes to documents III 2/9/1 and III 2/INF.3 and, having considered documents III 2/7/2 (Secretariat) containing information on recent developments that could be used in the context of updating resolution A.1052(27) on *Procedures for port State control, 2011*, referred them to the working group to be established under this agenda item to initiate the review of the above-mentioned procedures.

Nautical charts and nautical publications on ships

7.2 Having considered document III 2/7/8 (Australia) the Sub-Committee noted the concerns raised therein on the lack of compliance with SOLAS chapter V with regard to the carriage of appropriate and up-to-date nautical charts and nautical publications on some ships visiting Australian ports, and agreed that, for any further action to be considered, a more concrete proposal should be submitted to the MSC.

Deficiency codes and related actions taken by PSC regimes

7.3 The Sub-Committee considered the relevant part of documents III 2/7/7 and Corr.1 (Jordan), proposing the adoption of unified deficiency codes and related actions taken by port State control (PSC) regimes to be shared and applied globally.

7.4 Having noted the ongoing process of harmonization of PSC codes established by the Paris and Tokyo MoUs and opened to all other PSC regimes and the IMO Secretariat, as well as the fact that the use of the code for a deficiency to be rectified before departure did not necessarily imply the need for a PSC officer (PSCO) to re-inspect the ship, the Sub-Committee invited PSC regimes to continue to work towards the harmonization of PSC-related codes and agreed that there was no need, at this time, for the Organization to undertake the tasks identified in the submission from Jordan.

GUIDELINES FOR PORT STATE CONTROL OFFICERS ON THE ISM CODE

7.5 The Sub-Committee was informed that, based on the request of III 1 and following oral proposals by IACS, the draft MSC-MEPC.4 circular on *Guidelines for port State control officers on the ISM Code* had been referred to the Sub-Committee on Human Element, Training and Watchkeeping (HTW) for consideration by MEPC 67 and MSC 94. Having considered the outcome of HTW 2 that had amended the draft circular, as set out in annex 1 of document HTW 2/WP.5, MEPC 68 and MSC 95 forwarded the draft guidelines to the Sub-Committee for review and finalization for their approval.

7.6 In this context, the Sub-Committee noted that the changes proposed by the Working Group on Human Element Issues, established during HTW 2, were providing a more detailed description of "serious failures" by referencing criteria used for substandard ships and inserting a footnote as guidance for PSCOs when applying their professional judgement for checking deficiencies.

7.7 In the ensuing discussion some delegations expressed their view on the need to clarify the use of the words "serious failure" and to provide a common understanding of the factors constituting ISM Code-related failures and serious failures, the latter being the threshold for detaining a ship, in aligning such criteria with those being used for non-ISM Code-related

deficiencies for identifying substandard ships. In this regard, references to factors posing a serious threat to the safety of personnel or the ship or a serious risk to the environment contained in the proposed changes by HTW 2 to paragraphs 6.3.1.3, 7.1.2.3 and 7.3.1.1 of the draft Guidelines were in line with factors that would make a ship unseaworthy, which would be consistent with paragraph 3.1.2 of the annex to resolution 1052(27) on *Procedures for port State control, 2011*, concerning identification of a substandard ship.

7.8 Additionally, the footnote proposed to be added under paragraph 6.3.1 of the draft Guidelines was supported by some delegations as a decision support-tool for PSCOs, reminding them about sections 9 and 10 of the ISM Code on the company's responsibility to establish procedures to deal with deficiencies, so that evidence thereof might indicate that there is no failure of the safety management system.

7.9 Other delegations were of the view that the Guidelines prepared by III 1 had already been tested satisfactorily by some PSC regimes and that the scope of the proposed changes had gone beyond pure human element-based considerations.

7.10 In this context, the use of alternative terminologies, other than "serious failure", was recognized as introducing potential limitation to the scope of PSC inspections, whereas instead, the professional judgement of PSCOs should not be restricted, so that responsibility for ISM Code-related deficiencies would not only be that of the Captain of a ship, and the company and the shipowner would also be held accountable.

7.11 The Sub-Committee, having also endorsed the view that ISM Code-related deficiencies should be addressed differently from deficiencies not related to the ISM Code, instructed the working group to be established under this agenda item to finalize the draft guidelines for PSCOs on the ISM Code using the original version of the draft Guidelines, as set out as a draft MSC-MEPC.4 circular in annex 4 to document III 1/18.

DRAFT GUIDELINES FOR PORT STATE CONTROL OFFICERS ON CERTIFICATION OF SEAFARERS, REST HOURS BASED ON THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS (STCW), 1978, AS AMENDED, AND MANNING REQUIREMENTS FROM THE FLAG STATE

7.12 With respect to the draft MSC circular on *Guidelines for port State control officers on certification of seafarers, rest hours based on the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, and manning requirements from the flag State*, which had been referred by III 1 to the HTW Sub-Committee for review, both in general and, in particular, of paragraphs 6.2.24, 6.2.26, 6.4.2.2, 7.2.7, 7.3.2.4 and 7.3.2.14, the Sub-Committee noted the comments made on the draft guidelines by the Working Group on Human Element Issues, which had been established during HTW 2, and that further work would be carried out at HTW 3. In this context, the Sub-Committee urged PSC experts to provide HTW 3 with relevant input in the context of its consideration of this matter.

GUIDELINES FOR PORT STATE CONTROL OF MODUS

7.13 With regard to document III 2/7/5 (Islamic Republic of Iran) proposing the development of PSC Guidelines for MODUs for global utilization, the Sub-Committee recalled that the MODU Code is not a mandatory instrument and was informed that there are different degrees of acceptance of the Code by Member States.

7.14 The Sub-Committee acknowledged the meticulous and timely work carried out by members of the Indian Ocean MoU leading to the preparation of the draft guidelines under consideration. Having noted that there may be a need for such guidelines to go beyond port State inspections, the Sub-Committee invited the submitters and other developers of the guidelines to consider resubmitting them to the appropriate body of the Organization, if deemed necessary, taking into account the comments made, in particular regarding the questions of the role of the flag State, the recommended scope and place of such inspections, and the most appropriate way to disseminate this guidance in lieu of PSC guidelines.

PERFORMANCE OF FLAG ADMINISTRATIONS AND RECOGNIZED ORGANIZATIONS

7.15 In considering document III 2/7/3 (Paris and Tokyo MoUs) on the performance of flag Administrations and recognized organizations (ROs) and, in particular, the actions requested of it, the Sub-Committee invited other PSC regimes to provide similar information in order to assist flag Administrations in selecting high performing ROs and advised flag Administrations to use the information provided when considering authorizing ROs to act on their behalf.

7.16 With regard to document III 2/INF.13 (Paris and Tokyo MoUs and the United States) on flag Administrations targeted by the United States Coast Guard (USCG) and the Paris and Tokyo MoUs, the Sub-Committee noted that there no flag Administration had been targeted for inspection in all three regions over the three-year period from 2011 to 2013, while six flag Administrations had been targeted in two regions.

TRANSPARENCY AND HARMONIZATION OF PSC INFORMATION

Equasis information system

7.17 In the context of its consideration of document III 2/7/1 (Secretariat) on the Equasis information system, the Sub-Committee noted that the Mediterranean MoU had become the sixth PSC regime to provide PSC inspection data to Equasis, after the Indian Ocean, Paris and Tokyo MoUs, the USCG and the Viña del Mar Agreement (VMA). The expert of the Equasis Management Unit provided an update on the member access profile.

Port State control data exchange protocol

7.18 The Sub-Committee noted that the Paris and Abuja MoUs had renewed their agreements to include automatic renewal of their data exchange agreements with the Organization and that the Mediterranean MoU had similarly modified the renewal process of its agreement in the margin of the session, and invited the remaining PSC regimes to modify their agreements accordingly.

7.19 The Sub-Committee, having considered document III 2/7/6 (Secretariat), urged flag Administrations and port Administrations which are not members of regional PSC regimes to use GISIS direct reporting facilities, and invited all PSC regimes to harmonize their data exchange protocols with IMO so that the data sets and data exchange and renewal procedures are the same for all regimes.

CONCENTRATED INSPECTION CAMPAIGNS

7.20 The Sub-Committee, having recalled that III 1 had invited PSC regimes to conduct concentrated inspection campaigns (CICs) in cooperation with other PSC regimes, to continue to provide information on the outcome of CICs in the agreed reporting format as set out in annex 4 to document FSI 20/WP.5, and to provide recommendations, together with supporting material, which could be passed to relevant IMO bodies for further consideration, acknowledged with thanks the submissions made by PSC regimes in conformity with the format.

7.21 Regarding the proposed process for advancing recommendations to relevant IMO bodies resulting from the reports of CICs, as set out in annex 3 of document III 1/WP.4/Add.1, the Sub-Committee, having noted some views questioning the need for such information to be submitted, recalled that III 1 had decided to reconsider the proposed process at this session and referred the matter for consideration by the working group to be established.

7.22 In this context, the Sub-Committee considered the following views:

- .1 relevant conclusions and recommendations emanating from CICs should not be presented in information papers and should contain clear actions requested from the Sub-Committee;
- .2 the work on the review of the outcome of CICs, as well as on casualty analysis and consolidated audit summary reports, raises the need for the establishment of a work cycle in order to use the information to improve international standards and their implementation, and Member States should be invited to make proposals on how the Sub-Committee should carry out this work;
- .3 a dedicated working group under this Sub-Committee could determine whether the information linked to the current Strategic Plan can be addressed through the submission of a new output or is better seen as an adjustment under the existing Strategic Plan;
- .4 individual sets of data may not justify any particular action to be taken but the information could be banked within the Sub-Committee for possible future action, as appropriate;
- .5 upon receiving reports and analyses, the Secretariat could prepare documents to inform the Sub-Committee of highlights or lowlights asking Member States if action needs to be taken, while data should continue to be collected;
- .6 members of PSC regimes can decide to put forward relevant proposals, including new output to the relevant IMO bodies;
- .7 the result of a CIC is not, in itself, justification for new outputs, but there may be a need to raise the issue with the parent bodies with regard to new procedures in the Committees' Guidelines in a similar vein to what has been agreed on the use of regional or national activities in the context of formal safety assessments; and
- .8 the work based on the use of the outcome of CICs, as well as on casualty analysis, poses a general challenge, but should not be restricted to the justification of a new output. The Organization needs to know the state of the industry and the fleet, and where the problems are, on a more aggregated level, especially in the context of the audit, for which all information that can be gathered is needed to assess implementation.

7.23 Reverting to its consideration of the outcome of III 1 on the process for advancing recommendations to relevant IMO bodies resulting from reports of CICs, as contained in annex 3 of document III 1/WP.4/Add.1, but limited to the nine first paragraphs describing it, the Sub-Committee instructed the working group to be established to consider the matter further.

2013 Harmonized Verification Programme (HAVEP) on passenger ships (Paris MoU)

7.24 The Sub-Committee considered documents III 2/7/4 and III 2/INF.14 on the results of the 2013 Harmonized Verification Programme (HAVEP) on passenger ships (Paris MoU), as well as the proposal contained therein that the report should be forwarded to the appropriate IMO bodies for further consideration and action.

7.25 In this context, the Sub-Committee noted the views highlighting the difficulty for IMO bodies to act on the basis of the actions requested in documents III 2/7/4 and III 2/INF.14, as well as pointing out that the level of technical details might make it difficult to act upon the HAVEP findings. Subsequently, the Sub-Committee agreed to refer the documents to the working group to be established, as an input for the review process for advancing recommendations to relevant IMO bodies resulting from reports of CICs, without expecting any recommendation to be forwarded to other IMO bodies at this point in time.

Global CICs

7.26 While considering the proposal contained in document III 2/7/7 (Jordan) for a decision to be made on themes for CICs, which should then be carried out simultaneously by all PSC regimes, the Sub-Committee recalled its previous decision on the same issue (III 1/18, paragraph 6.7) that such a proposal might not be feasible at this stage due to the fact that not all MoUs are at the same level of development, nor do they have the same resources.

Outcome of CICs submitted for information

7.27 The Sub-Committee noted documents III 2/INF.7 (Paris and Tokyo MoUs), III 2/INF.15/Rev.1 (Indian Ocean MoU), III 2/INF.17 (Black Sea MoU), III 2/INF.19 (Caribbean MoU), III 2/INF.20 (Riyadh MoU), III 2/INF.22 (Mediterranean MoU) and III 2/INF.30 (Viña del Mar Agreement) on the results of CICs, and thanked the PSC regimes for the information provided.

7.28 The Sub-Committee invited the PSC regimes to conduct CICs in cooperation with other PSC regimes and to continue providing it with information on the outcome of CICs in the agreed reporting format, as set out in annex 4 to document FSI 20/WP.5, together with recommendations and supporting material which could be passed to relevant IMO bodies for further consideration, and taking into account any relevant outcome of further consideration of the matter (see paragraph 7.41).

ANALYSIS OF PSC ACTIVITIES, PRACTICES AND STATISTICS

7.29 The Sub-Committee recalled that III 1 had invited the regional PSC regimes and the United States to continue submitting their annual reports to the Sub-Committee in the agreed format as set out in annex 3 of document FSI 20/WP.5, and had requested the Secretariat to continue providing the Sub-Committee with a progress report on regional PSC agreements.

7.30 Having considered documents III 2/7 and III 2/INF.24 (Secretariat) the Sub-Committee was informed that, in 2013, without considering that several member Authorities have dual or triple membership, around 70,000 inspections were carried out and about 2,800 vessels were detained, which indicated that the overall detention rate decreased from 4.2% in 2012 to 4.0% in 2013. In this connection the following information documents were noted:

- .1 III 2/INF.6 (Black Sea MoU) on Black Sea MoU Annual Report 2014;
- .2 III 2/INF.8 (Tokyo MoU) on Summary of Tokyo MoU Activities in 2014;

- .3 III 2/INF.9 (Tokyo MoU) on Tokyo MoU annual report 2013;
- .4 III 2/INF.10 (Tokyo MoU) on Tokyo MoU PSC Data for 2014;
- .5 III 2/INF.11 (Tokyo MoU) on Measures taken by the Tokyo MoU against under-performing ships;
- .6 III 2/INF.12 (Paris MoU) on Paris MoU Annual Report 2013;
- .7 III 2/INF.16 and Corr.1 (Indian Ocean MoU) on Indian Ocean MoU PSC Activities;
- .8 III 2/INF.18 (Caribbean MoU) on Caribbean MoU on PSC Status of activities and inspections;
- .9 III 2/INF.21 (Abuja MoU) on Abuja MoU Annual Report 2014;
- .10 III 2/INF.23 (Mediterranean MoU) on Med MoU Annual Report 2013; and
- .11 III 2/INF.31 (Vina del Mar Agreement) on Annual Report 2013.

7.31 With respect to documents III 2/INF.26 and III 2/INF.27 (Australia), the Sub-Committee noted that Australia has introduced plasticized qualification cards for Australian seafarers, which are capable of containing more information and security features than paper certificates, and "Directions Notices" that can be issued to regulate the entry or otherwise of a ship to Australian ports.

7.32 The Sub-Committee invited the regional PSC regimes and the United States to continue submitting their annual reports to the Sub-Committee in the agreed format as set out in annex 3 of document FSI 20/WP.5, and requested the Secretariat to continue providing the Sub-Committee with a progress report on regional PSC agreements.

Analysis of PSC data to identify trends and develop knowledge and risk-based recommendations

7.33 The Sub-Committee agreed to a proposal by the Chairman to consider the need to prepare a draft methodology in order to carry out an analysis of PSC data, including the in-depth analysis of annual PSC reports, to identify trends and develop knowledge and risk-based recommendations, taking into account the fact that the work under output 12.1.2.1 related to the analysis of casualty and PSC data is currently limited, under agenda item 6, to casualty-related matters.

7.34 In this context, the Sub-Committee endorsed the view that there should not be any attempt to establish a correlation between casualty and PSC data at this stage and that, since the procedure for analysing CIC and PSC inspection data should be the same, the previously considered process of looking at CIC should be expanded to PSC data in general, and agreed to refer the matter to the working group to be established under this agenda item for further consideration.

ESTABLISHMENT OF THE WORKING GROUP ON MEASURES TO HARMONIZE PORT STATE CONTROL ACTIVITIES AND PROCEDURES WORLDWIDE

7.35 The Sub-Committee established the Working Group on Measures to harmonize port State control activities and procedures worldwide, taking into account comments and decisions made in plenary, under the following terms of reference:

- .1 develop the draft revision of the *Procedures for port State control, 2011*, taking into account relevant part of documents FSI 20/10/1, FSI 20/INF.6, FSI 21/10/1, FSI 21/INF.13, III 1/10/1, III 1/INF.4, III 2/7/2 and III 2/INF.3 and resolution MSC 370(93), as appropriate;
- .2 finalize, editorially, the draft *Guidelines for port State control officers on the ISM Code*, using annex 4 to document III 1/18 as a basis;
- .3 consider the proposed process for advancing recommendations to the relevant IMO bodies resulting from the reports of CICs, as set out in annex 3 of document III 1/WP.4/Add.1, paragraphs 1 to 9, and PSC data, including the in-depth analysis of annual PSC reports, to identify trends and develop knowledge and risk-based recommendations;
- .4 using the 2013 Harmonized Verification Programme (HAVEP) on passenger ships on the basis of documents III 2/7/4 and III 2/INF.14 to validate the process developed in paragraph 3 above; and
- .5 consider whether there is a need to establish a correspondence group to progress work intersessionally and to develop draft terms of reference accordingly, as appropriate.

REPORT OF THE WORKING GROUP

7.36 Having considered the report of the Working Group on Measures to Harmonize Port State Control Activities and Procedures Worldwide (III 2/WP.5), the Sub-Committee took the decisions as reflected in the following paragraphs.

Draft guidelines for port State control officers related to the ISM Code

7.37 Based on the text of the draft Guidelines, as developed by III1 and set out in annex 4 to document III 1/18, the Sub-Committee agreed to the draft MSC-MEPC.4 circular on *Guidelines for port State control officers on the ISM Code*, as set out in annex 5 for approval by MSC 96 and MEPC 69.

7.38 In relation to the issue of certificates contained in the above-mentioned guidelines, the Sub-Committee noted that the matter of the acceptance of electronic certificates, as addressed in FAL.5/Circ.39/Rev.1, might become relevant at some stage and agreed to consider in the future the status of the guidelines, either as a stand-alone guidance or as an update of the current appendix 8 of resolution A.1052(27), once they have been approved.

Process for putting forward recommendations to the relevant IMO bodies resulting from the reports of CICs

7.39 The Sub-Committee, while considering whether any additions or amendments should be made to the proposed process for putting forward recommendations to the relevant IMO bodies resulting from the reports of CICs, using paragraphs 1 to 9 of annex 3 of document III 1/WP.4/Add.1, as the basis, noted the following views:

- .1 CICs are useful for improving consistency of PSC activities, raising awareness, and providing focused training of PSCOs. The outcome is one method for assessing the effectiveness of the implementation of IMO instruments;
- .2 in assessing the results of the CICs and in formulating their observations and recommendations, PSC regimes should attempt to identify trends, possible root causes of non-compliance and suggest potential improvements;
- .3 PSC regimes should consider whether the outcome of CICs requires any action to be taken by the Organization, and if so, PSC regimes or their member Authorities may submit substantive documents to the Sub-Committee;
- .4 PSC regimes are invited to continue to submit the outcome of CICs to the Sub-Committee;
- .5 the process should consist of two stages, i.e. reporting on the output of CICs to the Sub-Committee and analysis of the output of CICs; and
- .6 the process should provide PSC regimes with feedback on the CIC data and the reporting format in light of experience gained.

7.40 The Sub-Committee agreed to the revised process for putting forward recommendations to the relevant IMO bodies resulting from the reports of CICs, as set out in annex 6, to be issued as III.2/Circ.1, subject to endorsement by the MSC and the MEPC. The Sub-Committee invited PSC regimes and their members to submit CIC reports and documents in accordance with this process.

PSC data, including the in-depth analysis of annual PSC reports

7.41 With regard to the analysis of PSC inspection data, including the in-depth analysis of annual PSC reports, the Sub-Committee agreed with the following general principles:

- .1 current data sets already available should be used;
- .2 requesting new data should be avoided where possible;
- .3 the current information supplied by PSC regimes should be in compliance with the agreed format, as set out in the annex to document FSI 20/WP.5, bearing in mind that the data for a region, as opposed to individual members, is more beneficial;
- .4 overall PSC regime data such as the total number of inspections, total inspections by ship type, total deficiencies by deficiency group, total detentions by ship and total inspections by flag Administration would be appropriate initial data sets to use; and

- .5 when appropriate data sets are identified, the Secretariat could be asked to produce the data for consideration by the Sub-Committee, as appropriate.

7.42 On the possible outcome of the analysis, the Sub-Committee noted the views expressed that some limitation in the trends would need to be considered, such as duplication of data owing to some Authorities being members of several PSC regimes and the fact that data would be impacted by the growth in PSC regime membership and the relevant instruments of individual PSC regimes. Any work concerned with pursuing global trends based on PSC and CIC data should not conflict with the strategic analysis work of the Organization.

7.43 The Sub-Committee agreed to refer the matter of whether the trend analysis should start from the time the data sets are identified or whether historical data should also be sourced from past PSC annual reports for consideration by the correspondence group to be established.

Results of the 2013 Harmonized Verification Programme (HAVEP) on passenger ships

7.44 While considering the results of the 2013 Harmonized Verification Programme (HAVEP) on passenger ships on the basis to documents III 2/7/4 and III 2/INF.14 to validate the process used in HAVEP, the Sub-Committee noted the following views:

- .1 it is difficult to make deep analysis based on results of the HAVEP on passenger ships as this was not a CIC;
- .2 the questionnaire was not specific enough to identify root causes of deficiencies; and
- .3 the conclusions and recommendations presented in document III 2/INF.14 did not contain sufficient detail to demonstrate a level of analysis enabling the Sub-Committee to consider subsequent actions.

7.45 Having used the HAVEP as a "case study" for the amended process, the Sub-Committee agreed that following the new process (see paragraph 7.42 and annex 6) would assist PSC regimes to submit substantive documents, which should contain sufficient information to enable the Sub-Committee to consider and take any relevant action.

Establishment of the Correspondence Group on Measures to Harmonize Port State Control (PSC) Activities and Procedures Worldwide

7.46 The Sub-Committee established the Correspondence Group on Measures to Harmonize Port State Control (PSC) Activities and Procedures Worldwide* under the following terms of reference:

- .1 develop the draft revision of resolution A.1052(27) on the *Procedures for port State control, 2011*, taking into account the relevant parts of documents FSI 20/10/1, FSI 20/INF.6, FSI 21/10/1, FSI 21/INF.13, III 1/10/1, III 1/INF.4, III 2/7/2 and III 2/INF.3 and resolution MSC 370(93), as appropriate;

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- .2 further consider PSC inspection data, including the in-depth analysis of annual PSC reports to explore how to identify trends, taking into account the process for putting forward recommendations to the relevant IMO bodies resulting from the reports of CICs, as set out in annex 6 ; and
- .3 report to III 3.

8 ANALYSIS OF CONSOLIDATED AUDIT SUMMARY REPORTS

8.1 The Sub-Committee was advised that C 113 had noted the eighth consolidated audit summary report (CASR) (C 113/5/2) and had requested the MSC and the MEPC to consider it and to advise the Council, in due course, of the outcome. MEPC 68 and MSC 95 had subsequently instructed the Sub-Committee to carry out this task and to report to them, as appropriate.

8.2 The Sub-Committee recalled that, so far, it had considered two analyses of CASRs previously issued and prepared by the Secretariat in order to assist its work on the review of CASRs. FSI 20 had considered documents FSI 20/9 and FSI 20/INF.16 (Secretariat) comprising the analysis based on the information contained in the first five consolidated audit summary reports and III 1 had considered documents III 1/9 and III 1/INF.23 (Secretariat) containing further analysis of all seven CASRs. Furthermore, III 1 had considered the report of the Working Group on the Review of the audit findings identified through the analysing process (III 1/WP.5) established during that session.

8.3 The Sub-Committee further recalled that III 1 had agreed that the presentation and the analysis of findings should contain more detailed information for future reviews, so that a clear understanding could be reached on all issues involved in implementation and/or enforcement of a related requirement. III 1 had requested the Secretariat to continue the analysis of future CASRs using the new elements of the methodology.

8.4 In this context, the Sub-Committee considered document III 2/8 (Secretariat) providing information on the analysis of CASRs, taking into account the status of voluntary audits and the methodology agreed by III 1.

8.5 The Sub-Committee was informed that, as part of the preparatory work for the commencement of mandatory audits in 2016, the Secretariat has completed the development of a new GISIS module on Member State Audit (MSA), which is intended to provide a common platform for the implementation of audits, from planning through to the reporting phases of the audit.

8.6 The above-mentioned module, taking into account the new elements of the methodology agreed by III 1, has been structured in such a way as to provide a robust basis for future production and review of consolidated audit summary reports, based on the structure of data on audit findings, observations, references to mandatory instruments and/or the audit standard, root causes and corrective actions. The built-in functionalities of the module will enable an effective analysis of data on the outcome of audits in the future. However, the new functionalities of the GISIS MSA module will only be available for the analysis of the outcome of mandatory audits.

8.7 In that sense, the Sub-Committee noted that there will be an important difference in the classification of findings in terms of references made to the *IMO Instruments Implementation (III Code)* (resolution A.1070(28)), as the audit standard for mandatory audits, compared with findings from the voluntary audits and audits under the transitional arrangements, as highlighted in the document. The analysis of the outcome from audits carried out from 2016 onwards will, therefore, be different, in some respects, from those under VIMSAS and the transitional arrangements.

8.8 Furthermore, the Sub-Committee was informed that undertaking further analysis of the data from the voluntary audits and audits under the transitional arrangements, based on the decision of the Sub-Committee to use the new elements of the methodology, would be extremely time consuming and an exhaustive process, which could not be done in a reasonable time for this session without additional resources.

8.9 A full analysis of the data from the voluntary audits and audits under the transitional arrangements will be undertaken by the Secretariat once all reporting from those audits has been completed. The Sub-Committee would then be provided with the complete information on lessons learned from the voluntary and transitional stages of the Scheme, which could facilitate the development of further recommendations for consideration by the committees, in particular, on the recurrent areas of findings and underlying causes and on capacity building or technical assistance.

9 UPDATED SURVEY GUIDELINES UNDER THE HARMONIZED SYSTEM OF SURVEY AND CERTIFICATION (HSSC)

INTERMEDIATE AND RENEWAL SURVEY WINDOWS

9.1 The Sub-Committee recalled that, following the policy decision taken by MSC 92 to align the survey regime for ships not subject to the enhanced survey programme of inspections (ESP) of bulk carriers and oil tankers with that of ships subject to it, III 1 had endorsed the draft amendment to SOLAS regulation XI-1/2 and the Survey Guidelines developed by the Drafting Group on the Review of the Survey Guidelines under the HSSC and the Non-exhaustive List of Obligations, using the proposal contained in paragraph 12.1 of document MSC 92/12/2 (Liberia et al.) as a basis, to align the survey intervals of the intermediate survey.

9.2 The Sub-Committee also recalled that III 1 had instructed the Correspondence Group on the Review of the Survey Guidelines under the HSSC and the Non-exhaustive List of Obligations under Instruments relevant to the IMO Instruments Implementation Code (III Code) to consider the matter further. In this context, the Sub-Committee considered the relevant part of the report of the correspondence group, as contained in document III 2/9.

9.3 The Sub-Committee noted that the proposed amendment to SOLAS XI-1/2, if agreed, would be submitted to MSC 96 for approval, with a view to adoption at a future session of the Committee and that, based on MSC.1/Circ.1481 – *Guidance on entry into force of amendments to the 1974 SOLAS Convention and related mandatory instruments* – the amendments could not enter into force earlier than 2020; likewise, the consequential amendments to the Survey Guidelines, as contained in part 2 of annex 1 of document III 2/9, cannot be adopted by the Assembly unless there is certainty of the entry into force of the amendment to SOLAS.

9.4 Following the discussion, the Sub-Committee agreed that the relevant part of document III 2/9 be referred to the working group to be established under agenda item 10, for detailed technical consideration and finalization, taking into account MSC.1/Circ.1500 on *Guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments* (see paragraph 10.5).

EXEMPTION OF SURVEY AND CERTIFICATION REQUIREMENTS UNDER THE MARPOL CONVENTION FOR UNSP BARGES

9.5 The Sub-Committee recalled that III 1 had noted that MARPOL Annexes I, IV and VI did not have specific provisions to allow an exemption from survey and certification requirements, although MARPOL Annexes I and VI did contain some regulations dealing with exemptions, while MARPOL Annex IV did not contain any regulation on exemptions.

9.6 The Sub-Committee also recalled that III 1 had developed the draft *Guidelines for exemption of unmanned non-self-propelled (UNSP) barges from the survey and certification requirements under the MARPOL Convention* and had invited MEPC 67 to consider if the development of amendments to MARPOL Annexes I, IV and VI or relevant unified interpretations, as appropriate, was necessary in order to allow the exemption of UNSP barges from survey and certification requirements.

9.7 The Sub-Committee considered document III 2/9/4 (Secretariat) providing information on the outcome of MEPC 68 on this matter. MEPC 68, in its consideration of the draft *Guidelines for exemption of unmanned non-self-propelled (UNSP) barges from the survey and certification requirements under the MARPOL Convention*, together with documents MEPC 68/12/4 (Republic of Korea) and MEPC 68/12/10 (New Zealand), noted the support for developing amendments to the relevant MARPOL annexes to provide a legal basis for exempting UNSP barges from survey and certification requirements. In this context, MEPC 68 instructed the Sub-Committee to further consider, with a view to finalization, the draft amendments to MARPOL concerning the exemption of UNSP barges from survey and certification requirements, taking into account documents MEPC 68/12/4 (Republic of Korea) and MEPC 68/12/10 (New Zealand) and to finalize the associated draft guidelines, as contained in annex 7 of document III 1/18, ensuring consistency with the draft MARPOL amendments.

9.8 In the ensuing discussion, the majority of delegations that spoke expressed their support for the proposal contained in document MEPC 68/12/10, while some delegations indicated that this document and document MEPC68/12/4 were complementing each other. The following views were also expressed during the debate:

- .1 the conditions under which the exemption was granted should be contained in the Convention itself rather than in the guidelines so that the scope of the exemption could not be extended;
- .2 if an exemption is granted to UNSP barges, effective control and supervision over UNSP barges would be required; concerns were raised about the potential administrative burden; and
- .3 if exemptions are granted to UNSP barges regarding survey and certification, there should be more areas for exemptions to be granted, e.g. under MARPOL Annex I, regulation 17.

9.9 The Sub-Committee instructed the working group to be established under agenda item 10 to finalize the draft amendments to MARPOL concerning the exemption of UNSP barges from survey and certification requirements, taking into account documents MEPC 68/12/4, MEPC 68/12/10 and III 2/9/4, and the associated draft guidelines, as contained in annex 7 of document III 1/18, ensuring consistency with the draft MARPOL amendments (see paragraph 10.5).

AMENDMENTS TO THE SURVEY GUIDELINES UNDER THE HSSC

9.10 The Sub-Committee recalled that III 1 had agreed that the draft amendments to the *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2011* (resolution A.1053(27), as amended by resolution A.1076(28)), needed to be further developed to include the requirements deriving from amendments to relevant IMO instruments entering into force up to and including 31 December 2015, with a view to the submission of draft amendments, together with a draft resolution, to III 2 for consideration and approval prior to submission to A 29 for adoption.

9.11 The Sub-Committee also recalled that III 1, having noted that the amendments to MARPOL Annex I, the *Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code)* and the *International Bulk Chemical Code (IBC Code)* on mandatory carriage requirements for stability instruments on board tankers, as adopted by resolutions MEPC.248(66), MEPC.249(66), MSC.376(93) and MEPC.250(66)/MSC.369(93), respectively, were expected to enter into force on 1 January 2016, and should not, therefore, be included in the next version of the Survey Guidelines under the HSSC, had agreed that the inclusion of the amendments set out in annex 9 of document SLF 55/17, which are related to the above-mentioned instruments, as amended, might, therefore, be referred to a correspondence group to be established at this session.

9.12 In addition to the above, the Sub-Committee also had for its consideration the following documents:

- .1 III 2/9 (China) containing the report of the Correspondence Group on the Review of the Survey Guidelines under the HSSC and the Non-exhaustive list of Obligations under Instruments relevant to the IMO Instruments Implementation Code (III Code) and presenting, inter alia, proposed amendments to the *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2011* (resolution A.1053(27), as amended by resolution A.1076(28)), deriving from the amendments to the relevant IMO instruments entering into force up to and including 31 December 2015;
- .2 III 2/9/6 (China) providing the correspondence group's comments regarding the development of a framework for the control, documentation and certification of ships found with deficiencies other than those mentioned in paragraphs 4.8.1 and 4.8.2 of the Survey Guidelines, as contained in the annex to document III/9, and proposing a further revised paragraph 4.8.3;
- .3 III 2/9/1 and III 2/INF.3 (Secretariat) containing a list of new and outstanding requirements which were adopted by MEPC 67 and MSC 94;
- .4 III 2/9/2 (IACS) containing proposed draft amendments to the *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2011* (resolution A.1053(27), as amended by resolution A.1076(28)), to align the provisions in this instrument with the requirements of the *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)* in relation to the examination of selected cargo spaces of gas carriers at intermediate surveys for ships over 10 years of age;
- .5 III 2/9/3 (IACS) containing proposed draft amendments to the *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2011* (resolution A.1053(27) as amended by resolution A.1076(28)) to provide consistency between the In Water Survey (IWS) provisions for passenger and cargo ships;
- .6 III 2/9/4 (Secretariat) providing information on the instruction by MEPC 68, having concurred with the proposal in document MEPC 67/14/1 (Democratic People's Republic of Korea) identifying an incorrect reference to a regulation of MARPOL Annex I in paragraph 4.8.1 of the Survey Guidelines and having noted that a reference to a regulation of the IBC Code in the same paragraph also needed to be corrected, to check all the references appearing in that paragraph of the guidelines and to correct them as appropriate; and

- .7 III 2/9/5 (IACS) containing proposed amendments to the Survey Guidelines deriving from a new SOLAS regulation XI-1/7 regarding the new carriage requirement for atmosphere testing instruments for enclosed spaces, as adopted by resolution MSC.380(94), which is expected to enter into force on 1 July 2016.

Development of a framework for the control, documentation and certification of ships found with deficiencies other than those preventing the ship from proceeding to sea

9.13 The Sub-Committee, in its consideration of documents III 2/9 and III 2/9/6 regarding a draft new paragraph 4.8.3 covering guidance for cases where there are deficiencies other than those described in paragraphs 4.8.1 and 4.8.2, agreed that there was a need to develop the framework and instructed the working group to be established under agenda item 10 to further develop this paragraph, retaining the annex to III 2/9/6 as the basis (see paragraph 10.5).

Survey and certification matters related to the Polar Code

9.14 The Sub-Committee was advised that MSC 94, in considering the final text of the Introduction and parts I-A and I-B of the *International Code for Ships Operating in Polar Waters (Polar Code)*, had instructed the Sub-Committee to consider survey and certification matters contained in the provisions of the Polar Code, as adopted by resolution MSC.385(94), in its next review of the Survey Guidelines under the HSSC, prior to the expected entry into force of the new SOLAS chapter XIV on 1 January 2017.

9.15 The Sub-Committee noted that, besides the time needed to develop and finalize the text of Survey Guidelines deriving from the Polar Code at this session, there might also be a legal implication for A 29 to adopt the text of the Survey Guidelines deriving from the Polar Code, at a time when the Polar Code has not yet been accepted according to the procedures under both SOLAS and MARPOL and according to the current procedures applicable to the review of the Survey Guidelines.

9.16 In this context, the Sub-Committee instructed the working group to be established under agenda item 10 to consider all relevant issues in the broad context of survey and certification matters under the provisions of the Polar Code, and to develop appropriate amendments to the Survey Guidelines to be finalized at the next session, subject to concurrence by the Committees, in the form of either a draft MSC-MEPC.5 circular or draft MSC and MEPC resolutions (see paragraph 10.5).

In Water Survey provisions for passenger and cargo ships

9.17 Regarding the proposal contained in document III 2/9/3 (IACS) the Sub-Committee, having considered the views that the survey regimes for passenger ships and cargo ships are different, and that more technical data regarding rudder bearing clearance is needed, invited IACS to submit more data supporting the proposed removal of perceived inconsistency between provisions for passenger and cargo ships to the MSC for its consideration as to whether this issue should be referred to other sub-committees.

Carriage requirement for atmosphere testing instruments for enclosed spaces

9.18 With respect to the proposed amendments to the Survey Guidelines deriving from a new SOLAS regulation XI-1/7, as contained in document III 2/9/5 (IACS), the Sub-Committee, having considered the urgency of early implementation of the requirements agreed by MSC 94 and concerns about the frequency of calibration to the instruments proposed in the document,

referred the proposed amendments, as contained in document III 2/9/5, to the working group to be established under agenda item 10 for its consideration in the context of the development of amendments to the Survey Guidelines to be adopted by A29 (see paragraph 10.5).

REFERRAL TO THE WORKING GROUP

9.19 After extensive discussions on the remaining issues, the Sub-Committee referred the consideration of the relevant part of the report of the correspondence group, using annex 2 of document III 2/9 and document III 2/9/6 as a basis and taking into account documents III 2/INF.3, III 2/9/2, III 2/9/4 and III 2/9/5, to the above-mentioned working group for the finalization of draft amendments to the *Survey Guidelines under the HSSC, 2011* (resolution A.1053(27), as amended by resolution A.1076(28)), together with the text of the draft Assembly resolution, for submission to A 29 with a view to adoption as a consolidated version of the Survey Guidelines (see paragraph 10.5).

REPORT OF THE WORKING GROUP

9.20 Having considered the report of the Working Group on the Updated Survey Guidelines under the HSSC and the Non-exhaustive List of Obligations under Instruments relevant to the IMO Instruments Implementation Code (III Code) (III 2/WP.4), the Sub-Committee took decisions as reflected in the following paragraphs.

New SOLAS regulation XI-1/2-1

9.21 The Sub-Committee agreed to the draft new SOLAS regulation XI-1/2-1, as set out in annex 7, together with the check/monitoring sheet and record for the draft new SOLAS regulation, as set out in annex 8, for consideration by MSC 96 for approval and subsequent adoption. The Sub-Committee also agreed to the consequential amendments to the Survey Guidelines under the HSSC, as set out in part 2 of annex 1 of document III 2/WP.4.

9.22 In the course of the discussion, the delegation of Spain raised the issue of the difficulties that could be encountered by Parties to the 1988 SOLAS Protocol in the context of the implementation of the new SOLAS regulation XI-1/2-1 and indicated that a reference to intermediate and renewal survey of structure, machinery and equipment of cargo ships would need to be added. The full text of its statement is set out in annex 16.

Exemption of survey and certification requirements under the MARPOL Convention for UNSP barges

9.23 The Sub-Committee noted that the group had considered draft amendments to MARPOL Annexes I, IV and VI concerning the exemption of unmanned non-self-propelled (UNSP) barges from the survey and certification requirements, using the proposal in document MEPC 68/12/10 as the basis.

9.24 Regarding the proposed limitation of the exemption to a period of not more than five years and the requirement to conduct a survey to confirm that the conditions are still met before a new exemption is issued, the Sub-Committee noted that the majority of the group had supported the inclusion of this limitation to not more than five years in the draft amendments. In this context, the delegations of China, Japan, Norway and the Republic of Korea expressed reservations against this limitation of the exemption period.

9.25 With regard to an exemption related to MARPOL Annex IV, the benefit of which had been questioned within the group, given the five-year period of renewal survey contained in MARPOL Annex IV regulation 4 the Sub-Committee could not reach a consensus and agreed

to retain the proposed amendments to MARPOL Annex IV within square brackets. In line with the draft amendments to MARPOL Annex IV, the text of the draft *Guidelines for exemption of unmanned non-self-propelled (UNSP) barges from the survey and certification requirements under the MARPOL Convention* related to MARPOL Annex IV was also placed within square brackets.

9.26 Concerning the identification of applicable regulations to be covered by the exemption, the Sub-Committee noted that the group had identified regulation 17.1 of MARPOL Annex I on the Oil Record Book. The group had been of the view that UNSP barges could also be exempted from regulation 17.1. However, this requirement being neither a survey nor a certification requirement and not being contained in the documents under consideration, the group considered it to be outside the scope of the instructions received from MEPC 68 and decided to retain the reference to regulation 17.1 in the draft amendments to MARPOL Annex I and in the draft Guidelines within square brackets. Consequently, the Sub-Committee agreed to keep the text and to remove the square brackets, for consideration by MEPC 69, as appropriate.

9.27 The Sub-Committee endorsed the group's conclusion that regulations 12, 13 and 14 of MARPOL Annex I need not be covered by the exemption because they are obviously not applicable to UNSP barges.

9.28 Having agreed to the draft amendments to MARPOL Annexes I, IV and VI concerning the exemption of UNSP barges from survey and certification requirements, as set out in annex 9, the Sub-Committee invited MEPC 69 to consider them for approval and subsequent adoption, taking into account the need to address the text within square brackets regarding MARPOL Annex I regulation 17.1, and whether it is necessary to amend MARPOL Annex IV.

9.29 The Sub-Committee also agreed to the associated draft MEPC circular on *Guidelines for exemption of unmanned non-self-propelled (UNSP) barges from the survey and certification requirements under the MARPOL Convention*, as set out in annex 10, for consideration by MEPC 69 with a view to approval.

Amendments to the Survey Guidelines under the HSSC

9.30 The Sub-Committee noted that the group had considered documents III 2/9/2 (IACS) on alignment of the Survey Guidelines under the HSSC with the provisions of the IGC Code, III 2/9/5 (IACS) regarding survey requirements under the new SOLAS regulation XI-1/7, III 2/9/6 (China) in relation to a new paragraph 4.8.3, providing guidance for cases where deficiencies, other than those described in paragraphs 4.8.1 and 4.8.2 of the Survey Guidelines, and III 2/9/4 (Secretariat) on correction of references.

9.31 The Sub-Committee considered the views expressed in favour of the insertion of the word "statutory" after the word "condition" in the first sentence of subparagraph 1 of new paragraph 4.8.3. Following detailed consideration as to whether the proposed addition would avoid potential confusion by including a reference to a condition of class, this being the frequent meaning of the use of the word "condition" or would, on the contrary, bring additional confusion, the Sub-Committee agreed to retain the shorter wording as prepared by the group.

9.32 In this context, the Sub-Committee approved the draft *Survey Guidelines under the HSSC, 2015*, together with the draft requisite Assembly resolution, as set out in annex 11, for submission to the Assembly at its twenty-ninth session with a view to adoption, as authorized by MEPC 67 and MSC 94. The Sub-Committee requested the Secretariat to forward the draft Assembly resolution to A 29 and authorized it, when preparing the final text of the consolidated Survey Guidelines, to effect any editorial corrections that may be identified and to renumber paragraphs as appropriate.

9.33 Regarding the items identified in documents III 2/9 (annex 3) and III 2/INF.3 that have not been dealt with so far, the Sub-Committee noted that the group had finalized the list of amendments to mandatory instruments not yet included in the Survey Guidelines, as set out in annex 7 of document III 2/WP.4, with a view to maintaining the status of the mandatory items for future amendments to the Survey Guidelines.

9.34 The Sub-Committee therefore concluded that there is a need to further continue the development of the respective survey items deriving from amendments to mandatory IMO instruments entering into force up to and including 31 December 2017, for inclusion in the Survey Guidelines in order to keep them updated in the future, and that a correspondence group should be tasked accordingly.

Survey and certification matters pertaining to the Polar Code

9.35 The Sub-Committee noted that, due to time constraints, the group had not been able to consider the survey and certification matters pertaining to the Polar Code and had therefore agreed to take the opportunity of this session to continue its discussion, with a view to setting up a framework for a correspondence group to work intersessionally. In this context, the Sub-Committee tasked the correspondence group to be established with relevant terms of reference, as set out in paragraph 9.37.

9.36 In this context, and after conclusion of the work of the working group, the delegation of Germany made a statement indicating the broad elements of the discussion that had taken place on survey and certification matters pertaining to the Polar Code, in order to facilitate further work on the matter, either by the correspondence group, in accordance with its terms of reference, or by the Sub-Committee at a future session. The full text of its statement is set out in annex 16.

ESTABLISHMENT OF THE CORRESPONDENCE GROUP

9.37 The Sub-Committee established the Correspondence Group* on the Review of the Survey Guidelines under HSSC and the Non-exhaustive List of Obligations under the following terms of reference:

- .1 consider survey and certification matters pertaining to the Polar Code in the context of the Survey Guidelines under the HSSC, taking into account the discussion that took place in the Working Group on the Updated Survey Guidelines under HSSC and the Non-exhaustive List of Obligations under instruments relevant to the IMO Instruments Implementation Code (III Code) at III 2, and to develop amendments to the Survey Guidelines, as appropriate, for finalization at III 3;
- .2 consider document III 2/11 (IACS) with a view to developing a draft MSC-MEPC.5 circular concerning the date of expiration assigned to statutory certificates, taking into account the definition of "anniversary dates" contained in the conventions and "valid certificates" in the PSC Procedures (resolution A. 1052(27));

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- .3 continue to develop amendments to the Survey Guidelines under the HSSC as a result of amendments to the relevant IMO instruments entering into force up to and including 31 December 2017, taking into account documents III 2/WP.4 (annex 7), III 2/INF.3, SLF 55/17 (annex 9) and the outcome of MSC 95, MEPC 68 and future sessions of the MSC and the MEPC, with a view to submission of the draft amendments to the Survey Guidelines to A 30 for adoption;
- .4 identify, in documents III 2/WP.4 (annex 7) and III 2/INF.3, the outcome of MSC 95, MEPC 68 and future sessions of the MSC and the MEPC, as provided by the Secretariat, those items which have not been dealt with so far and which require the development of further amendments to the Survey Guidelines, with a view to maintaining the items for future amendments;
- .5 continue to develop draft amendments to the *Non-exhaustive list of obligations under instruments relevant to the IMO Instrument Implementation Code (resolution A.1070(28))* deriving from those amendments to the relevant IMO instruments which will enter into force up to and including 1 July 2018 (III 2/WP.4 (annex 10), III 2/INF.4, the outcome of MSC 95, MEPC 68 and future sessions of the MSC and the MEPC), with a view to submission of draft amendments, finalized as a consolidated version, for adoption at A 30;
- .6 identify, in documents III 2/WP.4 (annex 10) and III 2/INF.4, the outcome of MSC 95, MEPC 68 and future sessions of the MSC and the MEPC, as provided by the Secretariat, those items which have not been dealt with so far, with a view to maintaining the items for future amendment to the Non-exhaustive list of obligations; and
- .7 submit a report to III 3.

10 NON-EXHAUSTIVE LIST OF OBLIGATIONS UNDER INSTRUMENTS RELEVANT TO THE IMO INSTRUMENTS IMPLEMENTATION CODE (III CODE)

AMENDMENTS TO THE NON-EXHAUSTIVE LIST OF OBLIGATIONS

10.1 The Sub-Committee recalled that III 1 had agreed that the draft amendments to the *2013 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)* (resolution A.1077(28)) needed to be further developed to include the requirements deriving from all amendments to mandatory IMO instruments entering into force up to and including 1 July 2016, with a view to submission of the draft amendments, together with a draft resolution, to III 2 for consideration and approval prior to submission to A 29 for adoption.

10.2 The Sub-Committee also recalled that III 1 had established the Correspondence Group on the Review of the Survey Guidelines under the HSSC and the Non-exhaustive List of Obligations, under the coordination of China, to continue to update the Non-exhaustive list of Obligations.

10.3 In this context, the Sub-Committee considered the relevant part of the report of the correspondence group (III 2/9), containing proposed amendments to the *2013 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)* (resolution A.1077(28)), taking into account the new provisions, the entry into force of which extends until 1 July 2016, and documents III 2/10 and III 2/INF.4 (Secretariat) containing a list of amendments to mandatory instruments, as adopted by MEPC 67 and MSC 94.

10.4 The Sub-Committee referred the proposed amendments to the *2013 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)* (resolution A.1077(28)) to the working group to be established under this item for detailed review, with a view to finalization, together with the text of a draft Assembly resolution for submission to A 29 for adoption.

ESTABLISHMENT OF THE WORKING GROUP

10.5 The Sub-Committee, recalling the outcome of its consideration of matters under agenda items 9, and together with the outcome of its consideration of matters under agenda item 11 (see paragraphs 9.4, 9.9, 9.13, 9.16, 9.18, 9.19 and 11.3), established the Working Group on the Updated Survey Guidelines under HSSC and the Non-exhaustive List of Obligations under Instruments relevant to the IMO Instruments Implementation Code (III Code) and instructed the group, taking into account the decisions and proposals made in plenary, with items .1, .2, .4, .5, .6, .7 and .8 as priorities at the current session, to :

Terms of reference under agenda item 9:

- .1 finalize the proposed amendments to SOLAS regulation XI-1/2 and relevant amendments to the Survey Guidelines under the HSSC to align the two survey regimes of ships subject to ESP and those not subject to it, as contained in annex 1 to document III 2/9, taking into account MSC.1/Circ.1500 on *Guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments*;
- .2 develop draft amendments to MARPOL concerning the exemption of UNSP barges from survey and certification requirements documents, taking into account document MEPC 68/12/4, MEPC 68/12/10 and III 2/9/4, with a view to finalization, together with the associated draft guidelines, as contained in annex 7 of document III 1/18, ensuring consistency with the draft MARPOL amendments;
- .3 consider all aspects of survey and certification matters contained in the Polar Code and develop amendments to the Survey Guidelines, as appropriate, for finalization at the next session;
- .4 finalize draft amendments to the *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2011*, (resolution A.1053(27), as amended by resolution A.1076(28)), together with the text of the draft Assembly resolution, using annex 2 to document III 2/9 and III 2/9/6 as a basis and taking into account documents III 2/INF.3, III 2/9/2, III 2/9/4 and III 2/9/5, for consideration for submission to A 29 with a view to adoption as a consolidated version of the Survey Guidelines;
- .5 identify, in documents III 2/9 (annex 3) and III 2/INF.3, items that have not been dealt with so far and that might require the development of further amendments to the Survey Guidelines, with a view to maintaining the items for future amendments;

Terms of reference under agenda item 10:

- .6 finalize draft amendments to the *2013 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code* (resolution A.1077(28)), together with the text of a draft Assembly resolution, using annex 4 to document III 2/9 as a basis and taking into account

document III 2/INF.4, for consideration for submission to A 29 with a view to adoption, as amendments to or as a consolidated version of, the *2013 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code* (resolution A.1077(28));

- .7 identify in documents III 2/9 (annex 4) and III 2/INF.4 those items which have not been dealt with so far but left for the purpose of further developing amendments to the Non-exhaustive list of obligations, with a view to maintaining the status of the items for future amendments;
- .8 advise on the re-establishment of a correspondence group under agenda items 9 and 10 and prepare draft terms of reference, as appropriate; and

Terms of reference under agenda item 11:

- .9 consider document III 2/11 (IACS) with a view to developing a draft MSC-MEPC.5 circular on the date of expiration assigned to statutory certificates, taking into account the definition of "Anniversary dates" contained in the conventions and "valid certificates" in the PSC Procedures (resolution A.1052(27)).

REPORT OF THE WORKING GROUP

10.6 Having approved the report of the Working Group on the Updated Survey Guidelines under HSSC and the Non-exhaustive List of Obligations under Instruments relevant to the IMO Instruments Implementation Code (III Code) (III 2/WP.4), in general, the Sub-Committee took decisions as reflected in the following paragraphs.

Amendments to the Non-exhaustive list of obligations

10.7 The Sub-Committee, having noted that the group had used annex 4 to document III 2/9 as a basis and had taken into account document III 2/INF.4, approved the draft *2015 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code* (resolution A.1070(28)), together with the draft requisite Assembly resolution, as set out in annex 12, for submission to the Assembly at its twenty-ninth session for consideration with a view to adoption, as authorized by MEPC 67 and MSC 94. The Sub-Committee requested the Secretariat to forward the draft Assembly resolution to A 29 and authorized it, when preparing the final text of the consolidated non-exhaustive list, to effect any editorial corrections that may be identified, as appropriate.

10.8 Regarding the question of whether the *Non-exhaustive list of obligations* should be adopted in the form of amendments or in the form of a consolidated version, the Sub-Committee, having recalled the decision of FSI 17 regarding the processing of the amendments to the *Code for the Implementation of Mandatory IMO Instruments* containing the same annexes as the *Non-exhaustive list of obligations*, agreed to the proposal by the Secretariat that the submission of only consolidated versions of the list to the Assembly for adoption would be a better option.

10.9 The Sub-Committee authorized the Secretariat, when preparing the final text of the consolidated *Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code* as an annex to the report of the Sub-Committee, to effect any editorial corrections that may be identified and renumber paragraphs, as appropriate.

10.10 Regarding the items identified in documents III 2/9 (annex 5) and III 2/INF.4 that have not been dealt with so far, the Sub-Committee noted that the group had finalized the list of amendments to mandatory instruments not yet included in the draft *Non-exhaustive list of obligations*, as set out in annex 10 of document III 2/WP.4, with a view to maintaining the status of the mandatory items for future amendments to the non-exhaustive list.

10.11 The Sub-Committee therefore concluded that the annexes to the *Non-exhaustive list of obligations* need to be further amended in the future, in order to keep them updated with amendments to the relevant IMO instruments entering into force up to and including 1 July 2018 and that a correspondence group should be tasked accordingly.

ESTABLISHMENT OF THE CORRESPONDENCE GROUP

10.12 The Sub-Committee established the Correspondence Group on the Review of the Survey Guidelines under HSSC and the Non-exhaustive List of Obligations under the terms of reference set out in paragraph 9.37.

11 UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY, AND ENVIRONMENT RELATED CONVENTIONS

11.1 The Sub-Committee considered document III 2/11 (IACS), providing information regarding the approaches taken by IACS Members when assigning the expiration dates to statutory certificates and seeking comments from the Sub-Committee on the issue of expiration dates assigned to statutory certificates.

11.2 Following the discussion and having noted the meaning of "anniversary" as an annually recurring date, the Sub-Committee concurred with the views expressed that the Organization should not be requested to decide in favour of one of the two options presented in paragraph 3 of document III 2/11, but, instead, should develop guidance highlighting those two approaches and inviting port States to accept both.

11.3 In this context, the Sub-Committee referred document III 2/11 to the Working Group on the Updated Survey Guidelines under the HSSC and the Non-exhaustive List of Obligations under Instruments relevant to the IMO Instruments Implementation Code (III Code) established under item 10 for further consideration (see paragraph 10.5), with a view to developing a draft MSC-MEPC.5 circular concerning the date of expiration assigned to statutory certificates, taking into account the definition of "Anniversary dates" contained in the conventions.

Report of the working group

11.4 Having considered the report of the Working Group on the Updated Survey Guidelines under the HSSC and the Non-exhaustive List of Obligations under Instruments relevant to the IMO Instruments Implementation Code (III Code) (III 2/WP.4), the Sub-Committee noted that, due to time constraints, the group had not been able to consider the date of expiration assigned to statutory certificates at the time of reporting and tasked the correspondence group to be established with relevant terms of reference as set out in paragraph 9.37.

12 REVIEW OF GENERAL CARGO SHIP SAFETY

12.1 The Sub-Committee was advised that MSC 94 and MEPC 68, having considered proposals relating, in particular, to Risk Control Options (RCOs), had approved the amendments to the Committees' Guidelines and the Guidelines for Formal Safety Assessment (FSA) for use in the IMO rule-making process, for circulation of the two revised Guidelines as MSC-MEPC.1/Circ.4/Rev.4 and MSC-MEPC.2/Circ.12/Rev.1, respectively.

12.2 The Sub-Committee was also advised that MSC 94, having considered the request of III 1, had agreed that there was no need to identify a coordinating organ for existing output 5.2.1.3 on "Review of general cargo ship safety", as the Committee itself would act as the coordinating organ. Also, MSC 95, on the outcome of the second session of the Sub-Committee on Ship Design and Construction (SDC 2) related to the review of general cargo ship safety, had noted that consideration of matters related to cargo ship safety had been completed by the SDC Sub-Committee in accordance with paragraph 5.12 of the Committees' Guidelines (MSC-MEPC.1/Circ.4/Rev.4) on the case of planned outputs for which no submissions have been received for two consecutive sessions.

12.3 The Sub-Committee recalled that, with regard to the extended survey on general cargo ships (RCO 19), III 1 had invited Member States and international organizations to submit their proposals and views on the issue to III 2. Furthermore, on port State control inspector training for general cargo ships (RCO 20), III 1 had addressed the issue, and no further instruction had been received from the MSC.

12.4 Having noted the absence of proposals submitted on the matter, particularly on RCO 19, to FSI 21, III 1 and III 2, the Sub-Committee, in accordance with paragraph 5.12 of the Committees' Guidelines (MSC-MEPC.1/Circ.4/Rev.4) on the case of planned outputs for which no submissions had been received for two consecutive sessions, concluded, subject to the Committees' concurrence, that the consideration of matters related to general cargo ship safety had been completed.

13 BIENNIAL AGENDA AND PROVISIONAL AGENDA FOR III 3

Reporting arrangements

13.1 In the absence of meetings of the MEPC and/or the MSC prior to the adoption of the High-level Action Plan for the next biennium, MSC 95 agreed that any changes to the proposals for the High-level Action Plan of the Organization and priorities for the 2016-2017 biennium, as set out in annex 22 to document MSC 95/22, emanating from the Sub-Committee, should be considered by the fourteenth session of the Ad Hoc Council Working Group on the Organization's Strategic Plan (CWGSP 14) or C/ES.28, as appropriate, and requested the Secretariat to act accordingly.

Biennial status report and proposed provisional agenda for III 3

13.2 Taking into account the progress made at this session, the Sub-Committee prepared the biennial status report (document III 2/WP.2, annex 1), as set out in annex 13, for consideration by C/ES.28.

Proposed biennial agenda for the 2016-2017 biennium and provisional agenda for III 3

13.3 Taking into account the progress made at the session and the relevant decisions of MEPC 67, MSC 94, MEPC 68 and MSC 95, the Sub-Committee prepared its proposed biennial agenda for 2016-2017 (III 2/WP.2, annex 2) and the proposed provisional agenda for III 3 (III 2/WP.2, annex 3), as set out in annexes 14 and 15, respectively, for consideration by C/ES.28.

13.4 With regard to output 12.1.2.1 on "Analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations", the Sub-Committee, having noted the view expressed that there should not be any attempt to establish a correlation between casualty and PSC data at this stage (see paragraph 7.36), recommended to the MSC and the MEPC that the output be divided into two, each using almost the same title, but with one output dedicated to casualty data and the other one to PSC data.

Correspondence groups established at this session

13.5 The Sub-Committee established correspondence groups on the following subjects, due to report to III 3:

- .1 analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations (paragraph 6.43);
- .2 updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC) – Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code) (paragraph 9.37); and
- .3 measures to harmonize port State control (PSC) activities and procedures worldwide (paragraph 7.48).

Arrangements for the next session

13.6 The Sub-Committee agreed to establish at its next session working/drafting groups on the following subjects:

- .1 analysis of casualty data to identify trends and develop knowledge and risk-based recommendations (agenda item 4)*;
- .2 measures to harmonize port State control (PSC) activities and procedures worldwide and analysis of PSC data to identify trends and develop knowledge and risk-based recommendations (agenda items 5 and 6);
- .3 analysis of consolidated audit summary reports (agenda item 7); and
- .4 updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC) – Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code) (agenda items 8 and 9).

The Chairman, taking into account the submissions received, would advise the Sub Committee well in time for III 3 on the final selection of such groups.

Date for the next session

13.7 The Sub-Committee noted that the third session of the Sub-Committee has been tentatively scheduled to take place from 18 to 22 July 2016.

14 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2016

14.1 In accordance with the Rules of Procedure of the Maritime Safety Committee and the Marine Environment Protection Committee, the Sub-Committee unanimously re-elected Captain D. Hutchinson (Bahamas) as Chairman and elected Dr. I. Cobos Delgado (Spain) as Vice-Chairman.

* Refer to annex 14.

Expression of appreciation

14.2 The Sub-Committee expressed sincere thanks and appreciation to Mrs. J. Gascon (Canada) for her excellent services to the Sub-Committee during the last five years when she served the Sub-Committee as its Vice-Chairman.

15 ANY OTHER BUSINESS

Global Integrated Shipping Information System (GISIS)

15.1 The Sub-Committee recalled that III 1 had agreed to retain consideration of relevant GISIS-related matters on the agenda and had requested the Secretariat to provide information, as appropriate, while discontinuing the preparation of a specific document on all GISIS modules, as this information was already available in the document prepared for the MSC, which should simply be referred to (III 1/18, paragraph 17.5).

15.2 The Sub-Committee noted the information provided in document III 2/INF.25 (Secretariat), in particular, regarding the recent release of modules relevant to the work of the Sub-Committee. In this context, besides the module on non-mandatory instruments which was indicated in document MSC 95/INF.2 (Secretariat), the module on survey and certification has been further developed, taking into account the feedback from Member States and the outcome of FAL 39, so that the module holds three types of information, as follows:

- .1 exemptions and equivalents required to be communicated to the Organization by Administrations under the provisions of the relevant IMO conventions and codes, both on a ship basis and a non-ship basis;
- .2 specimens of certificates required to be communicated to the Organization by Administrations under the provisions of relevant IMO conventions and codes; and
- .3 list of certificates issued in electronic format and their relevant website links for verification of authenticity as per FAL.5/Circ.39/Rev.1.

Submissions on national measures on implementation

15.3 The Sub-Committee noted the information provided in document III 2/INF.28 (Tunisia) on efforts made by the Tunisian Maritime Administration and Authority to implement the relevant provisions contained in IMO instruments. In particular, the above-mentioned Administration has been reorganized recently with a view to implementing the III Code, the Casualty Investigation Code and the ISPS Code, and enhancing the integration of women in the maritime sector.

IMO number schemes

15.4 The Sub-Committee was informed that the Secretariat intends to review Circular Letters Nos.1886 and 2554, in cooperation with the managers of the schemes, i.e. IHS Maritime & Trade. The new revisions will update contact details but will also include, in the forms related to the requests for IMO Company (DOC) and Register Owner identification numbers, a reference to bareboat chartering and, in order to assist the verification of the company and its fleet, at least one IMO ship identification number in the current fleet as a non-compulsory field for the issuing of the numbers.

Expression of appreciation

15.5 The Sub-Committee expressed appreciation to the following delegates and members of the Secretariat, who had recently retired or had been transferred to other duties or were about to be, for their invaluable contribution to its work and wished them a long and happy retirement or, as the case might be, every success in their new duties:

- H.E. Mrs. Elisabeth Barsacq, Ambassador and Permanent representative of France to IMO (on transfer);
- Ms. Dany Broderick-Bunn (IMO) (on retirement);
- Captain Mario Rubén Farinón (Argentina) (on transfer);
- Mr. Anthony Hogan (Australia) (on transfer);
- Mrs. Nancy Karigithu (Kenya), as outgoing Chairman of the Technical Cooperation Committee;
- Mr. S.-H. Kim (on secondment to IMO) (on return home);
- Mr. Sylvain Lachance (Canada);
- Mr. Guangling Li (China) (on transfer);
- Mr. Zhengjin Lin (on secondment to IMO) (on return home);
- Mr. Bin Okamura (Japan) (on retirement);
- Ms. Olga O'Neil (IMO) (on retirement);
- Mr. Carlos Ormaechea (IMO) (on retirement);
- Ms. Wilma Pereira (IMO) (on retirement);
- Captain Charlie Piersall (ISO) (on retirement);
- Ms. Janet Tang (IMO) (on retirement); and
- Mr. Andy Winbow (IMO) (on retirement).

Intervention by the delegation of the Islamic Republic of Iran

15.6 The delegation of the Islamic Republic of Iran made an intervention on the Joint Comprehensive Plan of Action (JCPOA) signed in Vienna on 14 July 2015. The full text of the statement is set out in annex 16.

16 ACTION REQUESTED OF THE COMMITTEES

- 16.1 The Marine Environment Protection Committee, at its sixty-ninth session, is invited to:
- .1 endorse the Sub-Committee's conclusion that there is no need to align FAL.2/Circ.127-MEPC.1/Circ.817-MS.1/Circ.1462 on "List of certificates and documents required to be carried on board ships" with FAL.5/Circ.39/Rev.1 at this time (paragraphs 4.3 and 4.4);
 - .2 approve the Countries Survey Questionnaire for dissemination to Member States (paragraphs 6.30 and 6.31);
 - .3 endorse the Sub-Committee's decision to post the in-the-field job aid for investigators on the GISIS MCI module and to include it, as reference material, when a training course is delivered, based on IMO Model Course 3.11, as well as in a future revision of the course (paragraphs 6.32 and 6.33);
 - .4 approve the draft MSC-MEPC.4 circular on *Guidelines for port State control officers on the ISM Code*, (paragraphs 7.39 and annex 5);

- .5 endorse the issuing of III.2/Circ.1 on the revised process for putting forward recommendations to the relevant IMO bodies resulting from the reports of CICs (paragraph 7.40 and annex 6);
- .6 approve the draft amendments to MARPOL Annexes I, IV and VI concerning the exemption of UNSP barges from survey and certification requirements with a view to subsequent adoption, taking into account the question of whether it is necessary to amend MARPOL Annex IV (paragraphs 9.24 to 9.26 and annex 9);
- .7 approve the draft MEPC circular on *Guidelines for exemption of unmanned non-self-propelled (UNSP) barges from the survey and certification requirements under the MARPOL Convention* (paragraph 9.29 and annex 10);
- .8 note that the Sub-Committee approved the draft Survey Guidelines under the HSSC, 2015, together with the draft requisite Assembly resolution, for submission to A 29 for consideration with a view to adoption, as authorized by MEPC 67 and MSC 94 (paragraph 9.32 and annex 11);
- .9 note that the Sub-Committee approved the draft 2015 Non-exhaustive list of obligations under instruments relevant to the IMO instruments implementation Code (resolution A.1070(28)), together with the draft requisite Assembly resolution, for submission to A 29 for consideration with a view to adoption, as authorized by MEPC 67 and MSC 94 (paragraph 10.7 and annex 12);
- .10 approve the biennial status report of the Sub-Committee for the 2014-2015 biennium (paragraph 13.2 and annex 13);
- .11 approve the biennial agenda of the Sub-Committee for the 2016-2017 biennium (paragraph 13.3 and annex 14);
- .12 approve the provisional agenda for III 3 (paragraph 13.3 and annex 15); and
- .13 approve the report in general.

16.2 The Maritime Safety Committee, at its ninety-sixth session, is invited to:

- .1 endorse the dissemination of the Guide for regulating the safety of passenger ships not covered by SOLAS, as set out in annex 1 and on IMODOCS, without detailed technical review (paragraph 3.9 and annex 1);
- .2 endorse the Sub-Committee's recommendation not to develop a guide for regulating the safety of other types of ships not covered by SOLAS (paragraph 3.10);
- .3 endorse the Sub-Committee's recommendation that an IMO model course be developed on the basis of the existing draft documents, including the completion of the Procedural Guide (paragraph 3.11);
- .4 endorse the Sub-Committee's conclusion that there is no need to align FAL.2/Circ.127-MEPC.1/Circ.817-MSA.1/Circ.1462 on "List of certificates and documents required to be carried on board ships" with FAL.5/Circ.39/Rev.1 at this time (paragraphs 4.3 and 4.4);

- .5 approve the Countries Survey Questionnaire for dissemination by the Secretariat to Member States, as appropriate (paragraphs 6.30 and 6.31);
- .6 endorse the Sub-Committee's decision to post the in-the-field job aid for investigators on the GISIS MCI module and to include it, as reference material, when a training course is delivered, based on IMO Model Course 3.11, as well as in a future revision of the course (paragraphs 6.32 and 6.33);
- .7 endorse the Sub-Committee's finding that there is no pertinent lesson to be learnt from the submission and dissemination of accident reports under ICAO's Convention or how accident reports are handled by the ICAO Secretariat (paragraphs 6.34 and 6.35);
- .8 approve the draft MSC-MEPC.4 circular on *Guidelines for port State control officers on the ISM Code* (paragraphs 7.39 and annex 5);
- .9 endorse the issuing of III.2/Circ.1 on the revised process for putting forward recommendations to the relevant IMO bodies resulting from the reports of CICs (paragraph 7.40 and annex 6);
- .10 approve the draft new SOLAS regulation XI-1/2-1 with a view to subsequent adoption, taking into account the check/monitoring sheet and record for regulatory development (paragraph 9.21, annexes 7 and 8);
- .11 note that the Sub-Committee approved the draft Survey Guidelines under the HSSC, 2015, together with the draft requisite Assembly resolution, for submission to A 29 for consideration with a view to adoption, as authorized by MEPC 67 and MSC 94 (paragraph 9.32 and annex 11);
- .12 note that the Sub-Committee approved the draft 2015 Non-exhaustive list of obligations under instruments relevant to the IMO instruments implementation Code (resolution A.1070(28)), together with the draft requisite Assembly resolution, for submission to A 29 for consideration with a view to adoption, as authorized by MEPC 67 and MSC 94 (paragraph 10.7 and annex 12);
- .13 approve the biennial status report of the Sub-Committee for the 2014-2015 biennium (paragraph 13.2 and annex 13);
- .14 approve the biennial agenda of the Sub-Committee for the 2016-2017 biennium (paragraph 13.3 and annex 14);
- .15 approve the provisional agenda for III 3 (paragraph 13.3 and annex 15); and
- .16 approve the report in general.

(Annexes 11 and 12 will be issued as an addendum to this document)

ANNEX 1

**GUIDE FOR REGULATING THE SAFETY OF PASSENGER SHIPS NOT COVERED BY
SOLAS: GENERIC PRINCIPLES AND FUNCTIONAL REQUIREMENTS**

July 2015

**Guide for regulating the safety of passenger ships not covered by SOLAS:
Generic principles and functional requirements**

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PREAMBLE

1 The draft Guide for Regulating the Safety of Passenger Ships not Covered by SOLAS, hereinafter called "the guide", is proposed for national maritime Administrations as a generic set of safety general principles and functional requirements, as a minimum safety level to be attained when developing national or regional safety regulations for passenger ships. The guide is not intended to be used where existing regional regulations are in place.

2 The guide is aimed at gathering, in a simplified manner, the various factors that should be taken into account when developing national or regional regulations, applicable for the safety certification of passenger ships. More detailed prescriptive regulations, used to assess the compliance of a ship for safety certification, should give effect to the issues identified in the guide, and ensure a safety level which should be consistent with its recommendations.

3.1 Under the SOLAS Convention, a passenger ship, when engaged on international voyages, is required to comply with the relevant SOLAS prescriptive requirements and to carry an International Passenger Ship Safety Certificate. These principles and prescriptive requirements were embodied fully in the guide.

3.2 When engaged on domestic voyages only, a passenger ship need not carry an international safety certificate. However, the flag State, under its general obligation to ensure maritime safety (Article 94 of the UNCLOS Convention), should ensure, preferably through the issuance of a national safety certificate, that the ship is built, equipped, operated and maintained in accordance with acceptable standards.

4 The guide covers passenger ships, regardless of size. However, certain principles or requirements embodied therein may be subject to size limits. In general, Administrations are advised that, for ships of more than 60 m in length (L), or for those authorized to carry more than 500 passengers, full compliance with the relevant SOLAS requirements should be required. For smaller ship sizes or passenger numbers, the principles and functional requirements put forward in the guide may be incorporated in national regulations that can, taking account of their sizes and navigation restrictions, provide an equivalent level of safety.

5 Regulations for the design, construction and operation of ships not certified in accordance with the SOLAS Convention should take into account the area, limiting weather and sea conditions in which the ship is intended to operate. Special attention should be given to the purchase a second-hand ship, change of service limits for an existing passenger ship and conversion or modification of a ship. This information should also be included in the relevant certificates and documentation relevant to the transfer of ownership.

6 The text of the guide is based on the principal IMO and ILO Conventions and their protocols in force (SOLAS, LL 66, STCW, MARPOL, COLREG and MLC 2006). The proposed text has its origins in the different regional initiatives, aimed at proposing model regulations over the last decade.

CHAPTER 1

GENERAL PROVISIONS

PART A – NATIONAL MARITIME LEGISLATION AND ADMINISTRATION

1 National maritime legislation and administration

1.1 The course of action to be taken by the flag State Administration to ensure the safety of passenger ships should be legally based, and be in accordance with the principles and functional requirements set out in the guide.

The legislative and regulatory provisions should cover:

- all ships flying the national flag, whatever their size or type;
- foreign ships when in national waters; and
- qualification of seafarers.

1.2 The national law and regulations addressed in paragraph 1.1 should provide the legal basis for at least the following courses of action:

- the issue of ship safety certificates by the maritime administration (hereinafter referred to as "the Administration");
- the adoption and promulgation by the Administration of procedural and technical regulations that specify the process of ship safety certification and the applicable technical requirements;
- the imposition of penalties for the offence of navigating a ship without being in possession of valid safety certificates as required;
- the authorisation of ship surveyors by the Administration to go on board ships and carry out surveys and inspections;
- the authorization by the Administration of defined categories of officers to report on violations;
- the delegation to recognized bodies of any part of the tasks related to the issuance of certificates and corresponding surveys;
- the designation of the authority to be in charge of marine safety investigations; and
- the specification of the process and requirements for crew qualification certification.

1.3 The Administration should be in existence and operational. It should include at least:

- a central authority, the Minister;
- an executive body, either a Directorate or a public Agency, hereinafter referred to as the Director; and
- one or several inspection centres, manned with competent ship surveyors.

1.4 The Director should be empowered by the Minister, and be delegated to:

- prepare all relevant maritime regulations for approval;
- ensure ship registration;
- carry out or delegate ship plan approval;
- issue certificates of competency to seafarers;

- organize the inspection centres and monitor their operation;
- designate surveyors authorized to carry out surveys and inspections;
- designate port State control officers authorized to inspect foreign ships; and
- issue ship safety certificates, or authorize their issuance by the inspection centres or a recognized body.

1.5 The inspection centres should be in charge of inspections and surveys of ships. To that effect, surveyors should be authorized by name on the basis of their professional qualifications and experience.

2 National maritime regulations

2.1 Procedural regulations should specify the process of ship safety certification, and in particular:

- the organization of the maritime Administration;
- the qualification requirements for the ship surveyors;
- the practical details for applying for ship registration and certification;
- the detailed process for plan approval, including the list of plans and documents to be submitted;
- the detailed operating mode for initial surveys, renewal surveys and inspections;
- the requirements for recognized bodies in relation to the scope of their recognition; and
- the process and requirements for crew qualification and certification.

2.2 Technical regulations should specify the technical requirements applicable to the different types or categories of ships for their safety, security and pollution prevention, pursuant to the general requirements set out in this guide.

Development of technical regulations on a regional basis may be advisable, as recommended in section 11.

PART B – SURVEYS AND CERTIFICATES

3 The process of ship safety certification

3.1 A passenger ship which is not required to carry an International Passenger Ship Safety Certificate should be required to carry a National Safety Certificate.

3.2 The National Passenger Ship Safety Certificates may be issued following satisfactory completion of the following steps:

- consideration and approval, by the Administration or a recognized body, of the plans and documents that describe the ship and its equipment, as defined in paragraph 4.4; and
- initial survey, as defined in section 5.

4 Plan approval

4.1 The Director should be the authority in charge of plan approval.

The Director may delegate plan approval to a recognized body. Recommended modes and conditions for recognition are described in section 9.

4.2 The Administration should require, as far as practicable, that for new ships, before the keel is laid or before a similar stage of construction is reached, the shipowner notify the commencement of works to the Director. This notification should provide the main characteristics of the ship. The plans and documents required for plan approval should be transmitted by the shipowner or his/her representative to the authority in charge of plan approval.

4.3 The Administration should specify, for each type of ships, the list of plans and documents to be submitted for approval.

4.4 In the case of second hand ships previously flying a foreign flag, the shipowner should be required to submit the plans and documents specified in paragraph 4.4. In addition, he should provide copies of the certificates issued to the ship before its change of flag and copies of the relevant survey reports if available.

5 Initial survey

5.1 Before the first issue of safety certificates to a ship entering into service under the national flag, the initial survey should be aimed at verifying that:

- the ship is built and equipped in compliance with the plans and documents previously approved by the Administration, and complies with the requirements specified by the national technical regulations;
- any prescription made by the Administration was duly followed;
- any trial or test provided for by the applicable technical regulations or specified by the authority that approved the plans and documents was completed to the satisfaction of the Administration; and
- a safety management system is set up, both in the Company and on board the ship.

5.2 The initial survey should be such as to ensure that the material installations, equipment and systems identified below comply fully with the provisions of the appropriate technical regulations and that they are in all respects in good working order, including:

- the arrangements, materials and scantlings of the structure;
- boilers and other pressure vessels;
- main and auxiliary machinery including steering gear and associated control systems;
- fire protection and fire safety systems, life-saving appliances and arrangements, navigational equipment, nautical publications, means of embarkation for pilots;
- radio installations including those used in life-saving appliances;
- oil discharge control systems and arrangements for retention on board; and
- positioning of lights, shapes and sound signals and distress signals in conformity with the COLREG Convention.

5.3 The surveyor or the recognized body in charge of the initial survey, and the other persons invited to participate, should be designated by the Director. The other persons may include, where relevant:

- the representative of the recognized body in charge of plan approval;
- one or two other surveyors;
- a representative of the radiocommunication national agency;
- a representative of the marine medical service; and
- other specialists.

The shipowner, the shipyard and the crew representatives should be authorized to witness the survey and to express their observations.

6 National Passenger Ship Safety Certificate

6.1 The National Passenger Ship Safety Certificate should be issued by:

- the Director;
- the designated inspection centre;
- the designated surveyor; or
- the recognized body in charge of the initial survey.

It should be valid for a period not exceeding twelve months.

6.2 If a ship at the time when the certificate expires is not in a port in which it is to be surveyed, the issuing authority may extend the period of validity of the certificate, but this extension should be granted only for the purpose of allowing the ship to complete its voyage to the port in which she is to be surveyed, and only in cases where it appears proper and reasonable to do so. The certificate should not be extended for a period longer than three months, and a ship to which an extension is granted should not, on her arrival in the port in which she is to be surveyed, be entitled by virtue of such extension to leave that port without having a new certificate.

6.3 The validity of the certificate may be renewed, for a new period of not more than 12 month after the anniversary date of its issuance, following a renewal survey.

6.4 The certificate should cease to be valid in any of the following cases:

- if the relevant surveys and inspections have not been carried out within the specified periods;
- upon change of flag; or
- upon major alterations to the structure, machinery, equipment and other parts of the ship as specified in the technical regulations.

7 Renewal survey

7.1 The renewal survey may be carried out by:

- the designated inspection centre;
- the designated surveyor; or
- the recognized body in charge of the initial survey.

7.2 The renewal survey should be such as to ensure that the installations, equipment and systems described below continue to comply fully with the provisions of the appropriate technical regulations and that they remain in all respects in good working order:

- the arrangements, materials and scantlings of the structure;
- the arrangements, materials and scantlings related to the assignment of freeboard and load lines or maximum permissible operating draught;
- pressure bottles and cylinders;
- main and auxiliary machinery including steering gear and associated control systems;
- fire protection and fire safety systems, life-saving appliances and arrangements, navigational equipment, nautical publications, means of embarkation for pilots;
- radio installations including those used in life-saving appliances;

- security including alarm and instructions;
- oil discharge control systems and arrangements for retention on board;
- sewage control system for retention on board; and
- positioning of lights, shapes and sound signals and distress signals in conformity with the COLREG Convention.

The renewal survey should include an inspection of the outside of the ship's bottom, as described in section 8.

During the renewal survey, the effective implementation of the applicable operational requirements, and in particular those addressed in chapters 14 and 15 of the guide, should be verified.

7.3 Where the surveyor is satisfied that the ship complies with the requirements of sections 7.2 and 7.3, he should renew the expiring certificate. Where he is not so satisfied, he should withdraw the certificate.

8 Other surveys and inspections

8.1 The purpose of the inspection of the outside of the ship's bottom and of the associated parts carried out at the same time is to ensure that they have been maintained in a satisfactory condition and are fit for the service for which the ship is intended.

Inspections of the ship's bottom required for the renewal survey that are not conducted in dry-dock may be carried out with ship afloat, taking into account section 5.10 of the *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2011* (resolution A.1076(28), as amended).

8.2 An additional general or partial inspection, as occasion arises, should be carried out after any repair resulting from an accident or damage which affects the safety of the ship. The inspection should be such as to ensure that the repairs and replacements have been carried out in an appropriate manner.

8.3 Any ship in a port may be subject to an inspection by a surveyor. This inspection is aimed at ascertaining that the ship is seaworthy, and that appropriate measures were taken in accordance with the applicable technical regulations to ensure the safety and security of the ship, the safety of her crew and of the persons on board, and the protection of the marine environment.

On completion of this inspection, if the condition of the ship or her equipment does not correspond substantially with the particulars of the certificate or is such that the ship is not fit to proceed to sea without danger to the ship, the environment or persons on board, the surveyor should immediately ensure that corrective action is taken and that the ship is not allowed to sail until she can proceed to sea or leave port for the purpose of proceeding to an appropriate repair yard, without danger to the ship, persons on board or the environment.

8.4 Upon completion of any survey or inspection, a report is drawn up. The report should record by their names those who have participated, and be signed by them. It should briefly mention the statements made during the survey or inspection, the resulting observations or prescriptions, and the time deadlines for their completion. Prescriptions should refer to the regulatory reference on which they are based.

8.5 All survey or inspection reports should be kept on board ship, for a five year duration, or longer if required by national regulations, in a special register which should be made available to any surveyor upon request.

Inspection reports of small ships may be kept ashore where the applicable regulations so authorize.

9 Recognized bodies

9.1 A recognized body may be authorized to carry out, on behalf of the Administration, part or all of the surveys and inspections related to the issuance or renewal of the safety certificates.

If it is so decided, this recognized body should be a recognized classification society for ships of more than 45 m in length or authorized to carry more than 200 passengers. For smaller ships, the recognized body may be an expert or group of experts having demonstrated technical skill in naval architecture and ship safety.

9.2 The decision to authorize a recognized body and to specify the scope of the corresponding delegation or assignment should be made by the Director.

The criteria and supporting evidence for recognition should include the following:

- the body or organization is independent from equipment manufacturers or suppliers;
- it is represented by a legal and physical entity in the national territory; and
- it has qualifications, experience and qualified personnel in relation to the activities to be carried out.

The Administration should use the recommendatory provisions contained in part 3 of the Code for Recognized Organizations (RO Code)¹ as a basis for relevant standards, unless their national requirements provide at least an equivalent degree of safety.

9.3 A working agreement, established between the Director and the recognized body should include the following elements:

- the ship types and ship sizes subject to delegated activities by the recognized body;
- the certificates which are delegated for their issuance, renewal or endorsement;
- practicalities for the information of the Administration on the decisions made by delegation;
- procedure for acceptance of equivalent provisions;
- rules and limitations for the remuneration of the recognized body;
- limitation of liability;
- confidentiality; and
- modes for the supervision and control of the delegated activities by the Administration.

¹ Refer to resolutions MSC.349(92) and MEPC.237(65) on *Code for Recognized Organizations (RO Code)*.

9.4 Ships classed with a recognized classification society may be exempted from part of the verifications specified by the national technical regulations. This exemption relates to points that were subject to examinations or tests carried out by the classification society, and ascertained by it in a statement or certificate.

9.5 Further to the assignments specified in paragraph 9.1, a recognized body may be authorized to carry out the following tasks on behalf of the Administration:

- tests or control of marine equipment for their approval or type-approval;
- examination of ship plans with a view to their approval;
- inspection or parts of inspection of defined categories of ships; and
- assisting the Administration with surveys.

9.6 The Administration should periodically perform an audit of the activities carried out under the authorization to verify that the recognized body still satisfies the conditions set out in paragraph 9.2. In case of evidence that activities carried out under the authorization are defective, the Administration may initiate a special audit.

The authorization of a recognized body may be withdrawn if the Administration observes that the conditions in paragraphs 9.2 and 9.3 are not being satisfied.

PART C – ACCIDENT INVESTIGATION

10 Accident investigation

10.1 Following a marine accident or incident, the authority of a substantially interested State², in charge of marine safety investigations, addressed in paragraph 1.2, may decide to carry out a marine safety investigation to determine the circumstances and causes of the accident or incident, in order to make recommendations to prevent re-occurrence of a similar event.

10.2 A marine safety investigation should be carried out in accordance with the applicable international principles and requirements². It should exclude any apportionment of guilt or liability.

PART D – REGIONAL COOPERATION

11 Regional cooperation and port State control

11.1 The development and maintenance of technical safety regulations, applicable to ships that are not subject to the IMO and ILO international regulations, may also be carried out at a regional level. The development and maintenance of such regulations on a regional basis should result in common regulations that ease the workload of Administrations and provide a regional safety standard, acceptable to the participating countries.

11.2 Where such regional standards are in force, or where national regulations are mutually accepted between countries in the region, whether or not a regional agreement on port State control is in force, the control of non-convention ships would be easier and more effective. In the exercise of his/her functions, the Port State Control Officer could make reference to mutually acceptable requirements.

² Refer to resolution MSC.255(84) on the Casualty Investigation Code

CHAPTER 2

STRUCTURE AND LOAD LINES

1 General

1.1 Ships should be designed, constructed and maintained in compliance with the structural requirements of a classification society which is recognized by the Administration or applicable national standards of the Administration which provide an equivalent level of safety. Ships should have adequate strength, integrity and stability to minimize the risk of accident or incident due to structural failure or loss of watertight integrity.

2 Design of ships and construction drawings

2.1 Ships should be designed to the satisfaction of the Administration to confirm the safety of the new as-built ship. Design documentation should include parameters that may limit the operation of the ship. A set of as-built construction drawings and other plans showing any subsequent structural alterations should be kept on board the ship and by the Company ashore. The design of ship should be survey-friendly to allow ease of access for inspection and repair.

3 Residual strength

3.1 The Administration should ensure at an early design stage that structural redundancy and hull-girder residual strength of the ship are adequate. A rational level of residual strength of damaged ship's hull should be based on its ultimate strength. Compliance with the relevant standard of a recognized classification society would fulfil this requirement.

4 Structural requirements for ships

4.1 Ships should be designed, constructed, and subsequently operated and maintained by their builders and operators, to minimize the risk of loss of the ship due to structural failure, including collapse, resulting in flooding or loss of watertight integrity.

4.2 Unless otherwise authorized by the Administration, ships should be fitted with a watertight weather deck over the length of the ship and be of adequate structural strength to withstand the sea and weather conditions likely to be encountered in the area of operation.

4.3 A ship which is constructed in accordance with the rules of a recognized classification society for a ship of its size, material and method of construction should be accepted as having an adequate standard of construction and design in so far as the hull structure is concerned, provided that the structure remains in good condition and wear, and corrosion and other effects have not reduced the structure below the allowances stated by that classification society.

4.4 A ship which is not constructed in accordance with the rules of a recognized classification society may be considered of an adequate hull strength provided that the Administration is satisfied that the construction is in accordance with established steel or aluminium ship construction standards and the scantlings are adequate taking into account the intended draught of the ship, as opposed to the intended freeboard at load draught, the area of operation, the intended deck loads and any other factors affecting the overall strength in service.

4.5 A ship not constructed in accordance with the rules of a recognized classification society may be considered of an adequate hull strength provided the Administration is satisfied in the case of a new fibre reinforced plastic (FRP) ship that the construction is in accordance with good industry practice as regards FRP construction using resins and reinforcing material approved for boat construction and scantlings that are adequate taking into account the intended use of the ship, the draught as against the intended freeboard and the necessary reinforcing to withstand cargo and deck loads.

4.6 Ships built to other standards should be considered specifically by the Administration and appropriate records maintained.

4.7 The strength and method of construction of the shell, superstructures, deckhouses, machinery trunks, doors and other structures as well as the equipment should allow the ship to withstand any of the conditions foreseeable in the service for which it is intended and should be considered satisfactory by the Administration.

4.8 A ship constructed and maintained in conformity with the standards recognized by the Administration may be considered to comply with the requirements of this section.

5 Installation of materials containing asbestos

5.1 Ships should be designed and constructed of materials for environmentally acceptable recycling without compromising the safety and operational efficiency of the ship.

5.2 The use of materials containing asbestos should be in accordance with SOLAS regulation 3-5.

6 Protection against corrosion

6.1 Ships over 24 metres in length should, where relevant, be designed, built, operated and maintained taking into account effective corrosion control standards acceptable to the Administration.

6.2 The designer should give consideration to the thickness of internal structure members in locations susceptible to rapid corrosion.

6.3 All piping, valves and fittings of ferrous materials should be protected inside and outside against corrosion unless specifically approved otherwise.

6.4 Tanks used for salt water ballast should have a corrosion-resistant hard type coating, such as epoxy or zinc, or equivalent as acceptable alternative on all structural surfaces provided that it is applied and maintained in compliance with the manufacturer's specification.

7 Freeboard, load line and hull marking

7.1 Ships should be assigned a minimum freeboard commensurate to the load lines stability requirements or other requirements that the Administration considers appropriate in relation to the type of ship, its service and its area of operation. For ships below 24 metres in length, the minimum freeboard should be defined by the Administration.

7.2 For ships over 24 metres in length, the requirements set out in the International Load Lines Convention should be met.

8 Prevention of water ingress

Ships of more than 24 metres in length should have satisfactory structural strength in compliance with regulation 1 of the International Load Lines Convention and sufficient reserve buoyancy and watertight integrity in compliance with chapter II of the International Load Lines Convention on conditions of assignment of freeboard.

9 Watertight and weathertight integrity

9.1 Ships should be designed to have adequate watertight and weathertight integrity for the intended service of the ship and adequate strength and redundancy of the associated securing devices of hull openings.

9.2 Where penetrations of watertight bulkheads and internal decks are necessary for access, piping, ventilation, electrical cables, etc. arrangements should be made to maintain the watertight integrity.

10 Rails, guards and other protective arrangements

10.1 Rails or lifelines, wire rope, chains and bulwarks that provide strength and support equivalent to fixed rails or equivalent protection should be installed near the periphery of all decks accessible to passengers or seafarers.

10.2 The bulwarks, hand rails and lifelines should be of sufficient size and strength to provide for protection of persons when the ship is rolling and pitching violently, and should be to the satisfaction of the Administration.

10.3 Hinged covers on hatchways, manholes and other openings should be provided with appliances to prevent their accidental closure. In particular, heavy covers placed over hatchways which are escape exits should be fitted with a counterweight and so constructed that they can be opened from both sides.

10.4 The dimensions of hatchways should be such that a person can escape rapidly and easily to a safe place in an emergency. Where possible, the dimensions of hatchways in cargo spaces and machinery spaces should be such as to facilitate arrangements for escape.

10.5 Skylights and other similar openings should be of steel and should not contain glass panels.

11 Assigning, marking and recording of subdivision load lines

11.1 Subdivision load lines should be assigned, marked and recorded in the Safety Certificate in the same manner as in the International Passenger Ship Safety Certificate issued in accordance with the provisions of the SOLAS Convention.

11.2 The freeboard corresponding to each of these load lines should be measured at the same position and from the same deck line as the freeboards determined in accordance with the provisions of the International Load Lines Convention.

11.3 In no case should any subdivision load line mark be placed above the deepest load line in salt water as determined by the strength of the ship or the International Load Lines Convention.

11.4 Whatever may be the position of the subdivision load line marks, a ship should in no case be loaded so as to submerge the load line mark appropriate to the season and locality as determined in accordance with the provisions of the International Load Lines Convention.

11.5 A ship should in no case be so loaded that when it is in salt water the subdivision load line mark appropriate to the particular voyage and service configuration is submerged.

12 Drainage of weather decks

12.1 The weather deck on all ships should be watertight or fitted with closures to ensure watertight integrity. The drainage from the weather deck should be such that the watertight integrity is not compromised.

12.2 In a ship in which freeing ports cannot be fitted, other efficient means of clearing trapped water from the ship should be provided to the satisfaction of the Administration, and spaces considered non-weather-tight should be provided with efficient drainage arrangements.

13 Sounding and ventilation pipes

13.1 Arrangements should be made to allow venting and soundings of spaces intended to hold liquids and any spaces not easily accessible at all times.

13.2 The division, number and position of air pipes should be arranged so as to avoid, as far as possible, air locks and overpressure during filling operations.

13.3 Sounding pipes should be suitably protected throughout their length against damage and accidental shocks. Precautions should be taken to ensure that repeated soundings do not give rise to excessive local deterioration of the shell plating.

CHAPTER 3

SUBDIVISION AND STABILITY

1 General

1.1 Ships regardless of their length should have subdivision and damage stability as required by the SOLAS Convention.

1.2 Ships should be designed, built and operated to established stability criteria and other measures for ensuring their safe operation to minimize the risk to such ships, the personnel on board and the environment.

1.3 The Administration should provide guidelines for stability information, operational provisions against capsizing, considerations for watertight integrity and determination of lightship parameters.

1.4 The stability of a ship should be determined by calculation or other means accepted by the Administration.

1.5 Ships should be able to survive hull damage resulting from certain categories of casualties or incidents. To that effect, they should be as efficiently subdivided by watertight bulkheads as is possible, having regard to the nature of the service for which they are intended. Double bottoms may also contribute to the same objective.

1.6 Efficient pumping systems should be provided, capable of pumping from and draining any watertight compartment.

2 Intact stability

2.1 Ships should be inclined upon completion and the elements of its stability determined.

2.2 Ships of 24 metres in length and above should meet the applicable provisions of the International Code on Intact Stability, 2008 (2008 IS Code). For ships of less than 24 metres in length, the Administration should define the standards of stability.

2.3 Where appropriate, the Administration may accept a simplified stability proof test commensurate with the size and trade of the ship.

2.4 Proper records of calculations and other methods used to evaluate the stability of the ship should be kept.

2.5 Where any alterations are made to a ship so as to materially affect the stability information supplied to the master, amended stability information should be provided. If necessary the ship should be re-inclined. The ship should be re-inclined if anticipated deviations exceed one of the values specified in paragraph 2.6.

2.6 At periodical intervals not exceeding five years, a lightweight survey should be carried out on ships as specified by the Administration taking account of the size of the ship, to verify any changes in lightship displacement and longitudinal centre of gravity. The ship should be re-inclined whenever, in comparison with the approved stability information, a deviation from the lightship displacement exceeding 2% or a deviation of the longitudinal centre of gravity exceeding 1% of L_s is found or anticipated.

2.7 Ships should have scales of draughts marked clearly at the bow and stern.

2.8 Where ballast is provided to ensure compliance with paragraph 2.2, its nature, arrangement and securing mode should in no case impair the safety of the ship. Permanent ballast should not to be removed or relocated without the approval of the Administration.

3 Stability information

3.1 The master of a ship should be supplied with information, satisfactory to the Administration, as is necessary to enable him/her, by rapid and simple processes, to obtain accurate guidance as to the stability of the ship under varying conditions of service in compliance with standards accepted by the Administration.

3.2 The Administration may require ships to have an approved intact stability book taking into account their size and trading area.

3.3 Where the Administration determines that a ship must have a stability book, the owner or operator should prepare the book in accordance with a recognized standard and submit it to the Administration for approval.

4 Subdivision

4.1 Ships should have subdivision and damage stability as required by part B1, chapter II-1 of the SOLAS Convention or any other equivalent standards commensurate to the size and operating area of the ship acceptable to the Administration.

4.2 For ships to which the damage stability requirements apply, the degree of subdivision to be provided should be determined taking account of the required and attained subdivision indexes of the SOLAS Convention, or any other equivalent standard acceptable to the Administration.

4.3 Ships should be as efficiently subdivided as is possible having regard to the nature of the service for which they are intended. The degree of subdivision should vary with the subdivision length (L_s) of the ship and with the service, in such manner that the highest degree of subdivision corresponds with the ships of greatest subdivision length (L_s).

4.4 The damage stability requirements should apply to every ship unless otherwise provided by the Administration. The Administration may, for a particular ship or group of ships, accept alternative methodologies if it is satisfied that at least the same degree of safety is achieved.

4.5 Where it is proposed to fit decks, inner skins or longitudinal bulkheads of sufficient tightness to seriously restrict the flow of water, the Administration should be satisfied that proper consideration is given to beneficial or adverse effects of such structures in the calculations.

5 Construction and arrangement of watertight bulkheads

5.1 Each watertight subdivision bulkhead, whether transverse or longitudinal, should be constructed having scantlings as specified by the classification rules and be capable of supporting at least the pressure due to a head of water up to the bulkhead deck. Steps and recesses in watertight bulkheads should be as strong as the bulkhead at the place where each occurs.

5.2 The maximum distance between adjacent main transverse watertight bulkheads abaft the collision bulkhead should be in accordance with recognized standards.

5.3 A collision bulkhead should be fitted which should be watertight up to the bulkhead deck. No doors, manholes, access openings, ventilation ducts or any other openings should be fitted in the collision bulkhead below the bulkhead deck.

5.4 The collision bulkhead should be located for ships of more than 24 metres and less than 60 metres in length, at a distance from the forward perpendicular of not less than 0.05L or 3 metres, whichever is the less, and, except as may be permitted by the Administration, not more than 0.08L or 5 metres, whichever is the greater. For ships of more than 60 metres in length, the SOLAS requirements should be applied. For ships of less than 24 metres in length, the Administration should apply recognized standards applicable to ships of those sizes.

5.5 A ro-ro ferry of more than 20 metres in length that may operate on its route ahead or astern should, in addition to the collision bulkhead required in paragraph 5.2, have a collision bulkhead fitted in accordance with paragraph 5.4.

5.6 The after collision bulkhead on a double-ended ferry of 20 metres or more in length overall should be located at a distance authorized by the Administration and installed in a single plane, with no recess or step, at least up to the bulkhead deck.

5.7 The number of pipes piercing the collision bulkhead should be as small as possible. Such pipes should be fitted with suitable valves operable from above the bulkhead deck and the valve chest should be secured at the bulkhead inside the forepeak. The Administration may authorize the fitting of such valves on the rear of the collision bulkhead provided that the valves are readily accessible at any time under all service conditions and the space in which they are located is not a cargo space. All valves should be of a material approved by the Administration.

5.8 Where bow doors are fitted and a sloping loading ramp forms part of the extension of the collision bulkhead above the bulkhead deck, the part of the ramp which is more than 2.3 metres, or any other length specified by the Administration, above the bulkhead deck may not extend more than 1 metre forward of the limit specified in paragraph 5.4. The ramp should be weathertight over its complete length.

5.9 The number of openings in the extension of the collision bulkhead above the bulkhead deck should be restricted to the minimum compatible with the design and normal operation of the ship. All such openings should be capable of being closed weathertight.

5.10 No manhole, door, hatchway, ventilation duct or any other opening should be authorized in the collision bulkhead below the bulkhead deck. When a chain locker is located aft of the collision bulkhead or extends into the forepeak, it should be watertight and provided with efficient means of pumping dry.

5.11 Bulkheads should be fitted separating the machinery space from cargo and accommodation spaces forward and aft and made watertight up to the bulkhead deck. An afterpeak bulkhead should also be fitted and made watertight up to the bulkhead deck. The afterpeak bulkhead may, however, be stepped below the bulkhead deck, provided the degree of safety of the ship as regards subdivision is not thereby diminished.

5.12 In all cases stern tubes should be enclosed in watertight spaces of moderate volume. The stern gland should be situated in a watertight shaft tunnel or other watertight space separate from the stern tube compartment and of such volume that, if flooded by leakage through the stern gland, the bulkhead deck will not be immersed.

6 Double bottoms

6.1 Ships of more than 60 metres in length should be fitted with double bottoms extending from the forepeak bulkhead to the afterpeak bulkhead, or as near thereto as practicable and compatible with the design and proper working of the ship. For ships between 60 metres and 75 metres in length, a double bottom may be omitted in the machinery space.

6.2 The Administration may permit a double bottom to be dispensed with if satisfied that the fitting of a double bottom in any part of the ship would not be compatible with the design and proper working of the ship.

7 Openings in watertight bulkheads below the bulkhead deck

7.1 The number of openings in watertight bulkheads should be reduced to the minimum compatible with the design and proper working of the ship, satisfactory means should be provided for closing these openings.

7.2 Where pipes, scuppers, electric cables, etc. are carried through watertight bulkheads, arrangements should be made to ensure the watertight integrity of the bulkheads.

8 Openings in the shell plating below the bulkhead deck

8.1 The number of openings in the shell plating should be reduced to the minimum compatible with the design and proper working of the ship.

8.2 The arrangement and efficiency of the means for closing any opening in the shell plating should be consistent with its intended purpose, the position in which it is fitted and generally to the satisfaction of the Administration, taking account of the requirements of the International Load Lines Convention.

9 Construction of watertight doors, side scuttles, etc.

The design, materials and construction of all watertight doors, side scuttles, gangway and cargo ports, valves, pipes, ash-chutes and rubbish-chutes should be to the satisfaction of the Administration.

10 Construction of watertight decks, trunks, etc.

Watertight decks, trunks, tunnels, duct keels and ventilators should be of the same strength as watertight bulkheads at corresponding levels. The means used for making them watertight, and the arrangements adopted for closing openings in them, should be to the satisfaction of the Administration. Watertight ventilators and trunks should be carried at least up to the bulkhead deck.

11 Internal watertight integrity above the bulkhead deck

11.1 The Administration may require that all reasonable and practicable measures should be taken to limit the entry and spread of water above the bulkhead deck.

11.2 Side scuttles, gangway, cargo and fuelling ports and other means for closing openings in the shell plating above the bulkhead deck should be of efficient design and construction and of sufficient strength having regard to the spaces in which they are fitted and their positions relative to the deepest subdivision draught.

12 Integrity of the hull, damage prevention and control

The Administration may permit the fitting of particular accesses to spaces below the bulkhead deck provided they are necessary for the essential working of the ship, subject to such accesses being made watertight, alarmed and indicated on the navigation bridge.

CHAPTER 4

MACHINERY INSTALLATIONS

1 General

1.1 The machinery, boilers and other pressure vessels, associated piping systems and fittings should be of a design and construction adequate for the service for which they are intended and should be so installed and protected as to reduce to a minimum any danger to persons on board, due regard being paid to moving parts, hot surfaces and other hazards. The design should have regard to materials used in construction, the purpose for which the equipment is intended, the working conditions to which it will be subjected and the environmental conditions of operation.

1.2 The Administration may, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific provisions of this chapter unreasonable or unnecessary, exempt from those provisions individual ships or classes of ships which, in the course of their voyage, do not proceed more than a specified distance from the nearest land.

1.3 Means should be provided whereby normal operation of propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative. Special consideration should be given to the malfunctioning of:

- a generating set which serves as a main source of electrical power;
- the fuel oil supply systems for engines;
- the sources of lubricating oil pressure;
- the sources of water pressure;
- an air compressor and receiver for starting or control purposes;
- the hydraulic, pneumatic or electrical means for control of main propulsion machinery including controllable pitch propellers; or
- any machinery part, equipment or system which may be anticipated by the Administration.

However, the Administration, having regard to overall safety considerations, may accept a partial reduction in propulsion capability from normal operation.

1.4 Machinery should be so equipped that it can be controlled in accordance with operating requirements in such a way that the service conditions prescribed by the manufacturer can be met.

1.5 The machinery should be so arranged that it can be brought into operation from the "dead ship" condition using only the facilities available on board.

1.6 All machinery, systems and components that are subject to inspection and maintenance on board should be installed and arranged for easy access.

1.7 Maintenance tasks normally expected to occur at short intervals should be carried out without loss of propulsion or steering.

1.8 Operating and maintenance instructions and engineering drawings for ship machinery and equipment essential to the safe operation of the ship should be written in a language understandable by those officers and crew members who are required to understand such information in the performance of their duties.

1.9 Efficient pumping systems should be provided, capable of pumping from and draining any watertight compartment.

2 Environmental conditions

All machinery, components and systems should be designed to operate under the environmental conditions set by the Administration, taking into consideration the type, size and service conditions of the ship.

3 Different risks to be overcome

3.1 The machinery should be so designed, installed and protected that risks of fire, explosions, accidental pollution, leakage and accidents will be acceptably low.

3.2 Where main or auxiliary machinery including pressure vessels or any parts of such machinery are subject to internal pressure and may be subject to dangerous overpressure, provision should be made, where practicable, to protect against such excessive pressure.

3.3 All boilers, parts of machinery, steam, hydraulic, pneumatic and other systems and their associated fittings which are under internal pressure should be subjected to appropriate tests, including a pressure test, before being put into service for the first time.

3.4 The design arrangement of machinery foundations, shaft connections, piping and ducting should take into account the effects of thermal expansion, vibration, misalignment and hull interaction to ensure operation within safe limits.

3.5 Facilities for the safe storage and handling of flammable fluids should be provided on board.

3.6 Location and arrangement of vent pipes for fuel oil service, settling and lubrication oil tanks should be such that in the event of a broken vent pipe this should not directly lead to the risk of ingress of seawater splashes or rainwater.

3.7 Piping and other installations for the transport of flammable fluids should be so located that the fire hazard resulting from rupture and other failures is acceptably low.

3.8 The use of asbestos is prohibited except for prefabricated asbestos packing or gaskets in high temperature piping systems and friction coating not requiring any adaption work on board.

4 Prevention of inadvertent operations

4.1 The machinery should be so arranged that inadvertent operation, caused by human error, would not lead to the reduced safety of the ship and personnel.

4.2 The machinery and piping systems should be arranged to prevent sea water, cargo or ballast from reaching dry spaces of the ship, or liquid cargo or bunkers from being discharged overboard as a consequence of inadvertent operations.

5 Functional capability

5.1 All machinery should be equipped with control and instrumentation considered necessary for safe operation of the machinery.

5.2 Changeover from one normal operational mode to another normal operational mode of the machinery should be possible without interruption in propulsion or steering.

6 Prevention of machinery failure

6.1 Where risk from overspeeding of machinery exists, means should be provided to ensure that the safe speed is not exceeded.

6.2 Main internal combustion propulsion machinery and auxiliary machinery should be provided with automatic shutoff arrangements in the case of failures such as overspeeding or lubricating oil supply failure which could lead rapidly to complete breakdown, serious damage or explosion. The Administration may permit provisions for overriding automatic shutoff devices.

7 Means of going astern

7.1 Sufficient power for going astern should be provided to secure proper control of the ship in all normal circumstances. Standards of a recognized classification society or applicable national standards which provide an equivalent level of safety may be used.

7.2 The ability of the machinery to reverse the direction of thrust of the propeller in sufficient time, and so to bring the ship to rest within a reasonable distance from maximum ahead service speed, should be demonstrated and recorded.

8 Steering gear

8.1 Ships should be provided with a main steering gear and an auxiliary steering gear in accordance with the relevant provisions of the SOLAS Convention or equivalent standards recognized by the Administration. The main steering gear and the auxiliary steering gear should be so arranged that the failure of one of them will not render the other one inoperative.

8.2 The steering gear compartments should be easily accessible and, as far as practicable, separated from machinery spaces, and provided with suitable arrangements to ensure working access to steering gear machinery and controls.

9 Propeller systems

Construction and fitting standards for propellers and associated fittings should be to the satisfaction of the Administration. Recognized design standards should be used.

10 Protection against noise

10.1 Measures should be taken to reduce machinery noise in machinery spaces to acceptable levels as determined by the Administration.

10.2 For vibrations generated by an engine or other device the intensity should not exceed defined limits determined by the Administration.

11 Machinery controls

11.1 Main and auxiliary machinery essential for the propulsion, control and safety of the ship should be provided with effective means for its operation and control. All control systems essential for the propulsion, control and safety of the ship should be independent or designed such that failure of one system does not degrade the performance of another system.

11.2 All machinery parameters and data essential for the safe operation of the ship should be fully controllable from the navigation bridge under all sailing conditions, including manoeuvring.

12 Remote control of machinery

12.1 Automatic starting, operational and control systems should include provisions for manually overriding the automatic controls. Failure of any part of such systems should not prevent the use of the manual override.

12.2 Indicators should be fitted on the navigation bridge, the main machinery control room and at the manoeuvring platform, for propeller speed and rotation condition and low starting air pressure.

13 Bridge control of propulsion machinery

13.1 The speed, direction of thrust and, if applicable, the pitch of the propeller should be fully controllable from the navigating bridge under all sailing conditions, including manoeuvring.

13.2 The main propulsion machinery should be provided with an emergency stopping device on the navigating bridge which should be independent of the navigating bridge control system.

13.3 Propulsion machinery orders from the navigation bridge should be indicated in the main machinery control room and at the manoeuvring platform.

13.4 It should be possible to control the propulsion machinery locally, even in the case of failure in any part of the remote control system. It should also be possible to control the auxiliary machinery, essential for the propulsion and safety of the ship, at or near the machinery concerned.

14 Steam generating and feedwater systems

Provision should be made for ships fitted with steam generating systems to be provided with safety valves of adequate capacity, high-water-level alarm, separate feedwater systems as applicable, to ensure functions essential for the safety of the ship based on standards accepted by the Administration.

15 Piping systems

15.1 The materials to be used in piping systems should be suitable for the medium and service for which the system is intended.

15.2 Systems and tanks should be so arranged that leakage or operation of valves will not directly lead to increased risk of damage to machinery, ship or personnel due to mixing of different fluids. Open or closed position of valves should be easily visible.

15.3 If the function of a valve in the system is not evident, there should be adequate information on a name plate attached to the valve and all connections to sea should be marked.

16 Air pressure systems

16.1 Means should be provided to prevent overpressure in any part of compressed air systems.

16.2 The main starting air arrangements for main propulsion internal combustion engines should be adequately protected against the effects of backfiring and internal explosion in the starting air pipes.

16.3 Provision should be made to reduce to a minimum the entry of oil into the air pressure systems and to drain these systems.

17 Ventilating systems in machinery spaces

17.1 Machinery spaces should be adequately ventilated so as to ensure that when machinery or boilers therein are operating at full power in all weather conditions, including heavy weather, an adequate supply of air is maintained to the spaces for the safety and comfort of personnel and the operation of the machinery.

17.2 All spaces where oil-burning installations, settling tanks or daily service fuel oil tanks are located should be easily accessible and well ventilated.

17.3 Provision should be made to prevent leaking fluids from reaching other parts of the machinery where danger of ignition may arise.

18 Bilge pumping arrangements

18.1 An efficient bilge pumping system should be provided, capable of pumping from and draining any watertight compartment under all practical conditions, other than a space permanently appropriated for the carriage of fresh water, water ballast, oil fuel or liquid cargo and for which other efficient means of pumping are provided. Efficient means should be provided for draining water from insulated holds.

18.2 The bilge pumping system should be capable of operation under all practicable conditions after a casualty whether the ship is upright or listed.

18.3 Sanitary, ballast and general service pumps may be accepted as independent power bilge pumps if fitted with the necessary connections to the bilge pumping system.

18.4 All bilge pipes used in or under fuel storage tanks or machinery spaces, including spaces in which oil-settling tanks or oil fuel pumping units are situated, should be of steel or other suitable material.

18.5 The arrangement of the bilge and ballast pumping system should be such as to prevent the possibility of water passing from the sea and from water ballast spaces into the cargo and machinery spaces, or from one compartment to another.

18.6 All distribution boxes and manually operated valves in connection with the bilge pumping arrangements should be in positions which are accessible under ordinary circumstances.

18.7 Where in addition to the main bilge pumping system an emergency bilge pumping system is provided, it should be independent of the main system and so arranged that a pump is capable of operating on any compartment under flooding condition.

18.8 Where practicable, the power bilge pumps should be placed in separate watertight compartments and so arranged or situated that these compartments will not be flooded by the same damage. If the main propulsion machinery, auxiliary machinery and boilers are in two or more watertight compartments, the pumps available for bilge service should be distributed as far as is possible throughout these compartments.

18.9 Provision should be made to prevent the compartment served by any bilge suction pipe being flooded in the event of the pipe being severed or otherwise damaged by collision or grounding in any other compartment.

19 Bilge level alarms for unattended machinery spaces

19.1 Every ship should be fitted with means for detecting a rise of water in the machinery space bilges or bilge wells. Bilge wells should be large enough to accommodate normal drainage during the unattended period. The number and location of wells and detectors should be such that accumulation of liquids may be detected at all normal angles of heel and trim.

19.2 Where the bilge pumps start automatically, means should be provided to indicate if the influx of liquid is greater than the pump capacity or if the pump is operating more frequently than would normally be expected.

19.3 Where automatically controlled bilge pumps are provided special attention should be given to oil pollution prevention requirements.

19.4 Bilge high water level alarms should be given at the main control station, engineers' accommodation area and at the bridge.

20 Communication between the navigation bridge and other control positions

20.1 At least two independent means should be provided for communicating orders from the navigation bridge to the position in the engine room from which the engines are normally controlled. The Administration may accept a single means of communication taking account of the proximity of the navigation bridge to the position of the control room of the main propulsion machinery.

20.2 Similarly, appropriate means of communication should be provided between the bridge and the tiller position.

21 Operation with periodically unattended machinery spaces

Ships intended to operate with periodically unattended machinery spaces should be arranged and tested to warrant that arrangements are provided to ensure that the safety of the ship in all sailing conditions, including manoeuvring and when alongside, is equivalent to that of a ship having machinery spaces attended.

22 Engineers' alarm

An engineers' alarm capable of being operated from the engine-room or at the manoeuvring platform, as appropriate, to alert personnel in the engineers' accommodation that assistance is needed in the engine-room, should be provided. The Administration may exempt a ship from this requirement if it considers that such an alarm is not necessary taking account of the form of manning of the engine department or the close proximity of the engine control room to the engineers' accommodation.

23 Spare parts for machinery installations

Spare parts for the main and auxiliary engines and steering gear should be determined by the Administration or the recognized organization to meet the needs posed by the ship's plans of operation and maintained on board. In determining the spare parts, the Administration should take into consideration:

- the probability of need as a consequence of likely failures;
- the likely failures and effect on the main functions; and
- the possibility of the ship's staff effecting the necessary repairs.

CHAPTER 5

ELECTRICAL INSTALLATIONS

1 General

- 1.1 Electrical equipment on a ship should be installed and maintained such that:
- all electrical auxiliary services necessary for maintaining the ship in normal operational and habitable conditions are ensured without recourse to an emergency source of power;
 - all services essential for safety are ensured under various emergency conditions;
 - passengers, seafarers, other persons, and the ship are protected from electrical hazards, including fire, caused by or originating in electrical equipment and electrical shock; and
 - electrical ignition of flammable vapours is prevented.
- 1.2 Drip-proof electrical equipment should be used in locations defined by the Administration.
- 1.3 Electrical equipment exposed to the weather should be watertight.
- 1.4 Electrical equipment exposed to corrosive environments should be demonstrated to be of suitable construction and corrosion-resistant.
- 1.5 Electrical equipment and installation should be designed and installed so that it is not affected by ship motions or vibration of the ship whilst underway.
- 1.6 All equipment, including switches, fuses, lamp holders, etc. should be rated for the voltage and current utilized.
- 1.7 Receptacle outlets of the type providing a grounded pole or a specific direct current polarity should be of a configuration that will not permit improper connection.
- 1.8 All electrical equipment and circuits should be clearly marked and identified.
- 1.9 Electrical installations and systems should be designed, constructed and maintained based on applicable standards for ships as issued by the International Electrotechnical Commission³ or other standards accepted by the Administration which provide an equivalent level of safety.

2 Electrical systems

- 2.1 An insulated system should be provided with double pole switches, except that single pole switches may be used in the final subcircuit and may be accepted in a system with one pole.
- 2.2 The insulation resistance, using a low voltage instrument so as not to cause damage, should not be less than 0.3 MΩ.
- 2.3 Steering motors should have an overload alarm in lieu of overload protection.

³ This implies primarily the IEC 60092 series for ships.

3 Safety precautions

3.1 A ship's hull should not carry current as a conductor except for the following systems:

- .1 impressed current cathodic protection systems; or
- .2 battery systems for engine starting

3.2 All electrical apparatus should be so constructed and installed as not to cause injury when handled or touched in the normal manner.

3.3 Main and emergency switchboards should be so arranged as to give easy access as may be needed to apparatus and equipment without danger to personnel. Exposed live parts having voltages to earth in excess of 55 V should not be installed on the front of such switchboards.

4 System earthing

4.1 The hull return system of distribution should not be used, unless authorized by the Administration.

4.2 Where the hull return system is used for distribution of DC power, one of the busbars of the distribution board should be connected to the hull. Outgoing final subcircuits i.e. all circuits fitted after the last protective device should be with insulated two-wires or two-core cables.

5 Electrical cables

5.1 Except as permitted by the Administration in exceptional circumstances, all metal sheaths and armour of cables should be electrically continuous and should be earthed.

5.2 Electrical cables should be constructed and fitted to a recognized standard for marine use.

5.3 When selecting cables for relevant applications, particular attention should be given to environmental factors such as temperature and contact with damaging substances e.g. oils and chemicals.

5.4 Cables and wiring serving essential or emergency power, lighting, internal communications or signals should so far as practicable be routed clear of galleys, laundries, machinery spaces and other high fire risk areas. Cables connecting fire pumps to emergency switchboard should be of the fire-resistant type where they pass through high fire risk areas. Where practicable all such cables should be run in such a manner as to preclude their being rendered unserviceable by heating of the bulkheads that may be caused by a fire in an adjacent space.

6 Hazardous spaces

6.1 No electrical equipment should be installed in any space where flammable mixtures are liable to collect or in compartments assigned primarily to accumulator batteries, in paint lockers or similar spaces, unless the Administration is satisfied that such equipment is essential for operational purposes and complies with a recognized standard for prevention of ignition of flammable atmosphere.

6.2 Lightning conductors should be installed on masts and mastheads constructed of non-conducting materials. If the ship is constructed of non-conducting materials, the lightning conductors should be connected to copper plates fitted to the ship's hull and running well below the water line.

6.3 Short circuit protection should be for more than twice the total rated current of the loads in the circuit protected. The rating or appropriate setting of the overload protective device for each circuit should be permanently indicated at the location of the protective device.

7 Lighting

7.1 Lighting fittings should be so arranged as to prevent temperature rises which could damage the cables and wiring, and to prevent surrounding material from becoming excessively hot.

7.2 A single hazardous event should not be capable of disabling all lighting systems.

7.3 Lighting circuits should be distributed through the spaces so that a total blackout cannot occur due to the failure of a single protective device.

7.4 Where general lighting is provided by a single centralized source, an alternative source of lighting should also be provided sufficient to enable persons to make their way to the open deck or to permit work on essential machinery.

7.5 A main electric lighting system which should provide illumination throughout those parts of the ship normally accessible to and used by passengers or crew should be supplied from the main source of electrical power.

7.6 The arrangement of the main electric lighting system should be such that a fire or other casualty in spaces containing the main source of electrical power, associated transforming equipment, if any, the main switchboard and the main lighting switchboard, will not render the emergency electric lighting system inoperative.

7.7 The arrangement of the emergency electric lighting system should be such that a fire or other casualty in spaces containing the emergency source of electrical power, associated transforming equipment, if any, the emergency switchboard and the emergency lighting switchboard will not render the main electric lighting system identified in this section inoperative.

7.8 All ro-ro passenger ships public spaces and alleyways should be provided with supplementary electric lighting that can operate for at least three hours when all other sources of electrical power have failed and under any condition of heel. The illumination provided should be such that the approach to the means of escape can be readily seen. The source of power for the supplementary lighting should consist of accumulator batteries located within the lighting units that are continuously charged, where practicable, from the emergency switchboard. Alternatively, any other means of lighting which is at least as effective may be accepted by the Administration. The supplementary lighting should be such that any failure of the lamp will be immediately apparent. Any accumulator battery provided should be replaced at intervals having regard to the specified service life in the ambient conditions to which they are subjected in service.

7.9 A portable rechargeable battery-operated lamp should be provided in every crew space alleyway, recreational space and every working space which is normally occupied unless supplementary emergency lighting, as required by paragraph.7.8, is provided.

8 Main source of electrical power

8.1 Each ship that relies on electricity to power the following essential loads should be arranged so that the loads can be energized from two sources of electricity:

- .1 Ship's essential systems:
 - Fuel system;
 - Fire main;
 - Fix firefighting systems;
 - Bilge system;
 - Steering system;
 - Propulsion system and its necessary auxiliaries and controls;
 - Ship's service and emergency electrical generation system and its necessary auxiliaries; and
 - A marine engineering system identified by the Administration as being crucial to the survival of the ship or to the protection of the personnel on board.
- .2 Interior lighting except for decorative lights;
- .3 Communication systems including a public address system; and
- .4 Navigation equipment and lights.

8.2 A ship with batteries of adequate capacity to supply the loads specified in paragraph 8.1 for time mentioned in paragraph 9.4.2, or an alternator driven by a propulsion engine, complies with the provisions of paragraph 1.1.

8.3 The source of electrical power of sufficient capacity to supply all the services mentioned in paragraph 8.1 should consist of generating sets which satisfy the following:

- .1 the capacity of the generating sets should be such that in the event of any one generating set being stopped it will still be possible to supply those services necessary to provide normal operational conditions of propulsion and safety;
- .2 the arrangements of the ship's main source of electrical power should be such that the services mentioned in paragraph 8.1 can be maintained regardless of the speed and direction of rotation of the propulsion machinery or shafting;
- .3 in addition, the generating sets should be such as to ensure that with any one generator or its primary source of power out of operation, the remaining generator sets should be capable of providing the electrical services necessary to start the main propulsion plant from a dead ship condition.

8.4 Where a ship service generator driven by a propulsion engine is used as a source of electrical power, a ship speed change, throttle movement or change in direction of the propeller shaft rotation should not interrupt power to any of the loads specified in paragraph 8.1.

8.5 Each generator and motor should be in a location that is accessible, adequately ventilated, and as dry as practicable and be mounted above the bilges to avoid damage by splash and to avoid contact with low-lying vapours.

8.6 Each generator should be protected by an overcurrent device with set value not exceeding 115% of the generator full load rating.

9 Emergency source of electrical power

9.1 A self-contained emergency source of electrical power should be provided on all ships so that in the event of the failure of the main source of electrical power, the emergency source of power will become available to supply power to services that are essential for safety in an emergency.

9.2 The emergency source of electrical power, associated transforming equipment, if any, transitional source of emergency power, emergency switchboard and emergency lighting switchboard should be located above the uppermost continuous deck and should be readily accessible from the open deck. They should not be located forward of the collision bulkhead.

9.3 The emergency source of electrical power may be either a generator or an accumulator battery, complying with the applicable provisions of the SOLAS Convention or standards recognized by the Administration. However, the Administration may relieve ships or categories of ships from compliance with certain provisions taking into account their size and limits of operation.

9.4 The electrical power available should be sufficient to supply all those services that are essential for safety in an emergency situation, due regard being paid to such services that may have to be operated simultaneously. The emergency source of electrical power should be capable:

- .1 of supplying simultaneously at least the essential emergency services for the periods specified by the Administration, if they depend upon an electrical source for their operation;
- .2 in particular to supply the power needed for simultaneous operation of the essential and emergency services as required for the size of the ship taking account of the time specified by the Administration.

9.5 The emergency source of electrical power may be used for the purpose of starting from a dead ship condition if its capability is sufficient to provide at the same time the essential services required to be supplied by paragraph 1.1.

9.6 Where electrical power is necessary to restore propulsion as required by paragraph 8.3.3, the capacity should be sufficient to restore propulsion to the ship in conjunction with other machinery, as appropriate, from a dead ship condition within 30 minutes after blackout.

9.7 Where the emergency source of electrical power is an accumulator battery, it should be capable of carrying the emergency electrical load without recharging.

9.8 The emergency source of electrical power should be capable of automatically connecting to the emergency switchboard in the event of failure of the main source of electrical power. Where automatic connection with the emergency switchboard is not possible, a manual connection to the satisfaction of the Administration may be accepted taking account of the size and service of the ship.

10 Accumulator batteries

10.1 Accumulator batteries should be suitably housed, and compartments used primarily for their accommodation should be properly constructed and efficiently ventilated.

10.2 Electrical or other equipment which may constitute a source of ignition of flammable vapours should not be permitted in these compartments except as permitted in paragraph 6.1.

10.3 Each accumulator battery should be located as high above the bilge as practicable, secured to protect against shifting with the roll and pitch of the ship, and free from exposure to water splash or spray.

10.4 An accumulator battery cut-out switch which acts as an isolator should be provided for all systems. Where a battery change-over switch is fitted and is provided with an "off" position, this may serve as the cut-out switch also.

10.5 Accumulator batteries used for engine starting should be located as close as possible to the engine or engines served.

11 Shore connections

The Administration may use standards of a recognized classification society and should ensure that changeover or interlocking systems are so arranged that the connection to shore cannot be fed from the ship's generators.

CHAPTER 6

FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

1 General

1.1 In order to ensure an acceptable level of fire safety on board ships should be designed and equipped to:

- prevent the occurrence of fire and explosion;
- reduce the risk to life caused by fire;
- reduce the risk of damage caused by fire to the ship, its cargo and the environment;
- contain, control and suppress fire and explosion in the compartment of origin; and
- provide adequate and readily accessible means of escape for passengers and crew.

1.2 Measures to achieve such acceptable level of fire safety should include:

- division of the ship into main vertical and horizontal zones by thermal and structural boundaries;
- separation of accommodation spaces from the remainder of the ship by thermal and structural boundaries;
- restricted use of combustible materials;
- detection of any fire in the zone of origin;
- containment and extinction of any fire in the space of origin;
- protection of means of escape and access for firefighting;
- ready availability of fire-extinguishing appliances; and
- minimization of the possibility of ignition of flammable cargo vapour.

1.3 The measures to achieve an acceptable level of fire safety on board ships should be reasonable and practicable taking into account the size, number of passengers authorized and conditions of operation of the ship.

2 Probability of ignition

2.1 Measures to be taken to prevent the ignition of combustible materials or flammable liquids should include:

- means to control leaks of flammable liquids;
- means to limit the accumulation of flammable vapours;
- restricting the ignitability of combustible materials;
- ignition sources to be restricted; and
- ignition sources to be separated from combustible materials and flammable liquids.

2.2 Provision for the arrangements for, and storage and use of, combustible fuel, lubricating oil and other flammable oils should be based on the requirements of SOLAS regulation II-2/4.2.

2.3 Gaseous fuel systems used for domestic purposes should be approved by the Administration. The storage of gas bottles should be located on the open deck or in a well ventilated space which opens only to the open deck.

2.4 Electric radiators should be fixed in position and so constructed as to reduce fire risks to a minimum; waste receptacles should be constructed of non-combustible materials with no openings in the sides or bottom; the surface of insulation where penetration of oil products is possible should be impervious to oil or oil vapours; and primary deck coverings within accommodation, service spaces, control stations and cabin balconies should be of approved material which will not readily ignite.

3 Fire growth potential

3.1 The fire growth potential in every space of the ship should be limited by use of the following means:

- control of the air supply to the space;
- control of flammable liquids in the space; and
- restricting the use of combustible materials.

3.2 The main inlets and outlets of all ventilation systems should be capable of being closed from outside the spaces being ventilated. The means of closing should be easily accessible as well as prominently and permanently marked and should indicate whether the shut-off is open or closed. Means of control should be provided for stopping forced and induced draught fans, oil fuel transfer pumps, oil fuel unit pumps, lubricating oil service pumps, thermal oil circulating pumps and oil separators (purifiers), which should be located outside the space concerned so they will not cut off in the event of fire in the space they serve. Controls for machinery space ventilation, pumps for flammable liquids and fire extinguishing systems should be situated at one control position or grouped in as few positions as possible to the satisfaction of the Administration. Such positions should have safe access from the open deck.

3.3 In ships with means of control in periodically unattended machinery spaces, the Administration should give special consideration to maintaining the fire integrity of the machinery spaces, the location and centralization of the fire-extinguishing system controls, the necessary shutdown arrangements and that additional fire-extinguishing appliances and other firefighting equipment and breathing apparatus may be required.

3.4 The use of fire protection materials should be guided by the provisions of SOLAS regulation II-5.3.

4 Smoke generation potential and toxicity

4.1 The quantity of smoke and toxic products released from combustible materials, including surface finishes, during a fire should be limited to reduce the hazard to life in spaces where persons normally work or live.

4.2 Paints, varnishes and other finishes used on exposed exterior surfaces, including cabin balconies, excluding natural hard wood decking systems, should not be capable of producing excessive quantities of smoke and toxic products as determined in accordance with the FTP Code.

4.3 Primary deck coverings applied within accommodation and service spaces and control stations, and on cabin balconies, should not give rise to smoke, toxic or explosive hazards at elevated temperatures as determined in accordance with the FTP Code.

5 Detection and alarm

5.1 The detection of a fire in the space of origin and provision for alarm for safe escape and firefighting activity should be achieved by the use of:

- fixed fire detection and fire alarm system installations suitable for the nature of the space, fire growth potential and potential generation of smoke and gases;
- manually operated call points placed effectively to ensure a readily accessible means of notification; and
- fire patrols to provide an effective means of detecting and locating fires and alerting the navigating bridge and fire teams.

5.2 A fixed fire detection and alarm system and a sample extraction smoke detection system should be of an approved type and comply with the FSS Code.

5.3 The function of fixed fire detection and fire alarm systems should be tested under varying conditions of ventilation after installation and periodically to the satisfaction of the Administration.

5.4 A fixed fire detection and fire alarm system should be installed in periodically unattended machinery spaces and in machinery spaces where:

- the installation of automatic and remote control systems has been approved in lieu of continuous manning of the space; and
- the main propulsion and associated machinery, including the main sources of electrical power, are provided with various degrees of automatic or remote control and are under continuous manned supervision from a control room.

5.5 In all ships smoke detectors should be installed in all stairways, corridors and escape routes within accommodation spaces; in ships carrying more than 36 passengers a fixed fire detection and alarm system should be so installed as to provide smoke detection in service spaces, control stations and accommodation spaces; and in ships carrying not more than 36 passengers there should be installed in each separate zone, in all accommodation and service spaces and in control spaces either a fixed fire detection and fire alarm system or an automatic sprinkler, fire detection and alarm system of an approved type complying with the relevant requirements of the FSS Code.

5.6 The entire main vertical zone containing the atrium should be protected throughout with a smoke detection system.

5.7 A fixed fire detection and fire alarm system or a sample extraction smoke detection system should be fitted in any cargo space which in the opinion of the Administration is not accessible.

5.8 Manually operated call points complying with the FSS Code should be installed throughout the accommodation spaces, service spaces and control stations. One manually operated call point should be located at each exit. Manually operated call points should be readily accessible in the corridors of each deck such that no part of the corridor is more than 20 metres from a manually operated call point.

5.9 An efficient patrol system should be maintained in ships carrying more than 36 passengers so that an outbreak of fire may be promptly detected. Members of the patrol should be trained to be familiar with the arrangements of the ship as well as the location and operation of any equipment they may be called upon to use. Ceilings and bulkheads

should be constructed to facilitate the detection of smoke originating in concealed and inaccessible places. Each member of the fire patrol should be provided with a two-way portable radiotelephone apparatus.

5.10 Ships should at all times be so manned or equipped as to ensure that any initial fire alarm is immediately received by a responsible member of the crew. A special alarm operated from the navigation bridge or fire control station, which may be part of the ship's general alarm system and capable of being sounded independently of the alarm to the passenger spaces, should be fitted to summon the crew.

6 Control of smoke spread

6.1 The spread of smoke in atriums, control stations, machinery spaces and concealed spaces should be controlled to minimize smoke hazards.

6.2 Practicable measures should be taken for control stations outside machinery spaces to ensure that ventilation, visibility and freedom from smoke are maintained so that the machinery and equipment contained therein may be supervised and continue to function in the event of a fire.

6.3 Suitable arrangements should be made to permit the release of smoke from machinery spaces in the event of a fire and the means of control should be located outside the space concerned so that they will not be cut off in the event of a fire in the space they serve.

6.4 Air spaces enclosed behind ceilings, panelling or linings should be divided by close-fitting draught stops and, in the vertical direction, such spaces, including those behind linings of stairways, trunks, etc. should be closed at each deck.

6.5 Atriums should be equipped with a smoke extraction system, capable of manual control, activated by the smoke detection system.

7 Containment of fire

7.1 Ships should be subdivided by thermal and structural boundaries to contain a fire in the space of origin. The thermal insulation of the boundaries should have due regard to the fire risk of the space and adjacent spaces, and the fire integrity of the divisions should be maintained at openings and penetrations.

7.2 The subdivision of ships by thermal and structural boundaries should be guided by SOLAS regulation II-2/9.2.2.

7.3 Penetrations in "A" class divisions should be tested in accordance with the FTP Code and in the case of "B" class divisions arrangements should be made to ensure that the fire resistance is not impaired. In approving structural fire protection details the Administration should have regard to the risk of heat transmission at intersections and terminal points of thermal barriers.

7.4 Protection of openings in fire-resisting divisions should be in accordance with SOLAS regulation II-2/9.4.1.

7.5 Protection of openings in machinery space boundaries in machinery spaces of category A and other machinery spaces where the Administration considers it desirable should be in accordance with SOLAS regulation II-2/9.5.

7.6 Protection of cargo space boundaries should be in accordance with SOLAS regulation II-2/9.6.1-.4.

7.7 Ventilation systems should be in accordance with SOLAS regulation II-2/9.7.

8 Firefighting

8.1 Ships should be fitted with fixed fire-extinguishing systems, having due regard to the fire growth potential of the protected spaces, and fire-extinguishing appliances which should be readily available.

8.2 Ships should be provided with fire pumps, fire mains, hydrants and hoses which comply with the provisions of SOLAS regulation II-2/10.2.

8.3 Portable fire extinguishers should comply with the requirements of the FSS Code and the other requirements of SOLAS regulation II-2/10.3.

8.4 The requirements for fixed fire-extinguishing systems should be in accordance with the provisions of SOLAS regulation II-2/10.4 and applicable provisions of the FSS Code.

8.5 Fire-extinguishing arrangements in machinery spaces containing oil fired boilers or oil fuel units, internal combustion machinery, steam turbines or enclosed steam turbines and other machinery spaces where a fire hazard exists, should be in accordance with the provisions of SOLAS regulation II-2/10.5.

8.6 Fire-extinguishing arrangements in control stations, accommodation and service spaces should be in accordance with the provisions of SOLAS regulations II-2/10.6.1 and 10.6.3 to 6.4.

8.7 The arrangements for fixed gas extinguishing systems for general cargo should be in accordance with the provisions of Regulation II-2/10.7.1.1 to .2 and those for the carriage of dangerous goods, SOLAS regulation II-2/10.7.2.

8.8 The type, number and stowage of firefighter's outfits should be in accordance with SOLAS regulation II-2/10.10.

9 Structural Integrity

9.1 Materials used in a ship's structure should ensure that the structural integrity is not degraded due to fire, preventing partial or total collapse of the ship structure due to strength deterioration by heat.

9.2 The hull, superstructures, structural bulkheads, decks and deckhouses should be constructed of steel or other equivalent material, being any non-combustible material which, by itself or due to insulation provided, has structural and integrity properties equivalent to steel at the end of the applicable exposure to the standard fire test.

9.3 In cases where any part of the structure is of aluminium alloy, which is not insulated to have structural and integrity properties equivalent to steel at the end of the applicable exposure to the standard fire test, it should be in compliance with the provisions of SOLAS regulation II-2/11.3.

9.4 The floor plating of normal passageways in machinery spaces of category A should be made of steel. Crowns and casings of machinery spaces of category A should be of steel construction and insulated in accordance with tables 9.5 and 9.7 of chapter II-2 of SOLAS.

9.5 Materials readily rendered ineffective by heat should not be used for overboard scuppers, sanitary discharges, and outlets which are close to the waterline and where the failure of the material in the event of fire would give rise to danger of flooding.

10 Notification of crew and passengers

10.1 The general emergency alarm system, identified in paragraph 7/6, should be used for notifying crew and passengers of a fire for safe evacuation.

10.2 A public address system or other effective means of communication complying with the provisions of paragraph 7.2.2 of the LSA Code should be available through the accommodation and service spaces and control stations and open decks.

11 Means of escape

11.1 Means of escape should be provided so that persons on board can safely and swiftly escape to the lifeboat and liferaft embarkation deck. They should be maintained in a safe condition, free of obstacles, and additional aids for escape should be provided as necessary to ensure accessibility, clear marking and adequate design for emergency situations.

11.2 At least two widely separated and ready means of escape should be provided from all spaces or groups of spaces. Lifts should not be considered as forming one of the means of escape.

11.3 Means of escape from control stations, accommodation spaces and service spaces should be arranged in accordance with the provisions of SOLAS regulations II-2/13.3.1, 3.2 and 3.4.

11.4 Means of escape from machinery spaces should be in accordance with the provisions of SOLAS regulations II-2/13.4.1 and 4.3.

11.5 Means of escape from special category and open ro-ro spaces to which any passenger carried can have access should be in accordance with the provisions of SOLAS regulation II-2/13.5.

11.6 At least two means of escape should be provided in ro-ro spaces where the crew are normally employed. The escape routes should provide a safe escape to the lifeboat and liferaft embarkation decks and should be located at the fore and aft ends of the space.

11.7 Additional escape routes should be provided on ro-ro passenger ships in accordance with the provisions of SOLAS regulation II-2/13.7.

12 Operational readiness and maintenance

12.1 At all times while the ship is in service the effectiveness of the fire safety measures with which the ship is provided should be maintained and monitored. The fire protection systems and firefighting systems and appliances should be maintained ready for use and should be properly tested and inspected. A ship is not in service when it is in port for repairs or lay-up, or in dry-dock, declared not in service by the owner and there are no passengers on board.

12.2 The ship's operational readiness and maintenance and testing arrangements should be in accordance with the provisions of SOLAS regulations II-2/14.2.1 and 2.2.

12.3 Ships carrying more than 36 passengers should develop a maintenance plan for low-location lighting and public address systems.

13 Instructions, onboard training and drills

13.1 The consequences of fire should be mitigated by means of proper instructions for training and drills of persons on board in correct procedures under emergency conditions. The crew should have the necessary knowledge and skills to handle fire emergency cases, including passenger care.

13.2 The instructions duties and organization, onboard training and drills, training manuals and fire control plans should all be in accordance with the provisions of SOLAS regulation II-2/15.2 and 3.

14 Operations

14.1 Instructions for proper ship and cargo handling operations in relation to fire safety should be provided on board in fire safety operational booklets. The booklets should include information concerning the crew's responsibilities for general fire safety of the ship while loading and discharging cargo and while underway and the necessary safety precautions for handling general cargoes should be explained.

14.2 The fire safety operational booklet should be provided in each crew mess room and recreation room or in each crew cabin and be written in the working language of the ship. The booklet may be combined with the training manuals on firefighting operations.

15 Alternative design and arrangements

Alternative design and arrangements should be considered and approved in accordance with the provisions of SOLAS regulation II-2/17.

16 Helicopter facilities

16.1 Ships fitted with special facilities for helicopters should have helideck structures adequate, firefighting appliances provided and refuelling and hanger facilities to provide the necessary measures, to protect the ship from the fire hazards associated with helicopter operations. Operation manuals and training should be provided.

16.2 Ships equipped with helidecks should comply with the provisions of SOLAS regulation II-2/18 and ships without helidecks where helicopters land or conduct winching operations on an occasional or emergency basis, firefighting equipment fitted in accordance with the provisions of paragraphs 5 to 9 should be made readily available in close proximity to the landing or winching area during helicopter operations.

17 Carriage of dangerous goods

The carriage of dangerous goods in packaged form, identified as such in the IMDG Code, should be in accordance with the provisions of part A of chapter VII of SOLAS.

18 Protection of vehicle, special category and ro-ro spaces

18.1 In ships fitted with vehicle, special category and ro-ro spaces, additional fire protection systems should be provided to adequately protect the ship from the fire hazards associated with, and ignition sources separated from vehicle, special category and ro-ro spaces. Such spaces should be adequately ventilated.

18.2 The protection of vehicle, special category and ro-ro spaces. Such spaces should be in accordance with the provisions of SOLAS regulation II-2/20.

CHAPTER 7

LIFE-SAVING APPLIANCES AND ARRANGEMENTS

1 General

1.1 All ships should be fitted with and carry life-saving equipment of the type and quantity appropriate to the size of ship, area of operation and availability of search and rescue services, which would ensure that persons in distress or danger can survive and be rescued.

2.2 Life-saving equipment include the following:

- survival craft;
 - lifeboats
 - rescue boats
 - liferafts
 - buoyant apparatus
- personal life-saving appliances;
 - lifebuoys
 - lifejackets
 - immersion suits and thermal protective aids
- communications;
 - radio communications
 - radar transponders
 - distress flares
 - line-throwing appliances.

2 Approval of life-saving appliances and arrangements and their equipment

The life-saving appliances and arrangements should be approved by the Administration. Before granting such approval the Administration should ensure that the life-saving appliances and arrangements and their equipment comply with the requirements of the LSA Code or a standard approved by the Administration.

3 Retro-reflective tapes for life-saving appliances

All rescue boats or liferafts, buoyant apparatus, immersion suits, life jackets and lifebuoys should be fitted with retro-reflective tapes in a manner considered satisfactory by the Administration, consistent with the *Recommendation on the Use and Fitting of Retro-reflective Materials on Life-saving Appliances* (resolution A.658(16)).

4 Survival craft

4.1 Ships should carry one or more survival craft having a total capacity sufficient to carry all persons on board. Where the survival craft and their launching appliances are not accessible from both sides of the ship, additional life-saving appliances should be fitted as required by the Administration.

4.2 The stowage of survival craft should be such that they are readily accessible to seafarers for launching, or be provided with a remotely operated device that releases the survival craft; they can be released manually from their securing arrangements if required; provided with means to prevent inadvertent movement of the survival craft in relation to its stowage arrangements; and any protective covers will not interfere with launching and embarkation.

4.3 Survival craft which are not stowed under davits or equivalent systems should be stowed such that they are secured to the ship by hydrostatic release units.

4.4 Buoyant apparatus should be attached permanently to the ship by a painter and float free unit. The weak link used in the float free unit should have a breaking strain which is less than that of the painter.

5 Personal life-saving appliances

5.1 Lifebuoys, at least one of which should be fitted with a lifeline, should be installed on board at readily accessible positions for all persons on board and should be capable of being rapidly cast loose and not be permanently secured in any way.

5.2 Ships should have on board a sufficient number of life jackets for every person on board the ship, and in addition, have a sufficient number of lifejackets for persons on watch. A number of lifejackets suitable for children equal to at least 10% of the number of passengers on board should be provided or as many as may be required to provide a lifejacket for each child. Unless provided otherwise, lifejackets should be stored in convenient places distributed throughout accommodation spaces and marked to the satisfaction of the Administration.

5.3 An immersion suit or an anti-exposure suit of appropriate size should be provided for every person assigned to crew the rescue boat or assigned to the marine evacuation system party. Protective clothing need not be carried where the ship operates constantly in warm climates.

6 Onboard communications and alarm systems

6.1 Ships should carry on board an emergency means of two-way communication, comprised of either fixed or portable equipment or both, provided for between the operating station and strategic positions on board and a general emergency alarm system capable of giving the signal to go to muster stations on the ship's siren or whistle supplied by the main or emergency source of power. The system should be capable of being controlled from the ship's bridge and should be audible in all accommodation and spaces used by the crew and on all open decks.

6.2 Ships should be equipped with a fixed installation public address system operable from the operating station, which should be audible during normal operating conditions throughout the accommodation spaces and all other spaces normally manned by crew members. On small ships a battery powered bullhorn may serve as the public address system where it can be demonstrated to be audible throughout the accommodation spaces of the ship during normal operating conditions. Where the Administration is satisfied that a public announcement made from the operating station without amplification can be heard throughout the accommodation spaces of the ship during normal operating conditions a public address system may not be required.

7 Radar transponders

Ships should carry at least one radar transponder stowed in such locations that they can be rapidly placed on any survival craft.

8 Distress flares

Distress flares and smoke signals complying with the provisions of the LSA Code should be carried on board and stowed on or near the navigation bridge.

9 Line throwing appliances

A line throwing appliance complying with the provisions of the LSA Code should be carried on board.

10 Operational readiness, maintenance and inspections

10.1 All life-saving appliances should be in working order and ready for immediate use before the ship leaves port and at all times during the voyage and each deck where survival craft or rescue boats are stowed or boarded should be kept clear of obstructions that could interfere with the boarding and launching of the survival craft or rescue boat.

10.2 All life-saving equipment should be maintained in accordance with the manufacturer's instructions and to the satisfaction of the Administration. Instructions for maintenance of survival craft should be exhibited and maintenance carried out in accordance with such instructions.

10.3 Survival craft and launching appliances should be visually inspected to ensure that they are ready for use and the general emergency alarm system tested at weekly intervals.

10.4 An inspection of the life-saving appliances, including lifeboat equipment, should be carried out monthly using a checklist to ensure that they are complete and in good order and a report of the inspection should be entered in the logbook.

10.5 Inflatable survival craft should be serviced at intervals not exceeding twelve months at a servicing station approved by the Administration, but the Administration may increase the service interval up to seventeen months in cases where it is difficult to have these appliances serviced within the recommended time frame.

10.6 Hydrostatic release units, other than disposable hydrostatic release units, should be serviced at intervals not exceeding twelve months in a servicing station approved by the Administration, but the Administration may increase the service interval up to seventeen months in cases where it is difficult to have these appliances serviced within the recommended time frame.

11 Training and abandon ship drills

11.1 The master should conduct sufficient drills and give sufficient instructions to make sure that all seafarers are familiar with their duties during emergencies that necessitate abandoning ship or the recovery of persons who have fallen overboard.

11.2 Each abandon ship drill should include summoning the seafarers to report to assigned stations and prepare for assigned duties, and on a ship on an overnight voyage, summoning passengers to muster stations or embarkation stations and ensuring that they are made aware of how the order to abandon ship will be given; checks should be made to ensure that lifejackets are correctly worn; and instructions given on the automatic and manual deployment of survival craft.

11.3 Each abandon ship drill should, as far as practicable, be conducted as if there were an actual emergency.

11.4 Muster stations and embarkation stations for lifeboats should be provided with lighting supplied by the emergency source of power.

11.5 Every crew member should be trained in launching and manoeuvring life-saving appliances and once each month, where reasonable and practicable, but at least once within a three month period before the ship gets underway with passengers, each rescue boat where provided, should be launched and manoeuvred in the water as if during an actual man overboard situation.

11.6 The instructions for use of life-saving appliances and arrangements should be exhibited at muster stations and common crew areas.

11.7 Every crew member should participate in at least one abandon ship drill and one fire drill every month, each drill being the occasion of a training session on the use of the corresponding equipment.

11.8 The conduct of the drills and corresponding training should be recorded in a log specified by the Administration.

12 Record of passengers

The master of a ship should keep an accurate list of all persons who embark on and disembark from the ship. For short and repetitive voyages the Administration may require that only the number of passengers on board be recorded. The passenger list or the passenger count should be deposited ashore in a manner provided for by the Administration.

13 Passenger safety

13.1 Before getting underway on a voyage where passengers are carried, the master of a ship should ensure that suitable public announcements are made informing all passengers of the following, as applicable to the ship's operations and arrangement:

- a general explanation of emergency procedures;
- the location of emergency exits and survival craft embarkation areas;
- the stowage location of lifejackets;
- the proper method of putting on and adjusting lifejackets of the type carried on the ship including a demonstration of the proper donning of a lifejacket;
- the location of the instruction placards for lifejackets and other lifesaving devices; and
- that all passengers will be required to wear lifejackets when possible hazardous conditions exist, as directed by the master.

13.2 As an alternative to the public announcements the master or other designated person may, prior to getting underway:

- deliver to each passenger or, on a ship that has seats for each passenger, place near each seat, a card or pamphlet that has the information which would have been given in the public announcements; and
- make an abbreviated announcement consisting of a statement that:
 - passengers should follow the instructions of the crew in an emergency;
 - the location of lifejackets; and
 - further information concerning emergency procedures including the donning of lifejackets, location of other emergency equipment, and emergency evacuation procedures are located on the card or pamphlet that was given to each passenger or is located near each seat.

13.3 Where the Administration determines that the announcements are not practical due to the ship's unique operation, ships operating on short runs may substitute bulkhead placards or signs for the passenger announcements required.

CHAPTER 8

RADIOCOMMUNICATIONS

1. Maritime radiocommunications

1.1 Every ship, while at sea, should be equipped with radio installations which, throughout the duration of the intended voyage, would be capable of:

- .1 transmitting ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service,
- .2 receiving shore-to-ship distress alerts,
- .3 transmitting and receiving ship-to-ship distress alerts,
- .4 transmitting and receiving search and rescue coordinating communications,
- .5 transmitting and receiving on-scene communications,
- .6 transmitting and, where applicable, receiving signals for locating,
- .7 transmitting and receiving maritime safety information,
- .8 transmitting and receiving general radiocommunications to and from shore-based radio systems or networks, and
- .9 transmitting and receiving bridge-to-bridge communications.

2 Radio installations

2.1 Radio installations should be located to prevent harmful interference of mechanical, electrical or other origin that would affect its proper use or that of other equipment and ensure the greatest possible degree of safety and operational availability.

2.2 Radio installations should be protected against the harmful effects of water, extremes of temperature and other adverse environmental conditions; be provided with reliable, efficient and permanently installed electric lighting and be clearly marked with the call sign, the ship station identity and other codes as applicable.

2.3 Control of the VHF radiotelephone channels, required for navigational safety, should be immediately available at the operating station.

3 Equipment availability

3.1 Radio equipment should be maintained to ensure its availability and fitness for the intended service.

3.2 Adequate information should be provided to enable the equipment to be properly operated and maintained.

3.3 The availability of the radio equipment should be ensured by duplication of equipment or shore-based maintenance.

4 Radio watch

Every ship, while at sea, should maintain a continuous watch on the distress frequencies and for broadcasts of maritime safety information on the appropriate frequency or frequencies on which such information is broadcast for the sea area in which the ship is navigating.

5 Radio personnel

Ships should carry personnel qualified to operate the radio installations on board. These persons should be holders of certificates specified in the Radio Regulations as appropriate, any one of whom should be designated to have primary responsibility for radiocommunications, especially during distress incidents.

6 Radio records

A record (radio log) should be kept on board of all incidents connected with the radiocommunication service which appear to be of importance to the safety of life at sea and prevention of pollution.

CHAPTER 9

SAFETY OF NAVIGATION

1 General

1.1 The safety of navigation depends on a number of factors which include:

- the ready availability of navigational information about the ship and its movement in the water, charts and nautical publications, and any operational limitations of the ship;
- the ability to see or detect other ships and navigational hazards;
- the ability to be seen or detected by other ships;
- a plan for the intended voyage;
- equipment for anchoring and mooring the ship;
- facilities and procedures for embarking and disembarking persons alongside and at sea;
- plans and documents, and ship stores and spares to facilitate emergency repairs; and
- knowledge of obligations and procedures applicable in distress situations, and life-saving signals used by ships, aircraft or persons in distress to facilitate rescue.

1.2 The systems fitted and navigational equipment and charts and publications carried on board to facilitate the safety of navigation should be approved by the Administration and be of a type and quantity appropriate to the size of ship, area of operation and availability of search and rescue services in the ship's area of operation.

1.3 Ships, while at sea, should carry the equipment, instruments and nautical documents that the Administration is satisfied are necessary and reasonable for the safety of the ship. Adequate arrangements should be in place to ensure that the performance of the equipment required by the Administration is maintained.

1.4 The Administration may require additional navigation, control or communication equipment on a ship which is of a novel design, operates at high speeds in restricted or high traffic areas, or which operates on extended routes or in remote locations.

1.5 The design of the bridge and the design and arrangement of navigational systems and equipment on the bridge should facilitate the tasks to be performed on the bridge in navigating the ship safely under all operational conditions.

1.6 Electrical and electronic equipment in the bridge or in the vicinity of the bridge should be so installed that electromagnetic interference does not affect the proper function of navigation systems and equipment, and portable electrical and electronic equipment should not be operated on the bridge if it may affect the proper function of navigational systems and equipment.

2 Shipborne navigational equipment

2.1 The shipborne navigational equipment required by the Administration should include radar, position fixing device, compass, speed log, echo sounder, various nautical instruments, charts and publications and miscellaneous equipment which include various flags and pennants.

2.2 Provision should be made for the magnetic compass deviation card to be renewed annually and spares and equipment to be carried for the maintenance of the gyrocompass where fitted.

2.3 Provision should be made for carriage of extracts from the required publications for the areas to be transited instead of the complete publication where appropriate or carriage of the publications in electronic format.

2.4 An Electronic Chart Display and Information System (ECDIS) may be carried in lieu of the charts required, provided it is fully compliant with the requirements of the Administration and all persons involved in its use are appropriately trained.

3 Preventing collisions at sea; navigation lights, shapes and sound signals

3.1 Ships should comply with the requirements of the COLREG Convention. They should carry an illustrated table summarizing the lights and signals to be carried by ships to prevent collisions at sea and an illustrated table of the International Code of Signals which should be exhibited on the bridge.

3.2 Ships should be provided with the navigation lights and other visual and audible means of signalling required by the COLREG Convention applicable to their type and size, which should be of an approved type.

3.3 Navigation lights should be duplicated or emergency lights should be provided and the whistle required should be capable of being supplied by two sources of power

3.4 The lamps should be controlled from a lighting switchboard in the wheelhouse or other control post, equipped with a switch and indicator light and no obstacle should interfere with the projection of the sound forward.

4 Automatic Identification System (AIS)

The Administration should determine the ships to be fitted with an automatic identification system in compliance with the requirements of SOLAS regulation V/19.2.4.

5 Operational limitations

A list of all limitations on the operation of the ship, including restrictions in operating areas, weather restrictions, sea state restrictions, restrictions in permissible loads, trim, speed and any other limitations, whether imposed by the Administration or established during the design or building stages, should be compiled before the ship is put in service. The list, with any necessary explanations, should be documented in a form acceptable to the Administration, kept updated, and kept on board readily available to the master.

6 Safe navigation and avoidance of dangerous situations

6.1 Prior to proceeding to sea, the master should ensure that the intended voyage has been planned using the appropriate nautical charts and nautical publications for the area concerned, taking into account the *Guidelines for voyage planning* adopted by resolution A893(21).

6.2 The voyage plan should identify a route which:

- takes into account any relevant ship's routing systems;
- ensures sufficient sea room for the safe passage of the ship throughout the voyage;
- anticipates all known navigational hazards and adverse weather conditions; and
- takes into account the marine environmental protection measures that apply and avoids, as far as possible, actions and activities which could cause damage to the environment.

7 Distress situations: obligations and procedures

The obligations and procedures with respect to distress situations, identified in SOLAS regulation V/33, should be taken into account when such situations occur.

8 Life-saving signals to be used by ships, aircraft or persons in distress

An illustrated table describing the life-saving signals to be used by ships or persons in distress when communicating with life-saving stations, maritime rescue units and aircraft engaged in search and rescue operations, should be readily available to the officer of the watch. The life-saving signals are described in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, Volume III, and illustrated in the International Code of Signals.

9 Anchoring and mooring equipment

Ships should be provided with anchoring and mooring equipment, to the satisfaction of the Administration, of a quantity and size appropriate to the size and type of ship for use under all operating conditions.

10 Pilot transfer arrangements and safe ship/shore access

10.1 Equipment and arrangements for pilot transfer should be in accordance with the provisions of SOLAS regulation V/23.

10.2 Equipment, to a standard approved by the Administration, should be provided to allow the safe movement of persons on or off a ship tied up alongside a wharf or jetty or a boat alongside. The equipment provided should facilitate also the counting and identification of persons arriving or departing the ship.

11 Plans and documents to be carried on board

The Administration should determine the plans and documents to be carried on board, which should be in the working language of the crew.

12 Ship's log

12.1 Ships should maintain a ship's log, with numbered pages and initialled with all entries being made in ink and signed each day by the master. The navigation log, the engine-room log and the radio log should constitute the ship's log. These logs may be replaced by a single ship's log in which should be recorded the main events relating to the voyage and safety of life at sea.

12.2 All entries should be in chronological order and the detail of the entries required should be identified.

13 Ship's stores and spare parts

13.1 Ships should be provided with equipment such as ropes, hawsers, towlines, etc. allowing it to receive assistance, if necessary.

13.2 Spare parts for the main and auxiliary engines, steering gear and manoeuvring gear should be determined by the Administration or the recognized organization during the initial survey, taking into account section 4/23.

13.3 The stores and spares required to be carried on board should be identified.

14 Steering gear: testing and drills

Steering gear should be operated, tested, and drills conducted in accordance with the provisions of SOLAS regulations V/25 and 26.

CHAPTER 10

PREVENTION OF POLLUTION

1 Ship design, construction and operation

1.1 Ships should be safe and environmentally friendly. Their fuel oil tanks should be so located as to minimize any risk of accidental pollution.

1.2 Ships should be managed and run under specified operating and environmental conditions.

1.3 Any discharge which presents a threat to the marine environment should be carried out under management standards and procedures acceptable to the Administration.

1.4 Ships should comply with the requirements of the MARPOL Convention, where applicable.

2 Discharge into the sea

2.1 Discharge into the sea of oil or oily mixtures from ships should be prohibited, except when the provisions specified in regulation 15 of MARPOL Annex I are satisfied.

2.2 Discharge of garbage into the sea should be prohibited, except when the provisions specified in regulations 3 to 7 of MARPOL Annex V are satisfied.

2.3 Discharge of sewage into the sea should be prohibited, except when the provisions specified in Regulation 9 of MARPOL Annex IV are satisfied.

2.4 Emissions from ships, as defined in regulation 2-7 of MARPOL Annex VI, should be prohibited except when the provisions specified in regulations 12 to 16 of that Annex are satisfied.

3 Retention on board

3.1 Ships should be provided with adequate capacities to make it possible for them to store on board any substance they are not allowed to discharge into the atmosphere or sea under section 2.

3.2 Ships should be provided with a tank or tanks of adequate capacity, having regard to the type of machinery and length of voyage, to receive the oil residues (sludge) which cannot be discharged in accordance with the requirements of paragraph 2.1.

3.3 The crew and passengers should be notified, by placards or another information mode, of the disposal prohibition defined in paragraph 2.2. They should be informed of the locations where garbage they generate may be stored on board.

3.4 Ships should be equipped with a holding tank of an adequate capacity for the retention of all sewage, having regard to the operation of the ship, the number of persons on board and other relevant factors. The holding tank should have a means to indicate visually the amount of its contents.

4 Disposal ashore and record keeping

4.1 Substances or garbage that are retained on board should be disposed of ashore in accordance with the relevant national or local regulations.

Ships should be fitted with adequate discharge connections for disposal ashore of liquid oily substances or sewage.

4.2 Record should be kept in the ship's log book of any discharge of oil or oily substances:

- .1 either at sea in accordance with paragraph 2.1, with an indication of the amount discharged and conditions;
- .2 or in a shore reception facility, the receipt being kept as evidence.

CHAPTER 11

OCCUPATIONAL SAFETY AND CREW ACCOMMODATION

PART A – OCCUPATIONAL SAFETY

1 Accident prevention

1.1 Appropriate provisions should be taken for the prevention of occupational accidents or diseases, covering in particular the following matters:

- machinery;
- special safety measures on and below deck;
- loading and unloading equipment;
- fire prevention and firefighting;
- anchors, chains and lines;
- dangerous cargo and ballast; and
- personal protective equipment for seafarers.

1.2 Any obligation on the shipowner to provide protective equipment or other accident prevention safeguards should be accompanied by written instructions posted in the appropriate locations, to the effect that such equipment and safeguards are actually used by seafarers when exposed to specific risk.

2 Safety of movement on board

2.1 Ships should be so fitted out that the crew can move about and work easily. Where necessary, moving parts and openings in the deck should be protected by safety devices, plating, guard rails and handrails. Winches and towing hooks should be designed to ensure safety at work. All installations required for work on board should be so designed, sited and protected as to make onboard manoeuvres, maintenance and repairs safe and easy.

2.2 Decks in the vicinity of winches and bollards, as well as side-decks, engine-room floors, landings, companionways and the top of the side-deck bollards should be non-slip.

2.3 The tops of side-deck bollards and any obstacles in areas where crew move about (e.g. the treads of companionways), should be marked by light-coloured paint.

2.4 The size and arrangement of passageways, accesses and corridors for the movement of persons and cargo should be such that they may be negotiated without risk of accident.

2.5 The design and layout of doors should be such as not to endanger the persons opening or closing them.

2.6 Structures for passage from one level to another, particularly companionways, ladders and rungs should be such that their use is free of hazard.

3 Safety of working stations

3.1 Working stations should be readily and safely accessible. They should be of such dimensions that each crew member working in them has adequate freedom of movement.

3.2 Closed spaces in which work is carried out, with the exception of storerooms, should be ventilated, either naturally or mechanically.

3.3 Working stations close to the water or in positions involving differences in level of more than 1 metre should be equipped so as to prevent crew slipping or falling.

4 Lighting in working spaces and areas

4.1 All companion-ways, doors or other means of access should be illuminated on both sides of the opening to facilitate safe passage.

4.2 All passageways and working spaces and areas should be provided with artificial lighting.

4.3 Provision should be made for some form of emergency lighting, which is independent of the normal supply.

4.4 Where necessary to prevent danger, electric lamps should be protected by guards.

PART B – CREW ACCOMMODATION

5 General

5.1 This part is relevant for ships engaged in overnight voyages, or where the crew is required to sleep and eat on board. The relevant requirements of the Maritime Labour Convention, 2006 should be complied with, as appropriate.

5.2 Location, structure and arrangement of crew accommodation spaces and means of access thereto should be such as to ensure adequate safety, protection against weather and sea and insulate from heat and cold, condensation, undue noise, vibration or effluvia from other spaces. Sleeping rooms should be placed aft the collision bulkhead.

5.3 Bulkheads and decks between accommodation spaces and machinery spaces, fuel tanks, galleys, engine, deck and other store rooms, drying rooms, communal wash-places or water closets should be so constructed as to prevent the infiltration of fumes and odours. Direct openings into sleeping rooms from such places should be avoided whenever reasonable or practicable.

5.4 Where passageways are provided in crew accommodation these should be as wide as possible. Where doors open outwards into a passageway, there should be sufficient space to pass the door when it is open at a right angle to the passageway.

5.5 Where appropriate, access to ordinary exits and emergency exits should be marked with direction indicators. Exits should be marked in a conspicuous manner above or beside the door.

5.6 Where the deck covering is of composition material, the connection to the side of the ship, bulkheads and partitions should be rounded to avoid crevices.

6 Lighting, heating and ventilation

6.1 All crew accommodation spaces should be adequately lighted, as far as possible, by natural lighting. Such spaces should also be equipped with adequate artificial light, such as to permit a person with normal vision to read an ordinary newspaper.

6.2 Where there are no two independent sources of electricity for lighting, additional lighting should be provided by properly constructed lamps or lighting apparatus for emergency use.

6.3 Methods of lighting should not endanger the health or safety of the crew or the safety of the ship.

6.4 Adequate heating facilities in crew accommodation spaces should be provided as required by climatic conditions. Heating by means of open fires is prohibited.

6.5 Accommodation spaces should be adequately ventilated at all times when the crew is expected to remain on board. The ventilation of galleys and sanitary spaces should be to the open air and, unless fitted with a mechanical ventilation system, be independent from that for other crew accommodation. Drying rooms or lockers for working clothes and oilskin lockers should have adequate ventilation that is separate from other spaces. The exhaust from such spaces should be well clear of the air intakes of the ventilation systems for other spaces.

7 Sleeping rooms

7.1 Sleeping rooms should be so planned and equipped as to ensure reasonable comfort for the occupants and to facilitate tidiness. The floor area of sleeping rooms should be sufficient.

7.2 Each member of the crew should be provided with an individual berth of sufficient dimensions. Berths should not be placed side by side in such a way that access to one berth can be obtained only over another. Berths should not normally be arranged in tiers of more than two.

7.3 Suitable bedding should be provided for the crew. Mattresses should not be of a type that is liable to develop toxic fumes in cases of fire nor of a type that will attract pests or insects. Mattresses should be provided with a cover of fire retardant material.

7.4 The furnishings of sleeping rooms should be sufficient to ensure decent living condition, having regard to the size, type or intended service of the ship.

7.5 The maximum number of persons to be accommodated in any sleeping room should be clearly and indelibly marked in the room where it can be conveniently seen.

8 Mess rooms

8.1 Wherever reasonable and practicable, mess room accommodation separate from sleeping quarters should be provided.

8.2 The furnishings of mess rooms should be sufficient for the number of persons likely to use them at any one time.

9 Sanitary facilities

9.1 Sufficient sanitary facilities, including wash-basins, shower-baths and water-closets, should be provided, having due regard to the intended service of the ship

9.2 Soil and waste discharge pipes should not pass through fresh water or drinking water tanks or, where practicable, provision stores. Such pipes should be fitted with anti-syphon closures.

9.3 In general, water-closets should be situated convenient to, but separate from, sleeping rooms, mess rooms and washrooms.

9.4 The deck area of wash places should have a covering of durable material, easily cleaned, impervious to damp and properly drained. The deck covering should be adequately sealed at all joints to prevent the ingress of water and damp.

9.5 The bulkheads should be watertight to a height of at least 0.25 m above the deck to allow for effective sealing of the deck covering where it meets the bulkheads.

10 Potable water facilities

Filling, storage and distribution arrangements for potable water should be designed to preclude any possibility of water contamination or overheating. Tanks should be designed to allow internal cleaning.

11 Cooking facilities

Having regard to the intended service of the ship, satisfactory cooking appliances and equipment should be provided and should, wherever practicable, be fitted in a separate galley.

12 Medicine chest, radio-medical services

12.1 First aid equipment and instructions should be provided in ships. Appropriate instructions and equipment should be provided to enable appropriate personnel to consult effectively with radio-medical services ashore.

12.2 Ships should carry an appropriate medical guide or instructions, so as to enable persons other than a doctor to care for the sick or injured on board both with and, if necessary, without medical advice by radio or satellite communication.

12.3 The medicine chest should contain equipment and medical supplies suitable for the expected service of the ship. It is to be ensured that medicines are not outdated.

CHAPTER 12

PASSENGER SAFETY, PASSENGER ACCOMMODATION, PASSENGER REGISTRATION

1 Passenger capacity

1.1 The maximum number of passengers permitted in any passenger ship should be the greatest number permitted by any of the following criteria or combination of these criteria:

- a) length of rail at the periphery of the deck, not including rail space in congested areas, on stairways and where persons standing in the space would block the vision of the ship's operators;
- b) free deck area available for the passengers' use;
- c) fixed seating.

The Administration should specify the respective length of rail, free deck area and width of fixed seating to be allowed for one passenger.

1.2 Different passenger capacity criteria may be used on each deck of a ship and added together to determine the maximum number of passengers to be carried on that ship. Where seats are provided on part of a deck and not on another, the number of passengers permitted on a ship may be the sum of the number permitted by the seating criterion for the space having seats and the number permitted by the deck area criterion for the space having no seats. The length of rail criterion may not be combined with either the deck area criterion or the fixed seating criterion when determining the maximum number of passengers permitted on an individual deck.

1.3 The maximum number of passengers carried on board a passenger ship should not exceed the number identified on the certificate.

1.4 The Administration may give special consideration to increasing the passenger allowances for a ship operating on short runs on protected waters, such as a ferry.

2 Passenger accommodation

2.1 All passenger accommodation should be arranged and equipped to provide for the safety of the passengers in consideration of the route, modes of operation and speed of the ship.

2.2 The height of deckheads in a passenger accommodation space should be at least 1.9 metres but may be reduced at the sides of a space to allow for camber, wiring, ventilation ducts and piping. The space should be maintained to minimize fire and safety hazards and to preserve sanitary conditions. Aisles should be kept clear of obstructions.

2.3 A berth to the satisfaction of the Administration should be provided for each passenger to be carried in overnight accommodation spaces.

2.4 A seat should be provided for each passenger permitted in a space for which the fixed seating criterion in paragraph 1.1 has been used to determine the number of passengers permitted. A seat should be constructed to minimize the possibility of injury and avoid trapping occupants. Installation of seats should provide for ready escape. Seats, including fixed, temporary or portable seats, should be arranged so as to allow sufficiently wide aisles and sufficient distance from seat front to seat front.

2.5 Seats identified in the determination of the maximum number of passengers permitted should be secured to the deck, bulkhead or bulwark by effective permanent or temporary means.

3 Passenger registration

3.1 All persons on board a ship which departs from a port should be counted before departure. To that effect, companies should set up and implement an adequate system for counting all persons getting on board before departure of this ship. The system should be approved by the Administration.

3.2 Before departure, the number of persons on board should be communicated to the master and to the company's passenger registrar or to a shore-based company system that performs the same function.

3.3 For a passenger ship that departs to undertake a voyage of more than twenty miles, the following information should be recorded regarding every person on board:

- family names;
- forenames or initials;
- sex;
- category of age (adult, child or infant), or year of birth; and
- when volunteered by a passenger, information concerning the need for special care or assistance in emergency situations.

3.4 The master should ensure before departure that the number of persons on board does not exceed the number the ship is authorized to carry.

3.5 The company of any ship arriving from a foreign port should ensure that the information on the number of passengers on board, as well as the information required in paragraph 3.3 where relevant, are collected and maintained so that it is available to the designated authority when needed for purposes of search and rescue and in the aftermath of an accident.

3.6 The Administration may verify the satisfactory operation of the approved registration system.

3.7 The Administration may exempt passenger ships operating exclusively in protected sea areas or on regular services of less than one hour between port calls from the above requirements or from any part of them.

CHAPTER 13

CARRIAGE OF CARGOES

1 Carriage of packaged dangerous goods

1.1 The carriage of dangerous goods on board passenger ships should be subject to authorization by the Administration.

Prior to packaged dangerous goods being carried, the ship should be surveyed and shown to be suitable for the carriage of packaged dangerous goods. Following the survey, the Administration should specify which classes of goods, as defined in the IMDG Code, can be carried, with a list of equipment fitted.

The packing, stowage and segregation requirements of the IMDG Code should be followed.

1.2 In the spaces where packaged dangerous goods are stowed:

- the scupper and drainage arrangements are to be directed overboard with no connections to internal spaces,
- electrical equipment should be of the certified safe type for the cargo being carried, or be capable of being securely isolated,
- fire bulkheads forming boundaries containing fuel tank and engine spaces should be insulated to A-60 standard,
- there should be an immediate availability of appropriate extinguishing means.

1.3 The crew should undergo training in the carriage of dangerous goods and the IMDG Code, and records kept of the training undertaken.

1.4 When packaged dangerous goods are carried, details of the emergency firefighting equipment and first aid medical procedures should be provided on board, with additional equipment if required under the IMDG Code, to ensure that if an emergency occurs, it can be dealt with effectively.

1.5 When carrying packaged dangerous goods, a full manifest of the cargo should be retained ashore by the shipowner, or other designated person, in case of an incident.

1.6 The carriage of goods of IMDG Classes 2.3, 4, 5, 6.2, 7 and 8 should be prohibited.

1.7 Ship stores, which are dangerous goods but carried for use during the voyage are exempt from the requirements of this section, but should be used and stowed appropriately.

2 Cargo securing

2.1 The carriage on board passenger ships of vehicles, containers or other cargo units may be authorized by the Administration.

Such cargoes should be so loaded, stowed and secured as to prevent as far as is practicable, throughout the voyage, damage or hazard to the ship and the persons on board, and loss of cargo overboard. All steps should be taken to ensure that the stability of the ship is not dangerously affected by possible movement of cargo. IMO resolution A. 714(17) should be used for guidance.

CHAPTER 14

MANNING, TRAINING AND CERTIFICATION

1 Safe manning

1.1 The number and qualifications of the crew should be sufficient for the safe operation and security of the ship and for the protection of the marine environment.

1.2 The minimum authorized number of crew for a ship in defined navigation and operation conditions should be prescribed by the Administration, upon a proposal by the shipowner, taking account of the regulations on the maximum duration of work on board, and of characteristics and conditions for the operation of the ship.

1.3 The minimum authorized number of crew may be revised by the Administration upon a justified request by the shipowner or master, or by crew members.

1.4 The safety certificate, or a separate safe manning document, should specify the minimum number of persons of each category in relation to the different functions on board.

1.5 No underage person should work on a ship, in accordance with the STCW Convention.

1.6 The work organization on board should be posted at a visible place in the accommodation spaces. It should be compliant with the national regulations or standards on the minimum hours of rest or maximum hours of work for seafarers.

2 Qualification of seafarers

2.1 The required conditions for carrying out the different duties on board a ship, and the conditions and procedures for issuance of certificates of competency, should be defined in national regulations, in accordance with the STCW Convention.

2.2 Seafarers should not work on a ship unless they are certified as medically fit to perform their duties.

2.3 Ships under the scope of application of the MLC Convention should carry a Maritime Labour Certificate and Declaration of Maritime Labour Compliance.

3 Training, exercises and drills

3.1 Seafarers should not work on a ship unless they are trained or certified as competent or otherwise qualified to perform their duties.

3.2 The shipowner should ensure that all officers and ratings receive, further to their familiarization training, continued training including exercises and drills. The records of such training should be kept current on board, at least in the following areas:

- fire prevention and firefighting, as recommended in section 6/13 of chapter 6,
- operation of life-saving appliances and abandon ship, as recommended in section 11 of chapter 7,
- first aid,
- survival at sea,
- steering gear tests and drills, in accordance with SOLAS regulation V/26 ,
- security risks and security management, as recommended in section 5 of chapter 16,
- their respective responsibilities in emergencies.

CHAPTER 15

SAFETY MANAGEMENT

1 General

Every Company that operates one or several passenger ships should:

- provide for safe practices in ship operation and a safe working environment;
- assess all identified risks to its ships, passengers, personnel and the environment and establish safeguards against them; and
- continuously improve safety management skills of personnel ashore and aboard ships, including preparing for emergencies related both to safety and environmental protection.

2 Safety management system

2.1 The Company should develop, implement and maintain a safety management system in accordance with the ISM Code, appropriate to the size, nature and complexity of its operations and the hazards and risks related to the operations, which should include the following functional requirements:

- a safety and environmental-protection policy;
- instructions and procedures to ensure safe operation of ships and protection of the environment in compliance with relevant international and flag State legislation;
- defined levels of authority and lines of communication between, and amongst, shore and shipboard personnel;
- procedures for reporting accidents and non-conformities with the provisions of the system;
- procedures to prepare for and respond to emergency situations; and
- procedures for internal audits and management reviews.

2.2 The safety management system should be audited and approved by either the Administration or a recognized body.

3 Documentation

3.1 The Company should establish and maintain procedures to control all documents and data, which are relevant to the safety management system.

3.2 The Company should ensure that:

- Valid documents are available at all relevant locations;
- Changes to documents are reviewed and approved by authorized personnel; and
- Obsolete documents are promptly removed.

3.3 Documentation related to the safety management system should be kept in a form that the Company considers most effective. Each ship should carry on board all documentation relevant to that ship.

CHAPTER 16

SECURITY MANAGEMENT

1 General

1.1 The principles put forward in this chapter should be interpreted, taking into account the security environment, the risk related to the operating area and the security risk that may be encountered during the intended voyage, as evaluated by the Administration.

1.2 The Guidelines on Security Aspects of the Operation of Vessels which do not fall within the scope of SOLAS chapter XI-2 and the ISPS Code (MSC.1/Circ.1283), part 1 to the Administration and part 2 to the owners and operators of ships to which these regulations apply, and related facilities, should be utilized.

2 Ship security

2.1 Ships should be searched after having been left unattended to ensure that nothing has been placed aboard or persons concealed thereon for illegal purposes. To the extent possible, checks should include all spaces accessible to non-authorized persons while the ship was unattended, e.g. crew areas, stores, holds, under-water hull.

2.2 Where possible external doors, hatches and storage areas should be kept locked and windows secured while the ship is left unattended, with due regard to the need to facilitate escape in the event of an emergency. If the ship is left unattended for a lengthy period of time such as overnight, it is recommended that the engine is disabled to prevent theft or unauthorized use.

2.3 Measures preventing unauthorized access to ships should be implemented and maintained. Such measures may be:

- over-the-side lighting which gives an even distribution of light on the whole hull and waterline;
- keeping a good watch from the deck;
- challenging all approaching boats; if unidentified, they should, where possible, be prevented from coming alongside; and
- all visitors and contractors should report to the master, or other responsible person, to notify them of their arrival.

2.4 The Administration may require specific measures to be taken with regard to the admission of passengers on board, when circumstances justify it.

3 Contingency measures for security alerts

3.1 Contingency measures should be in place for dealing with emergency navigational and health and safety alerts on board ships. These plans may be adapted to include procedures for security alerts and incidents.

3.2 If a suspicious device or package is found while a ship is at sea the master, when deciding on an appropriate course of action, should take into account:

- the size and location of the device;
- the credibility of the threat;
- the ship's location and the time it will take for security services and other assistance to arrive;
- the need to keep everyone well clear of the suspect device; and
- the need for all on board to keep clear of all doors, trunks and hatches leading from the space containing the device to avoid possible blast injuries.

4 Reporting security incidents

4.1 Procedures and processes for reporting and recording security incidents should be implemented. The master should be provided with contact information for authorities responsible for emergency response, the national response centre(s) (if appropriate) and any other authorities that may need to be notified.

4.2 Reports of security incidents on board a ship should be reported to the master or the person designated by him/her.

4.3 In the event of a security incident occurring while the ship is at sea the master, in addition to activating an appropriate response, should alert the nearest coastal State or authorities and/or ships in vicinity and provide details of the incident.

5 Training

5.1 The master should be made aware of basic security requirements contained in the ISPS Code.

5.2 Every new member of the crew, when embarking on board the ship for the first time, should be briefed on security risks and how to report any suspicious situation he may encounter.

GLOSSARY OF TERMS AND ABBREVIATIONS

"A" class divisions are those divisions formed by bulkheads and decks which comply with the criteria specified in SOLAS regulation II-2/3.2.

The Administration is the relevant person or office, in the maritime administration, who has authority for carrying out a defined duty or making a defined decision.

Authorized means authorized by the Minister or by the Director for carrying out a defined duty or making a defined decision.

"B" class divisions are those divisions formed by bulkheads and decks which comply with the criteria specified in SOLAS regulation II-2/3.4.

Bulkhead deck means the uppermost deck at any point in the subdivision length (L_s) to which the main bulkheads and the ship's shell are carried watertight and the lowermost deck from which passenger and crew evacuation will not be impeded by water in any stage of flooding for damage cases defined in SOLAS regulation II-1/8 and in part B-2 of this chapter. The bulkhead deck may be a stepped deck.

Company means the owner of the ship, or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the shipowner and who, on assuming such responsibility, has agreed to take over all duties and responsibility imposed by the Safety management system.

COLREG Convention is the Convention on the International Regulations for Preventing Collisions at Sea, 1972, as updated.

Control stations are those spaces in which the ship's radio or main navigating equipment or the emergency source of power is located or where the fire recording or fire control equipment is centralized. Spaces where the fire recording or fire control equipment is centralized are also considered to be a fire control station.

Dead ship condition is understood to mean that the entire machinery installation, including the power supply, is out of operation and that auxiliary services such as compressed air, starting current from batteries etc., for bringing the main propulsion into operation and for the restoration of the main power supply are not available.

The Director is the executive officer in charge of ship safety, or the Agency designated under the Maritime Code, under the Minister's authority.

An existing ship is a ship that is not a new ship.

A ferry is a passenger ship that operates only in protected waters, has provisions only for deck passengers or vehicles or both, and operates on a short run on a scheduled service between two or more places.

FSS Code is the international Code for Fire Safety Systems, 2007, as amended.

FRP stands for Fibre-Reinforced Plastic (or fibre-reinforced polymer).

FTP Code is the International Code for the Application of Fire Test Procedures, 2010, as amended.

The *freeboard* assigned is the distance measured vertically downwards amidships from the upper edge of the deck line to the upper edge of the related load line.

The *freeboard deck* is normally the uppermost complete deck exposed to weather and sea, which has permanent means of closing all openings in the weather part thereof, and below which all openings in the sides of the ship are fitted with permanent means of watertight closing. In a ship having a discontinuous freeboard deck, the lowest line of the exposed deck and the continuation of that line parallel to the upper part of the deck is taken as the freeboard deck.

The Guide is this "Guide for Regulating the Safety of Passenger Ships Not Covered by SOLAS".

IEC is the International Electrotechnical Commission. The IEC Standard 60 092 – 302 deals with electrical installations in ships.

ILO is the International Labour Organization.

IMDG Code is the International Maritime Dangerous Goods Code.

IMO is the International Maritime Organization

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.

An *inspection* is any examination by an authorized surveyor of a ship, a part of a ship or an equipment, either scheduled or not, other than a survey.

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.

The *International Code of Signals (ICS)* is an international system of signals and codes for use by ships to communicate important messages regarding safety of navigation and related matters.

ISM Code is the International Safety Management Code, as amended

ISPS Code is the International Ship and Port Facility Security Code, as amended.

The *length (L)* of a ship is 96% of the total length on a waterline at 85% of the least moulded depth measured from the top of the keel, or the length from the fore side of the stem to the axis of the rudder stock on that waterline, if that be greater. In ships designed with a rake of keel the waterline on which this length is measured shall be parallel to the designed waterline.

Lightweight is the displacement of a ship in tonnes without cargo, fuel, lubricating oil, ballast water, fresh water and feed water in tanks, consumable stores, and passengers and crew and their luggage.

LSA Code is the International Life-Saving Appliances Code, as amended.

Marine equipment are any safety or pollution prevention apparatus or appliance or any equipment, installation or material that has to be on board a ship other than a recreational craft when, pursuant to the requirements of the present Regulations, this equipment is required to be of an approved type.

MARPOL Convention is the International Convention for the Prevention of Pollution from Ships, as amended.

The Minister is the minister responsible for maritime transport in the Government.

The *MLC Convention* is the Maritime Labour Convention, 2006, as amended.

A *new ship* means a ship the keel of which is laid or which is at a similar stage of construction on or after the date of entry into force of the applicable regulations.

A *non-convention ship* is an expression, commonly used to designate a ship to which, due to its size and type, is not required under chapter I of SOLAS to carry an International Safety Certificate when engaged on international voyages. Practically, this expression includes any ship other than:

- a) cargo ships of a more than 500 gross tonnage, and
- b) passenger ships.

A *paragraph* in the Guide is a subdivision of a section. A paragraph is numbered with two digits. A reference to paragraph X.Z of Chapter Y is noted "Paragraph Y/X.Z". Where such a reference is made within chapter Y, it is simply noted "Paragraph X.Z".

A *passenger* is every person other than:

- .1 the master and the members of the crew or other persons employed or engaged in any capacity on board a ship on the business of that ship; and
- .2 a child under one year of age.

A *passenger ship* is a ship which carries more than twelve passengers.

Plan approval is the course of action taken in view of the approval by the Administration of the design, construction, equipment and operating conditions of a ship, prior to the initial survey.

Procedural regulations are the regulations that specify the different steps in the process of ship safety certification, including the renewal and maintenance of the certification during the ships' life.

The *Radio Regulations* are the complete texts adopted by the World Radiocommunication Conference (Geneva, 1995) (WRC-95), as updated.

A *recognized body* is an organization or an expert authorized to carry out, on behalf of the Administration, part or all of the surveys and inspections related to the issuance or renewal of the safety certificates.

A *recognized classification society* is a recognized body which is a classification society.

A *renewal 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. The renewal survey leads to the issue of a new certificate.

The *RO code* set by resolutions MSC.349(92) and MEPC.237(65) is an instrument which provides flag States with a standard to assist them in achieving harmonized and consistent global implementation of requirements when assessing and authorizing recognized organizations.

Ro-ro passenger ship means a passenger ship with roll-on/roll-off (ro-ro) spaces or special category spaces as defined in SOLAS regulation II-2/3.

A *Safety management system* is a structured and documented system enabling Company personnel to implement effectively the Company safety and environmental protection policy.

A *section* in the Guide is a subdivision of a chapter. A paragraph is numbered with one digit. Where such a reference is made within chapter Y, it is simply noted "Section X".

The *SOLAS Convention* is the International Convention for the Safety of Life at Sea, 1974, as amended.

The *STCW Convention* is the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended.

The *subdivision length* (L_s) of a ship is the greatest projected moulded length of that part of the ship at or below deck or decks limiting the vertical extent of flooding with the ship at the deepest subdivision draught.

A *survey* is a comprehensive and systematic examination of a ship and its parts, with the view to determine whether a safety certificate can be issued, renewed or endorsed to this ship.

A *surveyor* is a duly qualified officer of the maritime administration, authorized and assigned to carry out surveys and inspections and to issue, renew, endorse or withdraw ship safety certificates. In particular, *the Surveyor* is the competent surveyor in the port of registry of a ship for issuing, renewing or endorsing its safety certificates.

Technical regulations are technical requirements applicable to the different types or categories of ships for their safety, security and pollution prevention, pursuant to the general requirements set out in the Guide.

A *transitional source of emergency electrical power* consists of an accumulator battery, or batteries, for use in an emergency, which operate without recharging while maintaining the voltage of the battery throughout the discharge period, within 12% above or below its nominal voltage. It is of sufficient capacity and so arranged as to supply automatically to the essential services which depend upon an electrical source for their operation, power for half an hour at least in the event of failure of either the main or the emergency source of electrical power.

Watertight means having scantlings and arrangements capable of preventing the passage of water in any direction under the head of water likely to occur in intact and damaged conditions. In the damaged condition, the head of water is to be considered in the worst situation at equilibrium, including intermediate stages of flooding.

Weathertight means that in any sea conditions water will not penetrate into the ship.

ANNEX 2

LESSONS LEARNED FROM MARINE CASUALTIES

1 FATALITY

Very Serious Marine Casualty: Man overboard resulting in a fatality

What happened?

A large containership was at sea, rolling gently to about five degrees. The bosun decided (without being instructed, or requesting permission) to use the ship's gantry crane to shift some steel pipes from the deck to the engine-room. He climbed into the crane [trolley or basket] to remove the safety pins that stopped the trolley from moving while the ship was at sea. As soon as the bosun removed the pins, the trolley began to move in an uncontrolled manner towards the ship's side with the bosun in it. The trolley hit the end stops on the gantry, but they failed to stop the trolley, which, along with the bosun, fell into the sea. Man overboard procedures were initiated and search and rescue operations were launched, but the bosun was not recovered and was presumed dead.

Why did it happen?

- The bosun used the crane without permission of an officer and against the advice of the Able-Seaman who was assisting him.
The crane was being used at five degrees, its design angle of heel limit.
- The safety mechanisms, which should have prevented the crane trolley from leaving the gantry, catastrophically failed.

What can we learn?

- Lifting appliances should not be used without the appropriate permissions required in the ship's safety management system.
- All lifting operations should be subject to planning, risk assessment and supervision.
- Lifting operations when a ship is moving in a seaway should be approached and planned/risk assessed with **extreme caution**.

Who may benefit?

Shipowners, operators and crews.

2 FATALITY

Very Serious Marine Casualty: Fall from height in a ballast water tank resulting in a fatality

What happened?

An officer, safety officer and crew member were proceeding to exit a ballast water tank. They had just completed an air quality inspection of the tank prior to its undergoing maintenance. The crew member, who was to be the last person to exit the tank, was about one metre from the exit when he lost his grip and fell approximately 10 metres. Although the crew member was treated in the tank, he succumbed to his injuries two hours later. It took four hours to cut an escape hatch by which the crew member could be recovered from the tank.

Why did it happen?

- The design of the tank's access prevented the immediate removal of the injured crew member from the inside of the tank.
- Fall arrestors, lanyards and safety harnesses were not being used, nor were there any brackets or strong points for securing safety equipment.
- The crew member was carrying a gas detector (which he wore around his neck and which lay on his stomach) and a rope while climbing the ladder. As he tried to untangle the gas detector, he lost his grip and fell.

What can we learn?

- Hazard and rescue assessments should be carried out prior to entering a confined space.
- Safety procedures should be established and followed for use of ladders. These should include keeping hands free at all times and using appropriate means for hoisting and lowering of tools and equipment.
- Tank entrance design should accommodate the possibility of evacuating an injured person.
- The importance of proper safety harness and its use.

Who may benefit?

Shipowners, operators and crews.

3 GROUNDING

Very Serious Marine Casualty: Grounding resulting in fatalities

What happened?

A general cargo ship proceeded to an anchorage to wait for the passing of adverse weather. The following day, the weather conditions worsened and the ship started to drag anchor. Using the main engine, the master weighed anchor, then let go both the port and starboard anchors, but the ship continued to drag anchor towards a breakwater. The ship eventually grounded on the breakwater, damaging its hull. It then flooded, sank by the stern, and ended up on the sea bed with its bow above the water. Eleven of the 19 crew members on board lost their lives.

Why did it happen?

- The ship anchored on a lee shore
- There was no protection from the wind and sea in the anchorage area, and the ship's anchored position was upwind of the breakwater.
- The master considered that letting go both anchors with 8-9 shackles of anchor cable would be sufficient to maintain the ship's position.
- The weather conditions were such that the ship was unable to maintain its position using anchoring equipment.
- There was no consideration of preparing to abandon the ship before it was too late to do so, and the crew were left to defend for themselves.

What can we learn?

- The dangers associated with anchoring on a lee shore where high winds are forecasted and the need to be familiar with the ship's anchoring capabilities and limitations.
- Be prepared for the possibility that weather conditions may be worse than forecasted.
- Vessel operators need to plan in advance the taking of other measures, including: engaging the main engine, manoeuvring to reduce the load on the anchoring equipment, weighing anchor and proceeding to sea.
- Ensure that preparations for an abandonment have been taken as early as possible to allow for an orderly evacuation from the ship.

Who may benefit?

Shipowners, operators and crews.

4 FATALITY

Very Serious Marine Casualty: Crew member hit by swinging crane hook resulting in a fatality

What happened?

A stevedore was using ship's cargo crane and grab to load cargo onto the ship. Upon completion of his daily shift, he left the crane with the grab connected and the boom in the horizontal position, and then disembarked. Later, the chief officer arranged for two crew members to disconnect the grab from the crane to place it in its designated stowage position on the starboard side. While one crew member was on the deck disconnecting the grab from the crane hook, the other crew member was operating the crane from the crane's cabin to facilitate the grab disconnection. During the course of the work, the weather deteriorated and the ship encountered a heavy swell, causing it to roll and pitch. While the hook was being hoisted by the crane, it swung and crashed into the lower half of the operator's cabin. The crew member inside the operator's cabin was badly injured and taken to hospital, where he was declared dead upon arrival.

Why did it happen?

- No risk assessment was conducted before the job was carried out. The crew were not familiar with the crane operating procedures.
- Despite receiving a forecast of deteriorating weather, the ship's crew proceeded with the crane operation, ignoring the hazard.
- No precautions were taken to avoid the hook swinging as a result of the ship rolling and pitching in the heavy swell.
- The crane operator's cabin structure failed to provide sufficient protection to the operator inside.
- There were no specific instructions in the safety management system other than that the chief officer was to supervise the work on deck.

What can we learn?

- The importance of the risk assessment prior to work commencing.
- All crane operations should be closely monitored. Crane operations should not be allowed during heavy weather.

- Crane operations should be covered in the ship's safety management system.
- Internal audits of all company ships should be carried out to ensure full compliance with the safety management system on the safe operation of cranes.
- Crane operating crew need to be fully briefed and familiar with operating limitations.
- The structure of a crane operator's cabin should be sufficiently reinforced or protected.

Who may benefit?

Ship builders, owners, operators, and crews.

5 FATALITY

Very Serious Marine Casualty: Stevedore struck by falling crane cabin panel resulting in a fatality

What happened?

Two gangs of stevedores boarded the ship to load granite blocks. The ship's cranes, operated by the stevedores, were used for lifting the cargo. Stevedores were also deployed to stow the cargo and unhook the cargo sling. While cargo loading was in progress, a crane cabin front view panel detached from its hinges and fell onto a stevedore, who was working in a cargo hold. The ship's emergency team was mustered to render immediate medical aid, and an ambulance was called. The victim was fatally injured and another stevedore in proximity received minor injuries.

Why did it happen?

- The hinges of the panel frame had badly corroded due to a lack of maintenance.
- A telescopic stopper, which had been provided to keep the panel in place at varied open positions, had been removed by the stevedore operating the crane. The stopper was substituted with a wooden plank to create a wider opening of the panel that increased ventilation and allowed a clear view of the cargo hold.
- The stevedoring company did not provide appropriate personal protective equipment for its employees for working in potentially hazardous areas.
- The ship's staff did not ensure that all equipment was in good working order and free of any defects.
- The ship's staff did not provide necessary information and instructions to stevedores about usage of ship's equipment prior to its use.

What can we learn?

- The ship's staff should provide safe ship gear and equipment to stevedores, ensuring that it is in good working order and free of any defects.
- The ship's staff should also provide necessary information and instructions to everyone working on board to ensure their safety while engaged in cargo handling operations. The safe working practices, the potential risks and the necessary safety measures while engaged in cargo handling operations must be provided.
- Due to the intense nature of the work of the crane operator, special care should be taken to ensure adequate ventilation of crane cabins so that the crane operator is able to carry out the work accurately and efficiently in optimum environmental conditions.

- Before putting any cargo gear in use, visual checks should be carried out to determine its serviceability. The manufacturer's pre-start and operation checklist for cargo cranes should be completed prior to cargo operations.
- Risk assessments must be reviewed and explained to all personnel involved in cargo operations. Where appropriate, when an additional risk assessment is necessary, this must be undertaken, documented and retained on record. Assessment must be sufficient and suitable.
- The stevedoring company should provide adequate personal protective clothing, such as safety helmet, safety shoes and safety harness, to its employees. Stevedores should undergo periodic training of safe working practices of various cargo operations.
- The stevedore team supervisor should meet with the ship's officer of the watch and obtain the necessary information and instructions to ensure the safety of his stevedores while they work on board the ship.
- The stevedores deployed on board ship must not tamper with cargo crane fittings or remove components. Instead, any malfunction or defects of the ship's cranes or other equipment in use by stevedores should be reported directly to the ship's crew.

Who may benefit?

Seafarers, shipowners, ship managers and stevedoring companies.

6 EXPLOSION

Very Serious Marine Casualty: Explosion of observation glass resulting in a fatality

What happened?

A bulk carrier was three months into its maiden voyage. An engineer on board was draining accumulated fluid from the main engine starting air receiver as part of a normal daily routine. The fluid drained into a drainage pot which was fitted with a toughened glass observation panel. The glass shattered and severely injured the engineer, who later died from the injuries sustained.

Why did it happen?

The observation glass and drainage pot were not fit for the purpose for which they were being used. The drainage pot was originally designed as an open-topped container with a drainage line leading to an appropriate bilge. During the construction of the ship, at the request of the owner's representative, the drainage observation pot was modified by the shipbuilder to incorporate a toughened glass observation panel, the objective being to allow observation of the drainage without any splash-back. The modification could not withstand any significant build-up of pressure within the pot. The modifications were not submitted for classification society or flag Administration approval.

What can we learn?

- Compressed air can store a lot of energy, especially at the storage pressure found in main engine starting air receivers (30 bars in this case). It needs to be treated with the utmost respect. Significant back pressure can occur in small bore, lengthy condensate drainage lines, especially if, in the case of effluent from a starting air receiver, the drained fluid contains any emulsified lubricating oil.

- When making any design changes, an appropriate engineering analysis needs to be undertaken, especially for any modifications that effectively change an open drainage system into a pressurised closed one. Design validation and appropriate testing need to be undertaken. The classification society and flag Administration should be consulted and, if so directed, drawings submitted for approval.
- During the final stages of a ship's construction, vigilance is needed by all parties concerned to ensure that any deviation from approved arrangements are carefully and appropriately addressed and agreed. Agreed changes should be recorded.

Who may benefit?

Ship builders, owners, operators, classification society surveyors, and crews.

7 EXPLOSION

Very Serious Marine Casualty: Explosion in a fuel oil tank resulting in a fatality

What happened?

A bulk carrier was in port and had taken on bunkers. It was decided to completely drain a fuel oil settling tank because it contained fuel of poor quality. There was about 2.5 tons of heavy fuel oil in the tank. The flash point was said to be 82°C. The tank exploded. Five crew members were injured; one subsequently died. There was significant damage to the engine room and machinery.

Why did it happen?

- The settling tank had been modified without approval of the flag Administration and class society. The original steam heating coils had been taken out of service and replaced with an internal electric heater, located 1.5 metres above the bottom of the tank. A second electric heater was fitted at a later date; this was located 0.7 metre above the tank bottom. These installations were not submitted to the classification society or flag Administration for approval. Both were equipped with automatic temperature control sensors which were located one metre above the tank bottom and set to maintain an oil temperature between 45-55°C. However, these needed to be submerged in the fluid to function. No other protective devices were fitted to the heaters to shut off the current in the event that the heater coils were not submerged in oil.
- There was no low-level content alarm fitted to the tank, and the fuel level in the tank dropped below the level of one or both of the electric heaters without the engineers' knowledge. At the time of the explosion there was almost no fuel in the tank but the fuel heaters were still turned on. In such circumstances the temperature of the heater rod surface could rise above the flash point of the fuel/air mixture and even to the point where the heating rod could rupture and cause an arc. The tank contained fuel oil vapour and air drawn down the vent pipe as the fuel was discharged. It was concluded that this mixture was ignited by one of the fuel heater rods.
- There were no instructions on board for the electric fuel heating system and no information had been passed on to successive engineers.

What can we learn?

- A full risk assessment should be made prior to undertaking any modifications to fuel systems. Drawings should be submitted to the classification society for approval. When modifications are made, after any necessary approval, records should be kept on board and any modifications to operating instructions should be incorporated into the ship's safety management system (SMS).
- Consideration should be given within the SMS on how new crew members can be informed of any novel or unusual equipment installed in the ship, especially when it involves high-risk installations such as fuel systems.
- Whenever intending to carry out tasks involving a deviation from established work procedures it is particularly important to do a full risk assessment prior to starting the task; all crew members carrying out the task should be fully briefed.

Who may benefit?

Shipowners, operators, crews, and surveyors.

8 FIRE

Very Serious Marine Casualty: Fire during hot work resulting in a fatality

What happened?

A general cargo ship was loaded with large machinery and metallic construction material. The cargo in the lower hold had been secured with wooden blocking and bracing using ropes, wires and turnbuckles. Securings on hatches and tween deck also included welded items.

At the discharge port, workers from ashore were contracted to cut off the lashings and securings. They were instructed by the ship's officer for the job, but a hot work procedure was not conducted in accordance with the ship's safety management system, and a hot work permit was not issued.

Some hours later, as the work went on, smoke was discovered coming from the hold. Though firefighting efforts were initiated quickly, the fire lasted for many hours and caused much damage. Three shore workers were injured, and another was later found deceased in the hold.

Why did it happen?

- The lack of a hot work permit procedure meant that no one had done a proper risk assessment for the work.
- The presence of shore workers may have confused the ship's officers, not realising that it was their responsibility to supervise shore workers as well as crew members.
- There was flammable material in the lower hold.

What can we learn?

- Ship's officers are responsible not only for supervising crew members, but also for shore workers conducting work on board the ship. Flammable material should be kept in appropriate compartments. The location and proximity of compartments containing flammable matter to hot work areas should be taken into account when hot work permits are issued.

- Fulfilment of hot work permit procedures should include a safety assessment, making it easier to handle the risks identified.
- A ship's safety management system is not just a paperwork exercise; it is done to ensure the safety of the ship and crew.

Who may benefit?

Shipowners, operators, crews and shore workers.

9 ENGINE FAILURE

Very Serious Marine Casualty: Engine failure and grounding resulting in ship loss

What happened?

Although the chief engineer was concerned about high exhaust gas temperatures, a dry cargo ship departed for a long trans-ocean voyage. After a couple of weeks, the exhaust gas temperature increased and, consequently, the engine speed was reduced. Eventually, the engine was stopped for detailed inspection and investigation. This revealed broken rings on almost all of the pistons and also determined that the fuel injectors did not work properly. The ship was adrift for several days while the engine crew worked on the problem. Many attempts were made to start the engine again, but it would not start.

Meanwhile, there was ongoing correspondence between the ship and the management company. After a few days, the master was informed that tug assistance had been ordered. At about the same time, the ship was approaching the shore and could drop anchor. When the tug arrived, the weather had become worse and attempts to connect the towing gear were unsuccessful. The ship started to drag anchor and later grounded. The crew eventually abandoned the ship by helicopter.

Another tug tried to connect to the ship, and succeeded. However, the ship was not allowed to stay within the exclusive economic zone, and finally sank some 100 miles off the coast in a water depth of 1000 metres.

Why did it happen?

- The investigation did not confirm the exact cause but suggested that the quality of bunkers, together with a permanent shortage of new fuel injectors and other spare parts, had a significant impact.
- The actions of the master were professional and adequate. However, as problems increased, there seems to have been too much time spent on communication with the company and too many parties were involved in decision-making. This caused the master to not fully appreciate the risks of the situation.
- The engine crew had not fully appreciated that the outcome of the situation relied on their completing the work efficiently.

What can we learn?

- Concerns and suspicions should be taken seriously and investigated satisfactorily before departing port.
- An adequate stock of spare parts should be kept on board, especially when concerns have been raised.

- Proper equipment and, in this case, proper quality of bunkers are essential for a safe voyage. If money is saved by using lower quality products, actions should be taken in advance to be able to handle problems that may consequently arise.
- Focus should be kept on the important issues. The master, being at the scene, should be given the support necessary to reflect and validate the situation on site frequently. This validation should then guide how the engine crew should plan their job.
- The importance of internal crew communications.

Who may benefit?

Shipowners, operators and crews.

10 GROUNDING

Very Serious Marine Casualty: Grounding leading to ship loss

What happened?

A bulk carrier was loading coal. Once loaded, the ship prepared to depart shortly before lunchtime with a pilot and a training pilot on board. All communications between the pilot and tug masters were in their native language. All communications between the crew were in their native language, which differed from that of the pilot and the tug master. The master, who was experienced and had been working on the ship before, had returned from leave the day before. He felt comfortable enough to agree to the pilot disembarking before the ship had passed the breakwaters.

The ship was proceeding at about 8 knots when the engine was put to full ahead. The ship, still being in the channel, started to deviate slightly to starboard. The master ordered hard to port. The ship lost some speed and started to turn to port. The efforts to keep the course in the channel were unsuccessful, and the speed decreased even more. Then banging was heard, the steering alarm sounded and the rudder stopped responding (due to broken steering gear).

The ship had stranded on a sandbank at the side of the channel just outside the breakwaters, and cracks in the hull were soon discovered. The ship then broke in two. Fuel oil was removed and the ship was eventually sunk offshore.

Why did it happen?

- When planning the voyage, the increased draught due to the ship's movements caused by the swell, was not taken into account.
- The ability to manoeuvre a ship is considerably reduced when under-keel clearance is below half the ship's draught. Bank interaction also negatively affects a ship's manoeuvrability.
- The actions of the master, such as his request for full speed and full rudder angle, increased the loss of control of the ship, since the ship was moving in a narrow channel with little clearance underneath and at the sides.
- The pilot disembarked the ship before the ship left the channel increases risk.

What can we learn?

- Allowing the pilot to leave before the ship has reached the pilot station may impact on navigational safety.
- Masters and officers of the watch should be aware of the impact of bank interaction and squat when increasing speed and manoeuvring in shallow and/or confined water.
- Dealing with several nationalities may be difficult. A working language, understood by the master, pilot and bridge team should be agreed prior to pilotage. If necessary, the IMO Standard Maritime Communications Phrases should be used.

Who may benefit?

Shipowners, operators, crews and pilots.

11 EXPLOSION

Very Serious Marine Casualty: Explosion in cargo area resulting in fatalities

What happened?

A 38,000 dwt product oil/chemical tanker was loading methanol. On completing first foot loading in all scheduled tanks, full loading commenced into 1P, 2P & S, and 6P & S tanks. When the quantity loaded into 6P & S tanks had reached 800 tons in each tank, loading was switched from 6P & S to 5P & S tanks, in line with the loading plan. At 0230 and about 30 minutes after this loading switch took place, an AB on deck reported a fire at the 1P tank P/V valve. The ship contacted the terminal and the loading was stopped. The delivery valves closed on 1P and 2P & S tanks within seven minutes of the fire being reported. Shortly afterwards, there was an explosion in tanks 1P and 2P & S followed by explosions in tanks 5P & S and 6P & S. Five crew members lost their lives and the ship became a constructive total loss (CTL).

Why did it happen?

- CCTV footage showed that a lightning strike caused a fire at the 1P and 2 P & S tank P/V valves. The International Safety Guide for Oil Tankers and Terminals (ISGOTT) 5th Edition Para 26.1.3 – Electrical Storms advises "When an electrical storm is anticipated in the vicinity of a tanker or terminal the following operations must be stopped, whether or not the ship's cargo tanks are inerted: handling of volatile petroleum, handling of non-volatile petroleum in tanks not free of hydrocarbon vapour." Similar – but not identical – advice can be found in the ICS Tanker Safety Guide (Chemicals). Although the ship's SMS reminded officers to monitor the weather conditions and stop the operation in the event of an electrical storm, this storm took the ship's crew by surprise. The P/V valves and associated flame arresters did not prevent the passage of flame into the tank (Note MSC.1/Circ.677 Revised Standards for the Design, Testing and Location of Devices to Prevent the Passage of Flame into Cargo Tanks in Tankers paragraph 1.2.7 states "These Standards do not include consideration of sources of ignition such as lightning discharges...All cargo handling, tank cleaning and ballasting operations should be suspended on the approach of an electrical storm.").

- The cargo tanks were neither inerted nor purged with nitrogen prior to loading as neither the ship nor the loading berth had nitrogen-inerting capabilities.
- Closed-loop loading of methanol was not adopted at the terminal. Loading in this manner would have resulted in methanol vapours being returned to the terminal, rather than being vented through the P/V valves.
- While there can be no certainty that either inerting prior to loading or closed-loop loading with vapour return to the terminal would have prevented fire in the event of a sudden electrical storm hitting the ship, they may well have limited the consequences.

What can we learn?

- Weather should be monitored per ISGOTT and ICS for electrical storm activity when loading/discharging cargoes involving flammable vapours, especially in tropical areas prone to severe electrical storms.
- Both the terminal and the ship should have procedures in place requiring the immediate stoppage of cargo operations in the event of an electrical storm and describing the procedures to be followed; these need to take into account the terminal/ship interface and the respective responsibilities of the terminal and ship's personnel.
- Ship/Shore Safety Checklists set out in the ISGOTT and ICS guides should be carefully followed before and during cargo operations.

Who may benefit?

Ship and terminal operators.

ANNEX 3

COUNTRIES SURVEY QUESTIONNAIRE

The scope of part A of this questionnaire is to give an opportunity to the respondents to provide overall (generic) details on their experience in the safety investigation of accidents.

This section considers only "very serious" marine casualties involving SOLAS ships since 1 January 2010, the date of entry into force of the Casualty Investigation Code.

The questionnaire is structured into three main parts:

- Domain 1 The Member State (MS) administrative structure, available resources, legislation and policies for the conduct of safety investigations under the IMO Casualty Investigation Code¹
- Domain 2 The conduct and completion of a safety investigation²
- Domain 3 Submission of the required information to the GISIS database³

¹ IMO Member States' administrative impediments.

² Impediments to the conduct of the safety investigation itself in a thorough and timely manner.

³ Impediments to the reporting/submission of information to the IMO.

PART A

DOMAIN 1 – The Member State (MS) administrative structure, available resources, legislation and policies for the conduct of safety investigations under the IMO Casualty Investigation Code

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	<i>Function</i>	<i>Description</i>
Q1 Has the MS established an investigating body which is distinct and independent from the flag State Administration ⁴ ?	<input type="checkbox"/>	<input type="checkbox"/>		<i>MS Investigation Policy</i>	<i>The scope of Q1 is to have an indication of how investigation organizations within IMO MS are structured. This question is being made in view of the two main distinct set-ups adopted by the IMO Member States.</i>
Q2 Does the MS national legislation give effect to marine safety investigations carried out in compliance with the IMO Casualty Investigation Code?	<input type="checkbox"/>	<input type="checkbox"/>		<i>MS Investigation Policy</i>	<i>The scope of Q2 is to determine whether the MS has enacted the IMO Casualty Investigation Code and hence determine whether there are MS which may not investigate in accordance with the IMO Casualty Investigation Code. Q2 is also a filter question.</i>

⁴ The terms "independence" and "distinct" reflect the "principles of investigation" referred to in chapter 16 of the IMO Casualty Investigation Code.

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q3 Is the objective of MS investigations to prevent similar marine casualties in the future rather than to determine liability or apportion blame?	<input type="checkbox"/>	<input type="checkbox"/>		<i>MS Investigation Policy</i>	<i>Q3 aims to seek whether there is a culture of apportionment of blame which may limit the availability of relevant information that can be uploaded in GISIS. [FILTERED QUESTION FROM Q2].</i>
Q4 The national legislation applies to safety investigations involving SOLAS ships.	<input type="checkbox"/>	<input type="checkbox"/>		<i>MS Investigation Policy</i>	<i>Q4 aims to determine whether SOLAS ships are investigated.</i>
Q5 The national investigation legislation applies to domestic shipping.	<input type="checkbox"/>	<input type="checkbox"/>		<i>MS Investigation Policy</i>	<i>Q5 is aimed to be a follow up to Q4 and seeks to determine whether domestic ships are also addressed from a legal perspective.</i>

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q6 The MS categorises the severity of the reported occurrences in accordance with the IMO Casualty Investigation Code.	<input type="checkbox"/>	<input type="checkbox"/>		MS Investigation Policy	Q6 is intended to determine whether the classification of occurrences is in accordance with the IMO Casualty Investigation Code and therefore there is a common definition of the term "very serious" and what needs to be uploaded in GISIS.
Q7 The MS requires to be notified of "very serious" marine casualties.	<input type="checkbox"/>	<input type="checkbox"/>		MS Investigation Policy	Prioritising on accidents in terms of severity and focussing only on "very serious" casualties may indicate whether eventually minimum data is being uploaded in GISIS.
Q8 The MS requires to be notified of marine casualties which are not "very serious".	<input type="checkbox"/>	<input type="checkbox"/>		MS Investigation Policy	Q8 extends over Q7 in order to determine whether the MS goes beyond the requirements of the IMO Code vis-à-vis occurrences which used to be classified as "serious" and "less serious" accidents and requests notifications of these occurrences.

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q9 The MS requires notification of marine incidents.	<input type="checkbox"/>	<input type="checkbox"/>		<i>MS Investigation Policy</i>	<i>Q9 extends from Q7 and Q8 in order to determine whether the MS goes beyond the requirements of the IMO Code vis-à-vis occurrences which are classified as marine incidents and requests notifications of these occurrences.</i>
Q10a Under the MS legislation, the safety investigation of "very serious" casualties is mandatory.	<input type="checkbox"/>	<input type="checkbox"/>	Please clarify if your answer to 10(b) is 'Yes':	<i>MS Investigation Policy</i>	<i>In view of the limited data in GISIS, Q10 aims to identify whether there are any possibilities of occurrences which are classified as "very serious" in terms of the IMO Code but are not investigated.</i>
Q10b Under the MS legislation, the safety investigation of "very serious" casualties is discretionary.	<input type="checkbox"/>	<input type="checkbox"/>			

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
<p>Q11a Under the MS legislation, the safety investigation of casualties which are not "very serious" is mandatory.</p>	<input type="checkbox"/>	<input type="checkbox"/>	Please clarify if your answer to 11(a) is ' <u>Yes</u> ':	<p><i>MS Investigation Policy</i></p>	<p><i>Q11 aims to identify similar data to what is being asked in Q10 but refers to casualties which are not 'very serious'.</i></p>
<p>Q11b Under the MS legislation, the safety investigation of casualties which are not "very serious" is discretionary.</p>	<input type="checkbox"/>	<input type="checkbox"/>			

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q12a Under the MS legislation, the safety investigation of marine incidents is mandatory	<input type="checkbox"/>	<input type="checkbox"/>	Please clarify if your answer to 12(a) is 'Yes':	<i>MS Investigation Policy</i>	<i>Q12 aims to identify similar data to Q10 and Q11, although it refers only to marine incidents. It has to be kept in mind that marine incident investigation enhances the investigation capabilities of the MS and data input in GISIS.</i>
Q12b Under the MS legislation, the safety investigation of marine incidents is discretionary	<input type="checkbox"/>	<input type="checkbox"/>			
Q13 Under the MS legislation, the reporting of findings of "very serious" casualties to the IMO is mandatory.	<input type="checkbox"/>	<input type="checkbox"/>		<i>MS Investigation Policy</i>	<i>Q13 aims to determine whether or not casualty data for mandatory safety investigations (i.e. into "very serious" casualties) is required to be reported to GISIS, hence confirming an understanding of the MS obligations, or otherwise. The question aims to explore whether there are MS, which may be investigating 'very serious' casualties, but not uploading the findings in GISIS.</i>

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q14 Under national legislation, it is mandatory for the MS to report the findings of casualties other than "very serious".	<input type="checkbox"/>	<input type="checkbox"/>		<i>MS Investigation Policy</i>	<i>Q14 aims to determine whether or not casualty data (other than the minimum required by the IMO Casualty Investigation Code) is required to be reported to GISIS. The question aims to explore whether there are MS, which may be investigating casualties other than "very serious" but not uploading the findings in GISIS.</i>
Q15 National legislation may limit access to evidence to other substantially interested States.	<input type="checkbox"/>	<input type="checkbox"/>	If your answer is 'yes', please state under what conditions evidence can be shared.	<i>MS Investigation Policy</i>	<i>Q15 aims to determine whether National legislation may prohibit the sharing of evidence with other MS, leading to delays and potential non-reporting to the IMO. Q15 is also a filter question.</i>

Question	Remarks <i>(Please explain further as necessary)</i>					Function	Description
<p>Q16 If your answer to Q15 is 'Yes', please indicate the evidence which the MS <u>cannot</u> share with other substantially interested States:</p> <ul style="list-style-type: none"> • <i>Physical</i> (material, debris, equipment); • Recordings of witness interviews; • <i>Electronic</i> (VDR, sVDR, AIS, ENC); • <i>Photographic</i> / video; • <i>Documentary</i> (charts, written witness statements, logbooks, standing orders, correspondence); • <i>Official documentation</i> (official correspondence with other parties); • <i>Historical</i> (refits or maintenance); • <i>Underwater</i> (wrecks on seabed); • <i>Lab reports</i> (testing and analysis); • Other. 	<p>Hardly 1</p>	<p>Occasional 2</p>	<p>Sometimes 3</p>	<p>Frequent 4</p>	<p>Almost always 5</p>	<p>MS Investigation Policy</p>	<p>Q16 aims to identify which evidence may not be shared with other substantially interested States in view of national legal requirements. [FILTERED QUESTION FROM Q15].</p>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q17 The MS has a National policy on when to submit safety investigation reports to the IMO.	<input type="checkbox"/>	<input type="checkbox"/>		Notification to IMO Policy	Q17 is asked because absence of a deadline may lead to lack of incentive to report data to GISIS
Q18 Based on investigations conducted into "very serious" marine casualties since 01 January 2010, what is the minimum number of months, which are generally required to upload the final safety investigation report on GISIS?			Please enter the number of months below:	Notification to IMO Policy	Q18 aims to quantify the average number of months which IMO Member States take to upload a safety investigation report in GISIS.

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q19 Has the MS, experienced difficulties to investigate because access to evidence was limited by another State?	<input type="checkbox"/>	<input type="checkbox"/>	If the answer is 'Yes', under which condition(s) was the evidence limited?	<i>Cooperation</i>	<i>Q19 aims to determine whether the MS (as the lead investigating State) has ever been prohibited access to evidence because of the requirements of the National legislation of the substantially interested State, leading to delays and potential non reporting to the IMO. Q19 is also a filter question.</i>

Question	Remarks (Please explain further as necessary)					Function	Description
<p>Q20 If your answer to Q19 is 'Yes', please indicate the evidence which the substantially interested State was unable to share:</p>	Hardly 1	Occasional 2	Sometimes 3	Frequent 4	Almost always 5	MS Investigation Policy Cooperation	Q20 aims to identify which evidence was not provided to the lead investigating State by the substantially interested States because of the requirements prescribed in the legislation of the substantially interested State. [FILTERED QUESTION FROM Q19].
<ul style="list-style-type: none"> • <i>Physical</i> (material, debris, equipment); 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<ul style="list-style-type: none"> • Recordings of witness interviews; 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<ul style="list-style-type: none"> • <i>Electronic</i> (VDR, sVDR, AIS, ENC); 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<ul style="list-style-type: none"> • <i>Photographic</i>/ video); 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<ul style="list-style-type: none"> • <i>Documentary</i> (charts, written witness statements, logbooks, standing orders, correspondence); 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<ul style="list-style-type: none"> • <i>Official documentation</i> (official correspondence with other parties); 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<ul style="list-style-type: none"> • <i>Historical</i> (refits or maintenance); 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<ul style="list-style-type: none"> • <i>Underwater</i> (wrecks on seabed); 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<ul style="list-style-type: none"> • <i>Lab reports</i> (testing and analysis); 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<ul style="list-style-type: none"> • Other. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q21a Has the MS as the flag State ever decided not to investigate a 'very serious' casualty due to lack of available resources to conduct the safety investigation?	<input type="checkbox"/>	<input type="checkbox"/>		<i>Internal Resource</i>	<i>The scope of Q21 is to determine whether the number of occurrences and / or the resources available required to process the occurrences are an issue in the reporting of information into GISIS. Q21 is also a filter question.</i>
Q21b Has the MS ever been asked to investigate a 'very serious' casualty, for which it is not a substantially interested State, due to the flag State not having available resources to conduct the safety investigation	<input type="checkbox"/>	<input type="checkbox"/>			

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q22 If your answer to Q21a is 'Yes', how many "very serious" casualties have not been investigated since 01 January 2010?			Please enter the number of safety investigations into "very serious" casualties which have not been investigated:	<i>Internal Resource</i>	[FILTERED QUESTION FROM Q21].
Q23 The MS has safety investigators with different backgrounds to be deployed, depending on the accident type (e.g. navigational, engineering, and others)	<input type="checkbox"/>	<input type="checkbox"/>		<i>Internal Resource</i>	<i>The lack of a selection of investigators' background within the MS may eventually have negative effect on the collection of evidence, its analysis, and the reporting of data to GISIS.</i>

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q24 The flag State has logistical challenges with the majority of the "very serious" casualties because they happen either in the waters of other MS and/or in international waters.	<input type="checkbox"/>	<input type="checkbox"/>		--	Q24 aims to determine the context in which MS carry out their investigations. The question may indicate differences between traditional port States and flag States, where accidents in territorial waters of others may increase the challenges to the flag State, not least logistically to arrive at the accident site, preserve the evidence and transport it.
Q25 The MS has internationally dispersed investigators available for immediate deployment.	<input type="checkbox"/>	<input type="checkbox"/>		Internal / External Resource	Q25 aims to determine the availability of internationally dispersed investigators. This question should be most applicable to MS which are predominantly flag States rather than port States. Q25 is also a filter question.

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
<p>Q26 If your answer to Q25 is 'No', did the MS experience difficulties to conduct a safety investigation due to lack of internationally dispersed investigators.</p>	<input type="checkbox"/>	<input type="checkbox"/>		<p><i>Internal / External Resource</i></p>	<p><i>Q26 aims to confirm whether lack of availability of internationally dispersed investigators delayed or even halted safety investigations and eventually interfered with the submission of information to GISIS. [FILTERED QUESTION FROM Q25].</i></p>
<p>Q27 The MS has access to engineering, technical support and / or electronic data reading capabilities (e.g. VDR, sVDR, AIS, ENC).</p>	<input type="checkbox"/>	<input type="checkbox"/>	<p>If your answer is 'Yes', please describe.</p>	<p><i>Internal / External Resource</i></p>	<p><i>Q27 aims to determine whether the MS has the technical resources to extract and read electronic data for the purpose of the safety investigation.</i></p>

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q28 The MS has experienced difficulties in establishing contact with other MS with respect to the conduct of a safety investigation.	<input type="checkbox"/>	<input type="checkbox"/>	Please provide details of these experiences:	Cooperation	<i>Q28 aims to understand whether communication with other MS may be an issue. The question, however, does not identify the source of problem e.g. contact details not updated/available on GISIS.</i>
Q29 Do technical complexities of safety investigations cause delays in completing safety investigation reports and their submission to IMO?	<input type="checkbox"/>	<input type="checkbox"/>	Please provide details of why you believe that complexity has increased in modern casualties:	Internal Resource	<i>Q29 seeks to determine whether complex casualties may delay the submission of information to GISIS because there is not adequate expertise within the MS.</i>

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
30 The MS has the necessary budget to deploy its investigators to any accident site and/or assign the investigation task.	<input type="checkbox"/>	<input type="checkbox"/>		Internal Resource	<i>Q30 aims to determine whether or not there are adequate financial resources to deploy investigators in a timely manner to ensure that safety investigations are not delayed (or evidence is perished).</i>

DOMAIN 2 – The conduct and completion of a safety investigation

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>					Function	Description
Q31 The MS has experienced language barriers when communicating with other interested <u>parties</u> .	Hardly 1 <input type="checkbox"/>	Occasional 2 <input type="checkbox"/>	Sometimes 3 <input type="checkbox"/>	Frequent 4 <input type="checkbox"/>	Almost always 5 <input type="checkbox"/>	Internal Resource	Q31 aims to determine whether language barriers with interested parties were ever an issue during the course of safety investigations. Q31 is also a filter question.		
Q32 The MS has experienced language barriers when communicating with other substantially interested <u>States</u> .	<input type="checkbox"/>	<input type="checkbox"/>						Internal Resource	Q32 aims to determine whether language barriers with <u>substantially interested States</u> were ever an issue during the course of safety investigations. Q32 is also a filter question.
Q33 Language barriers have led to problems in the preservation and collection of evidence.	<input type="checkbox"/>	<input type="checkbox"/>						Internal Resource	Q33 aims to determine whether the communication problems were serious enough to lead to issues with the preservation and collection of evidence. [FILTERED QUESTION FROM Q31 AND Q32].

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q34 The MS has experienced difficulties other than language barriers with interested parties.	<input type="checkbox"/>	<input type="checkbox"/>		<i>Internal / External Resources / Cooperation</i>	<i>Q34 aims to quantify whether the MS has ever encountered difficulties other than language barriers with interested parties. Q34 is also a filter question.</i>
Q35 The MS has experienced difficulties other than language barriers with substantially interested States.	<input type="checkbox"/>	<input type="checkbox"/>		<i>Internal / External Resources / Cooperation</i>	<i>Q35 aims to quantify whether the MS has ever encountered difficulties other than language barriers with interested States. Q35 is also a filter question.</i>
Q36 Difficulties other than language have led to problems in the safety investigation of an accident.	<input type="checkbox"/>	<input type="checkbox"/>		<i>Internal / External Resource / Cooperation</i>	<i>Q36 is a follow up to the previous two questions. It aims to quantify whether the MS has ever delayed the safety investigation and hence the uploading of information to GISIS because there were cooperation issues with interested parties or substantially interested State/s during the collection of evidence. [FILTERED QUESTION FROM Q34 and Q35].</i>

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q37 Does the MS foresee that legal and / or judicial proceedings into a casualty can add significant time to the completion of a safety investigation.	<input type="checkbox"/>	<input type="checkbox"/>		Cooperation	Whereas Q15 and Q19 looked into potential issues with the preservation of evidence, Q37 aims to quantify whether there were ever any potential issues as a result of parallel investigations, which would have had an impact on the uploading of information in GISIS.
Q38 The MS has deployed specific experts (e.g. human factors and fire experts) to assist in the collection of evidence.	<input type="checkbox"/>	<input type="checkbox"/>		Internal / External Resource	Q38 aims to quantify if lack of access to specific experts, such as human factors experts and fire experts was ever been an issue during the collection of evidence. Q38 is also a filter question. The question focuses more on whether they can be readily deployed rather than availability.
Q39 Lack of specific experts at the accident site has added significant time to the completion of the safety investigation.	<input type="checkbox"/>	<input type="checkbox"/>		Internal / External Resource	Q39 aims to quantify if lack of access to specific experts, such as human factors experts and fire experts has eventually delayed or stalled a safety investigation and delayed and / or prevented the uploading of data into GISIS. [FILTERED QUESTION FROM Q38] .

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q40 The MS has experienced problems gaining access to crew members to carry out interviews.	<input type="checkbox"/>	<input type="checkbox"/>		Cooperation	Q40 aims to determine whether access to human evidence is problematic for whatever reason, being fear of incrimination, early repatriation and objections raised by legal representatives.
Q41 After returning from the accident site, the MS has encountered difficulties when follow-up information from other interested parties and/or substantially interested States was requested.	<input type="checkbox"/>	<input type="checkbox"/>		Cooperation	Q41 aims to determine whether hot debriefs and/or analysis of raw data (which, more often than not, will lead to requests for further data), has ever been hampered in any way, potentially leading to delays in the reporting of findings to GISIS.

DOMAIN 3 – Submission of the required information to the GISIS database

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>	Function	Description
Q42 The MS would not submit the preliminary report (Annex 1) to the IMO unless all data is available.	<input type="checkbox"/>	<input type="checkbox"/>		<i>'Notification to IMO' Policy</i>	<i>Q42 aims to determine whether MS have delayed the submission of initial data because they are aware of gaps in the data.</i>
Q43 The MS experienced difficulties with the reporting of information to the IMO because GISIS is very time consuming to populate.	<input type="checkbox"/>	<input type="checkbox"/>	Please elaborate if your answer to Q43 is ' <u>Yes</u> ':	<i>Internal Resource</i>	<i>Q43 tries to determine whether MS sees the fields in GISIS too numerous and time consuming.</i>
Q44 The MS experienced difficulties with the reporting of information to the IMO because GISIS is not user friendly to populate.	<input type="checkbox"/>	<input type="checkbox"/>	Please elaborate if your answer to Q44 is ' <u>Yes</u> ':	<i>Internal Resource</i>	<i>Q44 tries to determine whether the fields and/or taxonomy in GISIS are perceived to be too complex to the extent that they prohibit the reporting of data into GISIS.</i>

Question	YES	NO	Remarks <i>(Please explain further as necessary)</i>					Function	Description
Q45 The MS publishes accident reports but does not populate the accident data into GISIS.	<input type="checkbox"/>	<input type="checkbox"/>	Please clarify if your answer to Q45 is 'Yes':					'Notification to IMO' Policy	Q45 aims to determine whether MS investigate and publish reports but do not upload information in GISIS.
Q46 MS approval procedures to release the safety investigation report may result in extending the time required to complete a report to significantly longer than a year.	<input type="checkbox"/>	<input type="checkbox"/>						'Notification to IMO' Policy	Q46 aims to query on the possibility of situations during the consultation phase of the safety investigation, when a draft report is prepared and interested parties (or substantially interested States) submit substantiated comments, which may necessitate the delays in the completion of the investigation and eventual submission of information to GISIS. Q46 is also a filter question.
Q47 If your answer to Q46 is 'Yes', is the safety investigation target completion date missed?	Hardly 1 <input type="checkbox"/>	Occasional 2 <input type="checkbox"/>	Sometimes 3 <input type="checkbox"/>	Frequent 4 <input type="checkbox"/>	Almost always 5 <input type="checkbox"/>	'Notification to IMO' Policy	Q47 aims to qualify whether the deadline is effective within the MS. [FILTERED QUESTION FROM Q46].		

PART B

The scope of this part of the questionnaire is to invite MS to expand on any topics covered in the questionnaire using its experience(s) when dealing with "very serious" casualties investigation(s).

However, you may comment on any topic which was not raised in the questionnaire.

ANNEX 4

IN-THE-FIELD JOB AID FOR INVESTIGATORS

References are made to:

- 1 the *Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code)* (resolution MSC.255(84));
- 2 the Marine Investigation Manual of the Marine Accident Investigators' International Forum (MAIIF) which can be accessed at the following address: <http://www.maiif.org/index.php/investigation-manual-and-job-aid>, referred to as "MIM"; and
- 3 the *Guidelines to assist investigators in the implementation of the Casualty Investigation Code (resolution MSC.255(84))* (resolution A.1075(28)), referred to as "IG".

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2 Job Aid – Actions on Notification

2.1 Gather information

Gather information to be able to classify the accident, assess its significance and decide on appropriate response.

2.1.1 *Potential sources of information*

- Flag State(s), port State(s) and coastal States involved (contact details available in the Global Integrated Shipping Information System (GISIS) Contact Points module);
- 24-hour contacts for the investigating body in each Member State (GISIS Contact Points module or MAIF website);
- National authorities involved, e.g. maritime Administration, coastguard, port authorities, police (inc. VTS), and other emergency services (GISIS Contact Points module);
- Ship and company (contact details from GISIS Ship and Company Particulars module, EQUASIS);
- VDR, ECDIS, GPS information resources, e.g. MAIF/MAIB VDR Resource;
- AIS information sources, e.g. internet ship tracking databases and services;
- Environmental/hydrology conditions – National Meteorological Offices;
- Marine casualty information database(s), e.g. GISIS Marine Casualties and Incidents module, EMCIP or national database;

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- IMO Conventions, Codes and Regulations;
- Nautical publications, e.g. almanacs, charts, tidal data, pilot books;
- Media – monitor any media coverage of accident and possibly record

2.1.2 *Typical information required*

- Source of notification;
- Time and date of notification;
- Time and date of marine casualty or incident;
- The name of the ship(s), ship type, and flag State;
- Name and contact details of owners and operators, the ship(s), the shipping company and other points of contact as may be applicable;

- Name and contact details of ship agents, if applicable;
- The ship number (IMO ship identification number when allocated);
- The nature of the marine casualty;
- The location of the marine casualty, including latitude and longitude;
- The number of any seriously injured, missing or deceased persons;
- Consequences of the casualty to individuals, property and the environment;
- A brief description of the casualty event(s);
- The identification of any other ship or structure involved;
- Each ship's condition and intended movements;
- Contact details of anyone with information about the casualty;
- Details of VDR/SVDR, where fitted, and if the VDR data has been saved;
- The weather conditions on site;
- Contact information for the competent Authority of any Substantially Interested State, and their investigation body if applicable;
- Contact information and action taken by local first responders;
- Contact information for cargo details and location, e.g. loading company.

2.2 Consider level of inquiry

Is casualty a Very Serious Casualty (Definition Casualty Investigation (CI) Code 2.22)?

- YES
 - Marine Safety Investigation to be conducted
- NO
 - Decide on level of investigation and or appropriate response– consider:
 - The seriousness of the marine casualty or incident;

ACTIONS ON NOTIFICATION

- The type of ship and/or cargo involved;
- The potential safety value that may be gained by conducting an investigation;
- The public profile of the casualty or incident;
- Whether the casualty or incident is part of an identifiable trend, e.g. from GISIS database analysis;
- The potential (as opposed to actual) consequences of the casualty or incident;

- The extent of resources available and projected to be available in the event of conflicting priorities, including the extent of any investigation backlog;
- Any risks associated with not investigating;
- Serious injuries occurring to crew and/or passengers and/or third parties;
- The pollution of environmentally sensitive areas;
- Ships subject to significant structural damage;
- The disruption, or potential disruption, of major port operations or other activities;
- Whether another administration will be investigating.

Decide:

- **Marine Safety Investigation;**
- **More information needed (Preliminary Assessment); or,**
- **No investigation necessary (MIM 1.5)**

2.3 Notify others

Notify other Substantially Interested States (SISs)(Definition CI Code 2.20) and Interested Parties (IPs) (definition CI Code 2.7)

2.3.1 SISs

The flag State (s) of the ship(s) involved and/or the coastal State has an obligation to notify other SISs (CI Code Ch. 5) with as much of the following information as is available:

- flag State(s) of the ship(s);
- IMO identification number(s);
- nature of the marine casualty;
- location of the marine casualty;
- date and time of casualty;
- number of seriously injured or deceased persons (and nationalities);
- consequences of the marine casualty to people, property and/or environment;

THEN: Discuss and decide which State will be the Marine Safety Investigating State (CIC Ch.7)

2.3.2 *Interested parties*

If safety investigation is to be conducted inform the master, owner and agent of the ship(s) involved (CI Code Ch.20) as soon as practicable of:

- the casualty or incident under investigation;
- the time and place at which the investigation will commence;
- the name and contact details of the investigation authority;
- the relevant details of the underpinning legislation;
- their rights and obligations;
- the rights and obligations of the investigating State(s);

Early and regular contact with the Next of Kin (NoK) is recommended (MIM 2.1.9). Good practice to establish a single point of contact with NoK.

ACTIONS ON NOTIFICATION

Identify other interested parties and notify them if appropriate (MIM 1.6.4), for example:

- Flag and port State regulators, surveyors, enforcers;
- Police or other judicial authority;
- Search and Rescue/emergency response authorities;
- Port authority;
- P&I Club surveyors and lawyers;
- Classification Society;
- Lawyers representing cargo interests;
- Lawyers representing individual crew members and salvors;
- Industry representatives, e.g. fishing;
- Equipment manufacturers;
- Maritime training centres and organizations;
- Seafarers or other maritime unions

2.3.3 *Superiors – press office – media*

Ensure superior officers are aware of the actions being taken with respect to the safety investigation and consider whether a press release would be beneficial. (MIM 2.1.8) :

A typical press release might contain:

- What happened;
- Where it happened;
- When it happened;
- What the immediate consequences were;
- What can still be expected;
- Launch of an investigation;
- Time and location of any press conference.

PREPARING TO GO ON SITE

3 Job Aid – Preparing to Go on Site

3.1 Forming the Investigation Team

If resources allow it is always better to have at least two investigators in the team. To decide on the make-up of the team consider:

- Resources available
- Size and relative importance of investigation
- Necessary speed of response
- Complexities of investigation including:
 - Number of ships involved
 - Number of witnesses/interviewees involved
 - Difficulties associated with site, location
 - Number of locations (interviewees, ships)
 - Different aspects of investigation (deck, engine, stability)
- Need for specialist expertise (human factors, naval architecture, interpretation, technical analysis, recorder (VDR) specialists)
- Media interest – the possible need for dedicated media liaison

3.2 Evidence Preservation

3.2.1 *Preserve the Site (MIM 1.7)*

If possible and practicable, bearing in mind possible SAR and pollution prevention activities, the condition of the investigation site should be preserved until the arrival of the investigating team. Contact other interested parties to request assistance. Consider:

- The master and crew of the ship(s);
- The ship manager/owner/agent;
- Maritime administration inspectors/surveyors;
- Local police or fire service personnel;
- Harbour authority representatives;
- Coastguard and rescue authorities;
- Salvors.

PREPARING TO GO ON SITE

3.2.2 *Preserve the Evidence (MIM 1.7)*

Identify perishable evidence and take steps to ensure that it is preserved. Consider, in particular:

3.2.3 *Electronic*

- Voyage Data Recorders (MIM 1.7.2)
 - Identify from shipowners or from ship's crew, type and model of VDR;
 - Use MAIIF/MAIB online VDR web resource;
 - Gain advice from VDR manufacturer;
 - Instruct master to take appropriate steps to save data;
 - Consider saving VDR data from witness ships.
- Electronic Chart Display and Information System (ECDIS ;
 - Instruct master to take appropriate action to preserve data;
- ECS if fitted/used
- GPS Plotter
- CCTV cameras (on board and ashore);
- VTS radar and VHF recordings;
- Coastguard radar, VHF and AIS recordings.

3.2.4 *Human*

- Contact shipowner/manager, agent or master to ensure witnesses/interviewees remain available.

3.2.5 *Documentary*

- Contact ship to ensure charts, logbooks and other records remain unaltered.

3.2.6 *Photographs*

- Photographs accident site/scene by shipboard staff/others

PREPARING TO GO ON SITE

3.3 Health & Safety Risk Assessment (MIM 1.3.7.1, 2.3; IG 5.3.1.2)

Consider, and if necessary mitigate, foreseeable risks facing the investigation team, including:

- Travel to location/site
 - Security considerations
 - Driver fatigue
 - Vaccinations
 - Sunscreen
 - Warm/Cold weather clothing
- Access to site/ship
 - Ship at sea
 - Boat travel
 - Helicopter travel
 - Ship in port
 - Ladders
 - Tides
 - On ship
 - Ladders
 - Lighting
 - Enclosed space entry
 - Aloft or overside access if required
- Physical hazards
 - Condition of ship/accident site
 - Stability
 - Fire damage
 - Structural damage
 - Engine-room – lighting, floor plates, noise
 - Condition of cargo
 - Hazardous cargo
 - Stability of cargo
- Chemical hazards
 - Substances hazardous to health
- Bio hazards/pathogens
 - Blood
 - Other body fluids
 - Other
- Radiological hazards
- Psychological hazards
 - Bodies
 - Contact with grieving people

PREPARING TO GO ON SITE

3.4 Equip the Team

Ensure investigation team has correct personal protection equipment (PPE) and investigation equipment:

3.4.1 PPE

Consider:

- high-visibility and protective waterproof jacket;
- steel toe-capped, non-slip working boots;
- safety helmet with fitted ear protectors;
- safety goggles/glasses;
- high-visibility vest;
- automatic inflatable lifejacket;
- working gloves;
- overalls (reusable and disposable types);
- dust mask;
- latex type gloves for forensic evidence collection;
- waterproof trousers;

3.4.2 Investigation Equipment

Consider:

- safety torch;
- first aid/medical kit;
- mobile telephone;
- VDR downloading equipment;
- chart or map of area
- digital camera with video function;
- steel tape measure; laser measuring device
- digital voice recorder;
- laptop computer;
- measuring and sampling equipment – sample containers;
- spare batteries and other equipment accessories;
- note book and pen/pencil;
- oxygen /HS2/CO2 analyser with in-date test certification
- personal escape hood, to enable evacuation from confined space
- a basic tool kit should be considered when physical evidence removal is expected
- Evidence tags (numbered and/or bar coded)
- Forms – receipt for evidence taken

3.5 Logistics

Consider:

- Travel documentation – passports
- Tickets
- Visas
- Obligatory vaccinations

ARRIVING ON SITE/SITE MANAGEMENT

4 Job Aid – Arriving on Site/ Site Management

4.1 H&S Dynamic Risk assessment (MIM 2.3; IG 5.3.3)

At accident site review risk assessments and take mitigating action as necessary, including:

- Access to site/ship
 - Ship at sea
 - Boat travel
 - Helicopter travel
 - Ship in port
 - Ladders
 - Tides
 - On ship
 - Ladders
 - Lighting
 - Enclosed space entry
 - Aloft or overside access if required
- Physical hazards
 - Condition of ship/accident site
 - Stability
 - Fire damage
 - Structural damage
 - Engine-room – lighting, floor plates
 - Condition of cargo
 - Hazardous cargo
 - Stability of cargo
- Chemical hazards
 - Substances hazardous to health
- Bio hazards/pathogens
 - Blood
 - Other body fluids
 - Other
- Radiological hazards
- Psychological hazards
 - Bodies
 - Contact with grieving people
- Establish 'buddy' system – look after each other

4.2 Meeting Key People – Coordinating/Cooperating (IG 5.3.2)

There can be many different stakeholders involved in the aftermath of a marine casualty or incident, each with their own legitimate interests and responsibilities. Coordination at the casualty site is vital to make sure that the evidence collection is successful. To this end:

ARRIVING ON SITE/SITE MANAGEMENT

If boarding a working ship FIRST explain your role and requirements to the Master and seek his/her assistance as necessary.

Arrange a meeting with representatives from other substantially interested States (SISs), to discuss (IG 5.4):

- The sharing of knowledge
- Developing an investigation plan
- Delegation of investigation tasks
- Identification of additional help from specialists
- Legal powers

Identify other key stakeholders and arrange a coordination meeting to explain (MIM 2.1.7):

- Objectives
- Extent of Cooperation
- Legal powers
- Procedure and priority for interviews
- Procedure and priority for evidence collection
- Arrangements for updating on progress

4.3 Initial Site Survey (MIM 2.2.3, IG 5.6)

Walk through accident scene/site and:

- Ask for photographs taken earlier by shipboard staff/others
- Photograph scene
- Make written and voice notes
- Make sketches and diagrams
- Note positions of controls and switches
- Note position and use of emergency equipment
- Note extent of damage
- Establish what has changed since time of accident
-

ARRIVING ON SITE/SITE MANAGEMENT

4.4 Dealing with the media

If you are asked for information/interview.

TAKE CONTROL

- Introduce yourself.
- Ask for their name, phone number, outlet and deadline.
- Ask how you can help them and what type of information they need.
- If they want an interview, ask if it is taped, live, on site or in studio.

SET LIMITS AND NEGOTIATE

- Tell the media what you can talk about and explain the parameters of your expertise.
- Tell the media up front how much time you will have to speak with them.
- Propose an interview time and location that is convenient for you and your schedule.
- Negotiate if your proposal does not work for the journalist.
- Do not agree to speak off the record – there is no such thing.

KEEP INTERVIEWS SIMPLE

- Tell them if you are investigating.
- Explain your job and your role in the investigation.
- Explain the mandate of the investigating organization.
- Explain the standard investigative process.
- Tell them the facts about the accident.
- Tell them you cannot speculate about the causes of the accident at this stage.
- Tell them you are gathering the facts.
- Explain that you will need to analyse the facts before you will know what happened.

BE YOURSELF

- Use plain language, no jargon.
- Speak slowly.
- Explain technical terms if used.
- Be courteous and accessible

PRESERVE THE INTEGRITY OF THE INVESTIGATING ORGANIZATION

- Protect the privacy rights of individuals.
- Protect confidential information (for example, other government organizations, operators, manufacturers).
- Never talk about matters that are before the courts.

EVIDENCE COLLECTION

5 Job Aid – Evidence Collection

5.1 General Aide Memoire – SHELL

When collecting evidence for a human factors investigation the use of the acronym SHELL is recommended to ensure that all factors that might have affected human performance are examined. (Annex 1 and MIM 3.1.4)

Use SHELL – Consider:

- Software (The information and support systems guiding people)
 - checklists
 - manuals
 - publications
 - procedures
 - regulatory requirements
 - training
 - education
 - charts.
- Hardware (The ships, facilities, machinery, cargo, equipment, and material people work with)
 - Control station design
 - Navigational instruments
 - Bridge design
 - Ship design
 - Tools and equipment being used
 - Displays
 - Machinery being operated
 - Alarms
- Environment (The internal and external environment and the safety environment or culture in which the people were working)
 - External environment
 - Wind
 - Cloud cover
 - Precipitation
 - Visibility
 - Sea conditions
 - Ice
 - Internal environment
 - Temperature
 - Ventilation
 - Lighting
 - Noise
 - Vibration
 - Safety environment or culture
- Liveware (The people involved and their interaction with each other)
 - The key people - their physical and mental capability to do the work they were tasked to do
 - Physical fitness, height, reach, weight, age

- General health, fatigue, stress, alcohol, drugs
- Knowledge, training, aptitude, attitude, personality
- Interpersonal conflicts, financial problems, family problems.

- The other people that the key people were interacting with
 - Communication, cultural and language differences
 - Pilot/master interaction
 - Bridge resource management
 - Supervision
 - Task assignment
 - Bridge engine-room interaction
 - Crew interactions
 - Shore management

5.2 Evidence Collection – Human

5.2.1 *Fair Treatment (MIM 2.1.10)*

When collecting evidence from the people involved in the accident or from those who have information for the investigation, remember:

- Guidelines on the Fair Treatment of Seafarers (Res A.987(24))
 - Respect basic human rights
 - Investigate expeditiously
 - Allow seafarer repatriation as soon as possible
- Casualty Investigation Code (Res MSC.255(84))
 - Inform seafarer on nature and basis of investigation
 - Give access to legal advice

5.2.2 *Identify Witnesses/Interviewees (MIM 3.5.2)*

Identify:

- Key witnesses (those who played an active role in accident)
- Eye witnesses (those that saw something)
- Other crew and company personnel who can supply background information
- Port or Rescue service personnel
- Equipment designers/manufacturers
- Others

5.2.3 *Plan interviews (MIM 3.5.1, 3.5.2)*

Consider:

- Order of interviews (who first)
- A location for the interviews
- Preparing the location, seating, writing table, refreshments
- Ensuring that there is little or no disturbance
- Who will conduct interview and the "team" size
- The roles of the interviewers
- Collecting relevant background and documentary information before the interviews
- Broad topic areas to be discussed with each witness/interviewee (See Annex 2)
- Is an interpreter required? (MIM 3.5.7, 3.5.8)
- Be aware of possible cultural differences

EVIDENCE COLLECTION

5.2.4 Conduct Interviews (MIM 3.5.4)

Remember:

- Develop a rapport from the start
 - Introduce yourself as a seafarer, etc.
 - Be polite
 - Behave in a natural manner
 - Keep interruption to minimum
 - Develop a friendly conversation
 - Display sincere interest
 - Frequently summarise the information being given
- Respond to the particular needs of the interviewee
- Ask permission (if necessary) to use audio recorder
- Use cognitive interview techniques for cooperative eyewitnesses (MIM 3.5.6) to help them remember more details.
 - Start with free recall of events
 - Recreate the context
 - Picture the scene
 - Reverse order recall
- Do use:
 - Open questions
 - Specific questions to obtain detailed information
 - Closed questions to clarify a particular point
 - Indirect questions to obtain personal information
- Do not use:
 - Leading questions
 - Hypothetical questions
- Remain impartial – do not judge the interviewee

A detailed list of topic areas to be raised and information to be gained in different accident scenarios is included in **Annex 2**

5.3 Evidence Collection – Physical (MIM 2.4.2)

Consider:

- Equipment
- Tools
- Materials
- Details of structural damage
- Pre- and post-accident positions of accident-related elements
- Scattered debris
- Patterns, parts, and properties of physical items associated with the accident
- Fluids

Remember:

- Sketch and map position of debris, equipment, injured persons, etc.
- Photograph physical evidence in situ
- Survey and inspect physical evidence before removing it
- Document and log removal of evidence

5.4 Evidence Collection – Documentary

Consider:

There are numerous documents kept aboard a ship which may be valuable in determining the facts surrounding an incident. The investigators should consider examining the following shipboard documents (when applicable):

- Articles of Agreement
- Bar records – daily purchases – voyage receipts, etc.
- Bell Books (Bridge and Engine-room)
- Bridge Logbook (other than the official logbook)
- Captain's Night Orders
- Captain's Standing Orders
- Cargo Orders Book (like the Captain's Night Orders but issued by the Chief Mate regarding cargo operations)
- Course recorder
- Compass/gyro error log
- Crew list and crew Merchant Mariners' Credentials, including state pilots' licences.
- Crew qualifications
- Current certificates
- Charts and record of chart corrections
- Chief Engineer's Standing Orders
- Deck Logbook
- Declaration of Inspection
- Echo Sounder Chart;
- Engine-room Log Book
- Engine telegraph logger
- Instruction manuals, drawings
- ISM Code certification

EVIDENCE COLLECTION

- ISM Documentation including: (MIM 2.4.3)
 - Training procedures and materials (ISM Code 6.3)
 - Information and language of ISM Code (ISM Code 6.6]
 - Plans, instructions and check lists for the safety of the ship and pollution prevention (ISM Code 7.0)
 - Emergency preparedness (ISM Code 8.0)
 - Reporting non-conforming incidents (ISM Code 9.1)
 - Corrective action (ISM Code 9.2)
 - Maintenance (ISM Code 10.1)
 - Documentation (ISM Code 10.1)
 - Critical equipment (ISM Code 10.3)
 - Record of internal audits (ISM Code 12.3)
- Maintenance manuals
- Maintenance record
- Master-Pilot conference card (typically held by the pilot)
- Notes kept by deck officers regarding cargo operations, etc., and by oilers regarding their rounds
- Oil Record Books for cargo and bunker
- Oil Transfer Procedures
- Passenger list
- Personal logbooks (typically for deck and engine officers only)
- Pilot notes, trip sheets, and voyage/passage/pilotage plans
- Publications (nautical and others)
- Port log, and log abstract
- Radio Log
- Ship's statutory certificates/any conditions of class
- Ship's register
- Ship Reporting Records
- Ship Response Plans, garbage plans, etc.
- Ship Manoeuvring Characteristics
- Statement of facts/reports of accident/incident
- Voyage/passage plan
- Weather Log/printouts

Remember:

- Photograph documents using digital camera
- If removing documents ensure evidence log and evidential trail are maintained (MIM 2.4.7)
- Where possible obtain electronic (digital) versions of documents (e.g. SMS procedures and PMS records)

5.5 Evidence Collection – Electronic

Consider:

- Voyage Data Recorder (MIM 2.4.4)
 - Ensure VDR data has been saved
 - Retrieve the data – seek guidance if necessary from:
 - MAIB/MAIIF web resource (MAIIF members)
 - VDR manufacturer/service agent

Consider also:

- Other electronic evidence; (MIM 2.4.6)
 - Electronic Chart Display and Information Systems (ECDIS);
 - Electronic charting systems
 - GPS devices
 - AIS transponders
 - Radars
 - Engine management systems;
 - Fire protection systems
 - Communications systems
 - Security (CCTV) cameras
 - Electronic log books
 - Planned maintenance and safety management system records
 - Personal computers
 - Cargo loading/stowage computers
 - Ship's stability computers
 - Alarm systems

6 Preliminary Analysis (MIM 4.2.5, IG 5.11)

Evidence needs to be analysed as it is collected to find gaps and to ensure that all aspects of interest are covered.

6.1 Stage 1 – Sequence of events (MIM 4.3.1)

Start to compile a time line of events (MIM 4.2.5.3, IG 2.1) from the moment the first information is received. Build on it throughout the evidence gathering phase.

Consider:

- Initial reports (inc. coastguard reports)
- VDR
- GPS
- ECDIS or ECS
- AIS
- CCTV
- Course recorders
- Engine monitoring systems/logs
- Human evidence from interviews
- Log books
- VTS and CG VHF and radar recordings

Remember:

- The times used must all be on same time base
- Each event describes a single discrete happening
- Describe event precisely
- Give each event a date and time
- Identify gaps in the events and seek more evidence to fill them
- The event lines describes "WHAT" happened

6.2 Stage 2 – Identify "accident events" (MIM 4.2.5.3, IG 2.1)

To discover "HOW" a casualty occurred.

Consider:

- Applying systematic approach (MIM 4.3.2, IG 5.11)
- Each event in turn asking question - Is this BOTH significant and inappropriate?

Remember:

- "Accident events" are those events in the sequence of events that were critical in the lead up to the casualty
- An accident event needs to be inappropriate in the context of what was happening and what was known at the precise time of the event in question.
- Accurately identifying the 'accident events' is the single most important stage in the analysis process

6.3 Stage 3 – Analyse "accident events" (MIM 4.3.3)

PRELIMINARY ANALYSIS

To discover "WHY" the accident events occurred.

Consider:

SHELL

7 Annex 1

7.1 SHELL

Software, Hardware, Environment & Liveware

Software: The information and support systems guiding people. Software elements include checklists, manuals, publications, procedures, regulatory requirements, training, education, maps, and charts.

Hardware: The ships, facilities, machinery, cargo, equipment, and material people work with. Hardware elements include all machinery, gear, electronics, switches, controls, and displays.

Environment: The internal and marine environment in which people work. Environment elements include the internal environment such as workplace environment, room temperature, ventilation, lighting, pitching and yawing, and the marine environment such as sea state, wind, ice, precipitation, and visibility.

Liveware: The people themselves. Liveware elements include all of the people involved in the accident both directly and indirectly.

The SHEL model is typically depicted graphically to display not only the four categories or components of the maritime transportation system, but also the relationships or "interfaces" between the elements and the people (liveware) at the heart of the model.

In this diagram:
S is Software
H is Hardware
E is Environment
L is Liveware



The rough edges between the components in the SHEL diagram are symbolic of the fact that the **mismatch** between an individual and these components is important. These possible mismatches warrant special attention by the marine investigator because mismatches in the system may point out safety deficiencies. Examples of mismatches between a person and other components include:

- *Person to Person (liveware-liveware) Mismatches:* Mismatches between people and other people include voice communications, working language, phraseology, speech rate, readback/hearback, briefings, personal interactions, crew coordination, and non-verbal cues such as hand signals.
- *Person to Policy & Procedures (liveware-software) Mismatches:* Mismatches between liveware and software include problems in the transfer of information between support systems and the person. Outdated publications, for instance, generate a mismatch by giving the person incorrect information.

- *Person to Equipment & Gear (liveware-hardware) Mismatches:* Mismatches between live and hardware include problems in the physical and mental interaction of people and machines. Design limitations, instrument/control design and location, instrument controls and readability, seat design, proper guards and protections and other ergonomic issues are instances of these mismatches.
- *Person to Environment (liveware-environment) Mismatches:* Mismatches between people and environment are facts that affect human performance. For example temperature, humidity, illumination or glare, ambient noise, vibration, air quality, external visibility, pitch and yaw each have an effect on a person's ability to perform his or her task optimally.

INTERVIEW TOPICS

8 Annex 2

Interview – Areas to be examined and information to be gained

8.1 INFORMATION FOR EVERY CASUALTY

[Note: Select only what's relevant]

8.1.1 *General information*

- Casualty type
- Date and local time of casualty
- Position/Location of casualty – Latitude and Longitude, bearing and distance from a known point or river mile marker reference
- Ship(s) involved
- Consequences
- Weather at time of casualty
- Visibility
- Sea area – offshore, coastal, port approaches, harbour
- Sea conditions
- Tidal/current conditions
- Water depth
- Aids to navigation used
- Failure of aids to navigation
- Vessel Traffic Service used

8.1.2 *Ship related information*

- Name of ship
- Previous name(s)
- Nationality (Flag)
- Previous nationality(ies) (Flag(s))
- Documentation Number (IMO Number, State Number)
- Home port/port of registry
- Ship type/service
- Call sign
- Gross tonnage

- Deadweight
- Length overall
- Beam/breadth (moulded/extreme)
- Drafts – Fore, aft, midships
 - Leaving port
 - At time of casualty (best estimate)
 - After casualty (best estimate)
- List/heel
- Propulsion type and particulars
- Hull construction
- Hull material
- Classification society
- Previous Class Society
- Registered shipowner
- Ship manager/operator
- Date of contract/keel laid/delivery

INTERVIEW TOPICS

- Date of major conversion
- Building yard
- Hull number
- Port at which voyage commenced and port at which it was to have ended, with dates
- Details of cargo
- Last port and date of departure
- Port bound for at time of occurrence
- Any incident during the voyage that may have a material bearing on the incident, or unusual occurrence, whether or not it appears to be relevant to the incident
- Plan view of ship's layout including cargo spaces, slop tanks, bunker/fuel lube oil tanks (diagrams from IOPP Certificate)
- Details of cargo, bunkers, fresh water and ballast and consumption
- Any deficiencies highlighted in Port State Control inspections
- Any conditions of class

8.1.3 *Particulars of people involved in incident*

- Full name
- Age
- Details of injury (if any)
- Description of accident
- Person supervising activity
- First aid or other action on board
- Capacity on board
- Certificate of Competency/Licence
 - Grade
 - Date of issue
 - Issuing country/authority
 - Expiration Date
 - Time Document Held

- Age
- Height
- Weight
- Sex
- Restrictions/Limitations/Disabilities
- Nation of Origin
- Native Language
- Other Certificates of Competency held

8.1.4 *Particulars of sea state, weather and tide*

- Direction and force of wind
- Direction and state of sea and swell
- Atmospheric conditions and visibility
- State and height of tide
- Direction and strength of tidal and other currents, bearing in mind local conditions

INTERVIEW TOPICS

8.1.5 *Particulars of the incident*

- Type of incident
- Date, time and place of incident
- Details of incident and of the events leading up to it and following it
- Details of the performance of relevant equipment with special regard to any malfunction
- Persons on bridge
- Whereabouts of the master and chief engineer
- Mode of steering (auto or manual)
- Extracts from all relevant ship and, if applicable, shore documents including details of entries in official, bridge, scrap/rough and engine-room log books, data log printout, computer printouts, course and engine speed recorder, radar log, etc.
- Details of communications made between ship and radio stations, SAR centres and control centres, etc., with transcript of tape recordings where available
- Details of any injuries/fatalities
- Voyage data recorder information (if fitted) for analysis
- Details of cargo operations

8.2 SHIPBOARD ISSUES (IG APPENDIX)

8.2.1 *Training and experience*

- Position or rank held
- Certificate held; length of time the certificate has been held; where trained
- Experience in the position; both on this ship and over career
- Length of time on this contract and overall on board the ship
- Experience on other ships; both with this company and other companies
- Details of other relevant training

8.2.2 *Shipboard organizational structure and processes*

- The management/department structure on board the ship
- The individual's position within the on-board structure; who they work for, who they work with, who they report to and who they assign duties to
- Normal day-to-day responsibilities, tasks/watches and duties
- Description of any interaction with personnel ashore

8.2.3 *Nature of Tasks*

- Specifics of the task(s) being undertaken at the time of the occurrence including location
- Differences between the task at that time and normal operations
- Description of the social dynamics of the working environment (e.g. alone/pair/team)
- Understanding of the task
- Familiarity with the task; last time it was performed, etc.
- Available discretion relating to how the task was to be accomplished
- Training provided for the task; what was the training
- Procedures, documents and guidance for the task
- Equipment used for the task; reliability, previous failures, problems and were the crew familiar with it

- Physical environment; heat, humidity, noise, confined space, exposure to chemicals, etc.

INTERVIEW TOPICS

- Workload and/or effort required for the task:
 - To what extent was it within the crew's capability at the time
 - Were there any tasks that were not done because of the workload
 - Physical effort involved; pushing, pulling, lifting, etc.
 - Mental effort involved; thinking, deciding, calculating, remembering, looking, searching, etc.
 - Time pressure involved; adequacy of time allocated to the task
 - Use of scaling questions may assist here (e.g. "on a scale of 1 to 10, where 1 is very easy and 10 is extremely difficult, how (physically) difficult was this task ...")

8.2.4 *Activities prior to occurrence*

- Actions and/or activities before coming on watch or reporting for duty
- Individual's role in the operation being conducted by the ship at the time of the occurrence
- Individual's location on board at the time of the occurrence.
- What was being observed immediately prior to the occurrence; what was seen, heard, felt, smelled, and thought about

8.2.5 *Work period/rest period/recreation pattern*

- Description of normal duty schedule (e.g. day worker or watchkeeper)
- Description of duty schedule on the day of the occurrence; on the day before and during the week before the occurrence
- Length of time awake and/or on duty at the time of the occurrence
- Overtime worked on the day of the occurrence; on the day before and during the week before the occurrence
- Usual sleep/rest routine (what time asleep and awake)
- Sleep/rest routine in the three days (72 hours minimum) leading up to the occurrence:
 - 72-hour history of time to bed/time to sleep/duty times/nap times
 - If there is an indication of reduced sleep beyond 72 hours, collect sleep information beyond 72 hours (as a guide, collect information back to two good nights' rest prior to the occurrence)
 - Quality of sleep; disturbances, light sleep, waking, how refreshed when waking
 - Time of day when sleep is taken (impact on quality). ○ Last extended period of off-duty time

8.2.6 *Living conditions and shipboard environment*

- Description of the adequacy of personal facilities; individual, shared or communal; noisy, cramped, vibrations, temperature, ship's motion, etc.
- Availability and consumption of alcohol and/or non-prescribed medications

8.2.7 *Physical health*

- Symptoms of illness experienced within the 72 hours before the occurrence.
- Medications and other substances taken (prescribed, not prescribed).
- Description of the last meal consumed prior to the occurrence; what and when.
- Description of existence and regularity of exercise routine.
- Details of any recent medical examinations, illnesses or injuries.
- Details of any regular or irregular medication, both prescribed and not prescribed.
- Description of quality of vision (e.g. corrective lenses).
- Description of quality of hearing (e.g. hearing aids).
- Name and contact details of personal physician.

INTERVIEW TOPICS

8.2.8 *Mental Health*

- Length of time spent away from family and loved ones
- Extreme emotions at any time in the days before the occurrence; e.g. feelings of extreme sadness, anger, worry, fear (use scaling questions (1 to 10) to determine level)
- Important and/or difficult personal decisions made recently; e.g. financial or family worries
- Recent work performance; any concerns from others

- Stress and/or difficult situations whilst on board and how these were being managed
- Difficulties with concentration
- Any mental health issues recently and/or in the past
- Medications taken (prescribed, not prescribed)

8.2.9 *Working relationships*

- Friendships and/or support from other crew members
- Conflicts and/or clashes with other crew members or supervisors
- Trust in other crew members
- Language barriers interfering with work performance
- Clarity of roles and responsibilities with other crew members

8.2.10 *Employment conditions*

- Contractual arrangements
- Complaints or industrial action and systems for resolution of these.
- Recent changes to employment conditions

8.2.11 *Safety policy*

- Awareness of the company's safety policy
- Ship's procedures for dealing with safety issues; methods of reporting and addressing safety concerns
- Safety training; type, nature and frequency
- Emergency drills; type, nature and frequency
- Personal protective equipment (PPE) provided
- Records and/or knowledge of personal accidents or injuries prior to the occurrence
- Review and correction of non-conformities, deficiencies

8.2.12 *Staffing levels*

- Sufficiency of staffing/crewing levels on board
- Appropriate allocation of crew members to duties
- Changes to normal staffing/crewing levels

8.2.13 *Standing orders*

- Master's standing orders; for all or part of the crew
- How are the orders communicated
- Are the orders in accordance with the company policies

INTERVIEW TOPICS

8.2.14 *Level of automation and reliability of equipment*

- Complexity of machinery and automated systems
- Training provided for systems
- Competency of crew in using the systems
- Reliability of systems; any earlier failures

- Maintenance of systems
- Are the systems integrated with each other and with the task requirements
- Backup systems

8.2.15 *Ship design, motion/cargo characteristics*

- Ship design, motion or cargo characteristics; any features which interfere with human performance (e.g. obstructed watchkeeper vision).

8.3 SHORESIDE MANAGEMENT ISSUES (IG APPENDIX)

8.3.1 *Management policies and procedures*

- Existence of and opinion about the effectiveness of the safety management system, including auditing, analysis, reporting and investigation of the occurrence and Plan-Do-Check-Act cycle
- Existence of and opinion about the effectiveness of risk assessment and management policies and procedures relating to ships, personnel and the environment
- Existence of and opinion about the effectiveness of the role of the Designated Person (DP)

8.3.2 *Scheduling of work and rest periods*

- The company's work schedule, relief policy and risk management policy on fatigue
- Adherence to these policies
- Recent changes to these policies
- The company's policies and practices for determining staffing/crewing levels on board the ship
- The effectiveness of these policies and practices

8.3.3 *Assignment of duties*

- The company's policies for determining watchkeeping practices and other duties on board the ship
- The actual watchkeeping practices

8.3.4 *Shore-ship-shore support and communications*

- Means and level of support for the ship's master in conduct of operations
- The master's reporting requirements

8.3.5 *Voyage planning and port call schedules*

- Policies, procedures and guidelines provided to the master to enable voyage planning
- Actual practices for voyage planning

8.3.6 *Recreational facilities*

- The company's policies and practices for the provision of welfare and recreational services on board

INTERVIEW TOPICS

8.3.7 *Contractual and/or industrial arrangements and agreements*

- Contractual arrangements for all crew members
- Complaints or industrial action in the last year

8.3.8 *National/international requirements*

- Appropriateness of the applicable international conventions and flag State regulations
- Effectiveness of the flag State's implementation of the requirements and recommendations of the applicable international conventions
- Compliance with the requirements and recommendations of the applicable international conventions and flag State regulations

8.4 NAVIGATION ACCIDENTS

Aspects for particular consideration for [collisions and near misses] are in square brackets and for (groundings and contacts/allisions) are in round brackets. The rest are applicable to all navigation accidents:

- Memory from VDR, ECDIS, ECS, GPS, ARPA, course recorders, engine data log
- Navigation equipment: draw a plan or photo main consoles. What alarms could be set and what were actually set?
- Was navigation equipment working properly, when was it last checked, manuals?
- Familiarity of watchkeepers with the bridge equipment, training received
- What was the OOW's experience of navigating in the area?
- Was chart in use corrected and up-to-date, were sufficient paper charts carried?
- Navigation methods being used, e.g. how were fixes obtained, what was the fixing interval, how was the ship's track monitored?
- Steering mode, manual follow up/non-follow up, autopilot normal/river pilot, rudder limits/weather helm set
- Radars/ARPA in use, scale used, mode of display, EBL/VRM/parallel indexing used, alarm set, when was the radar index error last checked?
- GPS employed, correct datum in use?
- Passage plan- comprehensive? Was it used, who compiled and who approved it?
- Correct nautical publications carried?
- Company and Master's Standing orders and those for the conduct of navigation.
- Was the helm/rudder indicator used?
- Was the echo sounder used, alarms set, depth records kept?
- What was the gyro error, when was it last checked, were repeaters aligned?
- Magnetic compass deviation card posted up/available?
- What navigation lights and shapes were displayed?
- What were the watchkeeping arrangements?

- Content and standard of master/pilot briefing and liaison
- Content and standard of handover between watchkeepers
- Was information on squat and manoeuvrability available?
- Blind arcs/ranges for both visual lookout and ship's radar.
- Were clearing lines set and how?
- Was a watch alarm fitted, was it used, what was interval?
- Was the ship's whistle/horn operating correctly, manual and automatic modes?
- Propulsion information: shaft direction, rpm, pitch gauge
- [Position of collision/near miss]. (Grounding/contact)
- [When and how was other ship first detected? E.g. position, course, speed, true bearing, relative bearing, range]
- [Courses, headings, speeds, and sound signals from first sighting]. (Height of tide)
- [Radio communications between the two ships]
- [Monitoring of other ship, was a radar plot kept, acquired on ARPA?

INTERVIEW TOPICS

- (Draught of ship, forward, aft and amidships, last fix before grounding/contact)
- Weather, sea conditions, visibility, current and tidal flow
- Weather forecasts obtained e.g. Navtex; obtain hindcast from Met. Office
- Who was on the bridge, who had the con, where and what was he doing?
- Were the watchkeepers carrying out other tasks, distracted or fatigued?
- Was there a dedicated lookout?
- Lighting conditions and noise on the bridge
- Machinery or equipment failure
- General alarm sounded/broadcast on P/A system
- [Compliance with collision regulations]
- State of watertight and weathertight doors
- Point and angle of impact, sketches and photographs
- [Chart of area showing position of collision/near miss]. (Grounding/contact)
- Engine movement book or computer readout of engine data log
- [Post-collision action taken, degree of damage and repair, internal soundings]
- (Ship's draught, soundings taken around ship after grounding/contact)
- Extent of pollution, measures taken to minimise
- [Paint deposit samples where it is not clear who collided with whom]
- (If applicable anchor details, length and scope of cable, holding performance)
- Information from pilot's PPU (if relevant)
- How did planned route differ from the actual route?
- Were other vessels involved?

8.5 FIRES AND EXPLOSIONS

The following evidence should be collected in the case of a fire or an explosion. However, it should be recognized that fire investigation is a specialist topic in itself for which additional training is required or specialist contractor assistance is recommended:

- Outfit of firefighting systems and appliances, fire plan
- Firefighting appliances and systems properly serviced and maintained (PMS records, safety record book, certification etc.)
- Structural fire protection, e.g. insulation, fire doors, dampers, cable glands

- Containment used, use of fire doors and hatches, boundary cooling
- Sprinklers and gas drenching systems used
- Instructions posted for fixed firefighting systems
- Portable fire appliances used, e.g. fire hoses and extinguishers
- Emergency fire pump use
- Fire detection system, units activated, alarms given/noticed
- Organization and procedures for fire emergency control
- Fire drills practised and logged
- Seat of fire, source of ignition, material initially ignited
- Spread of fire and smoke; was flashover involved?
- Means of escape
- General alarm sounded, crew mustering, broadcast on P/A system
- Deployment of fire parties
- Fire dampers and fuel quick closing valves, shut down arrangements for fans and fuel pumps
- Shore side fire brigade involvement
- Hot work involved, permit to work procedure followed
- Dangerous goods involved
- Stability considerations with respect to firefighting water's free surface
- PMS/maintenance records of tests (QCVs, fixed systems, other equipment, etc.)

INTERVIEW TOPICS

8.6 CARGO SHIFT INCIDENTS

The following is applicable to cases in which bulk cargo has shifted:

- Port of loading, arrival date, departure date
- Was cargo stowed in accordance with IMO Code of Practice for the Safe Loading and Unloading of Bulk Carriers?
- Loading start and finish time and when ship left port, crew supervision of loading
- Cargo stockpiled before loading, condition of stockpiles, wet base, weather before and during loading
- Damp cargoes, moisture content, flow moisture point, transportable moisture limit, drainage to the bilges during voyage
- Method of loading e.g. belt conveyor, grabs, pneumatic conveying
- How was the cargo trimmed? E.g. rotating nozzle, deflector plate
- Number and dimensions of holds, cargo amount in each hold
- Shape of loaded cargo, approximate depths and slope angles
- Anything different about this shipment or how it was loaded
- Stability condition before sailing, conditions calculated while on passage
- Weather, sea conditions, speed of ship
- Heel angle before shift, list angle after shift
- Structural or other damage as a result of shift
- Remedial action e.g. ballasting, change of heading
- Did list cause problems with:
 - o Running of main engine or generators?
 - o Downflooding through ventilation pipes into fuel tanks?
 - o Valves in vent heads preventing downflooding?

- Cargo samples if applicable
- Roles and responsibilities for safe loading
- Wave direction, wave height, encounter period
- Weather condition (precipitation) at berth
- Rolling period while on passage
- Measurement method of moisture content, survey report
- Stowage plan
- Details of the shipper and consignee

8.7 FLOODING

- Source of flooding, failure of hull, deck and superstructure plating or planking, sea water cooling systems, scuppers, windows, stern or rudder glands?
- How was flooding first detected, what action was taken?
- Any unusual ship motion before flooding discovered?
- What was the extent of flooding?
- State of watertight and weathertight doors and hatches
- How was flooding limited by bulkheads, decks, doors and hatches?
- Condition of closing appliances, especially the seals
- Freeing ports adequate?
- Downflooding arrangements. Any used?
- Bilge alarms, fixed bilge pumps, portable pumps
- Stop cocks and non-return valves in pipe systems
- Stability condition before and after flooding
- Did floodwater cause significant hogging, sagging, list or loll?
- Did hogging or sagging cause structural damage?
- Did head of floodwater cause damage to e.g. bulkheads, decks?
- Cargo damage

INTERVIEW TOPICS

- Effect on propulsion machinery and electrical supply.
- Damage control measures, e.g. wood bungs and wedges, cement boxes, pipe clamps.
- Fishing vessel specifics:
 - o Did bilge alarm and pumps meet requirements of relevant regulations/code?
 - o Testing regime and maintenance of bilge alarm system.
 - o Extended spindles employed on sea inlets?
 - o Unauthorized modifications to vessel

8.8 FOUNDERING

Events leading up to the foundering:

- Voyage plan, course and speed
- Stability condition before foundering
- Stability performance, obtain stability book, last inclining experiment, computer models if available
- Weather, sea and visibility conditions
- Radio communications with coastguard, VTS, other ships
- How long afloat after initial accident?
- How did the ship sink? E.g. by bow, stern or capsize

- Location of wreck and water depth
- Salvage intentions?
- Fishing vessel specifics:
 - Type of fishing e.g. beam trawling, stern trawling, potting, dredging
 - Recent changes to fishing gear
 - Was vessel required to meet stability standard?
 - Sea bottom at wreck position, e.g. sand, mud, rock, wrecks nearby
 - Details of equipment/gear on deck
 - Maintenance condition and size of freeing ports/scuppers

8.9 LIFESAVING APPLIANCES AND EVACUATION

- Required outfit of lifesaving appliances carried
- Were lifesaving appliances properly fitted and in date for service, etc.?
- Organization and procedures for drills and emergencies
- Boat drills, including evacuation and man overboard, practised and logged?
- Liferafts correctly secured with Hydrostatic Release Unit?
- SOLAS type approved liferaft, or other recognized body?
- Distress signals card and SOLAS manual.

8.10 STRUCTURAL/MACHINERY/EQUIPMENT FAILURE

- Correct operating procedure used?
- Machinery/equipment maintained and serviced in accordance with the manufacturer's instructions (see Manuals), maintenance and servicing records, experienced and qualified staff
- Genuine replacement parts used or parts of correct specification
- Recent repairs, on board or ashore
- ISM - any non-conformity reports on failed components
- Design flaw, material defect, manufacturing or assembly fault
- Operating within environmental tolerance, e.g. temperature, humidity
- Item suitable for marine use, equipment designed for intended environment
- Fatigue failure, indicated by beach marks, repeated loading cycles below the maximum stress
- Fatigue life exceeded, number of cycles greater than assumed for design
- Material overstressed, indicated by tearing or buckling, e.g. ultimate tensile stress exceeded, excessive shear force or bending moment

INTERVIEW TOPICS

- Components subject to wear, foreign material present, oil samples, magnetic plug residue samples, fresh water samples
- Impact damage or abused in some other way
- Retention of failed specimens
- Previous failures and repairs
- Vibration noticed prior to failure
- Non-destructive testing, information available?
- Heavy weather damage. Obtain weather hindcast and wave information, photos of weather conditions at the time
- Ship motions, e.g. pitching, rolling and slamming
- Action taken to reduce motions, e.g. course change

8.11 SHIP LOST OR MISSING

- Ship history from, e.g. owners, agents, stevedores, pilots, surveyors
- Date and time of departure from last port
- Voyage plan, estimated time and date of arrival at next port
- Type of cargo, where and how stowed and secured
- Any communications e.g. radio and mobile telephone calls
- Contact or sighting by other ships, (coastguard incident log)
- Weather, sea conditions, visibility, current and tidal flow
- Reports of surveys, port state and general inspections
- History of equipment failures or structural defects
- Photographs of ship from, e.g. owners, previous crew, harbourmasters
- Fishing vessel specifics:
 - o Fishing habits of skipper; normal fishing grounds. Ask previous crew, harbourmaster, agent, crews of other fishing vessels
 - o Did any of the crew inform next of kin of their intentions?

8.12 ACCIDENTS INVOLVING ENCLOSED/CONFINED SPACES

- Any definition of enclosed/confined spaces held on board ship?
- What procedures are in place, e.g. space entry, ventilation of space, atmosphere monitoring?
- What equipment is held on board (atmosphere meters, BA, extraction equipment) and was it maintained properly?
- Records and crew experience of drills on enclosed space rescue
- If possible obtain independent measurement of atmosphere before ventilation after the accident
- Do not enter enclosed space until certified safe by a chemist or other authority capable of ensure the atmosphere is safe, e.g. fire brigade
- Check boundaries and penetrations of compartment for source of contamination
- Check validity of the procedures in place
- Establish familiarity of crew with the procedures
- Establish the maintenance history of relevant equipment on board
- Consider whether cargo handling or other work on board had an influence
- Consider whether weather and sea conditions were influential.

ANNEX 5

DRAFT MSC-MEPC.4 CIRCULAR

PORT STATE CONTROL-RELATED MATTERS*

GUIDELINES FOR PORT STATE CONTROL OFFICERS ON THE ISM CODE

1 The Marine Environment Protection Committee, [at its sixty-ninth session (18 to 22 April 2016)], and the Maritime Safety Committee, [at its ninety-sixth session (9 to 20 May 2016)], approved the *Guidelines for port State control officers on the ISM Code* following the recommendations made by the Sub-Committee on Implementation of IMO Instruments, at its second session.

2 Member Governments and regional port State control regimes are invited to apply the *Guidelines for port State control officers on the ISM Code*, as appropriate, and to bring them to the attention of officials exercising port and coastal State actions, and other parties, as appropriate.

* In order to facilitate the identification and retrieval of information circulated by means of joint MSC-MEPC circulars, from now on such information will be disseminated through the following circular series:

- 1 Organization and methods of work, as MSC-MEPC.1/Circ...
- 2 General matters, as MSC-MEPC.2/Circ...
- 3 Casualty-related matters, as MSC-MEPC.3/Circ...
- 4 Port State control-related matters, as MSC-MEPC.4/Circ...
- 5 Survey and certification-related matters, as MSC-MEPC.5/Circ...
- 6 National contact points for safety and pollution prevention and response, as MSC-MEPC.6/Circ...
- 7 Human element-related matters, as MSC-MEPC.7/Circ...

ANNEX

GUIDELINES FOR PORT STATE CONTROL OFFICERS ON THE ISM CODE

1 GENERAL

1.1 The International Safety Management Code (ISM Code) was adopted by the Assembly at its eighteenth session by resolution A.741(18) and was amended by resolutions MSC.104(73) and MSC.273(85). The ISM Code has been made mandatory through SOLAS regulation IX/3.

1.2 The Administration is responsible for verifying compliance with the requirements of the ISM Code and issuing Documents of Compliance to Companies and Safety Management Certificates to ships. This verification is carried out by the Administration or a recognized organization (RO).

1.3 Port State control officers (PSCOs) do not perform safety management audits. PSCO conduct inspections of ship, which are a sampling process and give a snapshot of the vessel on a particular day.

2 GOALS AND PURPOSE

2.1 The guidelines provide guidance to PSCOs for the harmonized application of relating technical or operational deficiencies found in relation to the ISM Code during a PSC inspection.

3 APPLICATION

3.1 The ISM Code applies to the following types of ships engaged on international voyages:

- .1 all passenger ships including passenger high-speed craft;
- .2 oil tankers, chemical tankers, gas carriers, bulk carriers and cargo high-speed craft of 500 gross tonnage and above; and
- .3 other cargo ships and self-propelled Mobile Offshore Drilling Units (MODUs) of 500 gross tonnage and above.

3.2 For establishing the applicability of SOLAS chapter IX and the ISM Code; "gross tonnage" means the gross tonnage of the ship as determined under the provisions of the International Convention on the Tonnage Measurement of Ships, 1969 and as stated on the International Tonnage Certificate of the ship.

3.3 The ISM Code does not apply to government-operated ships used for non-commercial purposes.

4 RELEVANT DOCUMENTATION

4.1 Applicable documentation for these guidelines are as follows:

- .1 SOLAS;
- .2 ISM Code;
- .3 Copy of the Interim DOC, or Copy of the DOC;
- .4 Interim SMC, or SMC; and
- .5 MSC/Circ.1059-MEPC/Circ.401, as may be amended.

5 DEFINITIONS AND ABBREVIATIONS

SOLAS	International Convention for the Safety of Life at Sea, 1974, as amended
ISM Code	International Safety Management Code: <i>"The International Management Code for the Safe Operation of Ships and for Pollution Prevention adopted by the Organization by resolution A.741(18), as may be amended by the Organization."</i>
Procedures for Port State Control	Procedures for Port State Control, 2011, as adopted by resolution A.1052(27), as may be amended
Company	<i>"The owner of the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the shipowner and who, on assuming such responsibility, has agreed to take over all duties and responsibility imposed by the Code."</i>
Administration	<i>"The Government of the State whose flag the ship is entitled to fly."</i>
DOC	<i>Document of Compliance:</i> <i>"A document issued to a Company which complies with the requirements of the ISM Code."</i>
SMC	<i>Safety Management Certificate:</i> <i>"A document issued to a ship which signifies that the Company and its shipboard management operate in accordance with the approved safety management system."</i>
SMS	<i>Safety Management System:</i> <i>"A structured and documented system enabling Company personnel to implement effectively the Company safety and environmental protection policy."</i>

Objective evidence	<i>"Quantitative or qualitative information, records or statements of fact pertaining to safety or to the existence and implementation of a safety management system element, which is based on observation, measurement or test and which can be verified."</i>
Valid certificate	<i>"A certificate that has been issued directly by a Party to a relevant Convention or on its behalf by a recognized organization and contains: accurate and effective dates; meets the provisions of the relevant Convention; and, with which the particulars of the ship, its crew and its equipment correspond."</i>
PSC	Port State Control
PSCO	Port State Control Officer
RO	Recognized Organization <i>"An organization recognized by the Administration."</i>
MODU	Mobile offshore drilling unit

6 INSPECTION OF SHIP

6.1 Initial inspection

6.1.1 Initial inspection should be carried out in accordance with the Procedures for port State control.

6.1.2 During the initial PSC inspection, the PSCO should verify that the ship carries the ISM certificates according to SOLAS chapter IX and the ISM Code by examining the copy of the DOC and the SMC, for which the following points are to be considered:

- .1 a copy of the DOC should be on board. However, according to SOLAS, the copy of the DOC is not required to be authenticated or certified. The copy of the DOC should have the required endorsements;
- .2 the SMC is not valid unless the operating Company holds a valid DOC for that ship type. The ship type in the SMC should be included in the DOC and the Company's particulars should be the same on both the DOC and the SMC. The SMC should have the required endorsements;
- .3 the validity of an Interim DOC should not exceed a period of 12 months. The validity of an Interim SMC should not exceed a period of six months. In special cases, the Administration, or at the request of the Administration another Government, may extend the validity of the Interim SMC for a period, which should not exceed six months from the date of expiry;
- .4 ROs may issue a short-term DOC or SMC not exceeding five months, whilst the full term certificate is being prepared in accordance with their internal procedures. If a renewal verification has been completed and a new SMC cannot be issued or placed on board the ship before the expiry date of the existing certificate, the Administration or RO may endorse the existing certificate. Such a certificate should be accepted as valid for a further period which should not exceed five months from the expiry date;

- .5 if a ship at the time when a SMC expires is not in a port in which it is to be verified, the Administration may extend the period of validity of the SMC but this extension should be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be verified, and then only in cases where it appears proper and reasonable to do so;
- .6 no SMC should be extended for a period of longer than three months, and the ship to which an extension is granted should not, on its arrival in the port in which it is to be verified, be entitled by virtue of such extension to leave that port without having a new SMC. When the renewal verification is completed, the new SMC should be valid to a date not exceeding five years from the expiry date of the existing SMC before the extension was granted; and
- .7 if no technical or operational related deficiencies are found during an initial inspection carried out in accordance with the Procedures for port State control and guidelines, there is no need to consider the ISM aspect.

6.2 Clear grounds

6.2.1 Since the PSCO is not carrying out a safety management audit of the SMS during a PSC inspection, the term clear grounds is not applicable in this context.

6.2.2 Clear grounds and the subsequent more detailed inspection only exists for technical or operational related deficiencies.

6.3 More detailed inspection

6.3.1 If a more detailed inspection for technical or operational related deficiencies is carried out, this should be done in accordance with the Procedures for port State control. Any technical and/or operational-related deficiencies found during this inspection should be, individually or collectively considered by the PSCO, using their professional judgement, to indicate that either:

- .1 these do not show a failure, or lack of effectiveness, of the implementation of the ISM Code; or
- .2 there is a failure, or lack of effectiveness, of the implementation of the ISM Code; or
- .3 there is a serious failure, or lack of effectiveness, of the implementation of the ISM Code.

6.3.2 If an outstanding ISM related deficiency from a previous PSC inspection exists and the current PSC inspection is more than 3 months later:

- .1 the PSCO will verify that an internal safety audit has been performed. The content of the internal safety audit report should not be evaluated; and
- .2 having reference to the previous PSC inspection report, the PSCO will examine the technical and/or operational areas in which deficiencies designated with "ISM" are noted.

7 FOLLOW-UP ACTION

7.1 Technical, operational and ISM-related deficiencies

7.1.1 The principles outlined in the Procedures for port State control with regard to reporting and rectification of technical or operational related deficiencies, and detention and release of the ship is applicable.

7.1.2 If there are technical or operational related deficiencies reported which:

- .1 do not show a failure, or lack of effectiveness, of the implementation of the ISM Code. No ISM-related deficiency should be reported in the PSC inspection report;
- .2 individually or collectively do not warrant the detention of the ship but indicate a failure, or lack of effectiveness, of the implementation of the ISM Code; report an ISM-related deficiency in the PSC inspection report with the requirement of an internal safety audit and corrective action within three months; and
- .3 individually or collectively lead to detention of the ship and indicate a serious failure, or lack of effectiveness, of the implementation of the ISM Code; report an ISM related deficiency in the PSC inspection report with the requirement that a safety management audit has to be carried by the Administration or the RO before the ship may be released from her detention.

Note: Where the PSCO considers one or more technical and/or operational deficiency(s) is ISM related this should be recorded as only one ISM deficiency.

7.1.3 If an outstanding ISM-related deficiency (to be rectified within three months) from a previous PSC inspection exists and no objective evidence can be provided by the master of the ship, during the current PSC inspection more than three months later, that an internal safety audit has been performed, any further action will be taken based on the professional judgement of the PSCO and may warrant the detention of the ship.

7.2 Deficiencies not warranting detention

7.2.1 Minor typing errors in the DOC or the SMC should be reported in the PSC inspection report as a technical deficiency with the certificates and not an ISM-related deficiency.

7.2.2 If technical and/or operational-related deficiencies are found and reported during the PSC inspection, which do not warrant detention but in the professional judgement of the PSCO provide objective evidence of a failure, or lack of effectiveness, of the implementation of the ISM Code; this should be reported additionally in the PSC inspection report as an ISM-related deficiency.

7.3 Deficiencies warranting detention

7.3.1 The following are deficiencies which may warrant detention:

- .1 deficiencies of technical and/or operational nature which individually or collectively provide objective evidence of a serious failure, or lack of effectiveness, of the implementation of the ISM Code;

- .2 there is no SMC, interim SMC and/or copy of the DOC or interim DOC on board the ship;
- .3 there is no valid SMC or interim SMC on board;
- .4 the SMC intermediate verification is overdue;
- .5 the SMC is expired and there is no objective evidence of an extension issued by the Administration; or where the SMC has been withdrawn by the Administration;
- .6 the DOC or interim DOC is expired or withdrawn;
- .7 the ship type as indicated on the SMC or interim SMC not listed on the DOC or interim DOC;
- .8 evidence of the DOC annual verification is not available on board;
- .9 the certificate number on the copy of the DOC and the endorsement pages are not the same; and
- .10 the Company name, the Company address or the issuing Government authority on the DOC or interim DOC is not the same as on the SMC or interim SMC.

8 REPORTING

8.1 Technical and operational-related deficiencies

8.1.1 All technical and/or operational-related deficiencies should be recorded as an individual deficiency in the PSC inspection report according to the Procedures for port State control.

8.1.2 Technical-related deficiency with the defective item DOC/SMC or interim DOC/SMC should be recorded in the PSC inspection report as a certificate deficiency.

8.2 ISM-related deficiency

8.2.1 Where the PSCO has considered the technical and/or operational-related deficiencies found and concluded these provide objective evidence of a (serious) failure, or lack of effectiveness of the implementation of the ISM Code, an ISM-related deficiency should be reported in the PSC inspection report.

ANNEX 6

REVISED PROCESS FOR PUTTING FORWARD RECOMMENDATIONS TO THE RELEVANT IMO BODIES RESULTING FROM REPORTS OF CONCENTRATED INSPECTION CAMPAIGNS (CICs)

Background

1 FSI 19 agreed that, at future sessions, the outcome of concentrated inspection campaigns (CICs) would be best reviewed by a working/drafting group, which would be tasked to prepare appropriate material for referral to the relevant sub-committees.

2 FSI 20 invited port State control (PSC) regimes to conduct CICs in cooperation with other PSC regimes and to continue providing the Sub-Committee with information on the outcome of CICs in the agreed reporting format as set out in annex 4 to document FSI 20/WP.5 and recommendations, together with supporting material, which could be referred to the relevant IMO bodies for further consideration.

3 In addition to the value to individual flag States, the data coming out from CICs can be a valuable measurement tool of the effectiveness of the implementation of IMO instruments.

4 This document is intended to propose a process for handling reports and recommendations arising from CICs to ensure that they receive appropriate consideration, prioritization and action within the Organization.

5 This document is further intended to provide feedback to regional PSC regimes on CIC data and the reporting format in light of experience gained through submissions to the Sub-Committee on Implementation of IMO Instruments (III) to support the goals of paragraph 4 above.

Important elements of the CIC report

6 To ensure that the results of a CIC are most useful to the Organization, reports on CICs need to be structured to include a section containing observations and recommendations relevant to the implementation of IMO instruments, along with supporting evidence. This information would normally be developed within the PSC regime by the coordinator of the CIC, based on the analysis of the data gathered during the CIC.

7 In assessing the results of the CIC and in formulating the observations and recommendations, the PSC regime should attempt to identify trends, possible root causes of non-compliance and suggest potential improvements.

Submission of documents

8 PSC regimes are invited to submit the full CIC report, including observations and recommendations, to the III Sub-Committee for information.

9 If, as a result of the CIC assessment, the PSC regime considers that the matter requires action of IMO then the PSC regime or its member Authorities may submit a substantive document to the III Sub-Committee.

- 10 This substantive document should not repeat the report, but should rather:
- .1 refer to the CIC report submitted in accordance with paragraph 8 above;
 - .2 summarize the data derived from statistical analysis of the CIC;
 - .3 outline the specific shortcomings or non-compliance issues identified in the analysis of the data of the CIC including supporting material to demonstrate this;
 - .4 identify the possible improvements and make recommendations for specific action in relation to the relevant IMO Instrument; and
 - .5 propose that the III Sub-Committee invite a specific appropriate Committee to consider the recommendation in subparagraph 3.

ANNEX 7

**DRAFT AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR
THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED**

**CHAPTER XI-1
SPECIAL MEASURES TO ENHANCE MARITIME SAFETY**

1 The following new regulation 2-1 is added after existing regulation 2:

Regulation 2-1 – Harmonization of survey periods of cargo ships not subject to the ESP Code

For cargo ships not subject to enhanced surveys under regulation XI-1/2, notwithstanding any other provisions, the intermediate and renewal safety construction surveys may be carried out and completed over the corresponding periods as specified in the 2011 ESP Code, as may be amended and the guidelines developed by the Organization*, as appropriate.

* Refer to Survey Guidelines under the harmonized system of survey and certification (HSSC), [...], as adopted by the Assembly of the Organization by resolution A...[]."

ANNEX 8

CHECK/MONITORING SHEET AND RECORD FOR THE DRAFT NEW SOLAS
REGULATION XI-1/2-1

Part III – Process monitoring to be completed during the work process at the sub-committee and checked as part of the final approval process by the Maritime Safety Committee (Refer to section 3.2.1.3)

1	The sub-committee, at an initial engagement, has allocated sufficient time for technical research and discussion before the target completion date, especially on issues needing to be addressed by more than one sub-committee and for which the timing of relevant sub-committees meetings and exchanges of the result of consideration needed to be carefully examined.	yes
2	The scope of application agreed at the proposal stage was not changed without the approval of the Committee.	yes
3	The technical base document/draft amendment addresses the proposal's issue(s) through the suggested instrument(s); where it does not, the sub-committee offers the Committee an alternative method of addressing the problem raised by the proposal.	Yes
4	Due attention has been paid to the <i>Interim guidelines for the systematic application of the grandfather clauses</i> (MSC/Circ.765-MEPC/Circ.315).	not applicable
5	All references have been examined against the text that will be valid if the proposed amendment enters into force.	yes
6	The location of the insertion or modified text is correct for the text that will be valid when the proposed text enters into force on a four-year cycle of entry into force, as other relevant amendments adopted might enter into force on the same date.	yes
7	There are no inconsistencies in respect of scope of application between the technical regulation and the application statement contained in regulation 1 or 2 of the relevant chapter, and application is specifically addressed for existing and/or new ships, as necessary.	yes ¹
8	Where a new term has been introduced into a regulation and a clear definition is necessary, the definition is given in the article of the Convention or at the beginning of the chapter.	not applicable
9	Where any of the terms "fitted", "provided", "installed" or "installation" are used, consideration has been given to clarifying the intended meaning of the term.	not applicable

¹ "Intermediate survey" is used in the amendments and it is discussed that not all cargo ships are subject to intermediate survey, as depending on the SOLAS chapter I, as it was, and SOLAS 1978 and 1988 Protocols.

10	All necessary related and consequential amendments to other existing instruments, including non-mandatory instruments, in particular to the forms of certificates and records of equipment required in the instrument being amended, have been examined and included as part of the proposed amendment(s).	yes
11	The forms of certificates and records of equipment have been harmonized, where appropriate, between the Convention and its Protocols.	not applicable
12	It is confirmed that the amendment is being made to a currently valid text and that no other bodies are concurrently proposing changes to the same text.	yes
13	All entry-into-force criteria (building contract, keel laying and delivery) have been considered and addressed.	not applicable
14	Other impacts of the implementation of the proposed/approved amendment have been fully analysed, including consequential amendments to the "application" and "definition" regulations of the chapter.	yes
15	The amendments presented for adoption clearly indicate changes made with respect to the original text, so as to facilitate their consideration.	yes
16	For amendments to mandatory instruments, the relationship between the Convention and the related instrument has been observed and addressed, as appropriate.	not applicable
17	The related record format has been completed or updated, as appropriate.	yes

Note: Parts I and II should be completed by the submitter of a proposed new amendment, to the fullest extent possible.

Part III should be completed by the drafting/working group that prepared the draft text using "yes", "no" or "not applicable".

RECORD FOR DRAFT NEW SOLAS REGULATION XI-1/2-1

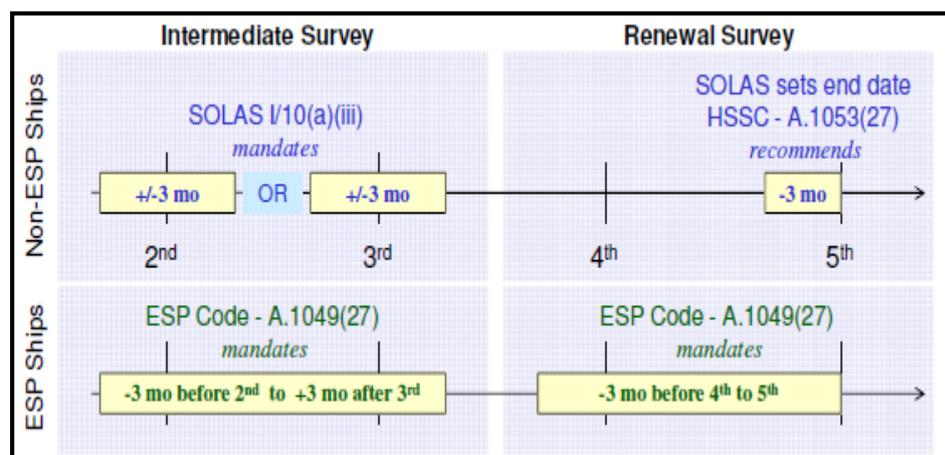
The following records should be created and kept updated for each regulatory development.

The records can be completed by providing references to paragraphs of related documents containing the relevant information, proposals, discussions and decisions.

1	Title (number and title of regulation(s))
	SOLAS chapter XI-1: Special measures to enhance maritime safety Regulation 2-1 Harmonization of survey periods of cargo ships not subject to the ESP Code Proposed to add a new regulation 2-1 after the existing regulation 2.
2	Origin of the requirement (original proposal document)
	MSC 92/12/2 (Liberia, Marshall Islands and IACS)
3	Main reason for the development (extract from the proposal document)
	<p>Main reasons as stated in MSC 92/12/2:</p> <ol style="list-style-type: none"> 1. The Survey Guidelines under the HSSC require an internal examination of selected cargo spaces but do not specify the scope of close-up inspection and thickness measurements for safety construction surveys. 2. However, for all ships, IACS Unified Requirements (URs) specify a detailed regime of internal inspections of cargo spaces and ballast tanks together with minimum extent of thickness measurements and close-up inspections of internal structural members commensurate with the ship's age that are comparable to that required for ESP ships. As is the case for ESP surveys, an IACS UR requires a survey planning meeting to be held prior to the commencement of intermediate and renewal surveys on non-ESP ships also. 3. The co-sponsors note that for intermediate surveys, section 4.1.1 of Part A of both Annexes A and B of the ESP Code states: "4.1.1 Items that are additional to the requirements of the annual survey may be surveyed either at the second or third annual survey or between these surveys." 4. The above text refers to "requirements that are additional to the requirements of the annual survey" and not to "requirements that are additional to the requirements of SOLAS regulation I/10". Consequently, there appears to be no reason why the special nature of ships required to undergo ESP surveys is relevant to the period in which the additional survey items are to be conducted. Also, there appears to be no reason, based on the scope of the additional survey items, why the periods in which they may be conducted should be different for ESP and non-ESP ships. <p>The document suggests that the harmonization be achieved by two sets of amendments, i.e. amending the Survey Guidelines in terms of renewal survey and amending SOLAS chapter XI-1 in terms of intermediate survey.</p>
4	Related output
	None

5	History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)
	<p>MSC 92 took a policy decision to align the survey regime for ships not subject to the enhanced survey programme of inspections of bulk carriers and oil tankers (ESP ships) with that of ships subject to it, as proposed in document MSC 92/12/2 (Liberia et al.). MSC 92 instructed the III 1 to prepare all relevant material for expeditious implementation of the above-mentioned alignment on the basis of the proposal, while addressing fully the concerns raised about the potentially adverse effect of the extended period of renewal surveys on annually-based survey items.</p> <p>III 1, through a drafting group, developed draft amendments to SOLAS regulation XI-1/2 and amendments to Survey Guidelines under HSSC (annex 1 to III 1/WP.6), using the proposal contained in document MSC 92/12/2 and agreed that the amendments to SOLAS and Survey Guidelines would be considered by a correspondence group.</p> <p>III 2, through a working group, finalized the draft new regulation 2-1 of SOLAS XI-1 and consequential draft amendments to the Survey Guidelines (annex 1 to III 2/WP.4) with a view of submission to MSC 96 for its consideration.</p>
6	Impact on other instruments (e.g. codes, performance standards, guidance circulars, certificates/records format, etc.)
	<p>Survey Guidelines under the HSSC, 2015. The consequential amendments to the Survey Guidelines are being under consideration together with the amendments to SOLAS. A consequential amendment to appendix 2 of the Survey Guidelines may be reviewed for clarification.</p>
7	Technical background
7.1	Scope and objective (to cross check with items 4 and 5 in part II of the checklist)
	<p>The amendments are intended to be applicable to all cargo ships not subject to ESP, including new and existing ships, as an alternative survey arrangement.</p>
7.2	Technical/operational background and rationale (summary of FSA study, etc., if available or, engineering challenge posed, etc.)

Current technical background of survey regime:



Rationale of the proposed amendments:

The proposed amendments to SOLAS and the Survey Guidelines is aimed at the harmonization of the intermediate and renewal survey window provisions for cargo ship safety construction survey for ships subject to the Enhanced survey program of inspections of bulk carriers and oil tankers (ESP ships) and ships not subject to it (non-ESP ships).

7.3 Source/derivation of requirement (non-mandatory instrument, industry standard, national/regional requirement)

The amendments to SOLAS regulation XI-1 should be considered together with amendments to the Survey Guidelines. Both amendments should come effective at the same time in terms of intermediate and renewal surveys for cargo ship safety construction.

7.4 Short summary of requirement (what is the new requirement – in short and lay terms)

Regulation 2-1 Harmonization of survey periods of cargo ships not subject to the ESP Code

For cargo ships not subject to enhanced surveys under regulation XI-1/2, the intermediate and renewal safety construction surveys may be carried out and completed over the corresponding periods as specified in the 2011 ESP Code, as may be amended and the guidelines developed by the Organization*, as appropriate.

*Refer to Survey Guidelines under the harmonized system of survey and certification (HSSC), [...], as adopted by the Assembly of the Organization by resolution A....[].

7.5 Points of discussions (controversial points and conclusion)

1. Any changes to the existing arrangements might require the development of draft amendments to SOLAS chapter XI-1 regarding intermediate surveys and to the Survey Guidelines under the HSSC for renewal and intermediate surveys, taking into account the risk of potential conflict with provisions such as SOLAS regulation I/10(a)(iii);

2. "Intermediate survey" is used in the amendment and it is discussed that not all cargo ships are subject to intermediate survey, as depending on the SOLAS chapter I, as it was, and SOLAS 1978 and 1988 Protocols.

ANNEX 9

DRAFT AMENDMENTS TO MARPOL ANNEXES I [, IV] AND VI

ANNEX I

REGULATIONS FOR THE PREVENTION OF POLLUTION BY OIL

Chapter 1 General

Regulation 3

Exemptions and waivers

1 The existing paragraph 2 is replaced with the following:

"2 Particulars of any such exemption, except those under paragraph 7 of this regulation, granted by the Administration shall be indicated in the Certificate referred to in regulation 7 of this Annex."

2 The following new paragraph 7 is added after the existing paragraph 6:

"7 The Administration may exempt an unmanned, non-self-propelled barge* from the requirements of regulations 6.1, 7.1, 17.1 and 37.1 of this Annex for a period not exceeding five years provided that the barge:

.1 is not propelled by mechanical means;

.2 has neither crew nor passengers or other persons on board during navigation;

.3 carries no oil (as defined in regulation 1.1 of this Annex) in bulk;

.4 carries no noxious liquid substances (as defined in regulation 1.10 of MARPOL Annex II) in bulk;

.5 has no machinery installed that may generate oil residues;

.6 has no fuel oil tank, lubricating oil tank and bilge/oil residues tank; and

.7 has undergone a survey to confirm that subparagraphs 7.1 to 7.6 of this paragraph are met.

*

Refer to the Guidelines for exemption of unmanned non-self-propelled barges from the survey and certification requirements under the MARPOL Convention, adopted by the Marine Environment Protection Committee by resolution MEPC.[...]."

[ANNEX IV

REGULATIONS FOR THE PREVENTION OF POLLUTION BY SEWAGE FROM SHIPS

Chapter 1
General

Regulation 3

Exceptions

1 The existing title of the regulation is replaced by the following:

"Exceptions and Exemptions"

2 The following new paragraph 2 is added after existing paragraph 1:

"2 The Administration may exempt an unmanned, non-self-propelled barge* from the requirements of regulations 4.1 and 5.1 of this Annex for a period not exceeding five years provided that the barge:

.1 is not propelled by mechanical means;

.2 has neither crew nor passengers or other persons on board during navigation;

.3 carries no oil (as defined in regulation 1.1 of MARPOL Annex I) in bulk;

.4 carries no noxious liquid substances (as defined in regulation 1.10 of MARPOL Annex II) in bulk;

.5 has no arrangements that could produce sewage as defined in regulation 1.3; and

.6 has undergone a survey to confirm that subparagraphs 2.1 to 2.5 of this paragraph are met.

* Refer to the Guidelines for exemption of unmanned non-self-propelled barges from the survey and certification requirements under the MARPOL Convention, adopted by the Marine Environment Protection Committee by resolution MEPC.[...] "

ANNEX VI

REGULATIONS FOR THE PREVENTION OF AIR POLLUTION FROM SHIPS

Chapter 1 General

Regulation 3

Exceptions and Exemptions

General

1 The following new paragraph 4 is added after existing paragraph 3:

"4 The Administration may exempt an unmanned, non-self-propelled barge* from the requirements of regulations 5.1, 6.1, 12.5 and 12.6 of this Annex for a period not exceeding five years provided that the barge:

- .1 is not propelled by mechanical means;
- .2 has neither crew nor passengers or other persons on board during navigation;
- .3 carries no oil (as defined in regulation 1.1 of MARPOL Annex I) in bulk;
- .4 carries no noxious liquid substances (as defined in regulation 1.10 of MARPOL Annex II) in bulk;
- .5 has no system, equipment and/or machinery installed that may generate emissions regulated by this Annex; and
- .6 has undergone a survey to confirm that subparagraphs 4.1 to 4.5 of this paragraph are met.

* Refer to the Guidelines for exemption of unmanned non-self-propelled barges from the survey and certification requirements under the MARPOL Convention, adopted by the Marine Environment Protection Committee by resolution MEPC.[...]."

ANNEX 10

DRAFT MEPC CIRCULAR

**GUIDELINES FOR EXEMPTION OF UNMANNED NON-SELF-PROPELLED BARGES
FROM THE SURVEY AND CERTIFICATION REQUIREMENTS UNDER
THE MARPOL CONVENTION**

1 The Marine Environment Protection Committee, at its [... session (...)], adopted amendments to MARPOL Annex I, IV and VI concerning the exemption of unmanned non-self-propelled (UNSP) barges from survey and certification requirements, by resolution MEPC.[...].

2 The Marine Environment Protection Committee, at its [... session (...)], with a view to providing more specific guidance for the application of relevant requirements of the MARPOL Convention, approved the *Guidelines for exemption of unmanned non-self-propelled barges from the survey and certification requirements under the MARPOL Convention*, prepared by the Sub-Committee on Implementation of IMO Instruments, at its second session, as set out in the annex.

3 Member Governments are invited to use the annexed guidelines when applying relevant provisions of the MARPOL Convention, and to bring them to the attention of all parties concerned.

ANNEX

GUIDELINES FOR EXEMPTION OF UNMANNED NON-SELF-PROPELLED BARGES FROM THE SURVEY AND CERTIFICATION REQUIREMENTS UNDER THE MARPOL CONVENTION

1 Introduction

1.1 The guidelines are intended to assist shipowners and operators in applying for exemptions from the survey and certification requirements under the MARPOL Convention for unmanned non-self-propelled (UNSP) barges.

1.2 For ease of port State and flag State control of UNSP barges, an Exemption for a UNSP barge should be issued by the Administration, or RO authorized to do so on its behalf, in accordance with the form set out in the appendix.

2 Application

2.1 The guidelines are applicable for the exemption of UNSP barges from certain requirements as regulated in regulation 3.7 of MARPOL Annex I[, regulation 3.2 of MARPOL Annex IV] and regulation 3.4 of MARPOL Annex VI.

3 Procedures for granting exemptions

3.1 The shipowner or operator should apply for exemption to the Administration, or RO authorized to do so on its behalf, with relevant information on the UNSP barge exemption conditions and relevant drawings (General Arrangement Plan, Capacity Plan and any other plans or documents, as necessary).

3.2 The Administration, or RO authorized to do so on its behalf, should review the General Arrangement Plan, Capacity Plan and other relevant information to confirm that the relevant conditions referred to in regulation 3.7 of MARPOL Annex I, [regulation 3.2 of MARPOL Annex IV,] or regulation 3.4 of MARPOL Annex VI, as appropriate, are met.

3.3 After a satisfactory review of the submitted plans and information, a survey of the UNSP barge should be carried out to confirm the actual arrangements on board comply with the exemption conditions, as appropriate.

3.4 Based on satisfactory results of the survey, an Exemption from the survey and certification requirements of MARPOL for a UNSP barge, as per the appendix, may be issued by the Administration or, after approval by the Administration, by the RO authorized to do so on its behalf, which should cover:

- for MARPOL Annex I, exemption from the regulations indicated in regulation 3.7; and/or
- [– for MARPOL Annex IV, exemption from the regulations indicated in regulation 3.2; and/or]
- for MARPOL Annex VI, exemption from the regulations indicated in regulation 3.4, as appropriate.

4 Other matters

4.1 After issuance of the Exemption, the UNSP barge should maintain its exemption conditions in accordance with the guidelines. The Exemption ceases to be valid if any of the approved exemption conditions are not met or any conversion or alteration has occurred, affecting the conditions under which the Exemption is issued. In case of such a conversion or alteration, the Administration, or RO authorized to do so on its behalf, may re-issue a corresponding Exemption to the UNSP barge, based on a further review of the arrangements of the barge and a satisfactory survey.

4.2 During towing and/or pushing operation, the Exemption for each UNSP barge should be available on the towing/pushing vessel.

4.3 The Administration may revoke an Exemption granted to a UNSP barge, in case this is considered appropriate based on any future amendment to the MARPOL Convention.

APPENDIX

**SAMPLE FORM OF EXEMPTION FOR UNMANNED
NON-SELF-PROPELLED BARGES**

Issued under the authority of the Government of

Particulars of ship¹

Name of ship

Distinctive number or letters

Port of registry

Gross tonnage

THIS IS TO CERTIFY that:

1 In accordance with the *Guidelines for exemption from the survey and certification requirements under the MARPOL Convention for Unmanned non-self-propelled barges* (MEPC.1/Circ.[...]), the unmanned non-self-propelled (UNSP) barge meets the following conditions that the barge:

- .1 is not propelled by mechanical means;
- .2 has neither crew nor passengers or other persons on board during navigation;
- .3 carries no oil (as defined in regulation 1.1 of MARPOL Annex I) in bulk; and
- .4 carries no noxious liquid substances (as defined in regulation 1.10 of MARPOL Annex II) in bulk.

2 The ship is exempted, under regulation 3.7 of MARPOL Annex I, from the certification and related survey requirements of regulations 6.1, 7.1, 17.1 and 37.1 under the following conditions that the barge:²

- .1 has no machinery installed that may generate oil residues; and
- .2 has no fuel oil tank, lubricating oil tank and bilge/oil residues tank.

[3 The ship is exempted, under regulation 3.2 of the MARPOL Annex IV, from the certification and related survey requirements of regulations 4.1 and 5.1 under the following conditions that the barge:..... ²

- .1 has no arrangements that could produce sewage as defined in regulation 1.3 of MARPOL Annex IV.]

¹ Alternatively, the particulars of the ship may be placed horizontally in boxes.

² Applicable Not Applicable

4 The ship is exempted, under regulation 3.4 of MARPOL Annex VI from the requirements of regulations 5.1, 6.1, 12.5 and 12.6 under the following conditions that the barge:..... ²

.1 has no system, equipment and/or machinery installed that may generate emissions controlled by MARPOL Annex VI.

This Exemption is valid until (Date of expiry)
subject to the exemption conditions being maintained in accordance with the above-mentioned *Guidelines*. This Exemption ceases to be valid if any of the approved exemption conditions are not met or any conversion or alteration has occurred, affecting the conditions under which the Exemption is issued.

Issued at
(Place of issue of the Exemption)

.....
(Date of issue)

.....
(Signature of authorized official issuing the Exemption)

(Seal or stamp of the issuing authority, as appropriate)

ANNEX 13

BIENNIAL STATUS REPORT OF THE III SUB-COMMITTEE FOR THE 2014-2015 BIENNIUM

Sub-Committee on Implementation of IMO Instruments (III)									
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References	
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment related Conventions	Continuous	MSC / MEPC		III / PPR / CCC / SDC / SSE / NCSR	Ongoing	Ongoing	MSC 78/26, paragraph 22.12; MEPC 67/20, paragraph 4.71; MEPC 68/21, paragraph 12.8; MEPC 68/21/Add.1, annex 16	
2.0.1.2	Guidelines for port State control under the 2004 BWM Convention, including guidance on ballast water sampling and analysis	2015	MEPC	PPR	III	Completed	No work requested of organ by parent	MEPC 68/21, paragraph 7.15 and 17.26	
Notes: TCY extended to 2017 at MEPC 68									
2.0.2.1	Analysis of consolidated audit summary reports	2015	Assembly	Council	MSC / MEPC / LEG / III	In progress	Postponed	MEPC 61/24, paragraph 11.14.1, MSC 88/26, paragraph 10.8	
5.1.2.2	Measures to protect the safety of persons rescued at sea (2017)	2014	MSC / FAL	NCSR	III	Postponed	Postponed	MSC 95/22, paragraph 21.18.3	
Notes: MSC 95 has moved from the PBA output 5.1.2.2 on the agenda of NCSR 3 from the 2016-2017 biennium agenda									

5.2.1.3	Review of general cargo ship safety	2014	MSC		SDC / NCSR / III / HTW	In progress	Completed	MSC 90/28, paragraph 25.10; MSC 93/22, paragraphs 15.7
Notes: III 2, similar to SDC 2, proposes that the work under this output is completed on the basis of paragraph 5.12 of the Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies (MSC-MEPC.1/Circ.4/Rev.4) on the case of planned outputs for which no submissions have been received for two consecutive sessions								
5.2.1.16	Non-mandatory instrument on regulations for non-convention ships	2015	MSC	III	PPR / SDC / SSE / NCSR / HTW	In progress	Completed	MSC 92/26, section 12; HTW 2/19, section 15
Notes: III 2, similar to HTW 2, proposes that the output be put on the post-biennial agenda of MSC								
5.2.1.17	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC / MEPC	III		Completed	Completed	MEPC 68/21, paragraphs 14.5 and 14.6; FSI 12/22, paragraph 9.4; MSC 79/23, paragraph 9.19
5.2.1.29	Non exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)	Annual	MSC / MEPC	III		Completed	Completed	MEPC 64/23, paragraph 11.49; MSC 91/22, paragraph 10.30; MEPC 52/24, paragraph 10.15
5.3.1.1	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	III		Ongoing	Ongoing	MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3
7.1.3.1	Consideration and analysis of reports on alleged inadequacy of port reception facilities	Annual	MEPC		III	Completed	Completed	MEPC 66/21, paragraph 18.25 and annex 17

8.0.3.1	Requirements for access to, or electronic versions of, certificates and documents, including record books required to be carried on ships	2015	FAL		MSC / LEG / III / MEPC	In progress	Postponed	FAL 39/16, paragraphs 5.36 and 5.37
12.1.2.1	Analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations	Annual	MSC / MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR	Completed	Completed	MSC 92/26, paragraph 22.29
12.3.1.1	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC / MEPC	CCC	III	No work requested of organ by parent	No work requested of organ by parent	

ANNEX 14

PROPOSED BIENNIAL AGENDA OF THE III SUB-COMMITTEE FOR THE 2016-2017 BIENNIUM*

Sub-Committee on Implementation of IMO Instruments (III)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year	Status of output for Year 2	References
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment related Conventions	Continuous	MSC / MEPC		III / PPR / CCC / SDC / SSE / NCSR			MSC 78/26, paragraph 22.12; MEPC 67/20, paragraph 4.71; MEPC 68/21, paragraph 12.8; MEPC 68/21/Add.1, annex 16
2.0.1.2	Guidelines for port State control under the 2004 BWM Convention, including guidance on ballast water sampling and analysis	2015 2017	MEPC	PPR	III			MEPC 68/21, paragraph 7.15 and 17.26
Notes: TCY extended to 2017 at MEPC 68								
2.0.2.1	Analysis of consolidated audit summary reports	2015 Annual	Assembly	Council	MSC / MEPC / LEG / III			MEPC 61/24, paragraph 11.14.1, MSC 88/26, paragraph 10.8
Notes: III 2 proposes to change to "annual"								

* The Sub-Committee's 2014-2015 biennial agenda, as set out in annex 19 to document MSC 95/22. Outputs printed in bold have been selected for the draft provisional agenda for III 3, as shown in annex 15. Struck-out text indicates proposed deletions. Output numbers are subject to change by A 29.

5.1.2.2	Measures to protect the safety of persons rescued at sea (2017)	2014 2017	MSC / FAL	NCSR	III			MSC 95/22, paragraph 21.18.3
Notes: MSC 95 has moved from the PBA output 5.1.2.2 for discussion in the 2016-2017 biennium								
5.2.1.3	Review of general cargo ship safety	2014	MSC		SDC / NCSR / III / HTW			MSC 90/28, paragraph 25.10; MSC 93/22, paragraphs 15.7
Notes: III 2, similar to SDC 2, proposed that the work under this output is completed on the basis of paragraph 5.12 of the <i>Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies</i> (MSC-MEPC.1/Circ.4/Rev.4) on the case of planned outputs for which no submissions have been received for two consecutive sessions								
5.2.1.17	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC / MEPC	III				MEPC 68/21, paragraphs 14.5 and 14.6 FSI 12/22, paragraph 9.4; MSC 79/23, paragraph 9.19
5.2.1.29	Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)	Annual	MSC / MEPC	III				MEPC 64/23, paragraph 11.49; MSC 91/22, paragraph 10.30; MEPC 52/24, paragraph 10.15
5.3.1.1	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	III				MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3
7.1.3.1	Consideration and analysis of reports on alleged inadequacy of port reception facilities	Annual	MEPC		III			

8.0.3.1	Requirements for access to, or electronic versions of, certificates and documents, including record books required to be carried on ships	2015 2017	FAL		MSC / LEG / III / MEPC			FAL 39/16, paragraphs 5.36 and 5.37 MEPC 68/21, paragraphs 13.2 and 17.26
Notes: TCY extended to 2017 at MEPC 68								
12.1.2.1	Analysis of casualty data to identify trends and develop knowledge and risk-based recommendations	Annual	MSC / MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR			MSC 92/26, paragraph 22.29
12.1.2.1bis	Analysis of PSC data to identify trends and develop knowledge and risk-based recommendations	Annual	MSC / MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR			MSC 92/26, paragraph 22.29
12.3.1.1	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC / MEPC	CCC	III			

TCY extended

ITEMS ON THE POST-BIENNIAL AGENDA OF MSC THAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE

MARITIME SAFETY COMMITTEE (MSC)								
ACCEPTED POST-BIENNIAL OUTPUTS				Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Timescale (sessions)	Remarks
Number	Reference to Strategic Direction	Reference to High-level Actions	Description					
5.1.2.2	5.1	5.1.2	Measures to protect the safety of persons rescued at sea (2017)	MSC/FAL	NCSR	III		MSC 95/22, paragraph 21.18.3
5.2.1.16	5.2	5.2.1	Non-mandatory instrument on regulations for non-convention ships	MSC				MSC 92/26, section 12

ANNEX 15

DRAFT PROVISIONAL AGENDA FOR III 3

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Consideration and analysis of reports on alleged inadequacy of port reception facilities (7.1.3.1)
 - 4 Analysis of casualty data to identify trends and develop knowledge and risk-based recommendations (12.1.2.1)
 - 5 Measures to harmonize port State control (PSC) activities and procedures worldwide (5.3.1.1)
 - 6 Analysis of PSC data to identify trends and develop knowledge and risk-based recommendations (12.1.2.1bis)
 - 7 Analysis of consolidated audit summary reports (2.0.2.1)
 - 8 Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC) (5.2.1.17)
 - 9 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code) (5.2.1.29)
 - 10 Unified interpretation of provisions of IMO safety, security, and environment related Conventions (1.1.2.3)
 - 11 Biennial agenda and provisional agenda for III 4
 - 12 Election of Chairman and Vice-Chairman for 2017
 - 13 Any other business
 - 14 Report to the Committees

ANNEX 16

STATEMENTS BY DELEGATIONS AND OBSERVERS*

ITEM 6

Statement by the observer of IFSMA

Thank you Chair.

IFSMA on behalf of shipmasters thanks the United Kingdom and participants of the correspondence group for this detailed Paper. IFSMA respectfully draws attention to the most important issue affecting seafarers today, namely, "fatigue" or more precisely tiredness, which affects none more so than shipmasters.

No civilisation in history or mode of transport today provides for only 77/70 hours rest per week. This equates to a 91 or 98 hour working week. Compliant with regulation (STCW 78 as amended), but contrary to all research in any sector of industry including shipping.

Invariably, investigation focuses on proximate cause with the seafarer taking the hit for a regulatory system that fails not only to protect them and treat them fairly but seeks to criminalise them so as facilitate a more favourable financial outcome. There are examples of good practice, where accident investigation is truly independent and criminal sanction is sparingly used. Shipmasters should not have to work in fear of incarceration – professional sanction should replace unwarranted criminalisation.

On the subject of GISIS, IFSMA takes issue with the secrecy embedded into a system where it requires the permission of the State submitting the report, to agree to release its content to interested parties including the relatives of deceased seafarers.

The correspondence group may have access to reports, but suspicion, remains amongst those that have suffered loss. The veil of secrecy needs to be lifted, untold benefit may come about. IFSMA requests these statements are recorded in the report of the Sub-Committee.

Thank you Chair.

ITEM 9

Statement by the delegation of Spain

España destacó que la enmienda propuesta en relación con la regla XI-1/2-1 es incompleta dado que la mención a "reconocimientos de seguridad de construcción" no permite que los países que hayan ratificado el Protocolo de 1988 al Convenio SOLAS y utilicen el "certificado de seguridad para buque de carga", en lugar del "certificado de seguridad de construcción para buque de carga", puedan acogerse a esta enmienda. El "certificado de seguridad para buque de carga" establece en una de sus secciones que el reconocimiento relativo a la estructura se denomina "de la estructura, las máquinas y el equipo de los buques de carga" (Regla 10 del Capítulo I) y no de construcción. Por ello, solicita que se haga una mención explícita a los reconocimientos de la estructura, las máquinas y el equipo de los buques de carga en la regla y así poder aplicar la misma.

* Statements have been included in this annex in the order in which they were given, sorted by agenda items, and in the language of submission (including translation into any other language if such translation was provided).

Statement by the delegation of Germany

Thank you Mr. Chairman,

for allowing me to take the floor again.

As indicated earlier, the working group used the opportunity of the session to start the consideration of the following matters on survey and certification under the Polar Code for further discussion and finalization by the correspondence group.

Our working group had a discussion on the new SOLAS regulation XIV/2 on Application, and identified that an interpretation of regulation 2.2 may be needed to identify the meaning of the term "intermediate or renewal survey". Such guidance may either refer to the completion of all Polar Code related surveys or any survey under SOLAS.

Discussing the inclusion of Polar Code survey and certification matters in the HSSC Survey Guidelines, the following was identified:

The requirements of paragraph 4.8. of the Survey Guidelines under the HSSC should be considered to avoid unintended consequences for ships not in substantial compliance with the requirements of the Code. A possible connection between the validity of the SOLAS Certificates for Safety Construction, Equipment and Radio and the requirements of the Polar Code should be taken into account and guidance provided.

The Polar Code is perceived as a standalone instrument to be certified while its content is to be surveyed in the context of the existing Surveys under SOLAS chapter I.

The working group agrees that the issuance of the Polar Ship Certificate for ships conducting a single voyage to the Polar Area should be part of the consideration in the Correspondence Group and guidance on the issuance of the Certificate and the conditions for its validity provided. Regulation 1.3.3 of the Code on certification of category C cargo ships should be analysed therefore.

The working group recommends the Correspondence Group to consider, with respect to the Polar Code, the following framework:

- .1 Take into account the application criteria in SOLAS chapter XIV.
- .2 Discuss areas related to survey and certification that have been identified as requiring guidance, in particular the consideration of related dates, such as application date, expiry date and completion date of the survey, and put forward a proposal.
- .3 Identify areas of the Survey Guidelines under the HSSC where additional guidance on the application of the mandatory Polar Code is necessary and draft related guidance.
- .4 Discuss survey and certification matters both for category C and category A and B ships in general.
- .5 Develop survey items related to the Polar Code for the Survey Guidelines, for the Polar Code part I in annex 4 as a new section 3 and for the Polar Code part II in annex 3.

- .6 Discuss on any necessary guidance on the completion of the model form of the Polar Ship Certificate.

The delegation of Germany would ask for this statement to be annexed to the report of the Sub-Committee, please.

Thank you Mr. Chairman.

ITEM 15

Statement by the delegation of the Islamic Republic of Iran

In the name of God, the compassionate, the merciful

Good morning Mr. Chairman, and good morning distinguished delegates,

I have great pleasure and honor to announce before you, that a "Historic" agreement on nuclear dispute has been made in Vienna, between the Islamic Republic of Iran and six nations (the so-called 5+1) (China, France, Germany, the Russian Federation, the United States and the United Kingdom) on 14 July 2015.

Diligent and constructive discussions and engagements between the senior officials of the seven nations, has resulted in this historic outcome, which can give a new direction to world and provide the basis for fairness and equitability alongside shared common interests.

By recognition the right for all nations to benefit from peaceful nuclear programmes, maintaining mutual respect and dignity with other nations, having political will and courage for development and prosperity, and having a dynamic leadership, Islamic Republic of Iran was and still is confident of finding its way forward, in an equitable manner, in the new realm of international relations, consequent to this landmark agreement.

It is indeed a historic occasion for all those involved, because it laid a new foundation for rebuilding mutual trust and opened a new chapter in our diplomatic relationship with the world.

SUB-COMMITTEE ON IMPLEMENTATION
OF IMO INSTRUMENTS
2nd session
Agenda item 16

III 2/16/Add.1
14 August 2015
Original: ENGLISH

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

Attached are annexes 11 and 12 of the report of the Sub-Committee on Implementation of IMO Instruments on its second session (III 2/16).

LIST OF ANNEXES

- ANNEX 11 DRAFT ASSEMBLY RESOLUTION ON THE SURVEY GUIDELINES UNDER THE HARMONIZED SYSTEM OF SURVEY AND CERTIFICATION (HSSC), 2015
- ANNEX 12 DRAFT ASSEMBLY RESOLUTION ON THE 2015 NON-EXHAUSTIVE LIST OF OBLIGATIONS UNDER INSTRUMENTS RELEVANT TO THE IMO INSTRUMENTS IMPLEMENTATION CODE (RESOLUTION A.1070(28))

ANNEX 11

DRAFT ASSEMBLY RESOLUTION

**SURVEY GUIDELINES UNDER THE HARMONIZED SYSTEM OF
SURVEY AND CERTIFICATION (HSSC), 2015**

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 regarding maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO the adoption by:

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

RECALLING ALSO that, by resolution A.1053(27), it adopted the Survey Guidelines under the Harmonized System of Survey and Certification, 2011 ("the Survey Guidelines") with a view to assisting Governments in implementing the requirements of the aforementioned instruments, and that, by resolution A.1076(28), it adopted amendments to the Survey Guidelines,

RECOGNIZING the need for the Survey Guidelines to be further revised to take into account the amendments to the IMO instruments referred to above, which have entered into force or become effective since the adoption of resolution A.1076(28),

HAVING CONSIDERED the recommendations made by the Marine Environment Protection Committee, at its sixty-seventh session, and the Maritime Safety Committee, at its ninety-fourth session,

1 ADOPTS the Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2015, as set out in the annex to the present resolution;

2 INVITES Governments carrying out surveys required by relevant IMO instruments to apply the provisions of the annexed Survey Guidelines;

3 REQUESTS the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Survey Guidelines under review and amend them as necessary;

4 REVOKES resolutions A.1053(27) and A.1076(28).

ANNEX

**SURVEY GUIDELINES UNDER THE HARMONIZED
SYSTEM OF SURVEY AND CERTIFICATION (HSSC), 2015**

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GENERAL

1 INTRODUCTION

1.1 These guidelines supersede the guidelines adopted by resolution A.1053(27), as amended by resolution A.1076 (28), 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) and as modified by the Protocol of 1988 relating thereto, as amended (SOLAS 74/88);
- .2 International Convention on Load Lines, 1966 (LLC 1966) and as modified by the Protocol of 1988 relating thereto, as amended (LLC 66/88);
- .3 International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, and as further amended by the Protocol of 1997, as amended (MARPOL);
- .4 International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, as amended (IBC Code);
- .5 International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, as amended (IGC Code); and
- .6 Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, as amended (BCH Code).

1.2 These guidelines take into account amendments to statutory instruments which have entered into force up to and including 31 December 2015 (see appendix 1) and contain the following:

- .1 Survey Guidelines under the 1974 SOLAS Convention, as modified by the Protocol of 1988 relating thereto (annex 1);
- .2 Survey Guidelines under the 1966 Load Line Convention, as modified by the Protocol of 1988 relating thereto (annex 2);
- .3 Survey Guidelines under the MARPOL Convention (annex 3); and
- .4 Survey Guidelines under mandatory Codes (annex 4).

1.3 The harmonized system, a diagrammatic arrangement of which is given in appendix 2, provides for:

- .1 a one-year standard interval between surveys, based on initial, annual, intermediate, periodical and renewal surveys, as appropriate, except for MARPOL Annex IV which is based on initial and renewal surveys;

- .2 a scheme providing the necessary flexibility to execute each survey, with provision for:
 - .1 completion of the renewal survey within three months before the expiry date of the existing certificate with no loss of its period of validity; and
 - .2 a "time window" of six months – from three months before to three months after the anniversary date of the certificate for annual, intermediate and periodical surveys;
- .3 a maximum period of validity of five years for all cargo ship certificates;
- .4 a maximum period of validity of 12 months for the Passenger Ship Safety Certificate;
- .5 a system for the extension of certificates limited to three months, enabling a ship to complete its voyage, or one month for ships engaged on short voyages;
- .6 when an extension has been granted, the period of validity of the new certificate starting from the expiry date of the existing certificate before its extension;
- .7 a flexible system for inspection of the outside of the ship's bottom on the following conditions:
 - .1 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; and
 - .2 the interval between any two such inspections should not exceed 36 months;
- .8 a Cargo Ship Safety Certificate under SOLAS 74/88, as an alternative to separate Cargo Ship Safety Construction, Cargo Ship Safety Equipment and Cargo Ship Safety Radio Certificates; and
- .9 a flexible system concerning the frequency and the period of validity of certificates, subject to the minimum pattern of surveys being maintained.

1.4 In implementing the harmonized system, the following principal changes made to the survey and certification requirements of SOLAS 74/88 have been taken into account:

- .1 unscheduled inspections are no longer included and annual surveys are mandatory for cargo ships;
- .2 intervals between the periodical surveys of equipment covered by the Cargo Ship Safety Equipment Certificate are alternately two and three years instead of two years;
- .3 intermediate surveys are required for all ships under the Cargo Ship Safety Construction Certificate;

- .4 inspection of the outside of the ship's bottom is required for all cargo ships;
- .5 intermediate surveys for the Cargo Ship Safety Construction Certificate are held within three months of either the second or third anniversary date;
- .6 all cargo ship certificates may be issued for any period of validity up to and including five years;
- .7 there is provision for a Cargo Ship Safety Certificate; and
- .8 the extension provisions have been reduced from five months to three months to enable a ship to complete its voyage and the extension for one month for a period of grace is limited to ships engaged on short voyages.

1.5 With regard to LLC 66/88, the principal changes to the requirements for survey and certification are the introduction of similar extension provisions (see 1.4.8) and linking of the period of validity of the new certificate to the expiry date of the previous certificate (see 1.3.6).

1.6 With regard to MARPOL and the IBC, IGC and BCH Codes, the main changes are the linking of the period of validity of the new certificate to the expiry date of the previous certificate (see 1.3.6), the holding of the intermediate survey within three months of the second or third anniversary date and the introduction of the same extension provisions (see 1.4.8).

2 TYPES OF SURVEY

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

- (I) 2.1 *An initial survey* is a complete inspection before a ship is put into service of all the items relating to a particular certificate, to ensure that the relevant requirements are complied with and that these items are satisfactory for the service for which the ship is intended.
- (P) 2.2 *A periodical survey* is an inspection of the items relating to the particular certificate to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.
- (R) 2.3 *A renewal survey* is the same as a periodical survey but also leads to the issue of a new certificate.
- (In) 2.4 *An intermediate survey* is an inspection of specified items relevant to the particular certificate to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.
- (A) 2.5 *An annual survey* is a general inspection of the items relating to the particular certificate to ensure that they have been maintained and remain satisfactory for the service for which the ship is intended.
- (B) 2.6 *An inspection of the outside of the ship's bottom* is an inspection of the underwater part of the ship and related items to ensure that they are in a satisfactory condition and fit for the service for which the ship is intended.
- (Ad) 2.7 *An additional survey* is an inspection, either general or partial according to the circumstances, to be made after a repair resulting from investigations or whenever any important repairs or renewals are made.

2.8 List of types of survey in Conventions and Codes

(I) 2.8.1 *Initial surveys*

SOLAS 74/88 regulations I/7(a)(i) and 7(b)(i)
regulations I/8(a)(i) and 8(b)(i)
regulations I/9(a)(i) and 9(b)(i)
regulations I/10(a)(i) and 10(b)(i)

LLC 66/88 article 14(1)(a)
MARPOL Annex I regulation 6.1.1
MARPOL Annex II regulation 8.1.1
MARPOL Annex IV regulation 4.1.1
MARPOL Annex VI regulation 5.1.1
IBC Code regulation 1.5.2.1.1
IGC Code regulation 1.5.2.1.1
BCH Code regulation 1.6.2.1.1

(P) 2.8.2 *Periodical surveys*

SOLAS 74/88 regulations I/8(a)(iii) and 8(b)(ii)
regulations I/9(a)(iii) and 9(b)(iii)

(R) 2.8.3 *Renewal surveys*

SOLAS 74/88 regulations I/7(a)(ii) and 7(b)(ii)
regulations I/8(a)(ii) and 8(b)(ii)
regulations I/9(a)(ii) and 9(b)(ii)
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LLC 66/88 article 14(1)(b)
MARPOL Annex I regulation 6.1.2
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MARPOL Annex IV regulation 4.1.2
MARPOL Annex VI regulation 5.1.2
IBC Code regulation 1.5.2.1.2
IGC Code regulation 1.5.2.1.2
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(In) 2.8.4 *Intermediate surveys*

SOLAS 74/88 regulations I/10(a)(iii) and 10(b)(iii)
MARPOL Annex I regulation 6.1.3
MARPOL Annex II regulation 8.1.3
MARPOL Annex VI regulation 5.1.3
IBC Code regulation 1.5.2.1.3
IGC Code regulation 1.5.2.1.3
BCH Code regulation 1.6.2.1.3

(A) 2.8.5 *Annual surveys*

SOLAS 74/88 regulations I/8(a)(iv), 8(b)(iii), and 10(a)(iv) and 10(b)(iv)
LLC 66/88 article 14(1)(c)
MARPOL Annex I regulation 6.1.4
MARPOL Annex II regulation 8.1.4
MARPOL Annex VI regulation 5.1.4
IBC Code regulation 1.5.2.1.4
IGC Code regulation 1.5.2.1.4
BCH Code regulation 1.6.2.1.4

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

SOLAS 74/88 regulations I/10(a)(v) and 10(b)(v)

(Ad) 2.8.7 *Additional surveys*

SOLAS 74/88 regulations I/7(a)(iii) and 7(b)(iii)
regulation I/8(a)(iv)
regulation I/9(a)(iv)
regulation I/10(a)(iv)

MARPOL Annex I regulation 6.1.5
MARPOL Annex II regulation 8.1.5
MARPOL Annex IV regulation 4.1.3
MARPOL Annex VI regulation 5.1.5
IBC Code regulation 1.5.2.1.5
IGC Code regulation 1.5.2.1.5
BCH Code regulation 1.6.2.1.5

3 APPLICATION AND ARRANGEMENT OF THE GUIDELINES

3.1 The guidelines provide a general framework upon which Administrations will be able to base their arrangements for carrying out surveys. It is recognized that survey provisions contained in the guidelines are not necessarily applicable to all types and sizes of ship.

3.2 Whilst the guidelines are intended to cover instruments listed in 1.1, they should be applied, as appropriate, to drilling rigs and other platforms covered by MARPOL Annex I regulation 39 and Annex VI regulation 5.

3.3 A description of the various types of survey is given in section 4 and, as shown on the contents page, this is followed by the detailed requirements for the various surveys for each of the certificates.

3.4 When appropriate, the detailed requirements for the various surveys contain a section that is applicable to all cargo ships followed by a section that only applies to specific ship types.

3.5 Whilst the Convention or Code references are included, where possible, it should be noted that, in general, it has not been possible to indicate where there are differing requirements dependent upon the ship's year of build. Consequently, care should be taken in applying specific requirements, particularly where there have been amendments that are only applicable to ships built after a certain date.

3.6 Although also part of the requirements for the Cargo Ship Safety Construction Certificate, a separate section is provided for inspection of the outside of the ship's bottom.

3.7 SOLAS 74/88 regulation 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 annual and intermediate surveys should be the same as those required for the replaced certificates and the appropriate sections of the Cargo Ship Safety Certificate, endorsed accordingly.

3.8 On the left-hand side of each item to be surveyed may be found two letters in brackets, the first indicating the certificate to which the survey relates, as follows:

- (E) for the Cargo Ship Safety Equipment Certificate;
- (C) for the Cargo Ship Safety Construction Certificate;
- (R) for the Cargo Ship Safety Radio Certificate;
- (L) for the International Load Line Certificate;
- (O) for the International Oil Pollution Prevention Certificate;
- (N) for the International Pollution Prevention Certificate for Carriage of Noxious Liquid Substances in Bulk;
- (S) for the International Sewage Pollution Prevention Certificate;
- (A) for the International Air Pollution Prevention Certificate;
- (D) for the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (G) for the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (P) for the Passenger Ship Safety Certificate;

and the second for the type of survey, as follows:

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

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

3.9 For the application of these guidelines, the following guidance on terms used in the survey requirements is provided:

- .1 "Examining" except where used in "examining the plans" or "examining the design" should be understood as a thorough examination, using appropriate techniques, of the components, system or appliance in question for satisfactory provision, arrangement and condition and for any signs of defects, deterioration or damage;

- .2 "Testing" should be understood as a functional test of the system or appliance in question, to confirm its satisfactory operation and performance for its intended use.

3.10 The amplification of various terms and conditions is given in section 5.

4 DESCRIPTION OF THE VARIOUS TYPES OF SURVEYS

(I) 4.1 Initial surveys

4.1.1 Frequency

The initial survey, as required by the relevant regulations (see 2.8.1), should be held before the ship is put in service, or when a new instrument applies to an existing ship, and the appropriate certificate is issued for the first time.

4.1.2 General

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

4.1.2.2 The initial survey should consist of:

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

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; and
- .3 any special conditions.

(A) 4.2 Annual surveys

4.2.1 Frequency

The annual survey, as required by the relevant regulations (see 2.8.5) and as shown diagrammatically in appendix 2, should be held within three months before or after each anniversary date of the certificate.

4.2.2 *General*

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

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

- .1 it should consist of a certificate examination, a visual examination of a sufficient extent of the ship and its equipment, and certain tests to confirm that their condition is being properly maintained;
- .2 it should also include a visual examination to confirm that no unapproved modifications have been made to the ship and its equipment;
- .3 the content of each annual survey is given in the respective guidelines. The thoroughness and stringency of the survey should depend upon the condition of the ship and its equipment; and
- .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*

The intermediate survey, as required by the relevant regulations (see 2.8.4) and as shown diagrammatically in appendix 2, should be held within three months before or after the second anniversary date or within three months before or after the third anniversary date of the appropriate certificate and should take the place of one of the annual surveys.

4.3.2 *General*

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

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

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

(P) **4.4 Periodical surveys**

4.4.1 *Frequency*

The periodical survey, as required by the relevant regulations (see 2.8.2) and as shown diagrammatically in appendix 2, should be held within three months before or after the second anniversary date or within three months before or after the third anniversary date in the case of the cargo ship safety equipment certificate and should take the place of one of the annual surveys and within three months before or after each anniversary date in the case of the cargo ship safety radio certificate.

4.4.2 *General*

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

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

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

(R) **4.5 Renewal surveys**

4.5.1 *Frequency*

The renewal survey, as required by the relevant regulations (see 2.8.3) and as shown diagrammatically in the appendix 2, should be held before the appropriate certificate is renewed.

The cargo ship safety construction renewal survey may be commenced at the fourth annual survey and may be progressed during the succeeding year with a view to completion by the fifth anniversary date. The survey items of the fourth annual survey should not be credited to the completion of the renewal survey.

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.

4.5.2.3 Concurrent crediting to both intermediate and renewal safety construction survey for surveys of spaces should not be acceptable.

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

4.6.1 *Frequency*

There should be a minimum of two inspections of the outside of the ship's bottom during any five-year period (see 5.7), except where SOLAS 74/88 regulation I/14(e) or (f) is applicable. One such inspection should be carried out on or after the fourth annual survey in conjunction with the renewal of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety

Certificate. Where the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate has been extended under SOLAS 74/88 regulation 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 paragraph 2.2.2[†] of the applicable part of annex A or B, of the *International code on the enhanced programme of inspections during surveys of bulk carriers and oil tankers, 2011* (2011 ESP Code) adopted by resolution A.1049(27), 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**

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

* Refer to the *Guidelines for pre-planning of surveys in dry dock of ships which are not subject to the enhanced programme of inspections* (MSC.1/Circ.1223).

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

4.8 Completion of surveys

4.8.1 If a survey shows that the condition of the ship or its equipment does not correspond substantially with the particulars of the certificate or is not fit to proceed to sea without danger to the ship, or persons on board, or without presenting unreasonable threat of harm to the environment, the officer of the Administration, nominated surveyor or recognized organization should be guided by the requirements of SOLAS 74/88 regulation I/6(c), MARPOL Annex I regulation 6.3.3, MARPOL Annex II regulation 8.2.5, MARPOL Annex IV regulation 4.5, MARPOL Annex VI regulation 5.3.3, IBC Code regulation 1.5.1.4, IGC Code regulation 1.5.1.3 and BCH Code 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 should also be notified immediately.

4.8.2 Although LLC 66/88 does not contain specific requirements, if a load line survey shows the condition of the ship or its equipment does not correspond substantially with the particulars of the certificate or is not fit to proceed to sea without danger to the ship, or persons on board, or without presenting unreasonable threat of harm to the environment, the officer of the Administration, nominated surveyor or recognized organization should, nevertheless, be guided by 4.8.1.

4.8.3 If a survey shows that the condition of the ship and its equipment correspond substantially with the particulars of the certificate, and the ship is fit to proceed to sea without danger to the ship, or persons on board, and without presenting unreasonable threat of harm to the environment, but deficiencies exist that cannot be rectified at the time of survey, the following should be guided:

- .1 A condition should be issued, detailing any relevant requirements or conditions with assigned due date for the time needed to rectify the deficiencies, with relevant information being kept available on board. If and as required by the Administration, the relevant certificates should be issued with the appropriate expiry dates; and
- .2 The Administration should be notified, as appropriate, according to the agreement with the nominated surveyor or the recognized organization.

5 AMPLIFICATION OF TERMS AND CONDITIONS

5.1 Definition of related items

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

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

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

References: SOLAS 74/88 regulation I/14(c), LLC 66/88 article 19(3), MARPOL Annex I regulation 10.3, MARPOL Annex II regulation 10.3, MARPOL Annex IV regulation 8.3, MARPOL Annex VI regulation 9.3, IBC Code regulation 1.5.6.3, IGC Code regulation 1.5.6.3, BCH Code regulation 1.6.6.3.

Where a certificate has been issued for a period of less than five years, it is permissible under these regulations or article to extend the certificate so that its maximum period of validity is five years provided that the pattern of surveys for a certificate with a five-year period of validity is maintained (see appendix 2). This means that, for example, if a request is made to extend a two-year Cargo Ship Safety Equipment Certificate to five years, then a periodical and two further annual surveys, as detailed in SOLAS 74/88 regulation I/8, would be required. Also, for example, if it was intended to extend a four-year Cargo Ship Safety Construction Certificate to five years, then an additional annual survey would be required, as detailed in SOLAS 74/88 regulation I/10. Where a certificate has been so extended, it is still permissible to also extend the certificate under SOLAS 74/88 regulations I/14(e) and (f), LLC 66/88 articles 19(5) and (6), MARPOL Annex I regulations 10.5 and 10.6, MARPOL Annex II regulations 10.5 and 10.6, MARPOL Annex IV regulations 8.5 and 8.6, MARPOL Annex VI regulations 9.5 and 9.6, IBC Code regulations 1.5.6.5 and 1.5.6.6, IGC Code, regulations 1.5.6.5 and 1.5.6.6, BCH Code regulations 1.6.6.5 and 1.6.6.6, when no additional surveys would be required but, of course, the new certificate issued after the renewal survey would date from the five-year expiry of the existing certificate, in accordance with SOLAS 74/88 regulation I/14(b)(ii), LLC 66/88 article 19(2)(b), MARPOL Annex I regulation 10.2.2, MARPOL Annex II regulation 10.2.2, MARPOL Annex IV regulation 8.2.2, MARPOL Annex VI regulation 9.2.2, IBC Code regulation 1.5.6.2.2, IGC Code regulation 1.5.6.2.2 and BCH Code regulation 1.6.6.2.2.

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

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

This permits the period of five years in which two inspections of the ship's bottom are to be carried out to be extended when the Cargo Ship Safety Construction Certificate is extended under regulation I/14(e) and (f). However, no extension should be permitted on the period of 36 months between any two such inspections. If the first ship's bottom inspection is carried out between 24 and 27 months then the thirty-sixth-month limitation may prevent the certificate being extended by the periods permitted in regulation I/14(e) and (f).

5.4 Definition of "short voyage"

References: SOLAS 74/88 regulation I/14(f), LLC 66/88 article 19(6), MARPOL Annex I regulation 10.6, MARPOL Annex II regulation 10.6, MARPOL Annex IV regulation 8.6, MARPOL Annex VI regulation 9.6, IBC Code regulation 1.5.6.6, IGC Code regulation 1.5.6.6, BCH Code regulation 1.6.6.6.

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

5.5 Application of "special circumstances"

References: SOLAS 74/88 regulation I/14(g), LLC 66/88 article 19(7), MARPOL Annex I, regulation 10.7, MARPOL Annex II regulation 10.7, MARPOL Annex IV regulation 8.7, MARPOL Annex VI regulation 9.7, IBC Code regulation 1.5.6.7, IGC Code regulation 1.5.6.7 and BCH Code regulation 1.6.6.7.

The purpose of these regulations or article is to permit Administrations to waive the requirement that a certificate issued following a renewal survey that is completed after the expiry of the existing certificate should be dated from the expiry date of the existing certificate. The special circumstances when this could be permitted are where the ship has been laid-up or has been out of service for a considerable period because of a major repair or modification.

Whilst the renewal survey would be as extensive as if the ship had continued in service, the Administration should consider whether additional surveys or examinations are required depending on how long the ship was out of service and the measures taken to protect the hull and machinery during this period. Where this regulation is invoked, it is reasonable to expect an examination of the outside of the ship's bottom to be held at the same time as the renewal survey when it would not be necessary to include any special requirements for cargo ships for the continued application of SOLAS 74/88 regulation I/10(a)(v).

5.6 Revalidation of certificates

References: SOLAS 74/88 regulation I/14(i)(i), LLC 66/88 article 19(9)(c), MARPOL Annex I regulation 10.9.1, MARPOL Annex II regulation 10.9.1, MARPOL Annex IV regulation 8.8.1, MARPOL Annex VI regulation 9.9.1, IBC Code regulation 1.5.6.9.1, IGC Code regulation 1.5.6.9.1 and BCH Code regulation 1.6.6.9.1.

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

5.7 Meaning of "any five-year period"

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

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

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

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

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

5.9.1 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 should 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 should be extended for a period longer than three months, and a ship to which an extension is granted should 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."

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

- .1 an additional survey, equivalent to at least the same scope of an annual survey required by the relevant certificate(s) should be carried out;
- .2 the renewal survey should be carried out to the maximum extent possible;
- .3 in cases where a dry docking is required, but cannot be carried out, an underwater inspection of the ship's bottom should be carried out;
- .4 in cases where an underwater inspection is not possible (e.g. poor water visibility, draft restrictions, excessive current, refusal by the port Authority), an internal inspection of the ship's bottom structure, to the maximum extent practicable, should be carried out;
- .5 the ship should be allowed to sail directly to a named final agreed cargo discharge port and then directly to a named agreed port to complete the survey and/or dry docking;
- .6 the extension period should be for the minimum amount of time needed to complete the survey and/or dry docking under the relevant certificate(s);
- .7 the condition of the ship found by the surveys indicated above should be considered in determining the duration, distance and operational restrictions, if any, of the voyage needed to complete the survey and/or dry docking; and
- .8 the extension period of the relevant statutory certificate(s) should not exceed the period of validity of the certificate which may be issued to document compliance with the structural, mechanical and electrical requirements of the recognized classification society.

5.10 Inspection of the outside of a passenger ship's bottom

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

5.10.2 Where acceptable to the Administration, the minimum number of inspections in dry-dock of the outside of the bottom of a passenger ship (which is not a ro-ro passenger ship) in any five-year period may be reduced from two to one*. In such cases the interval between consecutive inspections in dry-dock should not exceed 60 months.

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

5.10.3 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 three-month time window before the

* Refer to the *Guidelines for the assessment of technical provisions for the performance of an in-water survey in lieu of bottom inspection in dry-dock to permit one dry-dock examination in any five-year period for passenger ships other than ro-ro passenger ships* (MSC.1/Circ.1348).

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.

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

5.10.5 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 installations, including those used in life-saving appliances, should always be carried out by a qualified radio surveyor who has necessary knowledge of the requirements of SOLAS 1974, the International Telecommunication Union's Radio Regulations and the associated performance standards for radio equipment. The radio survey should be carried out using suitable test equipment capable of performing all the relevant measurements required by these guidelines. On satisfactory completion of the survey, the radio surveyor should forward a report of the survey, which should also state the organization he represents, to the authorities responsible for the issue of the ship's Cargo Ship Safety Radio Certificate or Passenger Ship Safety Certificate.

5.12 Survey of the automatic identification system (AIS)

The survey of the automatic identification system should always be carried out by a qualified radio surveyor who has necessary knowledge of the requirements of SOLAS 1974, the International Telecommunication Union's Radio Regulations and the associated performance standards for radio equipment. The survey of the automatic identification system should be carried out using suitable test equipment capable of performing all the relevant measurements required by and in accordance with the *Guidelines on annual testing of the Automatic Identification System (AIS)* (MSC.1/Circ.1252).

ANNEX 1

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

- (E) 1 **GUIDELINES FOR SURVEYS FOR THE CARGO SHIP SAFETY EQUIPMENT CERTIFICATE**
- (EI) 1.1 **Initial surveys** – see part "General" section 4.1.
- (EI) 1.1.1 For the life-saving appliances and the other equipment of cargo ships the examination of plans and designs should consist of:
- (EI) 1.1.1.1 examining the plans for the fire pumps including the emergency fire pump*, if applicable, fire mains, hydrants, hoses and nozzles and the international shore connection (SOLAS 74/00 regs. II-2/10.2 and 10.4.4 and 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 firefighters' outfits including its self-contained compressed air breathing apparatus, emergency escape breathing devices (EEBDs), on board means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (SOLAS 74/00/12 regs.II-2/10.10, 13.3.4, 13.4.3 and 15.2.2; FSSC ch.3) (SOLAS 74/88 reg.II-2/17) (BCH Code, ch. III, part E);
- (EI) 1.1.1.4 examining the plans for the fire-extinguishing arrangements in the machinery spaces (SOLAS 74/00/12 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 and enclosed spaces containing incinerators(SOLAS 74/00/10 regs. II-2/7.2, 7.3 and 7.4; FSSC ch. 9) (SOLAS 74/88 regs. II-2/13 and 14);
- (EI) 1.1.1.7 checking the provision of a fixed fire detection and fire alarm system and/or a sprinkler, fire detection and fire alarm system in accommodation and service spaces and control stations (SOLAS 74/00 regs.II-2/7.2, 7.3, 7.5.5, 7.7 and 10.6.2; FSSC chs.8 and 9) (SOLAS 74/88 reg.II-2/52);

* Refer to the unified interpretation of chapter 12 of the FSS Code, MSC.1/Circ.1388.

- (E) 1.1.1.8 checking the provision of a fire-extinguishing system for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5 and 7) (SOLAS 74/88 regs.II-2/18.7) (BCH Code ch.III, part E);
- (E) 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);
- (E) 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);
- (E) 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);
- (E) 1.1.1.12 checking navigation bridge visibility (SOLAS 74/00 reg.V/22);
- (E) 1.1.1.13 examining the plans for the helicopter facilities (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8);
- (E) 1.1.1.14 examining the plans for the special arrangements for the carriage of dangerous goods, when appropriate, including water supplies, electrical equipment and wiring, fire detection including sample extraction smoke detection systems, where applicable, ventilation, bilge pumping, personnel protection and any water spray system (SOLAS 74/00 reg. II-2/19 (except 19.3.8, 19.3.10 and 19.4); FSSC chs. 9 and 10) (SOLAS 74/88 reg. II-2/54);
- (E) 1.1.1.15 examining the provision and disposition of the survival craft and rescue boats and, where applicable, marine evacuation systems (SOLAS 74/88 regs.III/11 to 16, 31 and 33);
- (E) 1.1.1.16 examining, where applicable, the approved documentation for the alternative design and arrangements (SOLAS 74/00/06 regs. II-2/17 and III/38);
- (E) 1.1.1.17 examining the design of the survival craft, including their construction equipment, fittings, release mechanisms and recovery appliances and embarkation and launching arrangements (SOLAS 74/96/06/11 regs. III/4,16, 31, 32 to 33; LSAC sections 3.2, 4.1 to 4.9, 6.1 and 6.2);
- (E) 1.1.1.18 checking that the life-saving appliances are to be of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (E) 1.1.1.19 examining the design of the rescue boats, including their equipment and launching and recovery appliances and arrangements (SOLAS 74/00 regs.III/17 and 31; LSAC sections 5.1 and 6.1);

- (EI) 1.1.1.20 examining the provision, specification and stowage of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 reg.III/6);
- (EI) 1.1.1.21 examining the provision, specification and stowage of the distress flares and the line-throwing appliance and the provision of onboard communications equipment and the general alarm system (SOLAS 74/00 reg.II-2/12.1 and 12.2, and regs.III/6 and 18; and LSAC sections 3.1, 7.1 and 7.2);
- (EI) 1.1.1.22 examining the provision, specification and stowage of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets*, immersion suits and anti-exposure suits (SOLAS 74/00/06 regs.III/7 and 32; LSAC sections 2.1 to 2.5 and 3.1 to 3.3);
- (EI) 1.1.1.23 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSAC section 2.3.1);
- (EI) 1.1.1.24 examining the plans for the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including the supply from the emergency source of power (SOLAS 74/88 regs.II-1/43 and III/11);
- (EI) 1.1.1.25 examining the plans for the positioning of, and the specification for, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea (COLREG) in force, rules 20 to 24, 27 to 30 and 33);
- (EI) 1.1.1.26 examining the plans relating to the bridge design and arrangement of navigational systems and equipment and bridge procedures (SOLAS 74/00 regs.V/15 and 19);
- (EI) 1.1.1.27 checking the provision and specification of the following navigation equipment as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), automatic identification system, electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and distance measuring device(s), rudder angle indicator, propeller rate of revolution indicator, variable-pitch propeller pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, means of communication with emergency steering position, a pelorus or compass bearing device, means for correcting heading and bearings, a Bridge Navigational Watch Alarm System (BNWAS) as applicable and ECDIS including back-up arrangements as applicable (SOLAS 74/00/09/13 reg.V/19);
- (EI) 1.1.1.28 checking the provision and specification of voyage data recorder (SOLAS 74/00 reg.V/20);

* Regulation III/7.2.1.5 should be considered.

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- (EI) 1.1.1.29 checking the provision and specification of the long-range identification and tracking system (SOLAS 74/04 reg.V/19-1);
- (EI) 1.1.1.30 checking the plans and specification for the pilot transfer arrangement, the pilot ladders, the combination arrangements, where applicable, the access to the ship's deck and the associated equipment and lighting (SOLAS 74/88/10 reg. V/23);
- (EI) 1.1.1.31 checking the provision of means of embarkation and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders (SOLAS 74/08 reg.II-1/3-9).
- (EI) 1.1.2 For the examination of plans and designs of the life-saving appliances and the other equipment of cargo ships the additional requirements for tankers should consist of:
- (EI) 1.1.2.1 examining the plans for the cargo tank protection (SOLAS 74/00 regs. II-2/4.5.3, 4.5.5, 4.5.6 and 10.8; FSSC chs. 14 and 15) (SOLAS 74/88 regs. II-2/60 and 62);
- (EI) 1.1.2.2 examining the plans for gas measurement in double-hull spaces and double bottom spaces, including the fitting of permanent gas sampling lines, where appropriate (SOLAS 74/10 reg. II-2/4.5.7.2);
- (EI) 1.1.2.3 examining, for oil tankers of 20,000 tonnes deadweight and above, the plans for the fixed hydrocarbon gas detection system for measuring hydrocarbon gas concentrations in all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks (SOLAS 74/10 reg. II-2/4.5.7.3 and FSSC ch. 16); and
- (EI) 1.1.2.4 examining the plans for protection of the cargo pump rooms (SOLAS 78/00 regs.II-2/4.5.10 and 10.9) (SOLAS 74/88 reg.II-2/63).
- (EI) 1.1.3 For the life-saving appliances and the other equipment of cargo ships the survey during construction and after installation should consist of:
- (EI) 1.1.3.1 examining the fire pumps and fire main and the disposition of the hydrants, hoses and nozzles and the international shore connection and checking that each fire pump, including the emergency fire pump, can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main; and testing that the emergency fire pump has the required capacity, and if the emergency fire pump is the main supply of water for any fixed fire-extinguishing system, checking that that the emergency fire pump has the capacity for this system* (SOLAS 74/00 reg. II-2/10.2; 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);

* Refer to the unified interpretation of chapter 12 of the FSS Code, MSC.1/Circ.1388.

- (EI) 1.1.3.3 examining the firefighters' outfits including its self-contained compressed air breathing apparatus, emergency escape breathing devices (EEBDs), on board means of recharging breathing apparatus cylinders used during drills or the provision of a suitable number of spare cylinders to replace those used, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe (SOLAS 74/00/12 regs.II-2/10.10, 13.3.4, 13.4.3 and 15.2.2; FSSC ch.3) (SOLAS 74/88 reg.II-2/17) (BCH Code ch.III, part E);
- (EI) 1.1.3.4 checking the operational readiness and maintenance of 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 74/00/08/12 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 checking that fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces and cargo pump-rooms, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space (SOLAS 74/08 reg.II-2/10.4.1.5);
- (EI) 1.1.3.7 examining the fire-extinguishing and special arrangements in the machinery spaces and confirming, as far as practicable and as appropriate, the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power-operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00/12 regs.II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88 regs.II-2/7 and 11);
- (EI) 1.1.3.8 examining any fire detection and alarm system and any automatic sprinkler, fire detection and fire alarm system, and any sample extraction smoke detection system, and confirming that installation tests have been satisfactorily completed (SOLAS 74/00/10 regs. II-2/7.2, 7.3, 7.4, 7.5.1, 7.5.5, 19.3.3 and 20.4; FSSC chs. 8, 9 and 10) (SOLAS 74/88 regs. II-2/11, 13, 14, 53 and 54);
- (EI) 1.1.3.9 examining the fire-extinguishing system for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces and confirming that installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/00regs.II-2/10.6.3 and 10.6.4; FSSC chs.4 to 7) (SOLAS 74/88 reg.II-2/18.7) (BCH Code ch.III, part E);
- (EI) 1.1.3.10 examining the arrangements for remote closing of valves for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.2.3.4) (SOLAS 74/88 reg.II-2/15.2.5);

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- (EI) 1.1.3.11 examining the fire protection arrangements in cargo vehicle and ro-ro spaces and confirming, as far as practicable and as appropriate, the operation of the means for closing the various openings (SOLAS 74/00 regs.II-2/10.7, 20.2.1, 20.3 and 20.6.2) (SOLAS 74/88 reg.II-2/53);
- (EI) 1.1.3.12 examining, where applicable, the alternative design and arrangements for fire safety or life-saving appliances and arrangements, in accordance with the test and inspection requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs. II-2/17 and III/38);
- (EI) 1.1.3.13 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring, the ventilation, the provision of protective clothing and portable appliances and the testing of the water supply, bilge pumping and any water spray system (SOLAS 74/00/08 reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4); FSSC chs.9 and 10) (SOLAS 74/88 reg.II-2/54);
- (EI) 1.1.3.14 checking that the life-saving appliances are of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (EI) 1.1.3.15 checking the provision and disposition of the survival craft, where applicable, marine evacuation systems and rescue boats (SOLAS 74/88 regs.III/11 to 16 and 31; LSAC section 6.2);
- (EI) 1.1.3.16 deployment of 50% of the MES after installation (LSAC paragraph 6.2.2.2);
- (EI) 1.1.3.17 examining each survival craft, including its equipment. For liferafts provided for easy side to side transfer, verifying that they are less than 185 kg (SOLAS 74/88 reg.III/31; LSAC sections 2.5, 3.1 to 3.3 and 4.1 to 4.9) (SOLAS 74/00 reg.III/31.1);
- (EI) 1.1.3.18 examining the embarkation arrangements for each survival craft and the testing of each launching appliance, including overload tests, tests to establish the lowering speed and the lowering of each survival craft to the water with the ship at its lightest sea-going draught, and, where applicable, launching underway at 5 knots, checking the recovery of each lifeboat (SOLAS 74/00 regs.III/11, 12, 13, 16, 31 and 33; LSAC section 6.1);
- (EI) 1.1.3.19 examining the embarkation arrangements for each marine evacuation device, where applicable, and the launching arrangements, including inspection for lack of side shell opening between the embarkation station and waterline, review of distance to the propeller and other life-saving appliances and ensuring that the stowed position is protected from heavy weather damage, as much as practicable (SOLAS 74/00 reg.III/15; LSAC section 6.2);
- (EI) 1.1.3.20 examining each rescue boat, including its equipment. For inflatable rescue boats, confirming that they are stowed in a fully inflated condition (SOLAS 74/88 regs.III/14 and 31; LSAC sections 2.5, 5.1 and 6.1);

- (EI) 1.1.3.21 examining the embarkation and recovery arrangements for each rescue boat and testing each launching and recovery appliance, including overload tests, tests to establish the lowering and recovery speeds and ensuring that each rescue boat can be lowered to the water and recovered with the ship at its lightest sea-going draught, launching underway at 5 knots (SOLAS 74/88 regs.III/14, 17 and 31; LSAC section 6.1);
- (EI) 1.1.3.22 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern (SOLAS 74/00 reg.III/19);
- (EI) 1.1.3.23 confirming that there are posters or signs in the vicinity of survival craft and their launching stations and containers, brackets, racks and other similar stowage locations for life-saving equipment (SOLAS 74/88 regs.III/9 and 20);
- (EI) 1.1.3.24 examining the provision and stowage and checking the operation of portable on board communications equipment, if provided, and two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 regs.II-2/12.2 and III/6);
- (EI) 1.1.3.25 examining the provision and stowage of the distress flares and the line-throwing appliance, checking the provision and operation of fixed on board communications equipment, if provided, and testing the means of operation of the general alarm system (SOLAS 74/00 regs.III/6 and 18; LSAC sections 3.1, 7.1 and 7.2);
- (EI) 1.1.3.26 examining the provision, disposition and stowage of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets*, immersion suits and anti-exposure suits (SOLAS 74/00/06 regs.III/7 and 32; LSAC sections 2.1 to 2.5 and 3.1 to 3.3);
- (EI) 1.1.3.27 checking the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including when supplied from the emergency source of power (SOLAS 74/88 regs.II-1/43 and III/11);
- (EI) 1.1.3.28 examining the provision and positioning and checking the operation of, as appropriate, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea (COLREG) in force, rules 20 to 24, 27 to 30 and 33);
- (EI) 1.1.3.29 checking that the minimum safe distances from the steering and standard magnetic compasses for all electrical equipment are complied with (SOLAS 74/00 regs.V/17 and 19);
- (EI) 1.1.3.30 checking the electromagnetic compatibility of electrical and electronic equipment on or in the vicinity of the bridge (SOLAS 74/00 reg.V/17);

* Regulation III/7.2.1.5 should be considered.

- (EI) 1.1.3.31 checking, as appropriate, the provision and operation of the following shipborne navigational systems equipment (SOLAS 74/00 reg.V/19):
 - (EI) 1.1.3.31.1 the magnetic compass, including examining the siting, movement, illumination and a pelorus or compass bearing device (SOLAS 74/00 reg.V/19);
 - (EI) 1.1.3.31.2 nautical charts and nautical publications necessary for the intended voyage are available and have been updated, and, where an electronic chart display and information systems (ECDIS) is used, the electronic charts have been updated and the required back-up system is provided and updated (SOLAS 74/00/09 reg.V/19);
 - (EI) 1.1.3.31.3 global navigation satellite system receiver or terrestrial radionavigation system;
 - (EI) 1.1.3.31.4 sound-reception system, when bridge is totally enclosed;
 - (EI) 1.1.3.31.5 means of communication to emergency steering position, where provided;
 - (EI) 1.1.3.31.6 spare magnetic compass;
 - (EI) 1.1.3.31.7 daylight signalling lamp;
 - (EI) 1.1.3.31.8 echo sounding device;
 - (EI) 1.1.3.31.9 radar(s), including examining the waveguide and cable runs for routeing and protection and the display unit confirming lighting, correct operation of all controls, and functions;
 - (EI) 1.1.3.31.10 electronic plotting aid, automatic tracking aid or automatic radar plotting aid as appropriate, using the appropriate test facilities;
 - (EI) 1.1.3.31.11 speed and distance measuring devices "through the water" and "over the ground";
 - (EI) 1.1.3.31.12 transmitting heading device providing heading information to radar, plotting aids and automatic identification system equipment;
 - (EI) 1.1.3.31.13 automatic identification system;
 - (EI) 1.1.3.31.14 gyrocompass, including examining the alignment of the master and all repeaters;
 - (EI) 1.1.3.31.15 rudder angle indicator;
 - (EI) 1.1.3.31.16 propeller rate of revolution indicator;
 - (EI) 1.1.3.31.17 propeller, operational mode, thrust, and pitch indicator;
 - (EI) 1.1.3.31.18 rate-of-turn indicator;
 - (EI) 1.1.3.31.19 heading or track control system;

- (EI) 1.1.3.31.20 BNWAS;
- (EI) 1.1.3.32 checking for the provision and operation of the voyage data recorder (SOLAS 74/00 reg.V/20);
- (EI) 1.1.3.33 checking the record of the voyage data recorder annual performance test (SOLAS 74/00 reg.V/18);
- (EI) 1.1.3.34 checking navigation bridge visibility (SOLAS 74/00 reg.V/22);
- (EI) 1.1.3.35 checking that a valid conformance test report of the long-range identification and tracking system is available on board (SOLAS 74/04 reg.V/19-1);
- (EI) 1.1.3.36 checking the provision of the pilot transfer arrangement, the access to the ship's deck and the associated equipment and lighting, checking the operation of the pilot ladders and the combination arrangements (SOLAS 74/00/10 reg. V/23);
- (EI) 1.1.3.37 checking the provision of means of embarkation and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders (SOLAS 74/08 reg.II-1/3-9);
- (EI) 1.1.3.38 checking, when appropriate, the provision of an appropriate instrument for measuring the concentration of gas or oxygen in the air together with detailed instructions for its use (SOLAS 74/08 reg.VI/3).
- (EI) 1.1.4 For the life-saving appliances and the other equipment of cargo ships for the additional requirements for tankers the survey during construction and after installation should consist of:
 - (EI) 1.1.4.1 checking the deck foam system, including the supplies of foam concentrate, and testing that the minimum number of jets of water at the required pressure in the fire main is obtained (see (EI) 1.1.3.1) when the system is in operation (SOLAS 74/00 reg.II-2/10.8; 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) 1.1.4.5 examining, for all tankers, the arrangements for cargo tank protection, (SOLAS 74/00/10 regs. II-2/4.5.3, 4.5.6, and 10.8; FSSC chs. 14 and 15) (SOLAS 74/88 regs. II-2/60 and 62);
- (EI) 1.1.4.6 checking, for all tankers, the provision of at least one portable instrument for measuring oxygen and one for measuring flammable vapour concentrations, together with a sufficient set of spares, and suitable means for the calibration of these instruments (SOLAS 74/10 reg. II-2/4.5.7.1);
- (EI) 1.1.4.7 examining the arrangements for gas measurement in double-hull spaces and double bottom spaces, including the fitting of permanent gas sampling lines, where appropriate (SOLAS 74/10 reg. II-2/4.5.7.2);

- (EI) 1.1.4.8 examining, for oil tankers of 20,000 tonnes deadweight and above, the fixed hydrocarbon gas detection system for measuring hydrocarbon gas concentrations in all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks, and confirming that the installation tests have been satisfactorily completed (SOLAS 74/10 reg. II-2/4.5.7.3 and FSSC ch.16).
- (EI) 1.1.5 For the life-saving appliances and the other equipment of cargo ships the check that the required documentation has been placed on board should consist of:
- (EI) 1.1.5.1 confirming that the fire control plans are permanently exhibited or, alternatively, emergency booklets have been provided and that a duplicate of the plans or the emergency booklet are available in a prominently marked enclosure external to the ship's deckhouse (SOLAS 74/00 reg.II-2/15.2.4) (SOLAS 74/88 reg.II-2/20);
- (EI) 1.1.5.2 confirming that maintenance plans have been provided (SOLAS 74/00 regs.II-2/14.2.2 and 14.4);
- (EI) 1.1.5.3 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/00 regs.II-2/15.2.3, 16.2 and 16.3);
- (EI) 1.1.5.4 confirming that, where applicable, the approved documentation for the alternative design and arrangement is on board (SOLAS 74/00/06 regs. II-2/17 and III/38);
- (EI) 1.1.5.5 confirming, where appropriate, that the ship is provided with a document indicating compliance with the special requirement for carrying dangerous goods (SOLAS 74/00/08, reg.II-2/19.4) (SOLAS 74/88 reg.II-2/54(3));
- (EI) 1.1.5.6 confirming that emergency instructions are available for each person on board, that the muster list is posted in conspicuous places and they are in a language understood by the persons on board (SOLAS 74/00 regs.III/8 and 37);
- (EI) 1.1.5.7 confirming that ship-specific plans and procedures for recovery of persons from the water have been provided (SOLAS 74/12 reg. III/17-1);
- (EI) 1.1.5.8 confirming that the training manual and training aids for the life-saving appliances have been provided and are available in the working language of the ship (SOLAS 74/00 reg.III/35);
- (EI) 1.1.5.9 confirming that the instructions for onboard maintenance of the life-saving appliances have been provided (SOLAS 74/88 reg.III/36);
- (EI) 1.1.5.10 confirming that a table or curve of residual deviations for the magnetic compass has been provided, and that a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00 reg.V/19);

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- (EI) 1.1.5.11 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (EI) 1.1.5.12 checking that records are provided, identifying any pilot ladders placed into service (SOLAS 74/10 reg. V/23.2.4);
- (EI) 1.1.5.13 checking that the charts and nautical publications necessary for the intended voyage are available and have been updated (SOLAS 74/88 reg.V/27);
- (EI) 1.1.5.14 checking that the International Code of Signals and an up-to-date copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02 reg. V/21);
- (EI) 1.1.5.15 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg.V/28);
- (EI) 1.1.5.16 checking that the life-saving signals to be used by ships, aircraft or persons in distress are available (SOLAS 74/00 reg.V/29);
- (EI) 1.1.5.17 confirming that continuous synopsis record is provided (SOLAS 74/02 reg.XI-1/5).
- (EI) 1.1.6 For the life-saving appliances and the other equipment of cargo ships, concerning the additional requirements for tankers the check that the required documentation has been placed on board should consist of:
- (EI) 1.1.6.1 confirming, when appropriate, that the instruction manuals for the inert gas system have been provided (FSSC ch.15 paragraph 2.4.4) (SOLAS 74/88 reg.II-2/62.21);
- (EI) 1.1.6.2 confirming that the operating and maintenance instructions for the fixed hydrocarbon gas detection system are provided (SOLAS 74/10 reg. II-2/4.5.7.3 and FSSC ch.16).
- (EI) 1.1.7 For the life-saving appliances and the other equipment of cargo ships the completion of the initial survey should consist of:
- (EI) 1.1.7.1 after a satisfactory survey, the Cargo Ship Safety Equipment Certificate and its associated Record of Equipment (Form E) should be issued.
- (EA) **1.2 Annual surveys** – see part "General" section 4.2.
- (EA) 1.2.1 For the life-saving appliances and the other equipment of cargo ships the examination of current certificates and other records should consist of:
- (EA) 1.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (EA) 1.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (EA) 1.2.1.3 checking the validity of the International Ship Security Certificate;

- (EA) 1.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (EA) 1.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;
- (EA) 1.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
- (EA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (EA) 1.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (EA) 1.2.1.9 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (EA) 1.2.1.10 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (EA) 1.2.1.11 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (EA) 1.2.1.12 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (EA) 1.2.1.13 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (EA) 1.2.1.14 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (EA) 1.2.1.15 checking the manning and supervision of survival craft (SOLAS 74/00 reg.III/10);
- (EA) 1.2.1.16 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 74/00/06 regs. II-2/17 and III/38);
- (EA) 1.2.1.17 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (EA) 1.2.1.18 confirming that the fire control plans are permanently exhibited or, alternatively, that emergency booklets have been provided and that a duplicate of the plans or the emergency booklet are available in a prominently marked enclosure external to the ship's deckhouse (SOLAS 74/00 reg.II-2/15.2.4) (SOLAS 74/88 reg.II-2/20);

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- (EA) 1.2.1.19 confirming that the maintenance plans have been provided (SOLAS 74/00 regs.II-2/14.2.2 and 14.4);
- (EA) 1.2.1.20 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/00 regs.II-2/15.2.3, 16.2 and 16.3);
- (EA) 1.2.1.21 checking whether any fire has occurred on board necessitating the operation of the fixed fire-extinguishing systems or the portable fire extinguishers since the last survey;
- (EA) 1.2.1.22 checking, when appropriate, that the ship is provided with a document indicating compliance with the special requirements for carrying dangerous goods (SOLAS 74/00/08 reg.II-2/19.4) (SOLAS 74/88 reg.II-2/54(3));
- (EA) 1.2.1.23 confirming, when appropriate, that there is a special list, manifest or stowage plan for the carriage of dangerous goods (SOLAS 74/88 reg.VII/5(3));
- (EA) 1.2.1.24 confirming, when appropriate, that the instruction manuals for the inert gas system have been provided and checking from the records of the pressure and oxygen content that the inert gas system is being operated correctly (FSSC ch.15) (SOLAS 74/88 reg.II-2/62);
- (EA) 1.2.1.25 confirming that, where applicable, a factual statement has been provided on board by the lifeboat release and retrieval system manufacturer or one of their representatives, that confirms the successful completion of the overhaul examination of an existing lifeboat release and retrieval system found to be compliant with paragraphs 4.4.7.6.4 to 4.4.7.6.6 of the LSA Code, or, alternatively, that a statement of acceptance of the installation of a replacement release and retrieval system to an existing lifeboat is available (SOLAS 74/11 reg. III/1.5; LSAC section 4.4.7.6);
- (EA) 1.2.1.26 checking that log-book entries are being made (SOLAS 74/00/12 regs.III/19 and 20) and in particular:
- (EA) 1.2.1.26.1 the date when the last full muster of the crew for boat and fire drill took place, the date when the last enclosed space entry and rescue drills took place;
- (EA) 1.2.1.26.2 the records indicating that the lifeboat equipment was examined at that time and found to be complete;
- (EA) 1.2.1.26.3 the last occasion when the lifeboats were swung out and when each one was lowered into the water;
- (EA) 1.2.1.26.4 the records indicating that crew members have received the appropriate onboard training;
- (EA) 1.2.1.26.5 the records indicating that on voyages where passengers are scheduled to be on board for more than 24 h, musters of newly-embarked passengers have taken place prior to or immediately upon departure;

- (EA) 1.2.1.27 confirming that the training manual and training aids for the life-saving appliances are available on board in the working language of the ship (SOLAS 74/00 reg.III/35);
- (EA) 1.2.1.28 confirming that the checklist and instructions for on board maintenance of the life-saving appliances are on board (SOLAS 74/00 reg.III/36);
- (EA) 1.2.1.29 confirming that a table or curve of residual deviations for the magnetic compass has been provided, the compass deviation book has been properly maintained and a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00 reg.V/19);
- (EA) 1.2.1.30 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);
- (EA) 1.2.1.31 checking that nautical charts and nautical publications necessary for the intended voyage are available and have been updated, and, where electronic systems are used, the required back-up system is provided (SOLAS 74/00 regs.V/19 and 27);
- (EA) 1.2.1.32 checking that the International Code of Signals and an up-to-date copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02 reg. V/21);
- (EA) 1.2.1.33 checking that records are maintained identifying any pilot ladders placed into service and any repair effected (SOLAS 74/10 reg. V/23.2.4);
- (EA) 1.2.1.34 checking that the life-saving signals to be used by ships, aircraft or persons in distress are available (SOLAS 74/00 reg.V/29);
- (EA) 1.2.1.35 checking that records of navigational activities and daily reporting have been maintained (SOLAS 74/00/03 reg. V/28);
- (EA) 1.2.1.36 confirming that continuous synopsis record is provided (SOLAS 74/02 reg.XI-1/5);
- (EA) 1.2.1.37 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 annex 4 reg.2), when applicable.
- (EA) 1.2.2 For the life-saving appliances and the other equipment of cargo ships the annual survey should consist of:
 - (EA) 1.2.2.1 examining the fire pumps, fire main, hydrants, hoses and nozzles and the international shore connection and checking that each fire pump, including the emergency fire pump, can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main (SOLAS 74/00 reg.II-2/10.2; 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 firefighters' outfits including its self-contained compressed air breathing apparatus and emergency escape breathing devices (EEBDs) are complete and in good condition, that the cylinders, including the spare cylinders, of any required self-contained breathing apparatus are suitably charged, and that on board means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used are provided, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (SOLAS 74/00/12 regs.II-2/10.10, 13.3.4, 13.4.3 and 15.2.2; FSSC ch.3) (SOLAS 74/88 reg.II-2/17) (BCH Code, ch. III, part E);
- (EA) 1.2.2.4 checking the operational readiness and maintenance of fire-fighting systems (SOLAS 74/00 reg.II-2/14) (SOLAS 74/88/91 reg.II-2/21);
- (EA) 1.2.2.5 examining the fixed fire-fighting system for the machinery, cargo, vehicle, special category and ro-ro spaces, as appropriate, and confirming that its means of operation is clearly marked (SOLAS 74/00/12 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 74/00/12 regs.II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88 regs.II-2/7 and 11);
- (EA) 1.2.2.7 checking that fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces and cargo pump-rooms, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space (SOLAS 74/08 reg.II-2/10.4.1.5);
- (EA) 1.2.2.8 examining, as far as possible, and testing, as feasible, any fire detection and alarm system and any sample extraction smoke detection system (SOLAS 74/00/10 regs. II-2/7.2, 7.3, 7.4, 7.5.1, 7.5.5, 19.3.3 and 20.4; FSSC chs. 9 and 10) (SOLAS 74/88 regs. II-2/11, 13, 14, 53 and 54);
- (EA) 1.2.2.9 examining the fire-extinguishing systems for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5 to 7) (SOLAS 74/88 reg.II-2/18.7) (BCH Code ch.III, part E);
- (EA) 1.2.2.10 examining the helicopter facilities (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8);

- (EA) 1.2.2.11 examining the arrangements for remote closing of valves for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.2.3.4) (SOLAS 74/88 reg.II-2/15.2.5);
- (EA) 1.2.2.12 examining and testing of the general emergency alarm system (SOLAS 74/88 reg.III/20);
- (EA) 1.2.2.13 examining the fire protection arrangements in cargo, vehicle and ro-ro spaces and confirming, as far as practicable and as appropriate, the operation of the means of control provided for closing the various openings (SOLAS 74/00 regs.II-2/10.7, 20.2.1, 20.3 and 20.6.2) (SOLAS 74/88 reg.II-2/53);
- (EA) 1.2.2.14 examining, where applicable, the alternative design and arrangements for fire safety or life-saving appliances and arrangements, in accordance with the test, inspection and maintenance requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs. II-2/17 and III/38);
- (EA) 1.2.2.15 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring, the ventilation, the provision of protective clothing and portable appliances and the testing of the water supply, bilge pumping and any water spray system (SOLAS 74/00/08 reg.II-2/19 (except 19.3.8, 19.3.10 and 19.4)) (SOLAS 74/88 reg.II-2/54);
- (EA) 1.2.2.16 checking that emergency instructions are available for each person on board and that copies of the suitably updated muster list are posted in conspicuous places and that they are in a language understood by all persons on board and confirming that there are posters or signs in the vicinity of survival craft and their launching stations (SOLAS 74/00 regs.III/8, 9 and 37);
- (EA) 1.2.2.17 checking that the life-saving appliances are of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (EA) 1.2.2.18 examining each survival craft, including its equipment and, when fitted, the on-load release mechanism and hydrostatic lock and, for inflatable liferafts, the hydrostatic release unit and float-free arrangements. Checking that the hand-held flares are not out of date (SOLAS 74/00 regs. III/16, 20 and 31; LSAC sections 2.5, 3.1 to 3.3, 4.1.5, 4.4.7 and 4.4.8);
- (EA) 1.2.2.19 for liferafts provided for easy side to side transfer, verifying that they are less than 185 kg (SOLAS 74/00 reg.III/31.1);
- (EA) 1.2.2.20 checking that the falls used in launching appliances have been periodically inspected and have been renewed as necessary in the past five years (SOLAS 74/00 reg.III/20);

- (EA) 1.2.2.21 examining the embarkation arrangements and launching appliances for each survival craft. Each lifeboat should be lowered to the embarkation position or, if the stowage position is the embarkation position, lowered a short distance and, if practicable, one of the survival craft should be lowered to the water. The operation of the launching appliances for davit-launched liferafts should be demonstrated (SOLAS 74/00 regs.III/11, 12, 13, 16, 20 and 31; LSAC section 6.1);
- (EA) 1.2.2.22 checking that a thorough examination of launching appliances, including the dynamic testing of the winch brake, and servicing of lifeboat and rescue boat on-load release gear, including free-fall lifeboat release systems and davit-launched life raft automatic release hooks, has been carried out. The operational testing of free-fall lifeboat release systems shall be performed either by free-fall launch with only the operating crew on board or by a simulated launching carried out based on MSC.1/Circ.1206/Rev.1 (SOLAS 74/00/12 reg. III/ 20);
- (EA) 1.2.2.23 examining each rescue boat, including its equipment. For inflatable rescue boats, confirming that they are stowed in a fully inflated condition (SOLAS 74/88 reg.III/14 and 31; LSAC sections 2.5 and 5.1);
- (EA) 1.2.2.24 confirming that there are posters or signs in the vicinity of the survival craft, their launching stations and containers, brackets, racks and other similar stowage locations for life-saving equipment (SOLAS 74/00 regs.III/9 and 20);
- (EA) 1.2.2.25 examining the embarkation and recovery arrangements for each rescue boat. If practicable, the rescue boat(s) should be lowered to the water and its recovery demonstrated (SOLAS 74/00 regs.III/14, 17 and 31; LSAC section 6.1);
- (EA) 1.2.2.26 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern;
- (EA) 1.2.2.27 examining and checking the operation of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 reg.III/6);
- (EA) 1.2.2.28 examining the line-throwing appliance and checking that its rockets and the ship's distress signals are not out of date, and examining and checking the operation of on board communications equipment and the general emergency alarm system (SOLAS 74/00 regs.II-2/12.2 and III/6 and 18; LSAC sections 3.1, 7.1 and 7.2);
- (EA) 1.2.2.29 examining the provision, disposition, stowage and the condition of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejacket* and their whistles and lights, immersion suits and anti-exposure suits and that their associated batteries are not out of date (SOLAS 74/88/06 regs.III/7 and 32, LSAC sections 2.1 to 2.5);

* Regulation III/7.2.1.5 should be considered.

- (EA) 1.2.2.30 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSAC section 2.3.1);
- (EA) 1.2.2.31 checking the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including when supplied from the emergency source of power (SOLAS 74/88 regs.II-1/42 or 43 and III/11);
- (EA) 1.2.2.32 checking that the required navigation lights, shapes and sound signalling equipment are in order (International Regulations for Preventing Collisions at Sea (COLREG) in force, rules 20 to 24, 27 to 30 and 33);
- (EA) 1.2.2.33 checking that the following items of navigation equipment are in working order, as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and distance measuring device(s), rudder angle indicator, propeller rate of revolution indicator, variable-pitch propeller pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, means of communication with emergency steering position, a pelorus or compass bearing device, means for correcting heading and bearings, a BNWAS as applicable and ECDIS including back-up arrangements, as applicable. Items that cannot be checked with the ship in port should be verified from records (SOLAS 74/00/09/13 reg.V/19);
- (EA) 1.2.2.34 checking that the International Code of Signals is available (SOLAS 74/00 reg.V/21);
- (EA) 1.2.2.35 checking the rotational deployment of MES (SOLAS 74/88 reg.III/20.8.2; LSAC section 6.2.2.2);
- (EA) 1.2.2.36 checking the provision, specification, operation and annual performance test of the voyage data recorder, where fitted (SOLAS 74/00/04 reg.V/20);
- (EA) 1.2.2.37 checking the provision and operation of the automatic identification system, where fitted, and whether the annual test has been carried out and a copy of the test report is on board (SOLAS 74/00/04/10 regs. V/18.9 and 19);
- (EA) 1.2.2.38 checking that a valid conformance test report of the long-range identification and tracking system is available on board, where fitted (SOLAS 74/04 reg.V/19-1);
- (EA) 1.2.2.39 checking the provision and specification of the pilot ladders and pilot transfer arrangements (SOLAS 74/00/10 reg. V/23);
- (EA) 1.2.2.40 checking that the means of embarkation and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders, are in satisfactory condition, as applicable (SOLAS 74/08 reg.II-1/3-9);

- (EA) 1.2.2.41 checking, when appropriate, the provision of an appropriate instrument for measuring the concentration of gas or oxygen in the air together with detailed instructions for its use (SOLAS 74/08 reg.VI/3);
- (EA) 1.2.2.42 confirming that ship-specific plans and procedures for recovery of persons from the water have been provided (SOLAS 74/12 reg. III/17-1).
- (EA) 1.2.3 For the life-saving appliances and the other equipment of cargo ships, concerning the additional requirements for tankers the annual survey should consist of:
 - (EA) 1.2.3.1 checking the deck foam system, including the supplies of foam concentrate and testing that the minimum number of jets of water at the required pressure in the fire main is obtained (see (EA) 1.2.2.1) when the system is in operation (SOLAS 74/00 reg.II-2/10.8; 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 for all tankers, the provision of at least one portable instrument for measuring oxygen and one for measuring flammable vapour concentrations, together with a sufficient set of spares, and suitable means for the calibration of these instruments (SOLAS 74/10 reg. II-2/4.5.7.1);
- (EA) 1.2.3.6 examining the arrangements for gas measurement in double-hull spaces and double bottom spaces, including the fitting of permanent gas sampling lines, where appropriate (SOLAS 74/10 reg. II-2/4.5.7.2);
- (EA) 1.2.3.7 examining, as far as possible, and testing the fixed hydrocarbon gas detection system (SOLAS 74/10 reg. II-2/4.5.7.3 and FSSC ch. 16);
- (EA) 1.2.3.8 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) 1.2.3.9 checking protection of cargo pump room (SOLAS 74/00 reg.II-2/4.5.10), and in particular:
 - (EA) 1.2.3.9.1 checking temperature sensing devices for bulkhead glands and alarms;
 - (EA) 1.2.3.9.2 checking interlock between lighting and ventilation;
 - (EA) 1.2.3.9.3 checking gas detection system;
 - (EA) 1.2.3.9.4 checking bilge level monitoring devices and alarms.
- (EA) 1.2.4 For the life-saving appliances and the other equipment of cargo ships the completion of the annual survey should consist of:
 - (EA) 1.2.4.1 after a satisfactory survey, the Cargo Ship Safety Equipment Certificate should be endorsed;
 - (EA) 1.2.4.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.

- (EP) **1.3** **Periodical surveys** – see part "General" section 4.4.
- (EP) 1.3.1 For the life-saving appliances and the other equipment of cargo ships the examination of current certificates and other records should consist of:
- (EP) 1.3.1.1 the provisions of (EA) 1.2.1.
- (EP) 1.3.2 For the life-saving appliances and the other equipment of cargo ships the periodical survey should consist of:
- (EP) 1.3.2.1 the provisions of (EA) 1.2.2;
- (EP) 1.3.2.2 confirming, during the examination of the fixed 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 74/00/12 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 and any sample extraction smoke detection system (SOLAS 74/00/10 regs. II-2/7.2, 7.3, 7.4, 7.5.5, 19.3.3 and 20.4; FSSC chs. 9 and 10) (SOLAS 74/88 regs. II-2/11, 13, 14, 53 and 54);
- (EP) 1.3.2.5 testing, as feasible, the fire-extinguishing system for spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; 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 tankers the periodical survey should consist of:
- (EP) 1.3.3.1 the provisions of (EA) 1.2.3;
- (EP) 1.3.3.2 confirming during the examination of the fixed fire-fighting system for the cargo pump rooms that, as appropriate, any foam compounds have been checked and that the distribution pipework has been proved clear (SOLAS 74/00 reg.II-2/10.9; FSSC chs.5 to 7) (SOLAS 74/88 reg.II-2/63) and checking the operation of the remote means for closing the various openings.
- (EP) 1.3.4 For the life-saving appliances and the other equipment of cargo ships the completion of the periodical survey should consist of:
- (EP) 1.3.4.1 after a satisfactory survey, the cargo Ship Safety Equipment Certificate should be endorsed;
- (EP) 1.3.4.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (ER) **1.4 Renewal surveys** – see part "General" section 4.5
- (ER) 1.4.1 For the life-saving appliances and the other equipment of cargo ships the examination of current certificates and other records should consist of:
- (ER) 1.4.1.1 the provisions of (EA) 1.2.1, except for the validity of the Cargo Ship Safety Equipment Certificate.
- (ER) 1.4.2 For the life-saving appliances and the other equipment of cargo ships the renewal survey should consist of:
- (ER) 1.4.2.1 the provisions of (EP) 1.3.2.
- (ER) 1.4.3 for the life-saving appliances and the other equipment of cargo ships, concerning the additional requirements for 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.

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- (C) 2 **GUIDELINES FOR SURVEYS FOR THE CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE**
- (CI) 2.1 **Initial surveys** – see part "General", section 4.1.
- (CI) 2.1.1 For the hull, machinery and equipment of cargo ships the examination of plans and designs should consist of:
- (CI) 2.1.1.1 examining the plans for the hull (SOLAS 74/88 regs.II-1/11, 12-1, 14, 18 and 19) (SOLAS 74/06 regs.II-1/9, 10, 11, 12, 13-1, 15, 15-1, 16 and 16-1);
- (CI) 2.1.1.2 examining plans to verify that bulk carriers of 150 m in length and above, where appropriate, meet the applicable structural requirements of an organization recognized by the Administration, or national standards of the Administration, conforming to the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (SOLAS 74/10 reg. II-1/3-10);
- (CI) 2.1.1.3 examining the plans for the bilge pumping and drainage systems (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05/08/09 regs.II-1/35-1 and II-2/20.6.1.4);
- (CI) 2.1.1.4 examining the stability information and the damage control plans (SOLAS 74/88/00 regs.II-1/22, 23-1 and 25-8) (SOLAS 74/06/08 regs.II-1/5, 5-1 and 19; IS Code chs.1, 2 and 3);
- (CI) 2.1.1.5 examining the plans for the machinery installation (SOLAS 74/88 regs.II-1/26 to 36);
- (CI) 2.1.1.6 examining the plans for the electrical installation (SOLAS 74/88 regs.II-1/40, 41, 43, 44 and 45);
- (CI) 2.1.1.7 examining, where applicable, the approved documentation for the alternative design and arrangements (SOLAS 74/00/06 regs. II-1/55 and II-2/17);
- (CI) 2.1.1.8 examining the plans for the periodically unattended machinery spaces (SOLAS 74/00 reg.II-2/4.2.5) (SOLAS 74/88 regs.II-1/46 to 53);
- (CI) 2.1.1.9 examining the plans for the structural fire protection, including ventilation systems, in accommodation and service spaces, control stations and machinery spaces and oil fuel and lubricating oil systems (SOLAS 74/00/12 regs.II-2/4.2.2, 4.2.2.3, 4.2.2.4, 4.2.2.5, 4.4, 5.2, 5.3.1, 5.3.2, 6.2, 6.3, 7.5.5, 7.7, 8.2, 8.4, 9.2.1, 9.3, 9.5, 9.7.1, 9.7.2, 9.7.3, 9.7.5.2, 11.2, 11.3, 11.4, 11.5 and 17) (SOLAS 74/88 regs.II-2/42 to 52 (except 45 and 51));
- (CI) 2.1.1.10 examining the plans for the structural fire protection, including ventilation systems, in cargo spaces (SOLAS 74/00 regs.II-2/5.2, 11.2, 11.3, 11.5, 19.3.8, 19.3.10, 20.2.1 and 20.3) (SOLAS 74/88 regs.II-2/42 to 54);
- (CI) 2.1.1.11 examining the plans for the means of escape (SOLAS 74/00 regs.II-2/13.2, 13.3.1, 13.3.3, 13.4.2 and 13.6; FSSC ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45);

- (CI) 2.1.1.12 examining the plans for the arrangements for gaseous fuel for domestic purposes (SOLAS 74/00 reg.II-2/4.3) (SOLAS 74/88 reg.II-2/51);
- (CI) 2.1.1.13 examining the arrangements for the openings in the shell plating below the freeboard deck, (SOLAS 74/06 reg.II-1/15);
- (CI) 2.1.1.14 examining the plans for helicopter facilities for ships fitted with such facilities (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8);
- (CI) 2.1.1.15 examining the Cargo Securing Manual for ships carrying cargo units including containers (SOLAS 74/98 reg.VI/5.6);
- (CI) 2.1.1.16 checking for the loading booklet for carriage of cargoes in bulk (SOLAS 74/00 reg.VI/7);
- (CI) 2.1.1.17 examining the loading instrument for bulk carriers of 150 m in length and upwards (SOLAS 74/97/04 reg.XII/11);
- (CI) 2.1.1.18 confirming that bulk carriers, when appropriate, meet the requirements of damage stability and structural strength with its cargo hold(s) flooded, including other structural requirements(SOLAS 74/97/04 regs.XII/3, 4, 5 and 6);
- (CI) 2.1.1.19 examining the functionality of bilge well alarms to all cargo holds and conveyor tunnels (SOLAS 74/97/04 reg.XII/9);
- (CI) 2.1.1.20 confirming that the ship is constructed in accordance with the requirements of a recognized classification society, or one with equivalent national standards (SOLAS 74/00 reg.II-1/3-1);
- (CI) 2.1.1.21 confirming that a corrosion prevention system is fitted, when appropriate, in dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of 150 m in length and upwards (SOLAS 74/04/06 reg.II-1/3-2);
- (CI) 2.1.1.22 examining, for oil tankers and bulk carriers when appropriate, the Ship Structure Access Manual (SOLAS 74/00/02/04 reg.II-1/3-6(4));
- (CI) 2.1.1.23 for bulk carriers, checking the arrangements for hold, ballast and dry space water level detectors and their audible and visual alarms (SOLAS 74/02 reg.XII/12);
- (CI) 2.1.1.24 for bulk carriers, checking the arrangements for availability of draining and pumping systems forward of the collision bulkhead (SOLAS 74/02 reg.XII/13);
- (CI) 2.1.1.25 examining the calculation and drawings for the sufficient safe working load of towing and mooring equipment to enable the safe conduct of all towing and mooring operation in normal operation of the ship (SOLAS 74/04 reg.II-1/3-8);

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- (CI) 2.1.1.26 checking the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 74/08 reg.II-2/20.6.1.5).
- (CI) 2.1.2 For the hull, machinery and equipment of cargo ships, concerning the examination of plans and designs the additional requirements for oil tankers, chemical tankers and gas carriers should consist of:
- (CI) 2.1.2.1 examining the plans for the steering gear (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.2.2 examining the plans for the electrical installation (SOLAS 74/00 reg.II-1/43) (SOLAS 74/88 reg.II-1/45);
- (CI) 2.1.2.3 examining the plans for the structural fire protection (SOLAS 74/00/12 regs.II-2/1.6, 4.5.1, 4.5.2, 4.5.9, 9.2.4, 9.3, 9.4, 9.5, 9.6.3 and 11.6) (SOLAS 74/88 regs.II-2/55 to 58);
- (CI) 2.1.2.4 examining the plans for the cargo tank venting, cargo tank purging and gas-freeing and other ventilation arrangements and protection of the cargo tank structure against pressure or vacuum (SOLAS 74/00 regs.II-2/4.5.3, 4.5.4, 4.5.6, 4.5.8, 11.6 and 16.3) (SOLAS 74/88 reg.II-2/59);
- (CI) 2.1.2.5 examining the plans of access to bow (SOLAS 74/00/04 reg.II-1/3-3);
- (CI) 2.1.2.6 examining the plans for emergency towing, for tankers of not less than 20,000 tonnes deadweight (SOLAS 74/00/04 reg.II-1/3-4);
- (CI) 2.1.2.7 checking the access to spaces in the cargo area of oil tankers (SOLAS 74/88/92/00 reg.II-1/12-2) (SOLAS 74/04 reg.II-1/3-6);
- (CI) 2.1.2.8 examining plans to verify that oil tankers of 150 m in length and above, where appropriate, meet the applicable structural requirements of an organization recognized by the Administration, conforming to the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (SOLAS 74/10 reg. II-1/3-10).
- (CI) 2.1.3 For the hull, machinery and equipment of cargo ships the survey during construction and after installation should consist of:
- (CI) 2.1.3.1 confirming that the collision bulkhead is watertight up to the freeboard deck, that the valves fitted on the pipes piercing the collision bulkhead are operable from above the freeboard deck and that there are no doors, manholes, ventilation ducts or any other openings (SOLAS 74/88 reg.II-1/11) (SOLAS 74/06 reg.II-1/12);
- (CI) 2.1.3.2 confirming in accordance with the survey plan that bulk carriers of 150 m in length and above, where appropriate, meet the applicable structural requirements of an organization recognized by the Administration, or national standards of the Administration, conforming to the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (SOLAS 74/10 reg. II-1/3.10);

- (CI) 2.1.3.3 confirming that the subdivision bulkheads are constructed and tested as watertight up to the freeboard deck or margin line, as applicable (SOLAS 74/88 reg.II-1/14) (SOLAS 74/06 reg.II-1/10 and 11);
- (CI) 2.1.3.4 confirming that each watertight door has been tested (SOLAS 74/88 reg.II-1/18) (SOLAS 74/06 reg.II-1/16);
- (CI) 2.1.3.5 confirming that the arrangements for operating any watertight doors are generally in accordance with the requirements for passenger ships and carrying out similar tests, (see (PI) 5.1.2.6 to (PI) 5.1.2.8) (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13-1);
- (CI) 2.1.3.6 confirming by a hose or flooding test the watertightness of watertight decks and trunks, tunnels and ventilators (SOLAS 74/88 reg.II-1/19) (SOLAS 74/06 reg.II-1/16-1);
- (CI) 2.1.3.7 confirming that each bilge pump and the bilge pumping system provided for each watertight compartment is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05 reg.II-1/35-1);
- (CI) 2.1.3.8 confirming that the drainage system of enclosed cargo spaces situated on the freeboard deck is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05 reg.II-1/35-1);
- (CI) 2.1.3.8.1 examining visually the drainage facilities for blockage or other damage and confirming the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 74/08 reg.II-2/20.6.1.5);
- (CI) 2.1.3.9 conducting an inclining test, when this is required (SOLAS 74/88 reg.II-1/22) (SOLAS 74/06 reg.II-1/5);
- (CI) 2.1.3.10 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are installed and protected so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/00 reg.II-2/4.2 (except 4.2.2.3.4 relating to remote closing of valves included in safety equipment)) (SOLAS 74/88 regs.II-1/26, 32, 33 and 34) (SOLAS 74/88/06 reg.II-2/15 (except 15.2.5));
- (CI) 2.1.3.11 confirming that the normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (SOLAS 74/88 reg.II-1/26);
- (CI) 2.1.3.12 confirming that means are provided so that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88 reg.II-1/26);
- (CI) 2.1.3.13 confirming that the boilers, all parts of the machinery, all steam, hydraulic, pneumatic and other systems and their associated fittings which are under internal pressure have been subjected to the appropriate tests, including a pressure test as may be specified in the requirements of the Administration or the classification societies (SOLAS 74/88 reg.II-1/26);

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- (CI) 2.1.3.14 confirming that means are provided to ensure that the safe speed is not exceeded where there is the risk of machinery overspeeding (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.15 confirming that, where practicable, means are provided to protect against overpressure in the parts of main, auxiliary and other machinery that are subject to internal pressure and may be subject to dangerous overpressure (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.16 confirming that, when required, crankcase explosion relief devices are fitted to internal combustion engines and that they are arranged so as to minimize the possibility of injury to personnel (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.17 confirming that main turbine propulsion machinery and, where applicable, main internal combustion propulsion machinery and auxiliary machinery are provided with automatic shut-off arrangements in the case of failures, such as lubricating oil supply failure, which could rapidly lead to a complete breakdown, serious damage or explosion (SOLAS 74/88 reg.II-1/27);
- (CI) 2.1.3.18 confirming and recording the ability of the machinery to reverse the direction of the thrust of the propeller in sufficient time and to bring the ship to rest within a reasonable distance, including the effectiveness of any supplementary means of manoeuvring or stopping the ship* (SOLAS 74/88 reg. II-1/28);
- (CI) 2.1.3.19 confirming that the main and auxiliary steering gear are so arranged that the failure of one of them does not render the other inoperative* (SOLAS 74/88 reg. II-1/29);
- (CI) 2.1.3.20 confirming that, where appropriate, essential components of the steering gear are permanently lubricated or provided with lubrication fittings (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.21 confirming that relief valves are fitted to any part of a steering gear hydraulic system which can be isolated and in which pressure can be generated from the power source or from external forces and that these relief valves are set to a pressure not exceeding the design pressure (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.22 confirming that the main steering gear is capable of steering the ship at maximum ahead service speed and is capable of putting the rudder over from 35° on one side to 35° on the other side with the ship at its deepest seagoing draught† and running ahead at maximum ahead service speed and, under the same conditions, from 35° on either side to 30° on the other side in not more than 28 s† (SOLAS 74/88 reg. II-1/29);
- (CI) 2.1.3.23 confirming that the auxiliary steering gear is capable of steering the ship at navigable speed and of being brought speedily into action in an emergency and that it is capable of putting the rudder over from 15° on

* For trials with the ship not at the deepest seagoing draught, refer to MSC.1/Circ.1425.

† For ships fitted with alternative propulsion and steering arrangements other than traditional arrangements, such as but not limited to azimuthing propulsors or water jet propulsion systems, refer to MSC.1/Circ.1416.

** For trials with the ship not at the deepest seagoing draught, refer to MSC.1/Circ.1425.

- one side to 15° on the other side in not more than 60 s with the ship at its deepest seagoing draught and running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater** (SOLAS 74/88 reg. II-1/29);
- (CI) 2.1.3.24 confirming that the main and auxiliary steering gear power units restart automatically when power is restored after a power failure, that they are capable of being brought into operation from a position on the navigating bridge and that, in the event of a power failure to any one of the steering gear power units, an audible and visual alarm is given on the navigating bridge (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.25 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, a defect can be isolated so that steering capability can be maintained or speedily regained after a single failure in its piping system or in one of the power units* (SOLAS 74/88 reg. II-1/29);
- (CI) 2.1.3.26 confirming that the control systems for the main steering gear from both the navigating bridge and the steering gear compartment are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.27 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, the two independent control systems from the navigating bridge are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.28 confirming that the control system for the auxiliary steering gear in the steering gear compartment and, if this gear is power operated, from the navigating bridge are operating satisfactorily and that the latter is independent of the control system for the main steering gear (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.29 confirming that the control system for any main and auxiliary steering gear control system operable from the navigating bridge is capable of being brought into operation from a position on the navigating bridge, that means are provided in the steering gear compartment for disconnecting it from the steering gear that it serves and that an audible and visual alarm is given on the navigating bridge in the event of a failure of electrical power supply (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.30 confirming that the electric power circuits and steering gear control systems, together with their associated components, cables and pipes, are separated, as far as practicable, throughout their length (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.31 confirming that the means of communication between the bridge and the steering gear compartment is operating satisfactorily and that, with ships having emergency steering positions, a telephone or other means of communication for relaying heading information and supplying visual compass readings to the emergency steering position are provided (SOLAS 74/88 reg.II-1/29) (SOLAS 74/00 reg.V/19);

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- (CI) 2.1.3.32 confirming that the angular position of the rudder is indicated independently of the steering control system on the navigating bridge if the main steering gear is power-operated and that this angular position is given in the steering gear compartment (SOLAS 74/88 reg.II-1/29) (SOLAS 74/00 reg.V/19);
- (CI) 2.1.3.33 confirming that with a hydraulic power-operated steering gear the audible and visual low-level alarms on the navigating bridge and in the machinery space for each hydraulic fluid reservoir are operating satisfactorily and that at least one power actuating system including the reservoir can be recharged from a position within the steering gear compartment by means of a fixed storage tank (to which a contents gauge is fitted) with fixed piping (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.34 confirming that the steering gear compartment is readily accessible, that it is separated, as far as practicable, from machinery spaces and is provided with suitable arrangements to ensure working access to steering gear machinery and controls under safe conditions (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.3.35 confirming that with electric and electro-hydraulic steering gear the means are provided for indicating on the navigating bridge and at a main machinery control position that the motors are running and that the overload alarm and alarm for the loss of a phase in a three-phase supply located at the main machinery control position are operating satisfactorily (SOLAS 74/88 reg.II-1/30);
- (CI) 2.1.3.36 confirming that the main and auxiliary machinery essential for propulsion and the safety of the ship are provided with the effective means for its operation and control (SOLAS 74/88 reg.II-1/31);
- (CI) 2.1.3.37 confirming that appropriate means are provided where it is intended that the propulsion machinery should be remotely controlled from the navigating bridge, including, where necessary, the control, monitoring, reporting, alert and safety actions. (SOLAS 74/00/02 reg.II-1/31);
- (CI) 2.1.3.38 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (CI) 2.1.3.39 confirming that, in general, means are provided for manually overriding automatic controls and that a failure does not prevent the use of the manual override (SOLAS 74/88 reg.II-1/31);
- (CI) 2.1.3.40 confirming that oil-fired and exhaust gas boilers, unfired steam generators, steam pipe systems and air pressure systems are fitted with the appropriate safety features (SOLAS 74/88 regs.II-1/32, 33 and 34);
- (CI) 2.1.3.41 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);
- (CI) 2.1.3.42 when appropriate, confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-1/36 and SOLAS 74/12 reg.II-1/3-12.2); or confirming that the ship was constructed to reduce on board noise and to protect personnel from noise in accordance with the *Code on noise levels on board ships*,

- adopted by resolution MSC.337(91), as amended (SOLAS 74/12 reg. II-1/3-12);
- (CI) 2.1.3.43 confirming that the engine room telegraph giving visual indication of the orders and answers both in the machinery space and on the navigating bridge is operating satisfactorily (SOLAS 74/88, reg.II-1/37);
- (CI) 2.1.3.44 confirming that the second means of communication between the navigation bridge and machinery space is also operating satisfactorily and that appropriate means are provided to any other positions from which the engines are controlled (SOLAS 74/88 reg.II-1/37);
- (CI) 2.1.3.45 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);
- (CI) 2.1.3.46 confirming that precautions, taken to prevent any oil that may escape under pressure from any pump, filter or heater from coming into contact with heated surfaces, are efficient (SOLAS 74/00 reg.II-2/4.2.2.3);
- (CI) 2.1.3.47 confirming that the means of ascertaining the amount of oil contained in any oil tank are in good working condition (SOLAS 74/00 reg.II-2/4.2.2.3);
- (CI) 2.1.3.48 confirming that the devices provided to prevent overpressure in any oil tank or in any part of the oil system, including the filling pipes, are in good working condition (SOLAS 74/00 reg.II-2/4.2.2.4);
- (CI) 2.1.3.49 confirming that forepeak tanks are not intended for carriage of oil fuel, lubrication oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.2.3);
- (CI) 2.1.3.50 confirming that the electrical installations, including the main source of power and lighting systems, are installed in accordance with the approved plans (SOLAS 74/88 regs.II-1/40 and 41);
- (CI) 2.1.3.51 confirming that a self-contained emergency source of electrical power has been provided and that the appropriate systems are satisfactorily supplied (SOLAS 74/88 reg.II-1/43);
- (CI) 2.1.3.52 confirming that the starting arrangements of each emergency generating set are satisfactory (SOLAS 74/88 reg.II-1/44);
- (CI) 2.1.3.53 confirming that precautions have been provided against shock, fire and other hazards of electrical origin (SOLAS 74/88 reg.II-1/45);
- (CI) 2.1.3.54 confirming that the arrangements for periodically unattended machinery spaces are satisfactory (SOLAS 74/88 regs.II-1/46 to 53) and in particular:
- (CI) 2.1.3.55 examining, where applicable, the alternative design and arrangements for machinery or electrical installations, or fire safety, in accordance with the test and inspection requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs. II-1/55 and II-2/17);
- (CI) 2.1.3.55.1 checking the fire precautions and testing alarms, as appropriate;

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- (CI) 2.1.3.55.2 checking the means for the protection against flooding;
- (CI) 2.1.3.55.3 checking the means to control the propulsion from the navigating bridge;
- (CI) 2.1.3.55.4 ensuring that a means of vocal communication between the main machinery control room or its control position, as appropriate, and the navigating bridge and engineer officer's accommodation is provided and is effective;
- (CI) 2.1.3.55.5 checking that an alarm system is provided with random testing of functions;
- (CI) 2.1.3.55.6 checking that means are provided to automatically shut down machinery or boiler operations in the event of serious malfunction and testing the alarms;
- (CI) 2.1.3.55.7 ensuring that special requirements for the machinery, boiler and electrical installations, as appropriate, are provided;
- (CI) 2.1.3.56 confirming that all aspects of the structural fire protection, including the ventilation systems, in accommodation and service spaces, control stations and machinery spaces are installed in accordance with the approved plans, testing the operation of the means of closing the main inlets and outlets of all ventilation systems and proving that the power ventilation is capable of being stopped from outside the space served (SOLAS 74/00/12 regs.II-2/4.4, 5.2, 5.3.1, 5.3.2, 6.2, 6.3, 7.5.5, 7.7, 8.2, 8.4, 9.2.1, 9.3, 9.4.2, 9.5, 9.7.1, 9.7.2, 9.7.3, 9.7.5.2, 11.2, 11.3, 11.4 and 11.5) (SOLAS 74/88 regs.II-2/42 to 44, 46 to 50 and 52);
- (CI) 2.1.3.57 confirming that all aspects of the structural fire protection, including the ventilation systems, in cargo spaces are installed in accordance with the approved plans, testing the operation of the means of closing the main inlets and outlets of all ventilation systems and proving that the power ventilation is capable of being stopped from outside the space served (SOLAS 74/00 regs.II-2/5.2.1, 11.2, 11.3, 11.5, 19.3.8, 19.3.10, 20.2.1 and 20.3) (SOLAS 74/88 regs.II-2/42 to 44, 46 to 50 and 52 to 54);
- (CI) 2.1.3.58 confirming that stairways and ladders are so arranged as to provide a means of escape from all accommodation spaces and from spaces in which the crew is normally employed, other than machinery spaces, to the open deck and thence to the lifeboats and liferafts (SOLAS 74/00 regs.II-2/13.2, 13.3.1, 13.3.3 and 13.6; FSSC ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45) and in particular that:
- (CI) 2.1.3.58.1 at all levels of accommodation there are provided at least two widely separated means of escape from each restricted space or group of spaces;
- (CI) 2.1.3.58.2 below the lowest open deck the main means of escape is a stairway (the second being a trunk or a stairway);
- (CI) 2.1.3.58.3 above the lowest open deck the means of escape are stairways or doors to an open deck or a combination of them;
- (CI) 2.1.3.58.4 the radiotelegraph station has direct access to the open deck or is provided with two means of access or egress, one of which is a porthole or window of sufficient size;

- (CI) 2.1.3.59 confirming that two widely separated means of escape and, when appropriate, a fire shelter from the lower part of the space, are provided from each machinery space of Category A and that suitable escape routes are provided from other machinery spaces (SOLAS 74/00 reg.II-2/13.4.2; FSSC ch.13 paragraph 3) (SOLAS 74/88 reg.II-2/45);
- (CI) 2.1.3.60 examining the arrangements for gaseous fuel for domestic purposes (SOLAS 74/00 reg.II-2/4.3);
- (CI) 2.1.3.61 confirming, when appropriate, that all aspects of the helicopter facilities are installed in accordance with the approved plans (SOLAS 74/00 reg.II-2/18) (SOLAS 74/88 reg.II-2/18.8);
- (CI) 2.1.3.62 confirming that installed materials do not contain asbestos * (SOLAS 74/00/09 reg. II-1/3-5);
- (CI) 2.1.3.63 confirming, for bulk carriers, that dedicated sea water ballast tanks have an efficient corrosion protection system such as hard coating (SOLAS 74/00 reg.II-1/3-2).
- (CI) 2.1.3.64 confirming that dedicated sea water ballast tanks arranged in ships and double side skin spaces arranged in bulk carriers of 150 m in length and upward when appropriate have been coated in accordance with resolution MSC.215(82) (SOLAS 74/00/06 reg.II-1/3-2);
- (CI) 2.1.3.65 prior to the review of the coating technical file:
- (CI) 2.1.3.65.1 checking that the Technical Data Sheet and Statement of Compliance or Type Approval Certificate comply with the Standard;
- (CI) 2.1.3.65.2 checking that the coating identification on representative containers is consistent with the coating identified in the Technical Data Sheet;
- (CI) 2.1.3.65.3 checking that the inspector is qualified in accordance with the qualification standards;
- (CI) 2.1.3.65.4 checking that the inspector's reports of surface preparation and the coating's application indicate compliance with the manufacturer's Technical Data Sheet and Statement of Compliance or Type Approval Certificate; and
- (CI) 2.1.3.65.5 monitoring the implementation of the coating inspection requirements.
- (CI) 2.1.3.66 reviewing the Coating Technical File (SOLAS 74/00/06/10 regs. II-1/3-2 and II-1/3-11; MSC.215(82) and MSC.288(87));
- (CI) 2.1.3.67 confirming for oil tankers and bulk carriers, when appropriate, the provision of means of access to cargo and other spaces in accordance with the arrangements in the Ship Structures Access Manual (SOLAS 74/00/02/04 reg. II-1/3-6, SOLAS 74/10 reg. II-1/3-10 and MSC.287(87));

* Refer to MSC.1/Circ.1379 and MSC.1/Circ.1426 on Unified interpretation of SOLAS regulation II-1/3-5.

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- (CI) 2.1.3.68 for bulk carriers, examining and testing the hold, ballast and dry space water level detectors and their audible and visual alarms (SOLAS 74/02 reg.XII/12);
- (CI) 2.1.3.69 for bulk carriers, checking the arrangements for availability of draining and pumping systems forward of the collision bulkhead (SOLAS 74/02 reg.XII/13);
- (CI) 2.1.3.70 confirming, for bulk carriers, that the loading instrument is on board and functioning (SOLAS 74/97/04 reg.XII/11);
- (CI) 2.1.3.71 confirming that ship's identification number is permanently marked (SOLAS 74/02 reg.XI-1/3);
- (CI) 2.1.3.72 confirming that the towing and mooring equipment is properly marked with any restriction associated with its safe operation (SOLAS 74/04 reg.II-1/3-8);
- (CI) 2.1.3.73 confirming, where applicable, that an appropriate portable atmosphere testing instrument or instruments* is on board, and that suitable means are provided for the calibration of all such instruments; and checking appropriateness of the testing and calibration (SOLAS 74/14 reg. XI-1/7)†.
- (CI) 2.1.4 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for oil tankers the survey during construction and after installation should consist of:
- (CI) 2.1.4.1 confirming, when appropriate, that the main steering gear comprises the necessary two or more identical power units and the requisite arrangements to regain steering capability in the event of the prescribed single failure (SOLAS 74/88 reg.II-1/29);
- (CI) 2.1.4.2 confirming in accordance with the survey plan that oil tankers of 150 m in length and above, where appropriate, meet the applicable structural requirements of an organization recognized by the Administration, or national standards of the Administration, conforming to the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (SOLAS 74/10 reg. II-1/3-10);
- (CI) 2.1.4.3 confirming that a hull return system of distribution and earthed distribution system are not used (SOLAS 74/88 reg.II-1/45);
- (CI) 2.1.4.4 confirming that all aspects of the location of spaces and the structural fire protection, including the special arrangements when the ship is a combination carrier, are in accordance with the approved plans (SOLAS 74/00/12 regs.II-2/1.6, 4.5.1, 4.5.2, 4.5.9, 9.2.4, 9.3 and 9.6.3) (SOLAS 74/88 regs.II-2/55 to 58);

* Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces* as required by SOLAS regulation XI-1/7 (MSC.1/Circ.1477).

† New SOLAS 74/14 reg. XI-1/7, as adopted by MSC.380(94), is expected to come into force on 1 July 2016.

- (CI) 2.1.4.5 confirming that permanent approved gastight lighting enclosures for illuminating cargo pump rooms, having adequate strength and not impairing the integrity and gas tightness of the bulkheads or decks, are fitted in bulkheads and decks separating cargo pump rooms and other spaces (SOLAS 74/00 reg.II-2/4.5.2.5) (SOLAS 74/88 reg.II-2/58.5);
- (CI) 2.1.4.6 confirming that all aspects of the cargo tank venting, cargo tank purging and gas-freeing and other ventilation arrangements and protection of the cargo tank structure against pressure or vacuum are in accordance with the approved plans (SOLAS 74/00 regs.II-2/4.5.3, 4.5.4, 4.5.6, 4.5.8 and 11.6) (SOLAS 74/88 regs.II-2/59 and 62.13.1 to 62.13.3);
- (CI) 2.1.4.7 confirming that access to bow is arranged in accordance with approved plans (SOLAS 74/00/04 reg.II-1/3-3);
- (CI) 2.1.4.8 confirming, for tankers of not less than 20,000 tonnes deadweight, that emergency towing is arranged in accordance with approved plans (SOLAS 74/00/04 reg.II-1/3-4);
- (CI) 2.1.4.9 confirming when appropriate that dedicated sea water ballast tanks have an efficient corrosion protection system such as hard coating (SOLAS 74/00/06 reg.II-1/3-2).
- (CI) 2.1.4.10 confirming that all cargo oil tanks in crude oil tankers have either:
 - (CI) 2.1.4.10.1 been coated in accordance with MSC.288(87); or
 - (CI) 2.1.4.10.2 been protected by alternative means of corrosion protection or utilization of approved corrosion-resistant material (steel) in accordance with MSC.289(87) (SOLAS 74/10 reg. II-1/3-11).
- (CI) 2.1.5 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for chemical tankers and gas carriers, the survey during construction and after installation should consist of:
 - (CI) 2.1.5.1 the provisions of (CI) 2.1.4 except (CI) 2.1.4.2.
- (CI) 2.1.6 For the hull, machinery and equipment of cargo ships the check that the required documentation has been placed on board should consist of:
 - (CI) 2.1.6.1 confirming that the stability information and the damage control plans and damage control booklets have been provided (SOLAS 74/88 regs. II-1/22 and 23-1) (SOLAS 74/06 regs. II-1/5-1 and 19);
 - (CI) 2.1.6.2 checking, where applicable, that the noise survey report as required by the Code on noise levels on board ships is available on board (SOLAS 74/12 reg. II-1/3-12);
 - (CI) 2.1.6.3 confirming that the manoeuvring booklet has been provided and that the manoeuvring information has been displayed on the navigating bridge (SOLAS 74/88 reg.II-1/28);

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- (CI) 2.1.6.4 confirming that the approved Cargo Securing Manual for ships carrying cargo units including containers is provided on board (SOLAS 74/98 reg. VI/5.6);
- (CI) 2.1.6.5 confirming, for oil tankers and bulk carriers when appropriate, that the Ship Structure Access Manual is on board (SOLAS 74/00/02/04 reg.II-1/3-6(4));
- (CI) 2.1.6.6 confirming that a set of as-built construction drawings is available on board (SOLAS 74/04 reg.II-1/3-7);
- (CI) 2.1.6.7 confirming when appropriate that a coating technical file reviewed by the Administration has been provided on board (SOLAS 74/00/06/10 regs. II-1/3-2 and 3-11);
- (CI) 2.1.6.8 checking the provision of a ship-specific emergency towing procedure (SOLAS 74/08 reg.II-1/3-4);
- (CI) 2.1.6.9 confirming, for oil tankers and bulk carriers of 150 m in length and above, that the Ship Construction File has been provided (SOLAS 74/10 reg. II-1/3-10 and MSC.290(87));
- (CI) 2.1.6.10 confirming, when appropriate, that a technical file verified by the Administration has been provided on board (SOLAS 74/10 reg. II-1/3-11 and MSC.289(87));
- (CI) 2.1.6.11 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 74/00/06 regs.II-1/55 and II-2/17).
- (CI) 2.1.7 For the hull, machinery and equipment of cargo ships the completion of the initial survey should consist of:
- (CI) 2.1.7.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be issued.
- (CA) **2.2 Annual surveys** – see part "General", section 4.2.
- (CA) 2.2.1 For the hull, machinery and equipment of cargo ships the examination of current certificates and other records should consist of:
- (CA) 2.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (CA) 2.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (CA) 2.2.1.3 checking the validity of the International Ship Security Certificate;
- (CA) 2.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (CA) 2.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;

- (CA) 2.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
- (CA) 2.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (CA) 2.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (CA) 2.2.1.9 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (CA) 2.2.1.10 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (CA) 2.2.1.11 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (CA) 2.2.1.12 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (CA) 2.2.1.13 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg.V/14) (SOLAS 74/88 reg.V/13(b));
- (CA) 2.2.1.14 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (CA) 2.2.1.15 checking, where applicable, that the noise survey report as required by the Code on noise levels on board ships is available on board (SOLAS 74/12 reg. II-1/3-12);
- (CA) 2.2.1.16 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 74/00/06 regs.II-1/55 and II-2/17);
- (CA) 2.2.1.17 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (CA) 2.2.1.18 checking the provision of a ship-specific emergency towing procedure (SOLAS 74/08 reg.II-1/3-4);
- (CA) 2.2.1.19 confirming that the stability information, including damage stability, where applicable, and the damage control plans and damage control booklets are on board (SOLAS 74/88 regs. II-1/22, 23 and 25) (SOLAS 74/06 regs. II-1/5-1 and 19);
- (CA) 2.2.1.20 confirming that the manoeuvring booklet is on board and that the manoeuvring information is displayed on the navigating bridge (SOLAS 74/88 reg.II-1/28);

- (CA) 2.2.1.21 checking by the log-book entries that the testing and the emergency drills of the steering gear have been carried out (SOLAS 74/00 reg.V/26) (SOLAS 74/88 reg.V/19);
- (CA) 2.2.1.22 checking that the routine surveys of the boilers and other pressure vessels, as determined by the Administration, have been carried out as required and that safety devices, such as the boiler safety valves, have been tested;
- (CA) 2.2.1.23 checking that, as appropriate, the hull and machinery has been presented for survey in accordance with the continuous survey scheme approved by the Administration or a classification society;
- (CA) 2.2.1.24 confirming, when appropriate, that a complete file of the enhanced survey reports and the Condition Evaluation Report are on board*;
- (CA) 2.2.1.25 confirming that suitable Material Safety Data Sheets are available on board;
- (CA) 2.2.1.26 confirming, for bulk carriers, that the loading/unloading booklet required in SOLAS regulation VI/7.2 is on board (SOLAS 74/97/04 reg.XII/8.1);
- (CA) 2.2.1.27 confirming, that bulk carriers of 150 m in length and upwards of single side skin construction designed to carry solid bulk cargoes having a density of 1,780 kg/m³ and above, constructed before 1 July 1999, have, after the implementation date given in SOLAS 74/94/97 reg.XII/3, sufficient stability and strength to withstand flooding of the foremost cargo hold (SOLAS 74/97/04 reg.XII/3, 4 and 6);
- (CA) 2.2.1.28 confirming that approved Cargo Securing Manual for ships carrying cargo units including containers is on board (SOLAS 74/98 reg. VI/5.6);
- (CA) 2.2.1.29 confirming that the loading booklet for carriage of cargoes in bulk is on board (SOLAS 74/00 reg.VI/7);
- (CA) 2.2.1.30 confirming, for oil tankers and bulk carriers when appropriate, that the Ship Structure Access Manual is on board (SOLAS 74/00/02, reg.II-1/3-6(4));
- (CA) 2.2.1.31 confirming that structural alterations performed, if any, have been approved by the classification society and reported on the as-built drawings kept on board (SOLAS 74/04 reg.II-1/3-7);
- (CA) 2.2.1.32 confirming when appropriate that the coating technical file is available on board and maintained (SOLAS 74/00/06/10 regs. II-1/3-2 and 3-11);
- (CA) 2.2.1.33 confirming when appropriate that the maintenance of the protective coating is included in the overall ship's maintenance system (SOLAS 74/00/06 reg.II-1/3-2);

* Refer to International Code on the *Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers, 2011* (resolution A.1049(27), as amended).

- (CA) 2.2.1.34 confirming, where appropriate, for crude oil tankers, that a technical file verified by the Administration has been provided on board (SOLAS 74/10 reg. II-1/3-11 and MSC.289(87));
- (CA) 2.2.1.35 confirming, for oil tankers and bulk carriers of 150 m in length and above, that the Ship Construction File is available (SOLAS 74/10 reg. II-1/3-10 and MSC.287(87));
- (CA) 2.2.1.36 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 annex 4 reg.2), when applicable.
- (CA) 2.2.2 For the hull*, machinery and equipment of cargo ships the annual survey should consist of:
- (CA) 2.2.2.1 examining, in general and as far as can be seen, the hull and its closing appliances;
- (CA) 2.2.2.2 examining the anchoring and mooring equipment as far as can be seen. For ships built after 01/01/2007, confirming that the towing and mooring equipment is properly marked with any restriction associated with its safe operation (SOLAS 74/04 reg.II-1/3-8);
- (CA) 2.2.2.3 examining, for bulk carriers of 150 m and above, where appropriate, the ship's structure in accordance with the Ship Construction File, taking into account identified areas that need special attention (SOLAS 74/10 reg. II-1/3-10 and MSC.287(87));
- (CA) 2.2.2.4 examining the collision and the other watertight bulkheads as far as can be seen (SOLAS 74/88 regs.II-1/11 and 14) (SOLAS 74/06 regs.II-1/10, 11 and 12);
- (CA) 2.2.2.5 examining and testing (locally and remotely) all the watertight doors in watertight bulkheads (SOLAS 74/88 reg.II-1/18) (SOLAS 74/06 reg.II-1/16);
- (CA) 2.2.2.6 examining the arrangements for closing openings in the shell plating below the freeboard deck (SOLAS 74/06 reg.II-1/15);
- (CA) 2.2.2.7 examining each bilge pump and confirming that the bilge pumping system for each watertight compartment is satisfactory (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05 reg.II-1/35-1);
- (CA) 2.2.2.8 confirming that the drainage from enclosed cargo spaces situated on the freeboard deck is satisfactory (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05 reg.II-1/35-1);
- (CA) 2.2.2.8.1 examining visually the drainage facilities for blockage or other damage and confirming the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 74/08 reg.II-2/20.6.1.5);

* Refer also to annex A to the International Code on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil tankers, 2011(resolution A.1049(27), as amended).

- (CA) 2.2.2.9 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are installed and protected so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/00 reg.II-2/4.2 (except 4.2.2.3.4 relating to remote closing of valves included in safety equipment)) (SOLAS 74/88 regs.II-1/26, 32, 33 and 34) (SOLAS 74/88/06 reg.II-2/15 (except 15.2.5));
- (CA) 2.2.2.10 confirming that the normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (SOLAS 74/88 reg.II-1/26);
- (CA) 2.2.2.11 confirming that means are provided so that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88 reg.II-1/26);
- (CA) 2.2.2.12 carrying out a general examination of the machinery, the boilers, all steam, hydraulic, pneumatic and other systems and their associated fittings to see whether they are being properly maintained and with particular attention to the fire and explosion hazards (SOLAS 74/88 regs.II-1/26 and 27);
- (CA) 2.2.2.13 examining and testing the operation of main and auxiliary steering arrangements, including their associated equipment and control systems (SOLAS 74/88 reg.II-1/29);
- (CA) 2.2.2.14 confirming that the means of communication between the navigation bridge and steering gear compartment and the means of indicating the angular position of the rudder are operating satisfactorily (SOLAS 74/88 reg.II-1/29) (SOLAS 74/00 reg.V/19);
- (CA) 2.2.2.15 confirming that with ships having emergency steering positions there are means of relaying heading information and, when appropriate, of supplying visual compass readings to the emergency steering position (SOLAS 74/88 reg.II-1/29 and SOLAS 74/00 reg.V/19 or the SOLAS 74/88 text in force prior to 1 July 2002 reg.V/12 as appropriate);
- (CA) 2.2.2.16 confirming that the various alarms required for hydraulic power-operated, electric and electro-hydraulic steering gears are operating satisfactorily and that the re-charging arrangements for hydraulic power-operated steering gears are being maintained (SOLAS 74/88 regs.II-1/29 and 30);
- (CA) 2.2.2.17 examining the means for the operation of the main and auxiliary machinery essential for the propulsion and the safety of the ship, including, when applicable, the means of remotely controlling the propulsion machinery from the navigating bridge (including the control, monitoring, reporting, alert and safety actions) and the arrangements to operate the main and other machinery from a machinery control room (SOLAS 74/88/00/02 reg.II-1/31);
- (CA) 2.2.2.18 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);

- (CA) 2.2.2.19 when appropriate, confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg.II-1/36 and SOLAS 74/12 reg.II-1/3-12.2); or confirming that the ship was constructed to reduce on board noise and to protect personnel from noise in accordance with the *Code on noise levels on board ships*, adopted by resolution MSC.337(91), as amended (SOLAS 74/12 reg.II-1/3-12);
- (CA) 2.2.2.20 confirming that the engine room telegraph, the second means of communication between the navigation bridge and the machinery space and the means of communication with any other positions from which the engines are controlled are operating satisfactorily (SOLAS 74/88 reg.II-1/37);
- (CA) 2.2.2.21 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);
- (CA) 2.2.2.22 examining, as far as practicable, visually and in operation, the electrical installations, including the main source of power and the lighting systems (SOLAS 74/88 regs.II-1/40 and 41);
- (CA) 2.2.2.23 confirming, as far as practicable, the operation of the emergency source(s) of electrical power including their starting arrangements, the systems supplied and, when appropriate, their automatic operation (SOLAS 74/88 regs.II-1/43 and 44);
- (CA) 2.2.2.24 examining, in general, that the precautions provided against shock, fire and other hazards of electrical origin are being maintained (SOLAS 74/88 reg.II-1/45);
- (CA) 2.2.2.25 examining the arrangements for periodically unattended machinery spaces (SOLAS 74/88 regs.II-1/46 to 53) and, in particular, the random testing of alarm, automatic and shutdown functions;
- (CA) 2.2.2.26 examining, where applicable, the alternative design and arrangements for machinery or electrical installations, or fire safety, in accordance with the test, inspection and maintenance requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs. II-1/55 and II-2/17);
- (CA) 2.2.2.27 confirming, as far as practicable, that no changes have been made in the structural fire protection, examining any manual and automatic fire doors and proving their operation, testing the means of closing the main inlets and outlets of all ventilation systems and testing the means of stopping power ventilation systems from outside the space served (SOLAS 74/00/12 regs.II-2/4.4, 5.2, 5.3.1, 5.3.2, 6.2, 6.3, 7.5.5, 7.7, 8.2, 8.3, 8.4, 9.2.1, 9.2.3, 9.3, 9.4.2, 9.5, 9.7.1, 9.7.2, 9.7.3, 9.7.5.2, 11.2, 11.3, 11.4, 11.5, 19.3.8, 19.3.10, 20.2.1 and 20.3) (SOLAS 74/88 regs.II-2/42 to 44, 46 to 50 and 52);
- (CA) 2.2.2.28 confirming that the means of escape from accommodation, machinery and other spaces are satisfactory (SOLAS 74/00 regs.II-2/13.2, 13.3.1, 13.3.3, 13.4.2 and 13.6) (SOLAS 74/88 reg.II-2/45);
- (CA) 2.2.2.29 examining the arrangements for gaseous fuel for domestic purposes (SOLAS 74/00 reg.II-2/4.3) (SOLAS 74/88 reg.II-2/51);

- (CA) 2.2.2.30 examining visually the condition of any expansion joints in seawater systems;
- (CA) 2.2.2.31 confirming, when appropriate and as far as is practicable when examining internal spaces on oil tankers and bulk carriers, that the means of access to cargo and other spaces remain in good condition. (SOLAS 74/00/02 reg.II-1/3-6);
- (CA) 2.2.2.32 confirming that no new materials containing asbestos were installed on board* (SOLAS 74/00/04/09 reg. II-1/3-5);
- (CA) 2.2.2.33 examining the functionality of bilge well alarms to all cargo holds and conveyor tunnels (SOLAS 74/97/04 reg.XII/9);
- (CA) 2.2.2.34 for bulk carriers, examining the hold, ballast and dry space water level detectors and their audible and visual alarms. (SOLAS 74/02 reg.XII/12);
- (CA) 2.2.2.35 for bulk carriers, checking the arrangements for availability of draining and pumping systems forward of the collision bulkhead (SOLAS 74/02 reg.XII/13);
- (CA) 2.2.2.36 confirming that ship's identification number is permanently marked (SOLAS 74/02 reg.XI-1/3);
- (CA) 2.2.2.37 confirming, where applicable, that an appropriate portable atmosphere testing instrument or instruments† is on board, and that suitable means are provided for the calibration of all such instruments; and checking appropriateness of the testing and calibration (SOLAS 74/14 reg. XI-1/7‡);
- (CA) 2.2.2.38 for single hull, single hold cargo ships, examining the cargo hold water level detector and its audible and visual alarm (SOLAS 74/04 reg.II-1/23-3) (SOLAS 74/06 reg.II-1/25);
- (CA) 2.2.2.39 confirming that the coating system in dedicated SWB tanks in ships and double side skin spaces arranged in bulk carriers of 150 m in length and upward when appropriate is maintained and that maintenance, repair and partial recoating are recorded in the coating technical file (SOLAS 74/00/06 reg.II-1/3-2);
- (CA) 2.2.2.40 confirming, for bulk carriers constructed before 1 July 1999 with restrictions imposed with respect to the carriage of cargoes with a density of 1,780 kg/m³ and above, that a triangle is permanently marked at midship (SOLAS 74/97/04 reg.XII/8.3);
- (CA) 2.2.2.41 confirming, for bulk carriers, that the loading instrument is on board and functioning (SOLAS 74/97/04 reg.XII/11).
- (CA) 2.2.3 For the hull§, machinery and equipment of cargo ships, concerning the additional requirements for oil tankers, the annual survey should consist of:

* Refer to MSC.1/Circ.1379 and MSC.1/Circ.1426 on Unified interpretation of SOLAS regulation II-1/3-5.

† Refer to the Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7 (MSC.1/Circ.1477).

‡ The new SOLAS 74/14 reg. XI-1/7, as adopted by MSC.380(94), is expected to come into force on 1 July 2016.

§ Refer also to annex B to the International Code on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil tankers, 2011(resolution A.1049(26), as amended).

- (CA) 2.2.3.1 confirming, when appropriate, that the requisite arrangements to regain steering capability in the event of the prescribed single failure are being maintained (SOLAS 74/88 reg.II-1/29);
- (CA) 2.2.3.2 examining the cargo tank openings, including gaskets, covers, coamings and screens;
- (CA) 2.2.3.3 examining the cargo tank pressure/vacuum valves and devices to prevent the passage of flame (SOLAS 74/00 reg.II-2/11.6);
- (CA) 2.2.3.4 examining the devices to prevent the passage of flame on vents to all bunker, oily-ballast and oily-slop tanks and void spaces, as far as practicable;
- (CA) 2.2.3.5 examining the cargo tank venting, cargo tank purging and gas-freeing and other ventilation systems (SOLAS 74/00 reg.II-2/4.5.3, 4.5.4, 4.5.6 and 4.5.8) (SOLAS 74/88 reg.II-2/59);
- (CA) 2.2.3.6 examining the cargo, crude oil washing, ballast and stripping systems both on deck and in the cargo pump rooms and the bunker system on deck;
- (CA) 2.2.3.7 confirming that all electrical equipment in dangerous zones is suitable for such locations, is in good condition and is being properly maintained;
- (CA) 2.2.3.8 confirming that potential sources of ignition in or near the cargo pump room are eliminated, such as loose gear, combustible materials, etc., that there are no signs of undue leakage and that access ladders are in good condition;
- (CA) 2.2.3.9 examining all pump room bulkheads for signs of oil leakage or fractures and, in particular, the sealing arrangements of all penetrations of cargo pump room bulkheads;
- (CA) 2.2.3.10 examining, as far as practicable, the cargo, bilge, ballast and stripping pumps for undue gland seal leakage, verification of proper operation of electrical and mechanical remote operating and shutdown devices and operation of cargo pump room bilge system, and checking that pump foundations are intact;
- (CA) 2.2.3.11 confirming that the pump room ventilation system is operational, ducting intact, dampers are operational and screens clean;
- (CA) 2.2.3.12 verifying that installed pressure gauges on cargo discharge lines and level indicator systems are operational;
- (CA) 2.2.3.13 examining access to bow arrangement (SOLAS 74/00/04 reg.II-1/3-3);
- (CA) 2.2.3.14 examining the towing arrangement for tankers of not less than 20,000 tonnes deadweight (SOLAS 74/00/04 reg.II-1/3-4);
- (CA) 2.2.3.15 confirming that the corrosion prevention system fitted to dedicated ballast water tanks of oil tankers and bulk carriers when appropriate is maintained (SOLAS 74/00 reg.II-1/3-2);

- (CA) 2.2.3.16 confirming that the coating system in cargo oil tanks of crude oil tankers, when appropriate, is maintained and that in-service maintenance and repair activities are recorded in the coating technical file (SOLAS 74/10 reg. II-1/3-11 and MSC.288(87));
- (CA) 2.2.3.17 examining the emergency lighting in all cargo pump rooms of tankers constructed after 1 July 2002 (SOLAS 74/00 reg.II-1/43);
- (CA) 2.2.3.18 examining, for oil tankers of 150 m in length and above, where appropriate, the ship's structure in accordance with the Ship Construction File, taking into account identified areas that need special attention (SOLAS reg. II-1/3-10 and MSC.287(87));
- (CA) 2.2.4 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for chemical tankers and gas carriers, the annual survey should consist of:
- (CA) 2.2.4.1 the provisions of (CA) 2.2.3 except (CA) 2.2.3.16 and (CA) 2.2.3.18.
- (CA) 2.2.5 For the hull, machinery and equipment of cargo ships the completion of the annual survey should consist of:
- (CA) 2.2.5.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be endorsed;
- (CA) 2.2.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (CIn) **2.3 Intermediate surveys** – see part "General", section 4.3
- (CIn) 2.3.1 For the hull, machinery and equipment of cargo ships the examination of current certificates and other records should consist of:
- (CIn) 2.3.1.1 the provisions of (CA) 2.2.1.
- (CIn) 2.3.2 For the hull, machinery and equipment of cargo ships the intermediate survey should consist of:
- (CIn) 2.3.2.1 the provisions of (CA) 2.2.2;
- (CIn) 2.3.2.2 for ships over 5 years of age, an internal examination of representative spaces used for water ballast;
- (CIn) 2.3.2.3 for ships over 10 years of age, other than gas carriers and ships engaged in the carriage of dry cargoes only, an internal examination of selected cargo spaces.
- (CIn) 2.3.3 For the hull, machinery and equipment of cargo ships for the additional requirements for oil tankers the intermediate survey should consist of:
- (CIn) 2.3.3.1 the provisions of (CA) 2.2.3;

- (CIn) 2.3.3.2 should there be any doubt as to its condition when examining the various piping systems, the piping may be required to be pressure tested, gauged or both. Particular attention is to be paid to repairs such as welded doublers;
- (CIn) 2.3.3.3 for ships over 10 years of age an internal examination of selected cargo spaces;
- (CIn) 2.3.3.4 testing the insulation resistance of electrical circuits in dangerous zones such as cargo pump rooms and areas adjacent to cargo tanks, but in cases where a proper record of testing is maintained, consideration should be given to accepting recent readings.
- (CIn) 2.3.4 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for chemical tankers and gas carriers, the intermediate survey should consist of:
- (CIn) 2.3.4.1 the provisions of (CA) 2.2.3 except (CA) 2.2.3.16 and (CA) 2.2.3.18.
- (CIn) 2.3.5 For the hull, machinery and equipment of cargo ships the completion of the intermediate survey should consist of:
- (CIn) 2.3.5.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be endorsed;
- (CIn) 2.3.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (CR) **2.4** **Renewal surveys** – see part "General", section 4.5
- (CR) 2.4.1 For the hull, machinery and equipment of cargo ships the examination of current certificates and other records should consist of:
- (CR) 2.4.1.1 the provisions of (CA) 2.2.1, except for the validity of the Cargo Ship Safety Construction Certificate.
- (CR) 2.4.2 For the hull, machinery and equipment of cargo ships the renewal survey should consist of:
- (CR) 2.4.2.1 the provisions of (CIn) 2.3.2;
- (CR) 2.4.2.2 examination of sea valves and their connections to the hull;
- (CR) 2.4.2.3 examination of anchoring and mooring equipment for which purpose the anchors should be lowered and raised using the windlass.
- (CR) 2.4.3 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for oil tankers, the renewal survey should consist of:
- (CR) 2.4.3.1 the provisions of (CIn) 2.3.3.
- (CR) 2.4.4 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for chemical tankers and gas carriers, the renewal survey should consist of:

- (CR) 2.4.4.1 the provisions of (CA) 2.2.3 except (CA) 2.2.3.16 and (CA) 2.2.3.18.
- (CR) 2.4.5 For the hull, machinery and equipment of cargo ships, concerning the additional requirements for bulk carriers the renewal survey should consist of the provisions of (CI) 2.1.3.68 and 2.1.3.70.
- (CR) 2.4.6 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be issued.
- (B) 3 GUIDELINES FOR THE INSPECTION OF THE OUTSIDE OF THE SHIP'S BOTTOM OF CARGO SHIPS**
- (CB) 3.1 For the inspection of the outside of the ship's bottom of cargo ships the inspection should consist of:
- (CB) 3.1.1 examination of the ship's shell including bottom and bow plating, keel, bilge keels, stem, stern frame and rudder;
- (CB) 3.1.2 noting the clearances measured in the rudder bearings;
- (CB) 3.1.3 examination of the propeller and shaft seals, as far as practicable;
- (CB) 3.1.4 noting the clearance measured in the propeller shafts, as far as practicable;
- (CB) 3.1.5 examination of sea chests and strainers;
- (CB) 3.1.6 the survey of related items inspected at the same time (see part "General" section 5.1).
- (CB) 3.2 For the inspection of the outside of the ship's bottom of cargo ships the completion of the inspection should consist of:
- (CB) 3.2.1 after a satisfactory survey, the Cargo Ship Safety Construction Certificate should be endorsed;
- (CB) 3.2.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General" section 4.8.
- (R) 4 GUIDELINES FOR SURVEYS FOR THE CARGO SHIP SAFETY RADIO CERTIFICATE**
- (RI) 4.1 Initial surveys – see part "General" section 4.1**
- (RI) 4.1.1 For the radio installations, including those used in life-saving appliances, of cargo ships the examination of plans and designs should consist of:
- (RI) 4.1.1.1 establishing the sea areas declared for operation, the equipment installed to fulfil the functional requirements for the sea areas of operation, the methods adopted to ensure the availability of the functional requirements and the arrangements for supply of an emergency source of energy (if any) (SOLAS 74/88 regs.II-1/43 and IV/1 to 15);

- (RI) 4.1.1.2 establishing which radio equipment is to be surveyed and, if duplication of equipment is used as a means of ensuring the availability of the functional requirements, establishing which is the "basic equipment" and which the "duplicated equipment" (SOLAS 74/88 reg.IV/15) (Additional radiocommunications equipment provided other than for SOLAS compliance should be noted);
- (RI) 4.1.1.3 confirming all SOLAS equipment complies with appropriate performance standards not inferior to those adopted by IMO (SOLAS 74/88 reg.IV/14);
- (RI) 4.1.1.4 examining the plans for the provision and position of the radio installation, including sources of energy and antennas (SOLAS 74/88 regs.II-1/43, IV/6, IV/14 and V/19);
- (RI) 4.1.1.5 examining the plans for the provision and positioning of the radio life-saving appliances (SOLAS 74/88 reg.III/6).
- (RI) 4.1.2 For the radio installations, including radio life-saving appliances, of cargo ships the survey during construction and after installation should consist of:
 - (RI) 4.1.2.1 examining the position, physical and electromagnetic protection and illumination of each radio installation (SOLAS 74/88 reg.IV/6);
 - (RI) 4.1.2.2 confirming the provision of equipment for the radio installation with due regard to the declared sea areas in which the ship will trade and the declared means of maintaining availability of functional requirements (SOLAS 74/88 regs.III/6, IV/7 to 11, 14 and 15);
 - (RI) 4.1.2.3 confirming the ability to initiate the transmission of ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service, from the position from which the ship is normally navigated (SOLAS 74/88/06 regs.IV/4, 7 to 11);
 - (RI) 4.1.2.4 examining all antennas, including:
 - (RI) 4.1.2.4.1 visually checking all antennas, including Inmarsat antennas, and feeders for satisfactory siting and absence of defects (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.4.2 checking insulation and safety of all antennas;
 - (RI) 4.1.2.5 examining the reserve source of energy, including:
 - (RI) 4.1.2.5.1 checking there is sufficient capacity to operate the basic or duplicated equipment for 1 hour or 6 hours, as appropriate (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.5.2 if the reserve source of energy is a battery:
 - (RI) 4.1.2.5.2.1 checking its siting and installation (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.5.2.2 where appropriate, checking its condition by specific gravity measurement or voltage measurement;

- (RI) 4.1.2.5.2.3 with the battery off charge, and the maximum required radio installation load connected to the reserve source of energy, checking the battery voltage and discharge current;
- (RI) 4.1.2.5.2.4 checking that the charger(s) are capable of recharging the reserve battery within 10 hours (SOLAS 74/88 reg.IV/13);
- (RI) 4.1.2.5.2.5 checking that information of ship's position is provided continuously and automatically to all two-way communication equipment (SOLAS 74/88 reg.IV/18);
- (RI) 4.1.2.6 examining the VHF transceiver(s), including:
 - (RI) 4.1.2.6.1 checking for operation on channels 6, 13 and 16 (SOLAS 74/88 regs.IV/7 and 14);
 - (RI) 4.1.2.6.2 checking frequency tolerance, transmission line quality and radio frequency power output (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.6.3 checking for correct operation of all controls including priority of control units (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.6.4 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.6.5 checking the operation of the VHF control unit(s) or portable VHF equipment provided for navigational safety (SOLAS 74/88 reg.IV/6);
 - (RI) 4.1.2.6.6 checking for correct operation by on-air contact with a coast station or other ship;
- (RI) 4.1.2.7 examining the VHF DSC controller and channel 70 DSC watch receiver, including:
 - (RI) 4.1.2.7.1 performing an off-air check confirming the correct Maritime Mobile Service Identity is programmed in the equipment (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.7.2 checking for correct transmission by means of a routine or test call to a coast station, other ship, on board duplicate equipment or special test equipment;
 - (RI) 4.1.2.7.3 checking for correct reception by means of a routine or test call from a coast station, other ship, on board duplicate equipment or special test equipment;
 - (RI) 4.1.2.7.4 checking the audibility of the VHF/DSC alarm;
 - (RI) 4.1.2.7.5 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);

- (RI) 4.1.2.8 examining the MF/HF radiotelephone equipment, including:
 - (RI) 4.1.2.8.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.8.2 checking the antenna tuning in all appropriate bands;
 - (RI) 4.1.2.8.3 checking that the equipment is within frequency tolerance on all appropriate bands (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.8.4 checking for correct operation by contact with a coast station and/or measuring transmission line quality and radio frequency output;
 - (RI) 4.1.2.8.5 checking receiver performance by monitoring known stations on all appropriate bands;
 - (RI) 4.1.2.8.6 if control units are provided outside the navigating bridge, checking that the control unit on the bridge has first priority for the purpose of initiating distress alerts (SOLAS 74/88 regs.IV/9, 10, 11 and 14);
- (RI) 4.1.2.9 examining the HF radiotelex equipment, including:
 - (RI) 4.1.2.9.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.9.2 confirming that the correct selective calling number is programmed in the equipment;
 - (RI) 4.1.2.9.3 checking correct operation by inspection of recent hard copy or by a test with a coast radio station (SOLAS 74/88 regs.IV/10 and 11);
- (RI) 4.1.2.10 examining the MF/HF DSC controller(s), including:
 - (RI) 4.1.2.10.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (RI) 4.1.2.10.2 confirming that the correct Maritime Mobile Service Identity is programmed in the equipment;
 - (RI) 4.1.2.10.3 checking the off-air self-test program;
 - (RI) 4.1.2.10.4 checking operation by means of a test call on MF and/or HF to a coast radio station if the rules of the berth permit the use of MF/HF transmissions (SOLAS 74/88 regs.IV/9, 10 and 11);
 - (RI) 4.1.2.10.5 checking the audibility of the MF/HF DSC alarm;
- (RI) 4.1.2.11 examining the MF/HF DSC watch receiver(s), including:
 - (RI) 4.1.2.11.1 confirming that only distress and safety DSC frequencies are being monitored (SOLAS 74/88 regs.IV/9 to 12);
 - (RI) 4.1.2.11.2 checking that a continuous watch is being maintained whilst keying MF/HF radio transmitters (SOLAS 74/88 reg.IV/12);

- (RI) 4.1.2.11.3 checking for correct operation by means of a test call from a coast station or other ship;
- (RI) 4.1.2.12 examining the Inmarsat Ship Earth Station(s), including:
 - (RI) 4.1.2.12.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy, and that where an uninterrupted supply of information from the ship's navigational or other equipment is required ensuring such information remains available in the event of failure of the ship's main or emergency source of electrical power (SOLAS 74/88 regs.IV/13 and 14);
 - (RI) 4.1.2.12.2 checking the distress function by means of an approved test procedure where possible (SOLAS 74/88 regs.IV/10, 12 and 14);
 - (RI) 4.1.2.12.3 checking for correct operation by inspection of recent hard copy or by test call;
- (RI) 4.1.2.13 if appropriate, examining the NAVTEX equipment (SOLAS 74/88 regs.IV/7, 12 and 14), including:
 - (RI) 4.1.2.13.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (RI) 4.1.2.13.2 running the self-test program if provided;
- (RI) 4.1.2.14 examining the Enhanced Group Call equipment (SOLAS 74/88 regs.IV/7 and 14), including:
 - (RI) 4.1.2.14.1 checking for correct operation and area by monitoring incoming messages or by inspecting recent hard copy;
 - (RI) 4.1.2.14.2 running the self-test program if provided;
- (RI) 4.1.2.15 if appropriate, examining the radio equipment for receipt of maritime safety information by HF NBDP (SOLAS 74/88 regs.IV/7, 12 and 14), including:
 - (RI) 4.1.2.15.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (RI) 4.1.2.15.2 running the self-test program if provided;
- (RI) 4.1.2.16 examining the 406 MHz satellite EPIRB (SOLAS 74/88 regs.IV/7 and 14), including:
 - (RI) 4.1.2.16.1 checking position and mounting for float free operation;
 - (RI) 4.1.2.16.2 carrying out visual inspection for defects;
 - (RI) 4.1.2.16.3 carrying out the self-test routine;

- (RI) 4.1.2.16.4 checking that the unique beacon identification code ~~EPIRB ID~~ is clearly marked on the outside of the equipment and, where possible, decoding the unique beacon identification code confirming it is correct;
- (RI) 4.1.2.16.5 checking that the unique beacon identification code programmed in the EPIRB corresponds with the unique beacon identification code assigned by or on behalf of the Administration;
- (RI) 4.1.2.16.6 checking that the MMSI number if encoded in the beacon corresponds with the MMSI number assigned to the ship;
- (RI) 4.1.2.16.7 checking the battery expiry date;
- (RI) 4.1.2.16.8 if provided, checking the hydrostatic release and its expiry date;
- (RI) 4.1.2.16.9 checking the emission on operational frequencies, coding and registration on the 406 MHz signal without transmission of a distress call to the satellite;
- (RI) 4.1.2.16.10 checking that the EPIRB has been subject to maintenance at intervals not exceeding five years at an approved shore-based maintenance facility (SOLAS 74/00 reg.IV/15.9);
- (RI) 4.1.2.16.11 if possible, checking the emission on operational frequencies, coding and registration on the 121.5 MHz homing signal without transmission of a distress call to the satellite;
- (RI) 4.1.2.17 examining the two-way VHF radiotelephone apparatus (SOLAS 74/88 reg.III/6), including:
 - (RI) 4.1.2.17.1 checking for correct operation on Channel 16 and one other by testing with another fixed or portable VHF installation (SOLAS 74/88 reg.IV/14);
 - (RI) 4.1.2.17.2 checking the battery charging arrangements where re-chargeable batteries are used;
 - (RI) 4.1.2.17.3 checking the expiry date of primary batteries where used;
 - (RI) 4.1.2.17.4 where appropriate, checking any fixed installation provided in a survival craft;
- (RI) 4.1.2.18 examining the search and rescue locating device(s) (SOLAS 74/88/08 regs.III/6, IV/7 and 14), including:
 - (RI) 4.1.2.18.1 checking the position and mounting;
 - (RI) 4.1.2.18.2 monitoring response on ship's 9 GHz radar;
 - (RI) 4.1.2.18.3 checking the battery expiry date;
- (RI) 4.1.2.19 examining the test equipment and spares carried to ensure carriage is adequate in accordance with the sea areas in which the ship trades and the declared options for maintaining availability of the functional requirements (SOLAS 74/88 reg.IV/15).

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- (RI) 4.1.3 For the radio installations, including those used in life-saving appliances, the check that documentation, etc., has been placed on board should consist of:
- (RI) 4.1.3.1 checking for a valid radio licence issued by the flag Administration (ITU RR Art.24);
- (RI) 4.1.3.2 checking the radio operator's certificates of competence (SOLAS 74/88 reg.IV/16 and ITU RR Art.56);
- (RI) 4.1.3.3 checking the radio record (log) (SOLAS 74/88 reg.IV/17 and ITU RR App.11);
- (RI) 4.1.3.4 checking the carriage of up-to-date ITU publications (ITU RR App.11);
- (RI) 4.1.3.5 checking the carriage of operating manuals for all equipment (SOLAS 74/88 reg.IV/15);
- (RI) 4.1.3.6 checking the carriage of service manuals for all equipment when at-sea maintenance is the declared option (SOLAS 74/88 reg.IV/15).
- (RI) 4.1.4 For the radio installations, including those used in life-saving appliances, of cargo ships the completion of the initial survey should consist of:
- (RI) 4.1.4.1 the surveyor preparing and forwarding a survey report, indicating clearly the organization he represents, to the relevant authorities, detailing results of the survey and recording omissions and deficiencies, if satisfied, the relevant authorities should issue a Cargo Ship Safety Radio Certificate and the associated Record of Equipment (form R).
- (RP) **4.2 Periodical surveys** – see part "General" section 4.4
- (RP) 4.2.1 For radio installations, including radio life-saving appliances, on cargo ships the examination of current certificates and other records should consist of:
- (RP) 4.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (RP) 4.2.1.2 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14); (SOLAS 74/88 reg. V/13(b));
- (RP) 4.2.1.3 checking the validity of the International Ship Security Certificate;
- (RP) 4.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (RP) 4.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;

- (RP) 4.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
- (RP) 4.2.1.7 checking, where appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (RP) 4.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (RP) 4.2.1.9 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (RP) 4.2.1.10 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (RP) 4.2.1.11 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (RP) 4.2.1.1.12 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (RP) 4.2.1.13 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/88 reg.V/13(b));
- (RP) 4.2.1.14 checking that adequate information is on board to enable the equipment to be properly operated and maintained;
- (RP) 4.2.1.15 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (RP) 4.2.1.16 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) 4.2.1.17 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) 4.2.1.18 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) 4.2.1.19 confirming that the provisions of (RI) 4.1.3 have been met;
- (RP) 4.2.1.20 checking that the annual test has been carried out for the Satellite EPIRB and, if applicable, shore-based maintenance has been carried out at intervals not exceeding five years (SOLAS 74/04 reg.IV/15);
- (RP) 4.2.1.21 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 annex 4 reg.2) when applicable.
- (RP) 4.2.2 For radio installations, including radio life-saving appliances, of cargo ships the periodical survey should consist of:
 - (RP) 4.2.2.1 the provisions of (RI) 4.1.2.

- (RP) 4.2.3 For radio installations, including those used in radio life-saving appliances, of cargo ships the completion of the periodical survey should consist of:
- (RP) 4.2.3.1 after a satisfactory survey, endorsing the Cargo Ship Safety Radio Certificate;
- (RP) 4.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General" section 4.8.
- (RR) **4.3** **Renewal surveys** – see part "General" section 4.5
- (RR) 4.3.1 For the radio installations, including those used in life-saving appliances, of cargo ships the examination of current certificates and other records should consist of:
- (RR) 4.3.1.1 the provisions of (RP) 4.2.1, except for the validity of the Cargo Ship Safety Radio Certificate.
- (RR) 4.3.2 For the radio installations, including those used in radio life-saving appliances, of cargo ships the renewal survey should consist of:
- (RR) 4.3.2.1 the provisions of (RI) 4.1.2.
- (RR) 4.3.3 For the radio installations, including those used in radio life-saving appliances, on cargo ships the completion of the renewal survey should consist of:
- (RR) 4.3.3.1 after a satisfactory survey, issuing the Cargo Ship Safety Radio Certificate as per the provisions of (RI) 4.1.4.
- (P) **5** **GUIDELINES FOR SURVEYS FOR THE PASSENGER SHIP CERTIFICATE**
- (PI) **5.1** **Initial surveys** – see part "General" section 4.1.
- (PI) 5.1.1 For the hull, machinery and equipment of passenger ships the examination of plans and designs should consist of:
- (PI) 5.1.1.1 examining the subdivision and stability (SOLAS 74/88/95 regs.II-1/4 to 8, 8-1, 8-2, 8-3, 13 and 16) (SOLAS 74/06/08 regs.II-1/5 to 8-1, 14 and 18; IS Code chs.1, 2 and 3); (SOLAS 74/12 regs. II-1/8-1);
- (PI) 5.1.1.2 examining the ballasting arrangements (SOLAS 74/88 reg.II-1/9) (SOLAS 74/06 reg.II-1/20);
- (PI) 5.1.1.3 examining the arrangement of the bulkheads, their construction and the openings therein, including the disposition and means of operation of the watertight doors (SOLAS 74/88 regs.II-1/10, 14, and 15) (SOLAS 74/06 regs.II-1/10, 11 12 and 13);
- (PI) 5.1.1.4 examining the arrangement of the double bottoms (SOLAS 74/88 reg.II-1/12) (SOLAS 74/06 reg.II-1/9);

- (PI) 5.1.1.5 examining the arrangements for the openings in the shell plating below the margin line or the bulkhead deck as applicable, the construction of the watertight doors, sidescuttles, watertight decks, trunks, etc., and the watertight integrity above the margin line or the bulkhead deck as applicable (SOLAS 74/88 regs.II-1/17, 18, 19 and 20) (SOLAS 74/06 regs.II-1/15, 16, 16-1 and 17);
- (PI) 5.1.1.6 examining the plans for the bilge pumping and drainage systems (SOLAS 74/88 regs.II-1/21 and 39) (SOLAS 74/05/09 reg.II-1/35-1 and SOLAS 74/08 reg.II-2/20.6.1.4);
- (PI) 5.1.1.7 examining, when appropriate, the means of indicating the status of any bow doors and the leakage there from (SOLAS 74/88 reg.II-1/23-2) (SOLAS 74/06 reg.II-1/17-1);
- (PI) 5.1.1.8 examining the plans for the machinery installation (SOLAS 74/88 regs.II-1/26 to 36 and 54);
- (PI) 5.1.1.9 examining the plans for the electrical installation (SOLAS 74/88 regs.II-1/39, 40, 41, 42, 44 and 45);
- (PI) 5.1.1.10 checking, when appropriate, the provision of supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PI) 5.1.1.11 examining, where applicable, the approved documentation for the alternative design and arrangements (SOLAS 74/00/06 regs.II-1/55, II-2/17 and III/38);
- (PI) 5.1.1.12 examining the plans for the fire pumps, including the emergency fire pump* if applicable, fire mains, hydrants, hoses and nozzles and the international shore connection (SOLAS 74/88 reg. II-1/39 and SOLAS 74/00 reg. II-2/10.2; FSSC chs. 2 and 12) (SOLAS 74/88 reg. II-1/39 and regs. II-2/4 and 19);
- (PI) 5.1.1.13 examining the plans for the fire-extinguishing arrangements in the machinery spaces (SOLAS 74/00/12 regs.II-2/10.4 and 10.5; FSSC chs.5, 6 and 7) (SOLAS 74/88 reg.II-2/7);
- (PI) 5.1.1.14 checking the provision and specification of the fire extinguishers and the firefighter's outfits including its self-contained compressed air breathing apparatus, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (SOLAS 74/88 regs. II-2/6 and 17) (SOLAS 74/00/12 reg. II-2/10.10);
- (PI) 5.1.1.15 for passenger ship constructed on or after 1 July 2010, checking the provision of a suitably located means for fully recharging breathing air cylinders (SOLAS 74/08 reg.II-2/10.10.2);
- (PI) 5.1.1.16 examining the plans for the fire extinguishing and special arrangements in the machinery spaces (SOLAS 74/88 regs.II-1/39 and regs.II-2/7 and 11);

* Refer to the unified interpretation of chapter 12 of the FSS Code, MSC.1/Circ.1388.

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- (PI) 5.1.1.17 examining the arrangements for oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2.3) (SOLAS 74/88 reg.II-2/15);
- (PI) 5.1.1.18 examining the plans for the structural fire protection, including the means of escape (SOLAS 74/00/12 regs.II-2/4.4.4, 5.2, 5.3, 7.5, 7.8.2, 8.4, 8.5, 9, 10.6, 11, 13, 17, 20; FSSC ch.13 sections 1 and 2) (SOLAS 74/88 regs.II-2/23 to 36);
- (PI) 5.1.1.19 examining the plans for the protection of special category spaces and other cargo spaces (SOLAS 74/88 regs. II-2/37, 38 and 39) (SOLAS 74/00/06/10 regs. II-2/ 7.6, 9 and 20; FSSC chs. 9 and 10);
- (PI) 5.1.1.20 examining the plans for the fixed fire detection and alarm system, and any automatic sprinkler, fire detection and fire alarm system, as applicable, in machinery spaces, including enclosed spaces containing incinerators, accommodation and service spaces and control spaces (SOLAS 74/00/06/10 reg. II-2/7 (except 7.5.5, 7.6 and 7.9); FSSC chs. 8, 9 and 10) (SOLAS 74/88 reg. II-2/40);
- (PI) 5.1.1.21 examining the plans for the crew alarm and the public address system or other effective means of communication (SOLAS 74/00/06 reg. II-2/7.9; FSSC ch. 9; LSAC ch. 7) (SOLAS 74/88 reg. II-2/40);
- (PI) 5.1.1.22 examining the plans for the special arrangements for the carriage of dangerous goods, when appropriate, including water supplies, electrical equipment and wiring, fire detection sample extraction smoke detection system, bilge pumping and personnel protection (SOLAS 74/88 regs. II-2/41 and 54) (SOLAS 74/00/08 reg. II-2/19; FSSC chs. 9 and 10);
- (PI) 5.1.1.23 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) 5.1.1.24 examining the design of the survival craft, including their construction, equipment, fittings, release mechanisms and recovery appliances and embarkation and launching arrangements (SOLAS 74/88 regs. III/ 20 to 24, 36, 38 to 44 and 48) (SOLAS 74/06 reg. III/4) (LSAC sections 3.2, 4.1 to 4.6, 6.1 to 6.2);
- (PI) 5.1.1.25 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) 5.1.1.26 examining the provision, specification and stowage of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 reg. III/6.2.2);
- (PI) 5.1.1.27 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) 5.1.1.28 examining the provision, specification and stowage of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets, immersion suits and thermal protective aids (SOLAS 74/88/06 regs. III/7, 21, 22 and 26);
- (PI) 5.1.1.29 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) 5.1.1.30 examining the plans for the positioning of, and the specification for, the navigation lights, shapes and sound signalling equipment (International Regulations for Preventing Collisions at Sea (COLREG) in force rules 20 to 24, 27 to 30 and 33);
- (PI) 5.1.1.31 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) 5.1.1.32 checking the provision and specification of the following navigation equipment as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), automatic identification system, electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and distance indicator, rudder angle indicator, propeller rate of revolution indicator, variable pitch propeller pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, a pelorus or compass bearing device, means for correcting heading and bearings, a BNWAS as applicable and ECDIS including back-up arrangements as applicable (SOLAS 74/00/09/13 reg. V/19);
- (PI) 5.1.1.33 checking the provision and specification of the voyage data recorder (SOLAS 74/00 reg. V/20);
- (PI) 5.1.1.34 checking navigation bridge visibility (SOLAS 74/00 reg. V/22);
- (PI) 5.1.1.35 checking for the provision and specification of the long-range identification and tracking system (SOLAS 74/04 reg. V/19-1);
- (PI) 5.1.1.36 checking the plans and specification of the pilot transfer arrangement, the pilot ladders, the combination arrangements, where applicable, the access to the ship's deck and the associated equipment and lighting and hoists/pilot transfer arrangements (SOLAS 74/00/10 reg. V/23);
- (PI) 5.1.1.37 establishing the sea areas declared for operation, the equipment installed to fulfil the functional requirements for the sea areas of operation, the methods adopted to ensure the availability of the functional requirements and the arrangements for supply of an emergency source of energy (if any) (SOLAS 74/88 regs. II-1/42 and IV/1 to 15);

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- (PI) 5.1.1.38 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) 5.1.1.39 confirming that all SOLAS equipment complies with appropriate performance standards not inferior to those adopted by IMO (SOLAS 74/88 reg. IV/14);
- (PI) 5.1.1.40 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) 5.1.1.41 examining the plans for the provision and positioning of the radio life-saving appliances (SOLAS 74/88 reg. III/6);
- (PI) 5.1.1.42 if applicable, checking that a list of all limitations on the operation of a passenger ship is kept on board and updated;
- (PI) 5.1.1.43 checking the provision of means of embarkation and disembarkation from ships for use in port and in port related operations, such as gangways and accommodation ladders (SOLAS 74/08 reg.II-1/3-9);
- (PI) 5.1.1.44 checking the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 74/08 reg. II-2/20.6.1.5);
- (PI) 5.1.1.45 for passenger ships constructed on or after 1 July 2010, checking the provision of a safety centre (SOLAS 74 reg.II-2/23) and associated ventilation requirements (SOLAS 74/06 reg. II-2/8.2);
- (PI) 5.1.1.46 for passenger ships constructed on or after 1 July 2010 and having a length of 120 m or more or having three or more main vertical zones, confirming that design criteria for the ship's safe return to port and for systems to remain operational after a fire casualty have been documented and that safe areas have been designated (SOLAS 74/06 regs. II-2/21 and 22).
- (PI) 5.1.2 For the hull, machinery and equipment of passenger ships the survey during construction and after installation should consist of:
- (PI) 5.1.2.1 examining the outside of the ship's bottom, including the bottom and bow plating, keel, bilge keels, stem, stern frame, the rudder, sea chests and strainers (SOLAS 74/88 reg.I/7(b)(i));
- (PI) 5.1.2.2 confirming the arrangements, on which the calculations for subdivision and stability are based, and checking the subdivision load lines (SOLAS 74/88/95 regs. II-1/4 to 8, 13 and 16) (SOLAS 74/06/08 regs. II 1/6, 7, 7-1, 7-2, 7-3, 8, 9,14, 18) (SOLAS 74/12 reg. II-1/8-1);

- (PI) 5.1.2.3 confirming the provision of operational information to the master for safe return to port after a flooding casualty by on board stability computer or shore-based support (SOLAS 74/12 reg. II-1/8-1);
- (PI) 5.1.2.4 checking the ballasting arrangements (SOLAS 74/88 reg.II-1/9) (SOLAS 74/06 reg.II-1/20);
- (PI) 5.1.2.5 confirming that dedicated sea water ballast tanks have an approved coating system when appropriate (SOLAS 74/00/06 reg.II-1/3-2);
- (PI) 5.1.2.6 confirming the arrangement of the bulkheads, their construction and the openings therein, confirming that the collision bulkhead is watertight up to the freeboard deck, that the valves fitted on the pipes piercing the collision bulkhead are operable from above the freeboard deck and that there are no doors, manholes, ventilation ducts or any other openings, confirming that the other bulkheads, as required for the ship's subdivision, are watertight up to the bulkhead deck and confirming the construction of the watertight doors and that they have been tested (SOLAS 74/88 regs.II-1/10, 14, 15 and 18) (SOLAS 74/06 regs.II-1/10, 11, 12, 13 and 16);
- (PI) 5.1.2.7 confirming that the watertight integrity has been maintained where pipes, scuppers, etc., pass through subdivision watertight bulkheads (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);
- (PI) 5.1.2.8 confirming that a diagram is provided on the navigating bridge showing the location of the watertight doors together with indicators showing whether the doors are open or closed and confirming that the watertight doors and their means of operation have been installed in accordance with the approved plans (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);
- (PI) 5.1.2.9 testing the operation of the watertight doors both from the navigating bridge in the event of an emergency and locally at the door itself (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13) and, in particular, that they are:
- (PI) 5.1.2.9.1 operable locally from each side of the bulkhead;
- (PI) 5.1.2.9.2 provided with devices giving an indication of whether the door is open or closed at all remote operating positions;
- (PI) 5.1.2.9.3 provided with an audible alarm that is distinct from any other alarm in the area and, when appropriate, an intermittent visual signal;
- (PI) 5.1.2.9.4 provided with control handles on each side of the bulkhead so that a person may hold both handles in the open position and pass safely through the watertight door without accidentally setting the power closing mechanism into operation;
- (PI) 5.1.2.10 confirming that the watertight doors and their indicating devices are operable in the event of a failure of the main and emergency sources of power (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);

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- (PI) 5.1.2.11 checking, when appropriate, any watertight doors, that are not required to be closed remotely and are fitted in watertight bulkheads dividing 'tween deck spaces, and confirming that a notice is affixed concerning their closure (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);
- (PI) 5.1.2.12 confirming that a notice is affixed to any portable plates on bulkheads in machinery spaces concerning their closure and, if appropriate, testing any power operated watertight door fitted in lieu (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);
- (PI) 5.1.2.13 confirming the arrangements for closing sidescuttles and their deadlights, also scuppers, sanitary discharges and similar openings and other inlets and discharges in the shell plating below the bulkhead deck (SOLAS 74/06 reg. II-1/15);
- (PI) 5.1.2.14 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 74/06 reg.II-1/15);
- (PI) 5.1.2.15 confirming that gangway, cargo and fuelling ports fitted below the bulkhead deck can be effectively closed and that the inboard end of any ash or rubbish chutes are fitted with an effective cover (SOLAS 74/06 reg.II-1/13);
- (PI) 5.1.2.16 confirming by a hose or flooding test the watertightness of watertight decks and trunks, tunnels and ventilators (SOLAS 74/88 reg.II-1/19) (SOLAS 74/06 reg.II-1/16-1);
- (PI) 5.1.2.17 confirming the arrangements to maintain the watertight integrity above the bulkhead deck (SOLAS 74/06 regs.II-1/17 and 17-1);
- (PI) 5.1.2.18 confirming the arrangements for the bilge pumping and that each bilge pump and the bilge pumping system provided for each watertight compartment is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05, reg.II-1/35-1);
- (PI) 5.1.2.19 confirming that the drainage system of enclosed cargo spaces situated on the freeboard deck is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05 reg.II-1/35-1);
- (PI) 5.1.2.19.1 examining visually the drainage facilities for blockage or other damage and confirming the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 74/08 reg.II-2/20.6.1.5);
- (PI) 5.1.2.20 conducting an inclining test (SOLAS 74/88 reg.II-1/22) (SOLAS 74/06 reg.II-1/5);
- (PI) 5.1.2.21 checking, when appropriate, the means of indicating the status of any bow doors and any leakage there from (SOLAS 74/88 reg.II-1/23-2) (SOLAS 74/06 reg.II-1/17-1);
- (PI) 5.1.2.22 confirming that the arrangement for monitoring special category spaces or ro-ro spaces, when fitted, is satisfactory (SOLAS 74/06 reg.II-1/23);

- (PI) 5.1.2.23 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are installed and protected so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/88 reg.II-1/26);
- (PI) 5.1.2.24 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) 5.1.2.25 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) 5.1.2.26 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) 5.1.2.27 confirming that means are provided to ensure that the safe speed is not exceeded where there is the risk of machinery overspeeding (SOLAS 74/88 reg.II-1/27);
- (PI) 5.1.2.28 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) 5.1.2.29 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) 5.1.2.30 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) 5.1.2.31 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) 5.1.2.32 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) 5.1.2.33 confirming that, where appropriate, essential components of the steering gear are permanently lubricated or provided with lubrication fittings (SOLAS 74/88 reg.II-1/29);

* For ships fitted with alternative propulsion and steering arrangements other than traditional arrangements, such as but not limited to azimuthing propulsors or water jet propulsion systems, refer to MSC.1/Circ.1416.

- (PI) 5.1.2.34 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) 5.1.2.35 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);
- (PI) 5.1.2.36 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);
- (PI) 5.1.2.37 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) 5.1.2.38 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) 5.1.2.39 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) 5.1.2.40 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) 5.1.2.41 confirming that the control system for the auxiliary steering gear, in the steering gear compartment and, if this gear is power-operated, from the navigating bridge, is operating satisfactorily and that the latter is independent of the control system for the main steering gear (SOLAS 74/88 reg.II-1/29);
- (PI) 5.1.2.42 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,

[†] For trials with the ship not at the deepest seagoing draught, refer to MSC.1/Circ.1425.

- 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) 5.1.2.43 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) 5.1.2.44 confirming that the means of communication between the bridge and the steering gear is operating satisfactorily and that, with ships having emergency steering positions, a telephone or other means of communication for relaying heading information and supplying visual compass readings to the emergency steering position are provided (SOLAS 74/88 reg.II-1/29) (SOLAS 74/00 reg.V/19);
- (PI) 5.1.2.45 confirming that the angular position of the rudder is indicated independently of the steering control system on the navigating bridge if the main steering gear is power-operated and that this angular position is given in the steering gear compartment (SOLAS 74/88 reg.II-1/29), (SOLAS 74/00 reg.V/19);
- (PI) 5.1.2.46 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) 5.1.2.47 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) 5.1.2.48 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) 5.1.2.49 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) 5.1.2.50 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) 5.1.2.51 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (PI) 5.1.2.52 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) 5.1.2.53 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);
- (PI) 5.1.2.54 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);
- (PI) 5.1.2.55 when appropriate, confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg. II-1/36 and SOLAS 74/12 reg.II-1/3-12.2); or confirming that the ship was constructed to reduce on board noise and to protect personnel from noise in accordance with the *Code on noise levels on board ships*, adopted by resolution MSC.337(91), as amended (SOLAS 74/12 reg.II-1/3-12);
- (PI) 5.1.2.56 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) 5.1.2.57 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) 5.1.2.58 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 regulation II-1/38);
- (PI) 5.1.2.59 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) 5.1.2.60 confirming that the means of ascertaining the amount of oil contained in any oil tank are in satisfactory working condition (SOLAS 74/88 reg.II-2/15) (SOLAS 74/02 reg.II-2/33);
- (PI) 5.1.2.61 confirming that the devices provided to prevent overpressure in any oil tank or in any part of the oil system, including the filling pipes, are in satisfactory working condition (SOLAS 74/88 reg.II-2/15) (SOLAS 74/02 reg.II-2/33);
- (PI) 5.1.2.62 confirming that forepeak tanks are not intended for carriage of oil fuel, lubrication oil and other flammable oils;
- (PI) 5.1.2.63 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) 5.1.2.64 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) 5.1.2.65 confirming that the starting arrangements of each emergency generating set are satisfactory (SOLAS 74/88 reg.II-1/44);
- (PI) 5.1.2.66 checking, when appropriate, the disposition of, and testing, the supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PI) 5.1.2.66.1 for passenger ships, constructed on or after 1 July 2010, confirming provision of supplementary lighting in all cabins, and checking that such lighting automatically illuminates and remains on for a minimum of 30 min when power to the normal cabin lighting is lost (SOLAS 74/06/10 reg. II-1/41.6);
- (PI) 5.1.2.66.2 for passenger ships constructed on or after 1 July 2010, checking the provision of smoke detectors in cabins, which, when activated, are capable of emitting, or cause to be emitted, an audible alarm within the space where they are located (SOLAS 74/06 regs.II-2/7.5.2 and 7.5.3.1);
- (PI) 5.1.2.67 confirming that precautions have been provided against shock, fire and other hazards of electrical origin (SOLAS 74/88 reg.II-1/45);
- (PI) 5.1.2.68 confirming, when appropriate, that the arrangements for the machinery spaces being periodically unattended are satisfactory (SOLAS 74/88 reg.II-1/54);
- (PI) 5.1.2.69 examining, where applicable, the alternative design and arrangements for machinery or electrical installations, fire safety, or life-saving appliances and arrangements, in accordance with the test and inspection requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs. II-1/55, II-2/17 and III/38);
- (PI) 5.1.2.70 examining the fire pumps and fire main and the disposition of the hydrants, hoses and nozzles and the international shore connection and checking that each fire pump, including the emergency fire pump, can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main and testing that the emergency fire pump, if applicable, has the required capacity, and, if the emergency fire pump is the main supply of water for any fixed fire-extinguishing system, checking that the emergency fire pump has the capacity for this system^{*} (SOLAS 74/88 regs. II-2/4 and 19, FSSC chs. 2 and 12);
- (PI) 5.1.2.71 examining the provision and disposition of the fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSSC ch.4) (SOLAS 74/88 reg.II-2/17);
- (PI) 5.1.2.72 examining the firefighters' outfits including its self-contained compressed air breathing apparatus, and emergency escape breathing devices (EEBDs); confirming that they are complete and in satisfactory condition and that the cylinders, including the spare cylinders, of the

^{*} Refer to MSC.1/Circ.1388 on unified interpretation of chapter 12 of the FSS Code.

- self-contained breathing apparatus, are suitably charged, and that on board means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used are provided, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (SOLAS 74/00/08/12 regs.II-2/10.10, 13.3.4, 13.4.3 and 15.2.2; FSSC ch.3) (SOLAS 74/88 reg. II-2/17);
- (PI) 5.1.2.73 checking the operational readiness and maintenance of fire-fighting systems (SOLAS 74/00 reg.II-2/14) (SOLAS 74/88 regs.II-2/6, 17 and 21);
- (PI) 5.1.2.74 examining the fixed fire-fighting system for the machinery, cargo, special category and vehicle spaces; as appropriate, and confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (SOLAS 74/00/12 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSSC ch.5 to 7) (SOLAS 74/88 regs.II-2/7 and 53);
- (PI) 5.1.2.75 examining the fire-extinguishing and special arrangements in the machinery spaces and confirming, as far as practicable and as appropriate, the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power-operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00/12 regs.II-2/5.2, 8.3, 9.5 and 10.5) (SOLAS 74/88 regs.II-2/7 and 11);
- (PI) 5.1.2.76 checking that fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space (SOLAS 74/08 reg.II-2/10.4; FSSC ch.5.2.2.2);
- (PI) 5.1.2.77 examining the arrangements for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/88/06 reg.II-2/15) (SOLAS 74/00 reg.II-2/4.2);
- (PI) 5.1.2.78 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) 5.1.2.79 confirming that all aspects of installation of the structural fire protection, including the structure, fire integrity, protection of stairways and lifts, cabin balconies, openings in "A" and "B" Class divisions, ventilation systems and windows and sidescuttles, and the use of combustible material are in accordance with the approved plans (SOLAS 74/00/04/12 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) 5.1.2.80 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) 5.1.2.81 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) 5.1.2.82 confirming that stairways and ladders are so arranged as to provide a means of escape to the lifeboat and liferaft and liferaft embarkation deck from all passenger and crew spaces and from those spaces in which the crew is normally employed (SOLAS 74/00 reg.II- 2/13.7) and in particular that:
- (PI) 5.1.2.82.1 below the bulkhead deck there are two means of escape from each watertight compartment, one being independent of watertight doors;
- (PI) 5.1.2.82.2 above the bulkhead deck there are two means of escape from each vertical zone or similar such area, one leading directly to a stairway forming a vertical escape;
- (PI) 5.1.2.82.3 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) 5.1.2.83 confirming that the means of escape from any special category spaces are generally in accordance with (PI) 5.1.2.82 (SOLAS 74/88 reg.II-2/28);
- (PI) 5.1.2.84 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) 5.1.2.85 confirming the fire protection arrangements, including fire detection and sample extraction smoke detection systems for cargo spaces for cargo and dangerous goods and testing, as appropriate, the operation of the means for closing the various openings (SOLAS 74/88 reg.II-2/39) (SOLAS 74/00 regs. II-2/7.6 and 10.7; FSSC chs. 5, 9 and 10);
- (PI) 5.1.2.86 confirming the fire protection arrangements, including fire detection and sample extraction smoke detection systems, where applicable for vehicle, special category and ro-ro spaces and testing, as appropriate, the operation of the means for closing the various openings (SOLAS 74/88 regs. II-2/37, and 38) (SOLAS 74/00 reg. II-2/20 (except 20.5); FSSC chs. 5, 6, 7, 9, 10);
- (PI) 5.1.2.87 confirming and testing, as appropriate, any fixed fire detection and alarm system, and any automatic sprinkler, fire detection and fire alarm system, as applicable, in machinery spaces, including enclosed spaces containing incinerators, accommodation, service and control spaces (SOLAS 74/88 reg. II-2/40) (SOLAS 74/00/06/10 reg. II-2/7 (except 7.5.5, 7.6 and 7.9); FSSC chs. 8 and 9);

- (PI) 5.1.2.88 confirming and testing the special alarm and the public address system or other effective means of communication (SOLAS 74/88 reg. II-2/40) (SOLAS 74/00/06/10 reg. II-2/12; LSAC ch. 7);
- (PI) 5.1.2.89 for passenger ships constructed on or after 1 July 2010, confirming the provision of a fixed fire detection and fire alarm system for passenger ships capable of remotely and individually identifying each detector and manually operated call point (SOLAS 74/06 reg. II-2/7.2.4);
- (PI) 5.1.2.90 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring, fire detection, ventilation and boundary insulation, the provision of protective clothing and portable appliances and the testing of the water supply, bilge pumping and any water spray system (SOLAS 74/88 regs. II-2/41 and 54) (SOLAS 74/00/08 reg. II-2/19);
- (PI) 5.1.2.91 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) 5.1.2.92 examining each survival craft, including its equipment, and that the required number of search and rescue locating devices are fitted in liferafts and those liferafts are clearly marked (SOLAS 74/88/00/02/08 regs. III/20, 21 and 26; LSAC sections 2.3 to 2.5, 3.2 and 4.1 to 4.6);
- (PI) 5.1.2.93 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) 5.1.2.94 deployment of 50% of the MES after installation (LSAC paragraph 6.2.2.2);
- (PI) 5.1.2.95 examining each rescue boat, including its equipment. For inflatable rescue boats, confirming that they are stowed in a fully inflated condition (SOLAS 74/00/04 regs. III/21 and 26.3; LSAC section 5.1 and MSC/Circ.809);
- (PI) 5.1.2.96 examining the embarkation and recovery arrangements for each rescue boat and testing each launching and recovery appliance, including overload tests, tests to establish the lowering and recovery speeds and ensuring that each rescue boat can be lowered to the water and recovered with the ship at its lightest sea-going draught. The rescue boat(s) should be lowered to the water and its recovery demonstrated while underway at 5 knots (SOLAS 74/88 regs. III/14, 16, 17 and 20);
- (PI) 5.1.2.97 examining the arrangements for mustering passengers (SOLAS 74/88 reg. III/24);
- (PI) 5.1.2.98 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern (LSAC section 4.4.6.5);

- (PI) 5.1.2.99 confirming that there are posters or signs in the vicinity of survival craft and their launching stations (SOLAS 74/88 reg.III/9);
- (PI) 5.1.2.100 examining the provision and stowage and checking the operation of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 reg.III/6);
- (PI) 5.1.2.101 examining the provision and stowage of the distress flares and the line-throwing appliance, checking the provision and operation of onboard communications equipment and testing the means of operation of the general alarm system, verifying that the general alarm system is audible in accommodation, normal crew working spaces and on open decks (SOLAS 74/88 reg.III/6);
- (PI) 5.1.2.102 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 74/88/06 regs.III/7, 21, 22 and 26; LSAC section 2.1-2.5 and 3.3);
- (PI) 5.1.2.102.1 checking that the life-saving appliances are of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (PI) 5.1.2.102.2 checking the provision of lifejackets in three sizes (Infant, Child, Adult) and checking that they are marked by either weight or height, or by both weight and height (LSAC section 2.2.1.1). For passenger ships on voyages less than 24 h, checking that the number of infant lifejackets equals to at least 2.5% of the number of passengers on board and for passenger ships on voyages 24 h or greater, checking that infant lifejackets are provided for each infant on board (SOLAS 74/06 reg.III/7.2.1);
- (PI) 5.1.2.102.3 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSAC section 2.3.1);
- (PI) 5.1.2.103 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) 5.1.2.104 checking that means of rescue is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/26.4);
- (PI) 5.1.2.105 checking that a helicopter pick-up area is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/28);
- (PI) 5.1.2.106 checking that a decision support system is provided for the Master (SOLAS 74/00 reg. III/29; SOLAS 74/06 regs. II-2/21 and 22);
- (PI) 5.1.2.107 checking the electromagnetic compatibility of electrical and electronic equipment on or in the vicinity of the bridge (SOLAS 74/00 reg.V/17);

* Regulations III/7.2.1.1, 7.2.1.2 and 7.2.1.5 should be considered.

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- (PI) 5.1.2.108 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, rules 20 to 24, 27 to 30 and 33);
- (PI) 5.1.2.109 checking the provision and specification of the daylight signalling lamp (SOLAS 74/88 reg.V/11);
- (PI) 5.1.2.110 checking, as appropriate, the provision and operation of the following equipment (SOLAS 74/00 reg.V/19):
- (PI) 5.1.2.110.1 the magnetic compass, including examining the siting, movement, illumination and a pelorus or compass bearing device (SOLAS 74/00 reg.V/19);
- (PI) 5.1.2.110.2 that nautical charts and nautical publications necessary for the intended voyage are available and have been updated and, where an electronic chart display and information system (ECDIS) is used, that the electronic charts have been updated and the required back-up system is provided and updated (SOLAS 74/00/09 reg.V/19);
- (PI) 5.1.2.110.3 global navigation satellite receiver or terrestrial radionavigation system;
- (PI) 5.1.2.110.4 sound reception system, when bridge is totally enclosed;
- (PI) 5.1.2.110.5 means of communication to emergency steering position, where provided;
- (PI) 5.1.2.110.6 spare magnetic compass;
- (PI) 5.1.2.110.7 daylight signalling lamp;
- (PI) 5.1.2.110.8 echo sounding device, including examining the display for good access, viewing and lighting;
- (PI) 5.1.2.110.9 radar(s), including examining the waveguide and cable runs for routeing and protection and the display unit confirming lighting, plotting facilities, correct operation of all controls, functions and the true-motion facility if provided;
- (PI) 5.1.2.110.10 electronic plotting aid, automatic tracking aid or automatic radar plotting aid as appropriate, using the appropriate test facilities;
- (PI) 5.1.2.110.11 speed and distance measuring device;
- (PI) 5.1.2.110.12 transmitting heading device providing heading information to radar, plotting aids and automatic identification system equipment and distance devices;
- (PI) 5.1.2.110.13 heading or track control system;
- (PI) 5.1.2.110.14 BNWAS;

- (PI) 5.1.2.111 checking for the provision, specification, operation and annual performance test of the voyage data recorder (SOLAS 74/00/04 reg.V/20);
- (PI) 5.1.2.112 checking that a valid conformance test report of the long-range and identification tracking system is available on board (SOLAS 74/04 reg.V/19-1);
- (PI) 5.1.2.113 checking that the International Code of Signals and an up-to-date copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided (SOLAS 74/00/02 reg. V/21);
- (PI) 5.1.2.114 checking the provision of the pilot transfer arrangement, the access to the ship's deck and the associated equipment and lighting, checking the operation of the pilot ladders and combination arrangements, where applicable (SOLAS 74/00/10 reg. V/23);
- (PI) 5.1.2.115 examining the position, physical and electromagnetic protection and illumination of each radio installation (SOLAS 74/88 reg.IV/6);
- (PI) 5.1.2.116 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) 5.1.2.117 confirming the ability to initiate the transmission of ship-to-shore distress alerts by at least two separate and independent means, each using a different radio communication service, from the position from which the ship is normally navigated (SOLAS 74/88/06 regs.IV/4, 7 to 11);
- (PI) 5.1.2.118 examining all antennas, including:
 - (PI) 5.1.2.118.1 visually checking all antennas, including Inmarsat antennas, and feeders for satisfactory siting and absence of defects (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.118.2 checking insulation and safety of all antennas;
- (PI) 5.1.2.119 examining the reserve source of energy, including:
 - (PI) 5.1.2.119.1 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) 5.1.2.119.2 and, if the reserve source of energy is a battery:
 - (PI) 5.1.2.119.2.1 checking its siting and installation (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.119.2.2 where appropriate, checking its condition by specific gravity measurement or voltage measurement;
 - (PI) 5.1.2.119.2.3 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) 5.1.2.119.2.4 checking that the charger(s) are capable of recharging the reserve battery within 10 hours (SOLAS 74/88 reg.IV/13);
- (PI) 5.1.2.120 examining the VHF transceiver(s), including:
 - (PI) 5.1.2.120.1 checking for operation on channels 6, 13 and 16 (SOLAS 74/88 regs.IV/7 and 14);
 - (PI) 5.1.2.120.2 checking frequency tolerance, transmission line quality and radio frequency power output (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.120.3 checking for correct operation of all controls including priority of control units (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.120.4 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.120.5 checking the operation of the VHF control unit(s) or portable VHF equipment provided for navigational safety (SOLAS 74/88 reg.IV/6);
 - (PI) 5.1.2.120.6 checking for correct operation by on-air contact with a coast station or other ship;
- (PI) 5.1.2.121 examining the VHF DSC controller and channel 70 DSC watch receiver, including:
 - (PI) 5.1.2.121.1 performing an off-air check confirming the correct Maritime Mobile Service Identity is programmed in the equipment (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.121.2 checking for correct transmission by means of a routine or test call to a coast station, other ship, onboard duplicate equipment or special test equipment;
 - (PI) 5.1.2.121.3 checking for correct reception by means of a routine or test call from a coast station, other ship, onboard duplicate equipment or special test equipment;
 - (PI) 5.1.2.121.4 checking the audibility of the VHF/DSC alarm;
 - (PI) 5.1.2.121.5 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
- (PI) 5.1.2.122 examining the MF/HF radiotelephone equipment, including:
 - (PI) 5.1.2.122.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.122.2 checking the antenna tuning in all appropriate bands;
 - (PI) 5.1.2.122.3 checking the equipment is within frequency tolerance on all appropriate bands (SOLAS 74/88 reg.IV/14);

- (PI) 5.1.2.122.4 checking for correct operation by contact with a coast station and/or measuring transmission line quality and radio frequency output;
- (PI) 5.1.2.122.5 checking receiver performance by monitoring known stations on all appropriate bands;
- (PI) 5.1.2.122.6 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) 5.1.2.122.7 checking the correct operation of the radiotelephone alarm signal generating device on a frequency other than 2182 kHz;
- (PI) 5.1.2.123 examining the HF radiotelex equipment, including:
 - (PI) 5.1.2.123.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.123.2 confirming that the correct selective calling number is programmed in the equipment;
 - (PI) 5.1.2.123.3 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) 5.1.2.124 examining the MF/HF DSC controller(s), including:
 - (PI) 5.1.2.124.1 checking that the equipment operates from the main, emergency (if provided) and reserve sources of energy (SOLAS 74/88 reg.IV/13);
 - (PI) 5.1.2.124.2 confirming that the correct Maritime Mobile Service Identity is programmed in the equipment;
 - (PI) 5.1.2.124.3 checking the off-air self-test program;
 - (PI) 5.1.2.124.4 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) 5.1.2.124.5 checking the audibility of the MF/HF DSC alarm;
- (PI) 5.1.2.125 examining the MF/HF DSC watch receiver(s), including:
 - (PI) 5.1.2.125.1 confirming that only distress and safety DSC frequencies are being monitored (SOLAS 74/88 regs.IV/9 to 12);
 - (PI) 5.1.2.125.2 checking that a continuous watch is being maintained whilst keying MF/HF radio transmitters (SOLAS 74/88 reg.IV/12);
 - (PI) 5.1.2.125.3 checking for correct operation by means of a test call from a coast station or other ship;
- (PI) 5.1.2.126 examining the Inmarsat ship earth station(s), including:

- (PI) 5.1.2.126.1 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) 5.1.2.126.2 checking the distress function by means of an approved test procedure where possible (SOLAS 74/88 regs.IV/10, 12 and 14);
- (PI) 5.1.2.126.3 checking for correct operation by inspection of recent hard copy or by test call;
- (PI) 5.1.2.127 if appropriate, examining the NAVTEX equipment (SOLAS 74/88 regs.IV/7, 12 and 14), including:
 - (PI) 5.1.2.127.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (PI) 5.1.2.127.2 running the self-test program if provided;
- (PI) 5.1.2.128 examining the enhanced group call equipment (SOLAS 74/88 regs.IV/7 and 14), including:
 - (PI) 5.1.2.128.1 checking for correct operation and area by monitoring incoming messages or by inspecting recent hard copy;
 - (PI) 5.1.2.128.2 running the self-test program if provided;
- (PI) 5.1.2.129 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) 5.1.2.129.1 checking for correct operation by monitoring incoming messages or inspecting recent hard copy;
 - (PI) 5.1.2.129.2 running the self-test program if provided;
- (PI) 5.1.2.130 examining the 406 MHz satellite EPIRB (SOLAS 74/88 regs.IV/7 and 14), including:
 - (PI) 5.1.2.130.1 checking position and mounting for float-free operation;
 - (PI) 5.1.2.130.2 carrying out visual inspection for defects;
 - (PI) 5.1.2.130.3 carrying out the self-test routine;
 - (PI) 5.1.2.130.4 checking that the unique beacon identification code is clearly marked on the outside of the equipment and, where possible, decoding the unique beacon identification code confirming it is correct;
 - (PI) 5.1.2.130.5 checking that the unique beacon identification code programmed in the EPIRB corresponds with the unique beacon identification code assigned by or on behalf of the Administration;

- (PI) 5.1.2.130.6 checking that the MMSI number if encoded in the beacon corresponds with the MMSI number assigned to the ship;
- (PI) 5.1.2.130.7 checking the battery expiry date;
- (PI) 5.1.2.130.8 if provided, checking the hydrostatic release and its expiry date;
- (PI) 5.1.2.131 examining the two-way VHF radiotelephone apparatus (SOLAS 74/88 reg.III/6), including:
 - (PI) 5.1.2.131.1 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) 5.1.2.131.2 checking the battery charging arrangements where rechargeable batteries are used (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.131.3 checking the expiry date of primary batteries where used (SOLAS 74/88 reg.IV/14);
 - (PI) 5.1.2.131.4 where appropriate, checking any fixed installation provided in a survival craft (SOLAS 74/88 reg.IV/14);
- (PI) 5.1.2.132 examining the search and rescue locating device(s) (SOLAS 74/88/08 reg.III/6 and regs.IV/7 and 14), including:
 - (PI) 5.1.2.132.1 checking the position and mounting;
 - (PI) 5.1.2.132.2 monitoring response on ship's 9 GHz radar;
 - (PI) 5.1.2.132.3 checking the battery expiry date;
- (PI) 5.1.2.133 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) 5.1.2.134 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) 5.1.2.135 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) 5.1.2.136 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) 5.1.2.137 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) 5.1.2.138 confirming that the ship's identification number is permanently marked. (SOLAS 74/02 reg.XI-1/3);

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- (PI) 5.1.2.139 checking the provision, and, operation of the automatic identification system (SOLAS 74/00/04 reg. V/19);
- (PI) 5.1.2.140 for passenger ships carrying more than 36 passengers constructed on or after 1 July 2010, checking the provision of a suitably located means for fully recharging breathing air cylinders, free from contamination (SOLAS 74/08 reg.II-2/10.10.2.6);
- (PI) 5.1.2.141 confirming that installed materials do not contain asbestos * (SOLAS 74/09 reg. II-1/3-5);
- (PI) 5.1.2.142 confirming the provision of means of embarkation and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders (SOLAS 74/08 reg.II-1/3-9);
- (PI) 5.1.2.143 for passenger ships constructed on or after 1 July 2010 and having a length of 120 m or more or having three or more main vertical zones, checking the designation of safe areas (SOLAS 74/06 reg.II-2/21);
- (PI) 5.1.2.144 for passenger ships constructed on or after 1 July 2010, checking the provision of a safety centre (SOLAS 74 reg.II-2/23) and associated ventilation requirements (SOLAS 74/06 reg.II-2/8.2).
- (PI) 5.1.2.145 confirming, where applicable, that an appropriate portable atmosphere testing instrument or instruments[†] is on board, and that suitable means are provided for the calibration of all such instruments; and checking appropriateness of the testing and calibration (SOLAS 74/14 reg. XI-1/7[‡])
- (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 and damage control booklets have been provided (SOLAS 74/88 regs. II-1/22 and 23) (SOLAS 74/06 regs. II-1/5-1 and 19);
- (PI) 5.1.3.2 checking, where applicable, that the noise survey report as required by the *Code on noise levels on board ships* is available on board (SOLAS 74/12 reg. II-1/3-12);
- (PI) 5.1.3.3 checking the provision of a ship-specific emergency towing procedure (SOLAS 74/08 reg.II-1/3-4);
- (PI) 5.1.3.4 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);

* Refer to MSC.1/Circ.1379 and MSC.1/Circ.1426 on Unified interpretation of SOLAS regulation II-1/3-5.

† Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7* (MSC.1/Circ.1477).

‡ New SOLAS 74/14 reg. XI-1/7, as adopted by MSC.380(94), is expected to come into force on 1 July 2016.

- (PI) 5.1.3.5 confirming that documented operating procedures for closing and securing the openings in special category spaces and ro-ro spaces are available on board (SOLAS 74/06 reg.II-1/23);
- (PI) 5.1.3.6 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 74/00/06 regs.II-1/55, II-2/17 and III/38);
- (PI) 5.1.3.7 confirming that the fire control plans are permanently exhibited or, alternatively, that emergency booklets have been provided to each officer and a duplicate of the plans or the emergency booklet are available in a prominently marked enclosure external to the ship's deckhouse (SOLAS 74/00 regs.II-2/15.2.4 and 15.3.2) (SOLAS 74/88 reg.II-2/20). The fire control plan is in the language required by the Administration;
- (PI) 5.1.3.8 confirming that the maintenance plans have been provided (SOLAS 74/88 regs.II-2/14.2.2 and 14.3);
- (PI) 5.1.3.9 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/88 regs.II-2/15.2.3 and 16.2);
- (PI) 5.1.3.10 confirming, when appropriate, that the ship is provided with a document indicating compliance with the special requirements for carrying dangerous goods (SOLAS 74/00/08 reg.II-2/19.4) (SOLAS 74/88 regs.II-2/41 and 54.3);
- (PI) 5.1.3.11 confirming that emergency instructions are available for each person on board, that the muster list is posted in conspicuous places, and that they are in a language understood by the persons on board (SOLAS 74/00 regs. III/8 and 37);
- (PI) 5.1.3.12 confirming that ship-specific plans and procedures for recovery of persons from the water have been provided (SOLAS 74/12 reg. III/17-1);
- (PI) 5.1.3.13 confirming that the training manual for the life-saving appliances has been provided and is available in the working language of the ship (SOLAS 74/00/04 reg.III/35);
- (PI) 5.1.3.14 confirming that the checklist and instructions for MES, if provided, and onboard maintenance of the life-saving appliances have been provided (SOLAS 74/00 reg.III/36);
- (PI) 5.1.3.15 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) 5.1.3.16 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 regs.V/16 and 19);
- (PI) 5.1.3.17 checking that the charts and nautical publications necessary for the intended voyage are available and have been updated (SOLAS 74/00 regs.V/19 and 27);

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- (PI) 5.1.3.18 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) 5.1.3.19 checking that records are provided, identifying any pilot ladders placed into service (SOLAS 74/10 reg. V/23.2.4);
- (PI) 5.1.3.20 confirming that a list showing the operational limitations imposed to the ship is kept on board (SOLAS 74/00 reg.V/30);
- (PI) 5.1.3.21 checking that the life-saving signals to be used by ships, aircraft or persons in distress (SOLAS 74/00 reg.V/29);
- (PI) 5.1.3.22 checking the carriage of operating manuals for all equipment (SOLAS 74/88 reg.IV/15);
- (PI) 5.1.3.23 checking the carriage of service manuals for all equipment when at-sea maintenance is the declared option (SOLAS 74/88 reg.IV/15);
- (PI) 5.1.3.24 checking for a valid radio licence issued by the flag Administration (ITU RR Art.24);
- (PI) 5.1.3.25 checking the radio operators' certificates of competence (ITU RR Art.55);
- (PI) 5.1.3.26 checking the emission on operational frequencies, coding and registration on the 406 MHz signal without transmission of a distress call to the satellite;
- (PI) 5.1.3.27 checking the radio log (SOLAS 74/88 text in force prior to 1 February 1992 reg.IV/19 and ITU RR App.11);
- (PI) 5.1.3.28 checking the carriage of up-to-date ITU publications (ITU RR App.11);
- (PI) 5.1.3.29 checking that the EPIRB has been subject to maintenance at intervals not exceeding five years at an approved shore-based maintenance facility;
- (PI) 5.1.3.30 if possible, checking the emission on operational frequencies, coding and registration on the 121.5 MHz homing signal without transmission of the distress call to satellite system;
- (PI) 5.1.3.31 confirming that a continuous synopsis record is provided (SOLAS 74/02 reg.XI-1/5);
- (PI) 5.1.3.32 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg.V/28).
- (PI) 5.1.4 For the hull, machinery and equipment of passenger ships the completion of the initial survey should consist of:
- (PI) 5.1.4.1 after a satisfactory survey, issuing the Passenger Ship Safety Certificate and its associated Record of Equipment (Form P).

- (PR) **5.2** **Renewal surveys** – see part "General", section 4.5
- (PR) 5.2.1 For the hull, machinery and equipment of passenger ships the examination of current certificates and other records should consist of:
- (PR) 5.2.1.1 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (PR) 5.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (PR) 5.2.1.3 checking the validity of the International Ship Security Certificate;
- (PR) 5.2.1.4 checking the validity of the International Oil Pollution Prevention Certificate;
- (PR) 5.2.1.5 checking the certificates of class, if the ship is classed with a classification society;
- (PR) 5.2.1.6 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (PR) 5.2.1.7 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (PR) 5.2.1.8 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (PR) 5.2.1.9 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (PR) 5.2.1.10 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg.V/14) (SOLAS 74/88 reg.V/13(b));
- (PR) 5.2.1.11 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (PR) 5.2.1.12 checking, where applicable, that the noise survey report as required by the Code on noise levels on board ships is available on board (SOLAS 74/12 reg. II-1/3-12);
- (PR) 5.2.1.13 confirming that, where applicable, the approved documentation for the alternative design and arrangements is on board (SOLAS 74/00/06 regs.II-1/55, II-2/17 and III/38);
- (PR) 5.2.1.14 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (PR) 5.2.1.15 checking that the routine surveys of the boilers and other pressure vessels, as determined by the Administration, have been carried out as required and that safety devices, such as the boiler safety valves, have been tested;

- (PR) 5.2.1.16 checking that, as appropriate, the hull and machinery has been presented for survey in accordance with the continuous survey scheme approved by the Administration or a classification society;
- (PR) 5.2.1.17 confirming that the opening and the closing and locking of side scuttles positioned below the margin line or the bulkhead deck, as applicable, are being recorded in the log-book (SOLAS 74/88 reg.II-1/17), (SOLAS 74/06 reg.II-1/15);
- (PR) 5.2.1.18 confirming that the closure of the cargo loading doors and the opening and closing of any doors at sea required for the operation of the ship or the embarking and disembarking of passengers are being recorded in the log-book (SOLAS 74/88 reg.II-1/20-1) (SOLAS 74/06 reg.II-1/22);
- (PR) 5.2.1.19 confirming that the stability information and damage control plans and damage control booklets are readily available (SOLAS 74/88 regs. II-1/22 and 23) (SOLAS 74/06 regs. II-1/5-1 and 19);
- (PR) 5.2.1.20 confirming from the log-book entries that the openings required to be closed at sea are being kept closed and that the required drills and inspections of watertight doors, etc., are being carried out (SOLAS 74/88 regs.II-1/24 and 25) (SOLAS 74/06 regs.II-1/21 and 22);
- (PR) 5.2.1.21 confirming that documented operating procedures for closing and securing the openings in special category spaces and ro-ro spaces are available on board (SOLAS 74/06 reg.II-1/23);
- (PR) 5.2.1.22 confirming that the manoeuvring booklet is readily available and that the manoeuvring information is displayed on the navigating bridge (SOLAS 74/88 reg.II-1/28);
- (PR) 5.2.1.23 confirming that the fire control plans are permanently exhibited or, alternatively, that emergency booklets have been provided and a duplicate of the plans or the emergency booklet is available in a prominently marked enclosure external to the ship's deckhouse (SOLAS 74/88 reg.II-2/20);
- (PR) 5.2.1.24 confirming that the maintenance plans have been provided (SOLAS 74/00 regs.II-2/14.2.2 and 14.3);
- (PR) 5.2.1.25 confirming that the training manuals and the fire safety operational booklets have been provided (SOLAS 74/00 regs.II-2/15.2.3 and 16.2);
- (PR) 5.2.1.26 checking whether any fire has occurred on board necessitating the operation of the fixed fire-extinguishing systems or the portable fire extinguishers since the last survey and the entries into the ship's log-book;
- (PR) 5.2.1.27 checking, when appropriate, that the ship is provided with a document indicating compliance with the special requirements for carrying dangerous goods (SOLAS 74/00/08 reg.II-2/19.4) (SOLAS 74/88 reg.II-2/54.3);
- (PR) 5.2.1.28 confirming that ship-specific plans and procedures for recovery of persons from the water have been provided (SOLAS 74/12 reg. III/17-1);

- (PR) 5.2.1.29 confirming, when appropriate, that there is a special list, manifest or stowage plan for the carriage of dangerous goods (SOLAS 74/88 reg.VII/5);
- (PR) 5.2.1.30 confirming that emergency instructions are available for each person on board, that the muster list is posted in conspicuous places, and that they are in a language understood by the persons on board (SOLAS 74/00 regs.III/8 and 37);
- (PR) 5.2.1.31 confirming that, if applicable, a factual statement issued by the manufacturer of the lifeboat release mechanism is available, confirming the successful overhaul examination of a mechanism compliant with paragraphs 4.4.7.6.4 to 4.4.7.6.6 of the LSA Code, or, alternatively, that a statement of acceptance of the installation of a replacement release and retrieval system to an existing lifeboat is available (SOLAS 74/11 reg. III/1.5; LSAC section 4.4.7.6);
- (PR) 5.2.1.32 checking that log-book entries are being made (SOLAS 74/00/13 regs.III/19 and 20), in particular:
- (PR) 5.2.1.32.1 the date when the last full muster of the passengers and crew for boat and fire drill took place, and the date when the last enclosed space entry and rescue drills took place;
- (PR) 5.2.1.32.2 the records indicating that on voyages where passengers are scheduled to be on board for more than 24 h, musters of newly-embarked passengers have taken place prior to or immediately upon departure;
- (PR) 5.2.1.32.3 the records indicating that the lifeboat equipment was examined at that time and found to be complete;
- (PR) 5.2.1.32.4 the last occasion when the lifeboats were swung out and when each one was lowered into the water;
- (PR) 5.2.1.32.5 the records indicating that crew members have received the appropriate onboard training;
- (PR) 5.2.1.33 confirming that the training manual and training aids for the life-saving appliances are available on board in the working language of the ship (SOLAS 74/00/04 reg.III/35);
- (PR) 5.2.1.34 confirming that the instructions for on board maintenance of the life-saving appliances is on board (SOLAS 74/00 reg.III/36);
- (PR) 5.2.1.35 checking by the log-book entries that the testing and the emergency drills of the steering gear have been carried out (SOLAS 74/00 reg.V/26);
- (PR) 5.2.1.36 confirming that a table or curve of residual deviations for the magnetic compass is available and that a diagram of the radar installations shadow sectors is displayed (SOLAS 74/00 reg.V/19);
- (PR) 5.2.1.37 checking that operational and, where appropriate, maintenance manuals for all navigational equipment are provided (SOLAS 74/00 reg.V/16);

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- (PR) 5.2.1.38 checking that the charts and nautical publications necessary for the intended voyage are available and have been updated (SOLAS 74/00 reg.V/27);
- (PR) 5.2.1.39 checking that the compass deviation book is properly maintained (SOLAS 74/00 reg.V/19);
- (PR) 5.2.1.40 checking that records are maintained identifying any pilot ladders placed into service and any repair effected (SOLAS 74/10 reg. V/23.2.4);
- (R) 5.2.1.41 confirming that a list showing the operational limitations imposed on the ship is kept on board (SOLAS 74/00 reg.V/30);
- (R) 5.2.1.42 checking the life-saving signals to be used by ships, aircraft or persons in distress (SOLAS 74/00 reg.V/29);
- (PR) 5.2.1.43 confirming the provisions of (PI) 5.1.3.16 to (PI) 5.1.3.22 except (PI) 5.1.3.19;
- (PR) 5.2.1.44 confirming that a record has been kept in the period since the last survey to the satisfaction of the Administration and as required by the Radio Regulations (SOLAS 74/88 reg.IV/17);
- (PR) 5.2.1.45 checking documentary evidence that the actual capacity of the battery has been proved in port within the last 12 months (SOLAS 74/88 reg.IV/13);
- (PR) 5.2.1.46 if applicable, checking that a list of all limitations on the operation of a passenger ship is kept on board and updated;
- (PR) 5.2.1.47 confirming that continuous synopsis record is provided (SOLAS74/02 reg.XI-1/5);
- (PR) 5.2.1.48 checking that the annual test has been carried out for the Satellite EPIRB and, if applicable, that shore-based maintenance has been carried out at intervals not exceeding five years (SOLAS 74/04 reg.IV/15);
- (PR) 5.2.1.49 checking that arrangements are provided to maintain records of navigational activities and daily reporting (SOLAS 74/00/03 reg.V/28);
- (PR) 5.2.1.50 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 annex 4 reg.2), when applicable.
- (PR) 5.2.2 For the hull, machinery and equipment of passenger ships the renewal survey should consist of:
- (PR) 5.2.2.1 examining the outside of the ship's bottom, including the bottom and bow plating, keel, bilge keels, stem, stern frame, the rudder, sea chests and strainers, noting the clearance measured in the rudder bearings, examining the propeller and shaft seals, as far as practicable, and noting the clearance measured in the propeller shafts (SOLAS 74/88 reg.I/7(b)(ii));

- (PR) 5.2.2.2 examining the arrangements for subdivision, including the ship's stability in the damaged condition, and checking the subdivision load lines (SOLAS 74/88 regs.II-1/4 to 8, 13 and 16) (SOLAS 74/06/12 regs.II-1/8, 8-1, 14 and 18);
- (PR) 5.2.2.3 confirming the provision of operational information to the master for safe return to port after a flooding casualty by on board stability computer or shore-based support (SOLAS 74/12 reg. II-1/8-1);
- (PR) 5.2.2.4 checking the ballasting arrangements (SOLAS 74/88 reg.II-1/9) (SOLAS 74/06 reg.II-1/20);
- (PR) 5.2.2.5 confirming that dedicated sea water ballast tanks have been coated in accordance with resolution MSC.215(82) when appropriate (SOLAS 74/00/06 reg.II-1/3-2);
- (PR) 5.2.2.6 confirming when appropriate that the maintenance of the protective coating is included in the overall ship's maintenance system (SOLAS 74/00/06 reg.II-1/3-2);
- (PR) 5.2.2.7 examining the collision and other watertight bulkheads required for the ship's subdivision (SOLAS 74/88 regs.II-1/10, 14, 15 and 18) (SOLAS 74/06, regs.II-1/10, 11, 12, 13 and 16);
- (PR) 5.2.2.8 confirming that the watertight integrity has been maintained where pipes, scuppers, etc., pass through subdivision watertight bulkheads (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);
- (PR) 5.2.2.9 confirming that a diagram is provided on the navigating bridge showing the location of the watertight doors together with indicators showing whether the doors are open or closed (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);
- (PR) 5.2.2.10 testing the operation of the watertight doors both from the navigating bridge in the event of an emergency and locally at the door itself (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13) and, in particular, that they are:
 - (PR) 5.2.2.10.1 operable locally from each side of the bulkhead;
 - (PR) 5.2.2.10.2 provided with devices giving an indication of whether the door is open or closed at all remote operating positions;
 - (PR) 5.2.2.10.3 provided with an audible alarm that is distinct from any other alarm in the area and, when appropriate, an intermittent visual signal;
 - (PR) 5.2.2.10.4 provided with control handles on each side of the bulkhead so that a person may hold both handles in the open position and pass safely through the watertight door without accidentally setting the power closing mechanism into operation;
- (PR) 5.2.2.11 confirming that the watertight doors and their indicating devices are operable in the event of a failure of the main and emergency sources of power (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);

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- (PR) 5.2.2.12 checking, when appropriate, any watertight doors that are not required to be closed remotely, fitted in watertight bulkheads dividing 'tween deck spaces, and confirming that a notice is affixed concerning their closure (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);
- (PR) 5.2.2.13 confirming that a notice is affixed to any portable plates on bulkheads in machinery spaces concerning their closure and, if appropriate, testing any power-operated watertight door fitted in lieu (SOLAS 74/88 reg.II-1/15) (SOLAS 74/06 reg.II-1/13);
- (PR) 5.2.2.14 examining the arrangements for closing side scuttles and their deadlights, also scuppers, sanitary discharges and similar openings and other inlets and discharges in the shell plating below the margin line (SOLAS 74/88 reg.II-1/17);
- (PR) 5.2.2.15 examining the arrangements for closing side scuttles and their deadlights, also scuppers, sanitary discharges and similar openings and other inlets and discharges in the shell plating below the bulkhead deck (SOLAS 74/06 reg.II-1/15);
- (PR) 5.2.2.16 confirming that valves for closing the main and auxiliary sea inlets and discharges in the machinery spaces are readily accessible and indicators showing the status of the valves are provided (SOLAS 74/88 reg.II-1/17) (SOLAS 74/06 reg.II-1/15);
- (PR) 5.2.2.17 confirming that gangway, cargo and coaling ports fitted below the margin line may be effectively closed and that the inboard ends of any ash or rubbish chutes are fitted with an effective cover (SOLAS 74/88 reg.II-1/17);
- (PR) 5.2.2.18 confirming that gangway, cargo and fuelling ports fitted below the bulkhead deck may be effectively closed and that the inboard ends of any ash or rubbish chutes are fitted with an effective cover (SOLAS 74/06 reg.II-1/15);
- (PR) 5.2.2.19 examining the arrangements to maintain the watertight integrity above the margin line or the bulkhead deck as applicable (SOLAS 74/88 reg.II-1/20) (SOLAS 74/06 reg.II-1/17);
- (PR) 5.2.2.20 examining the arrangements for the bilge pumping and confirming that each bilge pump and the bilge pumping system provided for each watertight compartment is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05 reg.II-1/35-1);
- (PR) 5.2.2.21 confirming that the drainage system of enclosed cargo spaces situated on the freeboard deck is working efficiently (SOLAS 74/88 reg.II-1/21) (SOLAS 74/05 reg.II-1/35-1);
- (PR) 5.2.2.22 examining visually the drainage facilities for blockage or other damage and confirming the provision of means to prevent blockage of drainage arrangements, for closed vehicle and ro-ro spaces and special category spaces where fixed pressure water-spraying systems are used (SOLAS 74/08 reg.II-2/20.6.1.5);

- (PR) 5.2.2.23 examining, when appropriate, the means of indicating the status of any bow doors and any leakage there from (SOLAS 74/88 reg.II-1/23-2);
- (PR) 5.2.2.24 confirming, that the arrangement for monitoring special category spaces or ro-ro spaces, when fitted, is satisfactory (SOLAS 74/06 reg.II-1/23);
- (PR) 5.2.2.25 confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are being maintained so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards (SOLAS 74/88 reg.II-1/26);
- (PR) 5.2.2.26 confirming that normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative (SOLAS 74/88 reg.II-1/26);
- (PR) 5.2.2.27 confirming that means are provided so that the machinery can be brought into operation from the dead ship condition without external aid (SOLAS 74/88 reg.II-1/26);
- (PR) 5.2.2.28 examining, where practicable, the means provided to protect against overpressure in the parts of main, auxiliary and other machinery that is subject to internal pressure and may be subject to dangerous overpressure (SOLAS 74/88 reg.II-1/27);
- (PR) 5.2.2.29 examining, when appropriate, the crankcase explosion relief devices fitted to internal combustion engines and confirming that they are arranged so as to minimize the possibility of injury to personnel (SOLAS 74/88 reg.II-1/27);
- (PR) 5.2.2.30 confirming that the automatic shut-off arrangements fitted to the main turbine propulsion machinery and, where applicable, main internal combustion propulsion machinery and auxiliary machinery are being properly maintained (SOLAS 74/88 reg.II-1/27);
- (PR) 5.2.2.31 confirming, as far as practicable, the ability of the machinery to reverse the direction of the thrust of the propeller in sufficient time, including the effectiveness of any supplementary means of manoeuvring or stopping the ship (SOLAS 74/88 reg.II-1/28);
- (PR) 5.2.2.32 confirming that the main and auxiliary steering gear are being properly maintained, are arranged so that the failure of one does not render the other inoperative and that the auxiliary steering gear is capable of being brought speedily into action in an emergency* (SOLAS 74/88 reg. II-1/29);
- (PR) 5.2.2.33 confirming that, where appropriate, essential components of the steering gear are permanently lubricated or provided with lubrication fittings (SOLAS 74/88 reg.II-1/29);

* For ships fitted with alternative propulsion and steering arrangements other than traditional arrangements, such as but not limited to azimuthing propulsors or water jet propulsion systems, refer to MSC.1/Circ.1416.

- (PR) 5.2.2.34 confirming that relief valves fitted to the steering gear hydraulic system which can be isolated, and in which pressure can be generated from the power source or from external forces, are being maintained and are set to a pressure not exceeding the design pressure (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.35 confirming that the main or auxiliary steering gear power units restart automatically when power is restored after a power failure, that they are capable of being brought into operation from a position on the navigating bridge and that, in the event of a power failure to any one of the steering gear power units, an audible and visual alarm is given on the navigating bridge (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.36 confirming that the control systems for the main steering gear from both the navigating bridge and the steering gear compartment are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.37 confirming that, where the main steering gear comprises two or more identical power units and an auxiliary steering gear is not fitted, the two independent control systems from the navigating bridge are operating satisfactorily (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.38 confirming that the control system for the auxiliary steering gear, in the steering gear compartment and, if this gear is power-operated, from the navigating bridge, are operating satisfactorily and that the latter is independent of the control system for the main steering gear (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.39 confirming that an audible and visual alarm is given on the navigating bridge in the event of a failure of electrical power supply (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.40 confirming that the means of communication between the bridge and the steering gear is operating satisfactorily and that, with ships having emergency steering positions, a telephone or other means of communication for relaying heading information and supplying visual compass readings to the emergency steering position is provided (SOLAS 74/00 regs.II-1/29 and V/19);
- (PR) 5.2.2.41 confirming that the angular position of the rudder is indicated independently of the steering control system on the navigating bridge if the main steering gear is power-operated and that this angular position is given in the steering gear compartment (SOLAS 74/00 reg.II-1/29 and reg.V/19);
- (PR) 5.2.2.42 confirming that with a hydraulic power-operated steering gear the audible and visual low-level alarms on the navigating bridge and in the machinery space for each hydraulic fluid reservoir are operating satisfactorily and that at least one power-actuating system including the reservoir can be recharged from a position within the steering gear compartment by means of a fixed storage tank to which a contents gauge is fitted with fixed piping (SOLAS 74/88 reg.II-1/29);

- (PR) 5.2.2.43 confirming that the steering gear compartment is readily accessible and is provided with suitable arrangements to ensure working access to steering gear machinery and controls under safe conditions (SOLAS 74/88 reg.II-1/29);
- (PR) 5.2.2.44 confirming that, with electric and electro-hydraulic steering gear, the means for indicating on the navigating bridge and at a main machinery control position that the motors are running and, as far as practicable, that the overload alarm and alarm for the loss of a phase in a three phase supply located at the main machinery control position are operating satisfactorily (SOLAS 74/88 reg.II-1/30);
- (PR) 5.2.2.45 confirming that the effective means of operation and control of the main and auxiliary machinery essential for the propulsion and the safety of the ship are being maintained, including, when appropriate, any means for remotely controlling the propulsion machinery from the navigating bridge (including the control, monitoring, reporting, alert and safety actions) (SOLAS 74/88/00/02 reg.II-1/31);
- (PR) 5.2.2.46 confirming that arrangements to operate main and other machinery from a machinery control room are satisfactory (SOLAS 74/88 reg.II-1/31);
- (PR) 5.2.2.47 confirming that the means provided for manually overriding automatic controls are being maintained and that a failure does not prevent the use of the manual override (SOLAS 74/88 reg.II-1/31);
- (PR) 5.2.2.48 confirming that the appropriate safety features fitted to the oil-fired and exhaust gas boilers, unfired steam generators, steam pipe systems and air pressure systems are being maintained (SOLAS 74/88 regs.II-1/32, 33 and 34);
- (PR) 5.2.2.49 confirming the operation of the ventilation for the machinery spaces (SOLAS 74/88 reg.II-1/35);
- (PR) 5.2.2.50 when appropriate, confirming that the measures to prevent noise in machinery spaces are effective (SOLAS 74/88 reg. II-1/36 and SOLAS 74/12 reg.II-1/3-12.2); or confirming that the ship was constructed to reduce on board noise and to protect personnel from noise in accordance with the *Code on noise levels on board ships*, adopted by resolution MSC.337(91), as amended (SOLAS 74/12 reg. II-1/3-12);
- (PR) 5.2.2.51 confirming that the engine room telegraph giving visual indication of the orders and answers both in the machinery space and on the navigation bridge is operating satisfactorily (SOLAS 74/88 reg.II-1/37);
- (PR) 5.2.2.52 confirming that the second means of communication between the navigation bridge and machinery space is also operating satisfactorily, including any appropriate means provided to any other positions from which the engines are controlled (SOLAS 74/88 reg.II-1/37);
- (PR) 5.2.2.53 confirming that the engineer's alarm is clearly audible in the engineers' accommodation (SOLAS 74/88 reg.II-1/38);

- (PR) 5.2.2.54 confirming that precautions taken to prevent any oil that may escape under pressure from any pump, filter or heater from coming into contact with heated surfaces, are efficient;
- (PR) 5.2.2.55 confirming that the means of ascertaining the amount of oil contained in any oil tank are in satisfactory working condition (SOLAS 74/88 reg.II-2/15) (SOLAS 74/02 reg.II-2/33);
- (PR) 5.2.2.56 confirming that the devices provided to prevent overpressure in any oil tank or in any part of the oil system, including the filling pipes, are in satisfactory working condition (SOLAS 74/88 reg.II-2/15) (SOLAS 74/02 reg.II-2/33);
- (PR) 5.2.2.57 confirming that the electrical installations, including the main source of power and lighting systems, are being maintained (SOLAS 74/88 regs.II-1/40 and 41);
- (PR) 5.2.2.58 confirming that the self-contained emergency source of electrical power and its associated systems are operating satisfactorily (SOLAS 74/88 reg.II-1/42);
- (PR) 5.2.2.59 confirming that the starting arrangements of each emergency generating set are satisfactory (SOLAS 74/88 reg.II-1/44);
- (PR) 5.2.2.60 checking, when appropriate, the disposition of and testing the supplementary emergency lighting (SOLAS 74/88 reg.II-1/42-1);
- (PR) 5.2.2.61 for passenger ships constructed on or after 1 July 2010, checking the provision of supplementary lighting in all cabins, and checking that such lighting automatically illuminates and remains on for a minimum of 30 min when power to the normal cabin lighting is lost (SOLAS 74/06 reg.II-1/41.6);
- (PR) 5.2.2.62 confirming that precautions provided against shock, fire and other hazards of electrical origin are being maintained (SOLAS 74/88 reg.II-1/45);
- (PR) 5.2.2.6 confirming, when appropriate, that the arrangements for the machinery spaces being periodically unattended are satisfactory (SOLAS 74/88 reg.II-1/54);
- (PR) 5.2.2.64 examining, where applicable, the alternative design and arrangements for machinery or electrical installations, fire safety, or life-saving appliances and arrangements, in accordance with the test, inspection and maintenance requirements, if any, specified in the approved documentation (SOLAS 74/00/06 regs. II-1/55, II-2/17 and III/38);
- (PR) 5.2.2.65 examining the fire pumps and fire main and the disposition of the hydrants, hoses and nozzles and the international shore connection and checking that each fire pump, including the emergency fire pump, can be operated separately so that two jets of water are produced simultaneously from different hydrants at any part of the ship whilst the required pressure is maintained in the fire main (SOLAS 74/00 reg.II-2/10.2; FSSC chs.2 and 12) (SOLAS 74/88 regs.II-2/4 and 19);

- (PR) 5.2.2.66 examining the provision and randomly examining the condition of the portable and non-portable fire extinguishers (SOLAS 74/00 reg.II-2/10.3; FSSC ch.4) (SOLAS 74/88 reg.II-2/6);
- (PR) 5.2.2.67 examining the fixed fire extinguishing system for machinery, cargo, special category and vehicle spaces and confirming that its means of operation are clearly marked (SOLAS 74/00/12 regs.II-2/10.4, 10.5, 10.7 and 20.6.1; FSSC chs. 5 to 7) (SOLAS 74/88 regs.II-2/5, 7, 9, 10 and 53);
- (PR) 5.2.2.68 examining the special arrangements in the machinery spaces and confirming, as far as practicable and as appropriate, the operation of the remote means of control provided for the opening and closing of the skylights, the release of smoke, the closure of the funnel and ventilation openings, the closure of power-operated and other doors, the stopping of ventilation and boiler forced and induced draft fans and the stopping of oil fuel and other pumps that discharge flammable liquids (SOLAS 74/00 regs.II-2/5.2, 8.3 and 9.5) (SOLAS 74/88 reg.II-2/11);
- (PR) 5.2.2.69 checking that fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space (SOLAS 74/08 reg.II-2/10.4, FSSC ch.5.2.2.2);
- (PR) 5.2.2.70 examining the fire-extinguishing arrangements in control stations, accommodation and service spaces (SOLAS 74/00 reg.II-2/10.6.1; FSSC ch.8) (SOLAS 74/88 reg.II-2/36);
- (PR) 5.2.2.71 examining, when applicable, the fire-extinguishing arrangements in cabin balconies (SOLAS 74/00 reg.II-2/10.6.1);
- (PR) 5.2.2.72 examining the provision of fire-extinguishing systems for the spaces containing paint and/or flammable liquids and deep-fat cooking equipment in accommodation and service spaces (SOLAS 74/00 regs.II-2/10.6.3 and 10.6.4; FSSC chs.5, 6 and 7) (SOLAS 74/88 reg.II-2/15.2.5));
- (PR) 5.2.2.73 examining the arrangements for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the remote means of closing the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils (SOLAS 74/00 reg.II-2/4.2) (SOLAS 74/88 reg.II-2/15);
- (PR) 5.2.2.74 examining and testing, as far as practicable, any fire detection and fire alarm arrangements in machinery spaces, including enclosed spaces containing incinerators, if applicable, accommodation and service spaces and control spaces (SOLAS 74/00/10 reg. II-2/7 (except 7.5.5, 7.6 and 7.9); FSSC chs. 8 and 9) (SOLAS 74/88 regs. II-2/11, 12, 13, 13-1, 14, 36 and 41);
- (PR) 5.2.2.74.1 examining and testing, where applicable, any fire detection and fire alarm arrangements on cabin balconies. (SOLAS 74/00 reg.II-2/7.10);

- (PR) 5.2.2.74.2 for passenger ships constructed on or after 1 July 2010, confirming the smoke detectors in cabins, when activated, are emitting, or cause to emit, an audible alarm within the space where they are located (SOLAS 74/06 regs.II-2/7.5.2 and 7.5.3.1);
- (PR) 5.2.2.74.3 for passenger ships constructed on or after 1 July 2010, confirming detectors and manually operated call points of a fixed fire detection and fire alarm system can be remotely and individually identified (SOLAS 74/06 reg.II-2/7.2.4);
- (PR) 5.2.2.75 confirming that the firefighters' outfits including their self-contained compressed air breathing apparatus, and the emergency escape breathing devices (EEBDs) are complete and in good condition and that the cylinders, including the spare cylinders, of the self-contained breathing apparatus, are suitably charged, and that onboard means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used are provided, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (SOLAS 74/00/12 regs.II-2/10.10, 13.3.4, 13.4.3 and 15.2.2; FSSC ch.3) (SOLAS 74/88 reg.II-2/17);
- (PR) 5.2.2.76 checking the operational readiness and maintenance of firefighting systems (SOLAS 74/00 reg.II-2/14) (SOLAS 74/88/91 reg.II- 2/21);
- (PR) 5.2.2.77 confirming, as far as practicable, that no changes have been made in the structural fire protection, including the structure, fire integrity, protection of stairways and lifts, cabin balconies, openings in "A" and "B" Class divisions, ventilation systems and windows and side scuttles, and the use of combustible material (SOLAS 74/00/04/12 regs.II-2/5.2, 5.3, 6, 8.2, 8.5, 9.2.1, 9.2.2, 9.3, 9.4.1, 9.5, 9.6 (except 9.6.3), 9.7 and 11 (except 11.6)) (SOLAS 74/88 regs.II-2/11, 16, 18, 23 to 35 and 37);
- (PR) 5.2.2.78 confirming, as far as practicable, that no changes have been made in the structural fire protection in cargo spaces intended for the carriage of dangerous goods (SOLAS 74/00 regs.II-2/19.3.8 and 19.3.10) (SOLAS 74/88 regs.II-2/4, 54.2.8, 54.2.10 and 54.2.11);
- (PR) 5.2.2.79 examining and testing any manual and automatic fire doors including the means of closing the openings in "A" and "B" Class divisions (SOLAS 74/00 reg.II-2/9.4.1) (SOLAS 74/88 regs.II-2/30 and 31);
- (PR) 5.2.2.80 examining and testing the main inlets and outlets of all ventilation systems and checking that the power ventilation is capable of being stopped from outside the space served (SOLAS 74/00 reg.II-2/5.2.1) (SOLAS 74/88 regs.II-2/16 and 32);
- (PR) 5.2.2.81 confirming that the stairways and ladders, including the low-location lighting system, arranged to provide a means of escape to the lifeboat and liferaft embarkation deck from all passenger and crew spaces and from those spaces in which the crew is normally employed are being maintained (SOLAS 74/00 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) 5.2.2.82 confirming that the means of escape from any special category spaces and ro-ro spaces are satisfactory (SOLAS 74/00 regs.II-2/13.5 and 13.6) (SOLAS 74/88 reg.II-2/28);
- (PR) 5.2.2.83 confirming that the means of escape from the machinery spaces are satisfactory (SOLAS 74/00 reg.II-2/13.4.1) (SOLAS 74/88 reg.II-2/28);
- (PR) 5.2.2.84 examining the fire-extinguishing arrangements, examining and testing the fire detection and alarm systems and the sample extraction smoke detection systems, where applicable in cargo spaces for general cargo and dangerous goods and testing, as far as practicable and as appropriate, the operation of the means for closing the various openings (SOLAS 74/00 regs. II-2/7.6 and 10.7; FSSC chs. 5, 9 and 10) (SOLAS 74/88 reg. II-2/39);
- (PR) 5.2.2.85 examining the fire-extinguishing arrangements examining and testing the fire detection and alarm system and the sample extraction smoke detection system, where applicable, in vehicle, special category and ro-ro spaces and testing, as far as practicable and as appropriate, the operation of the means for closing the various openings (SOLAS 74/00 reg. II-2/20 (except 20.5); FSSC chs. 5, 6, 7, 9 and 10) (SOLAS 74/88 regs. II-2/37, 38 and 38-1);
- (PR) 5.2.2.86 examining and testing, as appropriate and as far as practicable, the crew alarm and the public address system or other effective means of communication (SOLAS 74/00 regs.II-2/7.9 and 12; LSAC ch.7) (SOLAS 74/88 reg.II-2/40);
- (PR) 5.2.2.87 examining, when appropriate, the special arrangements for carrying dangerous goods, including checking the electrical equipment and wiring, ventilation, the provision of personnel protection clothing and portable appliances, testing any fire detection and alarm system and any sample extraction smoke detection system and testing, as far as practicable, the water supply, bilge pumping and any water spray system (SOLAS 74/00/08 reg. II-2/19 (except 19.3.8, 19.3.10 and 19.4); FSSC chs. 3, 4, 7, 9 and 10) (SOLAS 74/88 regs. II-2/41 and 54);
- (PR) 5.2.2.88 examining, when appropriate, the helicopter facilities (SOLAS 74/00 regs.II-2/18, III/28) (SOLAS 74/88 reg.II-2/18.8);
- (PR) 5.2.2.89 checking the requirement for passenger ships carrying more than 36 passengers and constructed before 1 October 1994 (SOLAS 74/88/92 regs.II-2/41-1 and 41-2);
- (PR) 5.2.2.90 for passenger ships constructed on or after 1 July 2010 and having a length of 120 m or more or having three or more main vertical zones, checking the designation of safe areas (SOLAS 74/06 reg.II-2/21);
- (PR) 5.2.2.91 for passenger ships constructed on or after 1 July 2010, checking the provision of a safety centre (SOLAS 74/06 reg.II-2/23) and its associated ventilation system (SOLAS 74/06 reg.II-2/8.2);

- (PR) 5.2.2.92 checking that emergency instructions are available for each person on board, the muster list is posted in conspicuous places and there are signs or posters in the vicinity of survival craft and their launching stations (SOLAS 74/96 regs.III/8, 9 and 37);
- (PR) 5.2.2.93 checking that the falls used in launching have been periodically inspected and have been renewed in the past five years (SOLAS 74/96/04 reg.III/20);
- (PR) 5.2.2.94 examining each survival craft, including its equipment and, when fitted, the on-load release mechanism and hydrostatic lock, and for inflatable liferafts the hydrostatic release unit and float free arrangements, including the date of servicing or replacement. Checking that the hand-flares are not out of date and that the required number of search and rescue locating devices are fitted in liferafts and those liferafts are clearly marked (SOLAS 74/96/00/02/08 regs. III/20, 21, 23, 24 and 26; LSAC sections 2.3 to 2.5, 3.2 and 4.1 to 4.6);
- (PR) 5.2.2.95 checking that the life-saving appliances are of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea (LSAC section 1.2.2.6);
- (PR) 5.2.2.96 examining the embarkation arrangements and launching appliances for each survival craft. Each lifeboat should be lowered to the embarkation position or, if the stowage position is the embarkation position, lowered a short distance and, if practicable, one of the survival craft should be lowered to the water. The operation of the launching appliances for davit launched liferafts should be demonstrated. (SOLAS 74/96/04 regs.III/11, 12, 13, 15, 16, 20, 21 and 23; LSAC sections 6.1 and 6.2);
- (PR) 5.2.2.97 checking that a thorough examination of launching appliances, including the dynamic testing of the winch brake, and servicing of lifeboat and rescue boat on-load release gear and davit-launched life raft automatic release hooks have been carried out. (SOLAS 74/00/12 reg. III/ 20);
- (PR) 5.2.2.98 checking the rotational deployment of MES (SOLAS 74/88 reg.III/20.8.2; LSAC section 6.2.2.2);
- (PR) 5.2.2.99 examining each rescue boat, including its equipment. For inflatable rescue boats, confirming that they are stowed in a fully inflated condition (SOLAS 74/88/04 regs.III/14, 17, 21, 26.3 and 34);
- (PR) 5.2.2.100 examining the embarkation and recovery arrangements for each rescue boat (SOLAS 74/88 reg,III/14);
- (PR) 5.2.2.101 checking the arrangements for mustering passengers (SOLAS 74/96 regs.III/11, 24 and 25);
- (PR) 5.2.2.102 confirming that a means of rescue is provided on ro-ro passenger ships (SOLAS 74/00 regs.III/11, 26.4);
- (PR) 5.2.2.103 confirming that a helicopter pick-up area is provided on ro-ro passenger ships (SOLAS 74/00 reg.III/28);

- (PR) 5.2.2.104 confirming that a decision support system is provided for the Master (SOLAS 74/88 reg. III/29) (SOLAS 74/06 regs. II-2/21 and 22);
- (PR) 5.2.2.105 testing that the engine of the rescue boat(s) and of each lifeboat, when so fitted, start satisfactorily and operate both ahead and astern;
- (PR) 5.2.2.106 examining and checking the operation of two-way VHF radiotelephone apparatus and search and rescue locating devices (SOLAS 74/88/08 regs.III/6, IV/7 and 14);
- (PR) 5.2.2.107 examining the line-throwing appliance and checking that its rockets and the ship's distress signals are not out of date (SOLAS 74/96 regs.III/6, 18 and 35; LSAC sections 3.1 and 7.1);
- (PR) 5.2.2.108 examining and checking the operation of onboard communications equipment and verifying that the general alarm system is audible in accommodation, normal crew working spaces and on open decks (SOLAS 74/96 regs.III/6, 18 and 35; LSAC sections 3.1 and 7.1);
- (PR) 5.2.2.109 examining the provision, disposition, stowage and condition of the lifebuoys, including those fitted with self-igniting lights, self-activating smoke signals and buoyant lines, lifejackets^{*}, immersion suits, anti-exposure suits and thermal protective aids and that their associated batteries are not out of date (SOLAS 74/88/06 regs. III/7, 21, 22 and 26; LSAC sections 2.1 to 2.5 and 3.1 to 3.3);
- (PR) 5.2.2.109.1 checking the provision of lifejackets in three sizes (Infant, Child, Adult) and checking that they are marked by either weight or height, or by both weight and height (LSAC section 2.2.1.1). For passenger ships on voyages less than 24 h, checking that the number of infant lifejackets equals to at least 2.5% of the number of passengers on board and for passenger ships on voyages 24 h or greater, checking that infant lifejackets are provided for each infant on board (SOLAS 74/06 reg.III/7.2.1);
- (PR) 5.2.2.109.2 checking that immersion suits designed to be worn in conjunction with a lifejacket are suitably marked (LSAC section 2.3.1);
- (PR) 5.2.2.110 checking the lighting of the muster and embarkation stations and the alleyways, stairways and exits giving access to the muster and embarkation stations, including when supplied from the emergency source of power (SOLAS 74/88 regs.II-1/42 and III/11);
- (PR) 5.2.2.111 checking that the required navigation lights, shapes and sound signalling equipment are in order (International Regulations for Preventing Collisions at Sea in force (COLREG), rules 20 to 24, 27 to 30 and 33);
- (PR) 5.2.2.112 checking the provision and specification of the following navigation equipment as appropriate: daylight signalling lamp, magnetic compass, transmitting heading device, gyro compass, gyro compass repeaters, radar installation(s), electronic plotting aid, automatic tracking aid(s) or automatic radar plotting aid(s), echo-sounding device, speed and

* Regulations III/7.2.1.1, 7.2.1.2 and 7.2.1.5 should be considered.

- distance indicator, rudder angle indicator, propeller rate-of-revolution indicator, variable pitch propeller pitch and operational mode indicator, rate-of-turn indicator, heading or track control system, GNSS receiver, terrestrial radio navigation system and sound reception system, a pelorus or compass bearing device, means for correcting heading and bearings, a BNWAS, as applicable, and ECDIS including back-up arrangements, as applicable. Items that cannot be checked with the ship in port should be verified from records (SOLAS 74/00/09/13 reg.V/19);
- (PR) 5.2.2.113 checking for the provision, specification operation and annual performance test of the voyage data recorder (SOLAS 74/00/04 reg.V/20);
- (PR) 5.2.2.114 checking that the International Code of Signals and an up-to-date copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual have been provided. (SOLAS 74/00/02 reg. V/21);
- (PR) 5.2.2.115 checking that a valid conformance test report of the long-range identification and tracking system is available on board, where fitted (SOLAS 74/04 reg.V/19-1);
- (PR) 5.2.2.116 checking the provision and operation of the automatic identification system, where fitted, and whether the annual test has been carried out and a copy of the test report is on board (SOLAS 74/00/04/10 regs. V/18.9 and 19);
- (PR) 5.2.2.117 checking the provision and specification of the pilot ladders and pilot transfer arrangements (SOLAS 74/00/10 reg. V/23);
- (PR) 5.2.2.118 checking the provisions of (PI) 5.1.2.115 to (PI) 5.1.2.140 and (PI) 5.1.2.143 to (PI) 5.1.2.145;
- (PR) 5.2.2.119 confirming that no new materials containing asbestos were installed on board (SOLAS 74/00/05/09 reg. II-1/3-5)*.
- (PR) 5.2.2.120 checking that the means of embarkation and disembarkation from ships for use in port and in port related operations, such as gangways and accommodation ladders, are in satisfactory condition, as applicable (SOLAS 74/08 reg.II-1/3-9);
- (PR) 5.2.2.121 confirming, where applicable, that an appropriate portable atmosphere testing instrument or instruments[†] is on board, and that suitable means are provided for the calibration of all such instruments; and checking appropriateness of the testing and calibration (SOLAS 74/14 reg. XI-1/7[‡]).

* Refer to MSC.1/Circ.1379 and MSC.1/Circ.1426 on Unified interpretation on the implementation of SOLAS regulation II-1/3-5.

[†] Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7 (MSC.1/Circ.1477)*.

[‡] New SOLAS 74/14 reg. XI-1/7, as adopted by MSC.380(94), is expected to come into force on 1 July 2016.

- (PR) 5.2.3 For the hull, machinery and equipment of passenger ships the completion of the renewal survey should consist of:
- (PR) 5.2.3.1 after a satisfactory survey, issuing the Passenger Ship Safety Certificate and its associated Record of Equipment (Form P).

ANNEX 2

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

- (L) 1 **GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL LOAD LINE CERTIFICATE OR INTERNATIONAL LOAD LINE EXEMPTION CERTIFICATE**
- (LI) 1.1 **Initial surveys** – see part "General" section 4.1
- (LI) 1.1.1 For the load line the examination of plans and designs should consist of:
 - (LI) 1.1.1.1 examining the structural strength at the draft corresponding to the assigned freeboard (LLC 66/88 reg.1);
 - (LI) 1.1.1.2 examining the intact stability, and, where applicable, the damaged stability information and the loading and ballasting information that is to be supplied to the master, and, where not dispensed by the Administration, inclining experimental data (LLC 66/88/08 regs.1 and 10; IS Code chs.1, 2 and 3);
 - (LI) 1.1.1.3 determining the freeboard, including specifying and the consideration of the conditions of assignment for the freeboard (LLC 66/88/03 regs.11 to 45).
- (LI) 1.1.2 For the load line the survey during construction and after installation should consist of:
 - (LI) 1.1.2.1 checking that, as far as its strength is concerned, the ship has been constructed in accordance with the approved plans (LLC 66/88 reg.1);
 - (LI) 1.1.2.2 confirming that the deck line and load line mark are properly positioned (LLC 66/88 regs.4 to 9);
 - (LI) 1.1.2.3 witnessing the inclining experiment or lightweight survey (LLC 66/88/03 reg.10);
 - (LI) 1.1.2.4 examining the superstructure end bulkheads and the openings therein (LLC 66/88 regs.11 and 12);
 - (LI) 1.1.2.5 examining the means of securing the weathertightness of cargo hatchways, other hatchways and other openings on the freeboard and superstructure decks (LLC 66/88 regs.13 to 18);
 - (LI) 1.1.2.6 examining the ventilators and air pipes, including their coamings and closing appliances (LLC 66/88 regs.19 and 20);
 - (LI) 1.1.2.7 examining the watertight integrity of the closures to any openings in the ship's side below the freeboard deck (LLC 66/88 reg.21);
 - (LI) 1.1.2.8 examining the scuppers, inlets and discharges (LLC 66/88/03 reg.22);
 - (LI) 1.1.2.9 examining the garbage chutes (LLC 66/88/03 reg.22-1);

- (LI) 1.1.2.10 examining the spurling pipes and cable lockers (LLC 66/88/03 reg.22-2);
- (LI) 1.1.2.11 examining the side scuttles and deadlights (LLC 66/88 reg.23);
- (LI) 1.1.2.12 examining the bulwarks including the provision of freeing ports, special attention being given to any freeing ports fitted with shutters (LLC 66/88/03 regs.24 and 25);
- (LI) 1.1.2.13 examining the guardrails, gangways, walkways and other means provided for the protection of the crew and means for safe passage of crew (LLC 66/88/03 regs.25 and 25-1);
- (LI) 1.1.2.14 examining the special requirements for ships permitted to sail with type "A" or type "B-minus" freeboards (LLC 66/88/03 regs. 26 and 27);
- (LI) 1.1.2.15 checking, when applicable, of the fittings and appliances for timber deck cargoes (LLC 66/88 regs.42 to 45).
- (LI) 1.1.3 For the load line the check that certificates, etc., have been placed on board should consist of:
 - (LI) 1.1.3.1 checking that the loading and ballasting information has been supplied to the master (LLC 66/88 reg.10).
- (LI) 1.1.4 For the load line the completion of the initial survey should consist of:
 - (LI) 1.1.4.1 after a satisfactory survey, issuing the International Load Line Certificate or International Load Line Exemption Certificate.
- (LA) **1.2 Annual surveys** – see part "General", section 4.2
 - (LA) 1.2.1 For the load line the examination of current certificates and other records should consist of:
 - (LA) 1.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - (LA) 1.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
 - (LA) 1.2.1.3 checking the validity of the International Ship Security Certificate;
 - (LA) 1.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (LA) 1.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;
 - (LA) 1.2.1.6 checking the certificate of class, if the ship is classed with a classification society;

- (LA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (LA) 1.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (LA) 1.2.1.9 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (LA) 1.2.1.10 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (LA) 1.2.1.11 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (LA) 1.2.1.12 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (LA) 1.2.1.13 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg.V/13(b));
- (LA) 1.2.1.14 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (LA) 1.2.1.15 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (LA) 1.2.1.16 checking that the stability and, where applicable, the loading and ballasting information is available (LLC 66/88/08 regs.1 and 10; IS Code chs.1, 2 and 3);
- (LA) 1.2.1.17 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 annex 4 reg.2), when applicable.
- (LA) 1.2.2 For the load line the annual survey should consist of:
 - (LA) 1.2.2.1 checking, in general, that there has been no deterioration in the strength of the hull (LLC 66/88 reg.1);
 - (LA) 1.2.2.2 checking of the positions of the deck line and load line which, if necessary, are to be re-marked and re-painted (LLC 66/88 regs.4 to 9);
 - (LA) 1.2.2.3 checking that no alterations have been made to the hull or superstructures that would affect the calculations determining the position of the load lines (LLC 66/88 regs.11 to 45);
 - (LA) 1.2.2.4 examining the superstructure end bulkheads and the openings therein (LLC 66/88 regs.11 and 12);

- (LA) 1.2.2.5 examining the means of securing the weathertightness of cargo hatchways, other hatchways and other openings on the freeboard and superstructure decks (LLC 66/88 regs.13 to 18);
- (LA) 1.2.2.6 examining the ventilators and air pipes, including their coamings and closing appliances (LLC 66/88 regs.19 and 20);
- (LA) 1.2.2.7 examining the watertight integrity of the closures to any openings in the ship's side below the freeboard deck (LLC 66/88 reg.21);
- (LA) 1.2.2.8 examining the scuppers, inlets and discharges (LLC 66/88 reg.22);
- (LA) 1.2.2.9 examining the garbage chutes (LLC 66/88/03 reg.22-1);
- (LA) 1.2.2.10 examining the means provided to minimize water ingress through the spurling pipes and chain lockers (LLC 66/88/03 reg.22-2);
- (LA) 1.2.2.11 examining the side scuttles and deadlights (LLC 66/88 reg.23);
- (LA) 1.2.2.12 examining the bulwarks including the provision of freeing ports, special attention being given to any freeing ports fitted with shutters (LLC 66/88/03 regs.24 and 25);
- (LA) 1.2.2.13 examining the guardrails, gangways, walkways and other means provided for the protection of the crew and means for safe passage of crew (LLC 66/88/03 regs.25 and 25-1);
- (LA) 1.2.2.14 examining the special requirements for ships permitted to sail with type "A" or type "B-minus" freeboards (LLC 66/88/03 regs.26 and 27);
- (LA) 1.2.2.15 checking, when applicable, the fittings and appliances for timber deck cargoes (LLC 66/88 regs.42 to 45).
- (LA) 1.2.3 For the load line the completion of the annual survey should consist of:
 - (LA) 1.2.3.1 after a satisfactory survey, endorsement of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (LA) 1.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (LR) **1.3 Renewal surveys** – see part "General", section 4.5
 - (LR) 1.3.1 For the load line the examination of current certificates and other records should consist of:
 - (LR) 1.3.1.1 the provisions of (LA) 1.2.1, except for the validity of the International Load Line Certificate or International Load Line Exemption Certificate.
 - (LR) 1.3.2 For the load line the renewal survey should consist of:
 - (LR) 1.3.2.1 the provisions of (LA) 1.2.2;
 - (LR) 1.3.2.2 examining the hull to ensure that its strength is sufficient for the draft corresponding to the freeboard assigned (LLC 66/88 reg.1).

- (LR) 1.3.3 For the load line the completion of the renewal survey should consist of:
- (LR) 1.3.3.1 after a satisfactory survey, issuing the International Load Line Certificate or International Load Line Exemption Certificate.

ANNEX 3

SURVEY GUIDELINES UNDER THE MARPOL CONVENTION

- (O) 1 **GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE**
- (OI) 1.1 **Initial surveys** – see part "General", section 4.1
- (OI) 1.1.1 For oil pollution prevention the examination of plans and designs should consist of:
- (OI) 1.1.1.1 examining the arrangements for the control of the discharge of oil and examining the plans and designs of the oil discharge monitoring and control system and oily-water separating and oil filtering equipment; confirming that pollution prevention equipment is type approved in accordance with the relevant Resolution (MARPOL 90/04 Annex I regs.14 & 15);
- (OI) 1.1.1.2 examining the arrangements for operation in special areas (MARPOL 90/04 Annex I reg.15);
- (OI) 1.1.1.3 examining the arrangements for the segregation of oil and water ballast and the prohibition of carriage of oil in the forepeak tanks or in spaces forward of the collision bulkhead (MARPOL 90/04 Annex I reg.16);
- (OI) 1.1.1.4 examining the oil residue (sludge) tank and standard discharge arrangements (MARPOL 90/04/09 Annex I regs.12 and 13);
- (OI) 1.1.1.5 examining oil fuel tank protection arrangements (MARPOL 90/04 Annex I reg.12A);
- (OI) 1.1.1.6 confirming that requirements regarding capacity and protection of oil fuel tanks are complied with (MARPOL 90/04 Annex I reg.12A);
- (OI) 1.1.1.7 examining the shipboard oil pollution emergency plan or in the case of a chemical/product tanker the shipboard marine pollution emergency plan (MARPOL 90/04 Annex I reg.37).
- (OI) 1.1.2 For oil pollution prevention, concerning the additional requirements for oil tankers the examination of plans and designs should consist of:
- (OI) 1.1.2.1 examining the ODME Manual and the arrangements for the control of the discharge of oil and for the retention of oil on board. Verifying that the ODME is type-approved in accordance with the relevant Resolution (MARPOL 90/04 Annex I regs.29, 31 and 34);
- (OI) 1.1.2.2 examining the arrangements for operation in special areas (MARPOL 90/04 Annex I reg.34);
- (OI) 1.1.2.3 examining the arrangements for the segregated ballast tanks, checking their capacity and ascertaining whether the draft and trim conditions will be met (MARPOL 90/04 Annex I reg.18);

- (OI) 1.1.2.4 examining the arrangements for crude oil washing, including shadow diagrams and the Operations and Equipment Manual, checking that an inert gas system is to be fitted (MARPOL 90/04 Annex I regs.33 and 35);
- (OI) 1.1.2.5 examining, as appropriate, the arrangements for the prevention of oil pollution in the event of collision or stranding (MARPOL 90/04 Annex I regs.19 to 22);
- (OI) 1.1.2.6 examining the protective location of the segregated ballast spaces and the arrangements for minimizing pollution due to side and bottom damages (MARPOL 90/04 Annex I regs.18, and 24 to 26);
- (OI) 1.1.2.7 confirming, as appropriate, that arrangements are made for the maintenance and inspection of wing and double bottom tanks or spaces (MARPOL 90/04 Annex I reg.19);
- (OI) 1.1.2.8 examining the arrangements for cargo pump-room bottom protection (double bottom where required) (MARPOL 90/04 Annex I reg.22);
- (OI) 1.1.2.9 examining the pumping, piping and discharge arrangements (MARPOL 90/04 Annex I reg.30);
- (OI) 1.1.2.10 examining the arrangements of the oil/water interface detector (MARPOL 90/04 Annex I reg.32);
- (OI) 1.1.2.11 examining, for oil tanker of 5,000 tonnes deadweight and above delivered on or after 1 February 2002, the intact stability (MARPOL 90/04 Annex I, reg. 27);
- (OI) 1.1.2.12 examining, for oil tanker of 150 gross tonnage and above delivered after 31 December 1979, the subdivision and damage stability (MARPOL 90/04 Annex I reg.28);
- (OI) 1.1.2.13 examining the accidental oil outflow performance, as applicable (MARPOL 90/04 Annex I reg.23).
- (OI) 1.1.3 For the oil pollution prevention the survey during construction and after installation should consist of:
 - (OI) 1.1.3.1 confirming the satisfactory installation and operation of, as appropriate, oil filtering equipment and when appropriate the operation of the automatic means provided to stop the discharge of effluent and the satisfactory operation of the alarm – or other installation (MARPOL 90/04 Annex I regs.14 and 15);
 - (OI) 1.1.3.2 confirming, when applicable, that the oil content meter and its recording device are operable and that there is a sufficient supply of consumables for the recording device on board (MARPOL 90/04 Annex I regs.14 and 15);
 - (OI) 1.1.3.3 testing, where fitted, the automatic stopping device required for discharges in Special Areas (MARPOL 90/04 Annex I reg.15);

- (OI) 1.1.3.4 confirming the segregation of the oil fuel and water ballast system and the non-carriage of oil in forepeak tanks (MARPOL 90/04 Annex I reg.16);
- (OI) 1.1.3.5 confirming that the oil residue (sludge) tank and its discharge arrangements are satisfactory and, when the size of the sludge tank is approved on the basis of such installations, confirming the satisfactory operation of homogenizers, sludge incinerators or other recognized means for the control of sludge (MARPOL 90/04/09 Annex I reg.12);
- (OI) 1.1.3.6 confirming the provision of the standard discharge connection (MARPOL 90/04 Annex I reg.13);
- (OI) 1.1.3.7 confirming oil fuel tank protection arrangements (MARPOL 90/04 Annex I reg.12A).
- (OI) 1.1.4 For oil pollution prevention, concerning the additional requirements for oil tankers the survey during construction and after installation should consist of:
 - (OI) 1.1.4.1 confirming that the arrangements of slop tanks or cargo tanks designated as slop tanks, and associated piping systems, are satisfactory (MARPOL 90/04 Annex I regs.29 and 34);
 - (OI) 1.1.4.2 confirming the satisfactory installation and operation of the oil discharge monitoring and control system, including any audible or visual alarms, the automatic and manual means to stop the discharge of effluent, the starting interlock, the accuracy of the flow meter and the applicable resolution's requirements for installation survey * (MARPOL 90/04 Annex I regs.31 and 34);
 - (OI) 1.1.4.3 confirming that the oil content meter and its recording device are operable and that there is a sufficient supply of consumables for the recording device on board (MARPOL 90/04 Annex I regs.31 and 34);
 - (OI) 1.1.4.4 confirming that the approved oil/water interface detectors are on board and are operational (MARPOL 90/04 Annex I reg.32);
 - (OI) 1.1.4.5 confirming that the arrangements of pumps, pipes and valves are in accordance with the requirements for segregated ballast systems and that there are no cross-connections between the cargo and segregated ballast systems (MARPOL 90/04 Annex I reg.18);
 - (OI) 1.1.4.6 where a portable spool piece is provided for the emergency discharge of segregated ballast by connecting the segregated ballast system to a cargo pump, confirming that non-return valves are fitted on the segregated ballast connections and that the spool piece is mounted in a conspicuous position in the pump room with a permanent notice restricting its use (MARPOL 90/04 Annex I reg.18);
 - (OI) 1.1.4.7 testing ballast pipelines that pass through cargo tanks and those cargo pipelines that pass through ballast tanks to ensure there is no cross contamination (MARPOL 90/04 Annex I reg.18);

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

- (OI) 1.1.4.8 confirming that the crude oil washing system is installed in accordance with the approved plans (MARPOL 90/04 Annex I regs.18 and 33) and, in particular:
- (OI) 1.1.4.8.1 examining crude oil washing piping, pumps, valves and deck-mounted washing machines for signs of leakage and to check that all anchoring devices for crude oil washing piping are intact and secure;
- (OI) 1.1.4.8.2 carrying out pressure testing of the crude oil washing system to 1.5 times the working pressure;
- (OI) 1.1.4.8.3 confirming in those cases where drive units are not integral with the tank washing machines, that the number of operational drive units specified in the Manual are on board;
- (OI) 1.1.4.8.4 checking that, when fitted, steam heaters for water washing can be properly isolated during crude oil washing operations, either by double shut-off valves or by clearly identifiable blanks;
- (OI) 1.1.4.8.5 checking that the prescribed means of communication between the deck watch keeper and the cargo control position is operational;
- (OI) 1.1.4.8.6 confirming that an overpressure relief device (or other approved arrangement) is fitted to the pumps supplying the crude oil washing system;
- (OI) 1.1.4.8.7 verifying that flexible hoses for supply of oil to the washing machines on combination carriers are of an approved type, are properly stored and are in good condition;
- (OI) 1.1.4.9 verifying the effectiveness of the crude oil washing system (MARPOL 90/04 Annex I reg.33) and, in particular:
- (OI) 1.1.4.9.1 checking that the crude oil washing machines are operable and observing the proper operation of the washing machines by means of the movement indicators and/or sound patterns or other approved methods;
- (OI) 1.1.4.9.2 checking the effectiveness of the stripping system in appropriate cargo tanks by observing the monitoring equipment and by hand-dipping or other approved means;
- (OI) 1.1.4.9.3 verifying by internal tank inspection after crude oil washing that the installation and operational procedures laid down in the Operations and Equipment Manual are satisfactory;
- (OI) 1.1.4.10 confirming that, where there is a crude oil washing system, an inert gas system has been installed and tested in accordance with the requirements of SOLAS 74/88/2000 (see (EI) 1.1.4.2 in Annex 1);
- (OI) 1.1.4.11 confirming, as appropriate, that the arrangements for the prevention of oil pollution in the event of collision or stranding are in accordance with the approved plans (MARPOL 90/04 Annex I regs.19 to 22);

- (OI) 1.1.4.12 confirming that the piping systems associated with the discharge of dirty ballast water or oil-contaminated water are satisfactory (MARPOL 90/04 Annex I reg.30);
- (OI) 1.1.4.13 confirming that the observation and discharge control positions for visually observing the discharge of oil-contaminated water, including the testing of the communication system between the two positions are satisfactory (MARPOL 90/04 Annex I reg.30);
- (OI) 1.1.4.14 confirming that the means of draining cargo pumps and cargo lines, including the provision of a stripping device and the connections for pumping to the slop or cargo tanks or ashore, are satisfactory (MARPOL 90/04 Annex I reg.30);
- (OI) 1.1.4.15 confirming that closing devices installed in the cargo transfer system and cargo piping, as appropriate, are satisfactory (MARPOL 90/04 Annex I regs.23 and 26);
- (OI) 1.1.4.16 confirming that the subdivision and stability arrangements, in addition to the provision of (OI) 1.1.4.15, to prevent progressive flooding are satisfactory (MARPOL 90/04 Annex I regs.23 and 26);
- (OI) 1.1.4.17 confirming the arrangements for cargo pump-room bottom protection (double bottom where required) (MARPOL 90/04 Annex I reg.22).
- (OI) 1.1.5 For the oil pollution prevention the check that the documentation has been placed on board cargo ships should consist of:
 - (OI) 1.1.5.1 confirming that certificates for type approval for the oil filtering equipment and oil content meters are available (MARPOL 90/04 Annex I reg.14);
 - (OI) 1.1.5.2 confirming that the Oil Record Book (Part I) has been provided (MARPOL 90/04 Annex I reg.17);
 - (OI) 1.1.5.3 confirming that the shipboard oil pollution emergency plan or, in the case of a chemical/product tanker, a shipboard marine pollution emergency plan has been provided (MARPOL 90/04 Annex I reg.37);
 - (OI) 1.1.5.4 confirming, as appropriate, that the Operating and Maintenance manuals for the 15 ppm bilge separator and 15 ppm bilge alarm are available.
- (OI) 1.1.6 For the oil pollution prevention the check that the documentation has been placed on board oil tankers should additionally consist of:
 - (OI) 1.1.6.1 confirming that, if applicable, a Ship to Ship (STS) operations Plan approved by the Administration has been provided (MARPOL Annex I reg.41);
 - (OI) 1.1.6.2 confirming that, if applicable, a Crude Oil Washing Operations and Equipment Manual has been provided (MARPOL 90/04 Annex I reg.35);

- (OI) 1.1.6.3 confirming that an operations manual for the oil discharge monitoring and control system has been provided together with any other documentation requested by the applicable resolution* (MARPOL 90/04 Annex I reg.31);
- (OI) 1.1.6.4 confirming that certificates for type approval for the oil content meters, oil discharge monitoring and control system and oil/water interface detectors are available (MARPOL 90/04 Annex I regs.31 and 32);
- (OI) 1.1.6.5 confirming that the Oil Record Book (Part II) has been provided (MARPOL 90/04 Annex I reg.36);
- (OI) 1.1.6.6 confirming that the information and data concerning the subdivision and damage stability has been provided (MARPOL 90/04 Annex I reg.28);
- (OI) 1.1.6.7 confirming that the shipboard oil pollution emergency plan or in the case of a chemical/product tanker a shipboard marine pollution emergency plan has been provided (MARPOL 90/04 Annex I reg.37);
- (OI) 1.1.6.8 confirming, for oil tankers of 5,000 tonnes deadweight and above delivered on/after 1 February 2002, that the intact stability has been approved (MARPOL 90/04 Annex I reg.27);
- (OI) 1.1.6.9 confirming, for oil tankers of 5,000 tonnes deadweight and above, that arrangements are in place to provide prompt access to shore-based damage stability and residual structural strength computerized calculation programs (MARPOL 90/04 Annex I reg.37.4).
- (OI) 1.1.7 For oil pollution prevention the completion of the initial survey should consist of:
- (OI) 1.1.7.1 after satisfactory survey, issuing the International Oil Pollution Prevention Certificate.
- (OA) **1.2** **Annual surveys** – see part "General", section 4.2
- (OA) 1.2.1 For oil pollution prevention the examination of current certificates and other records should consist of:
- (OA) 1.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (OA) 1.2.1.2 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (OA) 1.2.1.3 checking the validity of the International Oil Pollution Prevention Certificate;
- (OA) 1.2.1.4 checking the certificates of class, if the ship is classed with a classification society;

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

- (OA) 1.2.1.5 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (OA) 1.2.1.6 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (OA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (OA) 1.2.1.8 checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (OA) 1.2.1.9 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (OA) 1.2.1.10 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (OA) 1.2.1.11 checking, when appropriate, the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (OA) 1.2.1.12 checking the validity of the International Ship Security Certificate;
- (OA) 1.2.1.13 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (OA) 1.2.1.14 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (OA) 1.2.1.15 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (OA) 1.2.1.16 checking the certificates for the type approval of the oil filtering equipment (MARPOL 90/04 Annex I regs.14 and 15);
- (OA) 1.2.1.17 checking, when appropriate, that the Operating and Maintenance manuals for the 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 board*;
- (OA) 1.2.1.19 checking whether the appropriate entries have been made in Part I of the Oil Record Book (MARPOL 90/04 Annex I reg.17);

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

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- (OA) 1.2.1.20 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable;
- (OA) 1.2.1.21 confirming that the oil pollution emergency plan or, in the case of a chemical/product tanker, a shipboard marine pollution emergency plan, is on board (MARPOL 90/04 Annex I reg.37).
- (OA) 1.2.2 For oil pollution prevention the examination of current certificates and other records for oil tankers should additionally consist of:
- (OA) 1.2.2.1 confirming that the approved Dedicated Clean Ballast Tank Operation Manual, and/or the approved Operations and Equipment Manual for the Crude Oil Washing Systems, as appropriate, is/are on board (MARPOL 90/04 Annex I regs.18 and 35);
- (OA) 1.2.2.2 confirming, when appropriate, that a CAS Statement of Compliance together with the CAS Final Report* are on board (MARPOL 90/04 Annex I, regs. 20.6, 20.7 and 21.6);
- (OA) 1.2.2.3 confirming that the Operating and Maintenance manual for the oil discharge monitoring and control system, is on board (MARPOL 90/04 Annex I reg.31);
- (OA) 1.2.2.4 confirming that a valid calibration certificate for the oil discharge monitoring equipment is available on board†;
- (OA) 1.2.2.5 checking whether the appropriate entries have been made in Part II of the Oil Record Book (MARPOL 90/04 Annex I reg.36);
- (OA) 1.2.2.6 confirming that for oil tankers of 5,000 tonnes deadweight and above delivered on/after 1 February 2002 the loading conditions and intact stability information, in an approved form, is on board (MARPOL 90/04 Annex I reg.27);
- (OA) 1.2.2.7 confirming that subdivision and damage stability information in an approved form, where applicable, is on board (MARPOL 90/04 Annex I reg.28);
- (OA) 1.2.2.8 checking the certificates for the type approval of the oil pollution prevention equipment, such as the oil content meters and oil/water interface detectors, and sighting the records of the various oil discharge monitoring equipment, as applicable (MARPOL 90/04 Annex I reg.31);
- (OA) 1.2.2.9 checking that the ship is allowed continued operation according to the phase-out scheme of MARPOL 90/04 Annex I reg.20);
- (OA) 1.2.2.10 confirming that, if applicable, a Ship to Ship (STS) operations Plan approved by the Administration has been provided (MARPOL Annex I reg.41).

* Refer to the Condition Assessment Scheme (resolution MEPC.94(46), as amended).

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

- (OA) 1.2.3 For the oil pollution prevention the annual survey should consist of:
- (OA) 1.2.3.1 examining externally the oil filtering equipment and confirming, as far as practicable, its satisfactory operation including, when appropriate, testing the operation of the automatic means provided to stop the discharge of effluent and the alarm for the oil filtering equipment (MARPOL 90/04 Annex I regs.14 and 15);
- (OA) 1.2.3.2 testing, where fitted, the oil filtering equipment required for discharge in special areas (MARPOL 90/04 Annex I reg.15);
- (OA) 1.2.3.3 confirming the segregation of oil fuel and water ballast systems and that the arrangements prohibit the carriage of oil in forepeak tanks or in spaces forward of the collision bulkhead (MARPOL 90/04 Annex I reg.16);
- (OA) 1.2.3.4 checking that the arrangement of oil residue (sludge) tank and its discharge arrangements are satisfactory and confirming that, where applicable, homogenizers, sludge incinerators or other recognized means for the control of sludge are satisfactory (MARPOL 90/04/09 Annex I reg.12);
- (OA) 1.2.3.5 confirming that a standard discharge connection is provided (MARPOL 90/04 Annex I reg.13).
- (OA) 1.2.4 For oil pollution prevention the annual survey of the additional requirements for oil tankers should consist of:
- (OA) 1.2.4.1 examining the oil discharge monitoring and control system and its associated equipment (MARPOL 90/04 Annex I reg.31) and, in particular:
- (OA) 1.2.4.1.1 examining externally the system and equipment and, if applicable, verifying that the instrument is properly sealed;
- (OA) 1.2.4.1.2 confirming, as far as practicable, the satisfactory operation of the oil discharge monitoring and control system including the oil content meter and, where applicable, the automatic and manual means provided to stop the discharge of effluent and the starting interlock;
- (OA) 1.2.4.1.3 observing that indicators and recording devices are operable and verifying that sufficient supply of consumables for the recorders are on board;
- (OA) 1.2.4.1.4 testing, as far as practicable, any audible or visual alarms fitted to the oil discharge monitoring and control system;
- (OA) 1.2.4.2 examining, as far as practicable, the oil/water interface detectors (MARPOL 90/04 Annex I reg.32);
- (OA) 1.2.4.3 confirming that no cross-connections have been fitted between the cargo and segregated ballast systems (MARPOL 90/04 Annex I reg.18);

- (OA) 1.2.4.4 where a portable spool piece is provided for the emergency discharge of segregated ballast by connecting the segregated ballast system to a cargo pump, confirming that non-return valves are fitted on the segregated ballast connections and that the spool piece is mounted in a conspicuous position in the pump room with a permanent notice restricting its use (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.5 confirming by sighting that there has been no contamination with oil in the segregated ballast tanks (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.6 confirming, as far as practicable, that the dedicated clean ballast tank arrangement remains satisfactory (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.7 confirming by sighting that there has been no contamination with oil in the dedicated clean ballast tanks (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.8 confirming, as far as practicable, that the crude oil washing system remains satisfactory (MARPOL 90/04 Annex I reg.33) and, in particular:
- (OA) 1.2.4.8.1 examining externally the crude oil washing piping, pumps, valves and deck mounted washing machines for signs of leakage and checking that all anchoring devices for crude oil washing piping are intact and secure;
- (OA) 1.2.4.8.2 confirming, in those cases where drive units are not integral with the tank cleaning machines, that the number of operational drive units as specified in the Manual are on board;
- (OA) 1.2.4.8.3 checking that, when fitted, steam heaters for water washing can be properly isolated during crude oil washing operations, either by double shut-off valves or clearly identifiable blanks;
- (OA) 1.2.4.8.4 checking that the prescribed means of communications between the deck watch keeper and the cargo control position is operational;
- (OA) 1.2.4.8.5 confirming that an overpressure relief device (or other approved arrangement) is fitted to the pumps supplying the crude oil washing systems;
- (OA) 1.2.4.8.6 confirming that flexible hoses for supply of oil to the washing machines on combination carriers, are of an approved type, are properly stored and are in good condition;
- (OA) 1.2.4.9 verifying, where applicable and as far as practicable, the effectiveness of the crude-oil washing system (MARPOL 90/04 Annex I reg.33) and, in particular:
- (OA) 1.2.4.9.1 checking tanks containing departure and/or arrival ballast water, as applicable, to confirm the effectiveness of the cleaning and stripping;
- (OA) 1.2.4.9.2 checking, as far as practicable, that the crude oil washing machines are operable and, when the survey is carried out during crude oil washing operations, observing the proper operation of the washing machines by means of the movement indicators and/or sound patterns or other approved methods;

- (OA) 1.2.4.9.3 checking, as far as practicable, the effectiveness of the stripping system in appropriate cargo tanks by observing the monitoring equipment and by hand-dipping or other approved means;
- (OA) 1.2.4.10 confirming that on those existing tankers operating with special ballast arrangements, the arrangements are as approved and are satisfactory (MARPOL 90/04 Annex I reg.18);
- (OA) 1.2.4.11 confirming, as appropriate and as practicable, that the arrangements for the prevention of oil pollution in the event of collision or stranding are approved and are satisfactory (MARPOL 90/04 Annex I regs.19 to 22);
- (OA) 1.2.4.12 examining the piping systems associated with the discharge of dirty ballast or oil-contaminated water including the part flow system, if fitted (MARPOL 90/04 Annex I reg.30);
- (OA) 1.2.4.13 testing the communication system between the observation and discharge control positions (MARPOL 90/04 Annex I reg.30);
- (OA) 1.2.4.14 examining the means of draining cargo pumps and cargo lines, including the stripping device and the connections for pumping to the slop or cargo tanks or ashore (MARPOL 90/04 Annex I reg.30);
- (OA) 1.2.4.15 confirming for oil tankers of 5,000 tonnes deadweight and above that arrangements are in place to provide prompt access to shore-based damage stability and residual structural strength computerized calculation programs(MARPOL 90/04 Annex I reg.37.4).
- (OA) 1.2.5 For oil pollution prevention the completion of the annual survey should consist of:
 - (OA) 1.2.5.1 after a satisfactory survey, endorsing the International Oil Pollution Prevention Certificate;
 - (OA) 1.2.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (OIn) **1.3 Intermediate surveys** – see part "General", section 4.3
 - (OIn) 1.3.1 For oil pollution prevention the examination of current certificates and other records should consist of:
 - (OIn) 1.3.1.1 the provisions of (OA) 1.2.1.
 - (OIn) 1.3.2 For oil pollution prevention the examination of current certificates and other records for oil tankers should additionally consist of:
 - (OIn) 1.3.2.1 the provisions of (OA) 1.2.2.
 - (OIn) 1.3.3 For oil pollution prevention the intermediate survey should consist of:
 - (OIn) 1.3.3.1 the provisions of (OA) 1.2.3;

- (OIn) 1.3.3.2 examining the oily-water separating equipment or oil filtering equipment or process unit, where fitted, including associated pumps, piping and fittings for wear and corrosion (MARPOL 90/04 Annex I regs.14 and 15);
- (OIn) 1.3.3.3 examining the oil content meter (15 ppm alarm and bilge monitor) for obvious defects, deterioration or damage and checking the record of calibration of the meter when done in accordance with the manufacturer's operational and instruction manual (MARPOL 90/04 Annex I reg.14).
- (OIn) 1.3.4 For oil pollution prevention the intermediate survey of the additional requirements for oil tankers should consist of:
- (OIn) 1.3.4.1 the provisions of (OA) 1.2.4;
- (OIn) 1.3.4.2 examining the oil discharge monitoring and control system and the oil content meter for obvious defects, deterioration or damage, and checking the record of calibration of the meter when done in accordance with the manufacturer's operational and instruction manual (MARPOL 90/04 Annex I reg.31);
- (OIn) 1.3.4.3 confirming the satisfactory operation of the oil/water interface detectors (MARPOL 90/04 Annex I reg.32);
- (OIn) 1.3.4.4 for the crude oil washing system (MARPOL 90/04 Annex I reg.33):
- (OIn) 1.3.4.4.1 examining the crude oil washing piping outside the cargo tanks. If upon examination there is any doubt as to its condition, the piping may be required to be pressure tested, gauged or both. Particular attention should be paid to any repairs such as welded doublers;
- (OIn) 1.3.4.4.2 confirming the satisfactory operation of the isolation valves to steam heaters for washing water, when fitted;
- (OIn) 1.3.4.4.3 examining at least two selected cargo tanks for the express purpose of verifying the continued effectiveness of the installed crude oil washing and stripping systems. If the tank cannot be gas-freed for the safe entry of the surveyor, an internal examination should not be conducted. In this case this examination may be conducted in conjunction with the internal examination of cargo tanks required in (CIn) 2.3.3.3 in annex 1;
- (OIn) 1.3.4.5 examining the manual and/or remote operation of the individual tank valves (or other similar closing devices) to be kept closed at sea (MARPOL 90/04 Annex I regs.23 and 26).
- (OIn) 1.3.5 For the oil pollution prevention the completion of the intermediate survey should consist of:
- (OIn) 1.3.5.1 after a satisfactory survey, endorsing the International Oil Pollution Prevention Certificate;
- (OIn) 1.3.5.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory; see part "General", section 4.8.

- (OR) 1.4 **Renewal surveys** – see part "General" section 4.5
- (OR) 1.4.1 For oil pollution prevention the examination of current certificates and other records should consist of:
- (OR) 1.4.1.1 the provisions of (OA) 1.2.1, except for the validity of the International Oil Pollution Prevention Certificate;
- (OR) 1.4.1.2 verifying that, if applicable, the 15 ppm bilge alarm has been calibrated by the manufacturer or a person authorized by the manufacturer and that a valid calibration certificate is available on board*.
- (OR) 1.4.2 For oil pollution prevention the examination of current certificates and other records for tankers should additionally consist of:
- (OR) 1.4.2.1 the provisions of (OA) 1.2.2;
- (OR) 1.4.2.2 verifying that, if applicable, the oil discharge monitoring equipment has been calibrated and that a valid calibration certificate is available on board*.
- (OR) 1.4.3 For oil pollution prevention the renewal survey should consist of:
- (OR) 1.4.3.1 the provisions of (OIn) 1.3.3;
- (OR) 1.4.3.2 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the oily-water separating equipment or oil filtering equipment (MARPOL 90/04 Annex I reg.14);
- (OR) 1.4.3.3 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the oil discharge monitoring and control system, including where practicable the automatic and manual operation of the means provided to stop the discharge of effluent (MARPOL 90/04 Annex I reg.31);
- (OR) 1.4.3.4 confirming the satisfactory operation of the alarm for the oil filtering system (MARPOL 90/04 Annex I reg.14);
- (OR) 1.4.3.5 confirming the satisfactory operation of homogenizers, sludge incinerators or other recognized means for the control of sludge when the size of oil residue (sludge) tank is approved on the basis of such installations (MARPOL 90/04 Annex I reg.12).
- (OR) 1.4.4 For oil pollution prevention the renewal survey of the additional requirements for oil tankers should consist of:
- (OR) 1.4.4.1 the provisions of (OIn) 1.3.4;

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

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

- (OR) 1.4.4.2 confirming that the arrangements of slop tanks or cargo tanks designated as slop tanks and associated piping systems are satisfactory (MARPOL 90/04 Annex I regs.29 and 34);
- (OR) 1.4.4.3 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the oil discharge monitoring and control system and its associated equipment, including the oil/water interface detectors (MARPOL 90/04 Annex I regs.31 and 32);
- (OR) 1.4.4.4 confirming that the arrangements of pumps, pipes and valves are in accordance with the requirements for SBT systems (MARPOL 90/04 Annex I reg.18);
- (OR) 1.4.4.5 confirming that the arrangements of pumps, pipes and valves are in accordance with the Revised Specifications for Oil Tankers with Dedicated Clean Ballast Tanks (MARPOL 90/04 Annex I reg.18);
- (OR) 1.4.4.6 confirming that the crude oil washing system is in accordance with the requirements for such systems (MARPOL 90/04 Annex I reg.33) and, in particular:
 - (OR) 1.4.4.6.1 carrying out pressure testing of the crude oil washing system to at least the working pressure;
 - (OR) 1.4.4.6.2 examining the cargo tanks for the express purpose of verifying the continued effectiveness of the installed crude oil washing and stripping systems;
 - (OR) 1.4.4.6.3 examining internally, when fitted, the isolation valves for any steam heaters;
- (OR) 1.4.4.7 verifying, by internal tank inspection or by another alternative method acceptable to the Administration, the effectiveness of the crude oil washing system. If the tank cannot be gas-freed for the safe entry of the surveyor, an internal inspection should not be conducted. An acceptable alternative would be satisfactory results during the surveys required by (OA) 1.2.4.9 (MARPOL 90/04 Annex I reg.33);
- (OR) 1.4.4.8 confirming that there is no leakage from those ballast pipelines passing through cargo tanks and those cargo pipelines passing through ballast tanks (MARPOL 90/04 Annex I regs.18 and 33);
- (OR) 1.4.4.9 confirming that the pumping, piping and discharge arrangements are satisfactory (MARPOL 90/04 Annex I reg.30) and, in particular:
 - (OR) 1.4.4.9.1 confirming that the piping systems associated with the discharge of dirty ballast water or oil contaminated water are satisfactory;
 - (OR) 1.4.4.9.2 confirming that the means of draining cargo pumps and cargo lines, including the stripping device and the connections for pumping to the slop or cargo tanks or ashore are satisfactory;
 - (OR) 1.4.4.9.3 confirming that the arrangements for the part flow system, where fitted, are satisfactory;

- (OR) 1.4.4.10 confirming that closing devices installed in the cargo transfer system and cargo piping as appropriate are satisfactory (MARPOL 90/04 Annex I regs.23 and 26);
- (OR) 1.4.4.11 confirming, as appropriate and as practicable, that the arrangements for the prevention of oil pollution in the event of collision or stranding are satisfactory (MARPOL 73/78/90 Annex I regs.19 to 22);
- (OR) 1.4.4.12 confirming for oil tankers of 5,000 tonnes deadweight and above that arrangements are in place to provide prompt access to shore based damage stability and residual structural strength computerized calculation programs (MARPOL 90/04 Annex I reg.37.4).
- (OR) 1.4.5 For oil pollution prevention the completion of the renewal survey should consist of:
- (OR) 1.4.5.1 after a satisfactory survey, issuing the International Oil Pollution Prevention Certificate.
- (N) **2 GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL POLLUTION PREVENTION CERTIFICATE FOR THE CARRIAGE OF NOXIOUS LIQUID SUBSTANCES IN BULK**
- (NI) **2.1 Initial surveys** – see part General section 4.1
- (NI) 2.1.1 For the carriage of noxious liquid substances in bulk the examination of plans and designs (as applicable to the cargoes the ship is to be certified to carry) should consist of:
- (NI) 2.1.1.1 drawing up the list of noxious liquid substances it is proposed the ship will be certified to carry (MARPOL 90/04 Annex II reg.6);
- (NI) 2.1.1.2 examining the pumping system (MARPOL 90/04 Annex II reg.12);
- (NI) 2.1.1.3 examining the stripping system (MARPOL 90/04 Annex II reg.12);
- (NI) 2.1.1.4 examining the tank washing system and equipment (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.1.5 examining the underwater discharge arrangements (MARPOL 90/04 Annex II reg.12);
- (NI) 2.1.1.6 examining the ventilation equipment for residue removal (MARPOL 90/04 Annex II reg.13 and App.7);
- (NI) 2.1.1.7 examining the heating system for solidifying and high viscosity substances (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.1.8 examining the Procedures and Arrangements Manual (including cargo carriage requirements to meet Annex II regulations) (MARPOL 90/04 Annex II reg.14 and App.4);

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- (NI) 2.1.1.9 examining the shipboard marine pollution emergency plan (MARPOL 90/04 Annex II reg.17);
- (NI) 2.1.1.10 examining, if applicable, the construction and arrangements of a ship certified to carry individually identified vegetable oils under exemption from the carriage requirements (MARPOL 90/04 Annex II, reg.4.1.3).
- (NI) 2.1.2 For the carriage of noxious liquid substances in bulk, the survey during construction and after installation (as applicable to the cargoes the ship is to be certified to carry) should consist of:
- (NI) 2.1.2.1 confirming that the pumping and stripping systems are satisfactory and that portable pipes or bends in sufficient number, if required, are on board (MARPOL 90/04 Annex II reg.12);
- (NI) 2.1.2.2 conducting the water test for assessing the stripping quantity, as required (MARPOL 73/78/90/04 Annex II reg.12 and App.5);
- (NI) 2.1.2.3 confirming that the tank washing machines provided on board are in working order, are those described in the Procedures and Arrangements Manual and are installed in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.2.4 confirming that the wash water heating system, if required, is installed in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.2.5 confirming that the number and position of tank cleaning openings for portable machines are in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.2.6 confirming that the underwater discharge outlet(s) are in accordance with the approved plans (MARPOL 90/04 Annex II reg.12);
- (NI) 2.1.2.7 verifying by actual test that the discharge rate of the pumps, where a variable rate type is used, can be controlled as specified in the Procedures and Arrangements Manual (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.2.8 confirming that the ventilation equipment for residue removal is installed in accordance with the approved plan and is in working order and that the pressure in the driving medium for portable fans for ventilation equipment for residue removal can be achieved to give the required fan capacity (MARPOL 90/04 Annex II reg.13 and App.7);
- (NI) 2.1.2.9 confirming that the heating system for solidifying and high viscosity substances is installed in accordance with the approved plan (MARPOL 90/04 Annex II reg.14 and App.4);
- (NI) 2.1.2.10 confirming if applicable the construction and arrangements of a ship certified to carry individually identified vegetable oils under exemption from the carriage requirements (MARPOL 90/04 Annex II reg.4.1.3).

- (NI) 2.1.3 For the carriage of noxious liquid substances in bulk the check that the required documentation has been placed on board cargo ships (as applicable to the cargoes the ship is to be certified to carry) should consist of:
- (NI) 2.1.3.1 confirming that Procedures and Arrangements Manual has been provided (MARPOL 90/04 Annex II reg.14);
- (NI) 2.1.3.2 confirming that the Cargo Record Book has been provided (MARPOL 90/04 Annex II reg.15);
- (NI) 2.1.3.3 confirming that the shipboard marine pollution emergency plan is provided (MARPOL 04 Annex II, reg. 17).
- (NI) 2.1.4 For the carriage of noxious liquid substances in bulk the completion of initial survey should consist of:
- (NI) 2.1.4.1 after satisfactory survey, issuing the International Certificate for the Carriage of Noxious Liquid Substances in Bulk.
- (NA) **2.2 Annual surveys** – see part "General", section 4.2
- (NA) 2.2.1 For the carriage of noxious liquid substances in bulk the examination of current certificates and other records should consist of:
- (NA) 2.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
- (NA) 2.2.1.2 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (NA) 2.2.1.3 checking the validity of the International Oil Pollution Prevention Certificate;
- (NA) 2.2.1.4 checking the certificates of class, if the ship is classed with a classification society;
- (NA) 2.2.1.5 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (NA) 2.2.1.6 checking the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (NA) 2.2.1.7 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (NA) 2.2.1.8 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (NA) 2.2.1.9 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;

- (NA) 2.2.1.10 checking, when appropriate, the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (NA) 2.2.1.11 checking the validity of the International Ship Security Certificate;
- (NA) 2.2.1.12 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (NA) 2.2.1.13 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (NA) 2.2.1.14 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (NA) 2.2.1.15 confirming that the Procedures and Arrangements Manual is on board (MARPOL 90/04 Annex II reg.14);
- (NA) 2.2.1.16 confirming that the Cargo Record Book is being correctly used (MARPOL 90/04 Annex II reg.15);
- (NA) 2.2.1.17 confirming that the shipboard marine pollution emergency plan is on board (MARPOL 90/04 Annex II reg.17);
- (NA) 2.2.1.18 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 Annex 4 reg.2), when applicable.
- (NA) 2.2.2 For the carriage of noxious liquid substances in bulk the annual survey should consist of:
 - (NA) 2.2.2.1 examining externally and confirming that the pumping and piping systems, including a stripping system if fitted, and associated equipment remain as approved (MARPOL 90/04 Annex II reg.12);
 - (NA) 2.2.2.2 examining externally the tank washing piping and confirming that the type, capacity, number, and arrangement of the tank washing machines are as approved (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NA) 2.2.2.3 examining externally the wash water heating system (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NA) 2.2.2.4 examining externally, as far as practicable, the underwater discharge arrangements (MARPOL 90/04 Annex II reg.12);
 - (NA) 2.2.2.5 confirming that the means of controlling the rate of discharge of the residue is as approved (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NA) 2.2.2.6 confirming that the ventilation equipment for residue removal is as approved (MARPOL 90/04 Annex II reg.13 and App.7);

- (NA) 2.2.2.7 examining externally, as far as is accessible, the heating system required for solidifying and high viscosity substances (MARPOL 90/04 Annex II reg.14 and App.4);
- (NA) 2.2.2.8 examining any additional requirements listed on the International Certificate for the Carriage of Noxious Liquid Substances in Bulk.
- (NA) 2.2.3 For the carriage of noxious liquid substances in bulk the completion of annual survey should consist of:
- (NA) 2.2.3.1 after satisfactory survey, endorsing the International Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (NA) 2.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General" section 4.8.
- (NIn) **2.3 Intermediate surveys** – see part "General", section 4.3
- (NIn) 2.3.1 For the carriage of noxious liquid substances in bulk the examination of current certificates and other records should consist of:
- (NIn) 2.3.1.1 the provisions of (NA) 2.2.1.
- (NIn) 2.3.2 For the carriage of noxious liquid substances in bulk the intermediate survey should consist of:
- (NIn) 2.3.2.1 the provisions of (NA) 2.2.2;
- (NIn) 2.3.2.2 verifying from the cargo record book that the pumping and stripping arrangements have been emptying the tanks efficiently and are all in working order (MARPOL 90/04 Annex II regs.12 and 15);
- (NIn) 2.3.2.3 confirming, if possible, that the discharge outlet(s) are in good condition (MARPOL 90/04 Annex II P & A Standards);
- (NIn) 2.3.2.4 confirming that the ventilation equipment for residue removal is satisfactory and that the pressure in the driving medium for portable fans for ventilation equipment for residue removal can be achieved to give the required fan capacity (MARPOL 90/04 Annex II App.7).
- (NIn) 2.3.3 For the carriage of noxious liquid substances in bulk the completion of intermediate survey should consist of:
- (NIn) 2.3.3.1 after satisfactory survey, endorsing the International Certificate for the Carriage of Noxious Liquid Substances in Bulk; should be endorsed;
- (NIn) 2.3.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory, see part "General", section 4.8.
- (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 (NIIn) 2.3.2;
 - (NR) 2.4.2.2 confirming that the pumping and stripping systems are satisfactory and that portable pipes or bends in sufficient number, if required, are on board (MARPOL 73/78/90/04 Annex II reg.12);
 - (NR) 2.4.2.3 conducting the water test for assessing the stripping quantity, as required (MARPOL 73/78/90/04 Annex II reg.12 and App.5);
 - (NR) 2.4.2.4 confirming that the tank washing machines provided on board are in working order, are those described in the Procedures and Arrangements Manual and are installed in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NR) 2.4.2.5 confirming that the wash water heating system, if required, is installed in accordance with the approved plans and is in working order (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NR) 2.4.2.6 confirming that the number and position of tank cleaning openings for portable machines are in accordance with the approved plans (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NR) 2.4.2.7 confirming that the underwater discharge outlet(s) are in good condition and are in accordance with the approved plans (MARPOL 90/04 Annex II regs.12, 14 and App.4);
 - (NR) 2.4.2.8 verifying by actual test that the discharge rate of the pumps, where a variable rate type is used, can be controlled as specified in the Procedures and Arrangements Manual (MARPOL 90/04 Annex II reg.14 and App.4);
 - (NR) 2.4.2.9 confirming that the ventilation equipment for residue removal is installed in accordance with the approved plan and is in working order (MARPOL 90/04 Annex II regs.12, 14 and App.4);
 - (NR) 2.4.2.10 confirming that the heating system for solidifying and high viscosity substances is installed in accordance with the approved plan and is in working order (MARPOL 90/04 Annex II regs.12, 14 and App.4).
- (NR) 2.4.3 For the carriage of noxious liquid substances in bulk the completion of renewal survey should consist of:
 - (NR) 2.4.3.1 after satisfactory survey, issuing the International Certificate for the Carriage of Noxious Liquid Substances in Bulk.

- (S) **3** **GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL SEWAGE POLLUTION PREVENTION CERTIFICATE**
- (SI) **3.1** **Initial surveys** – see part "General", section 4.1
- (SI) 3.1.1 For sewage pollution prevention the examination of plans and designs should consist of:
- (SI) 3.1.1.1 examining as appropriate the arrangements for the provision of a sewage treatment plant, or of a sewage comminuting and disinfecting system, or of a sewage holding tank (MARPOL Annex IV reg.9);
- (SI) 3.1.1.2 if a sewage treatment plant is fitted, checking that it is type approved by the Administration in accordance with the appropriate resolution (MARPOL Annex IV, regs. 9.1.1 and 9.2.1);
- ((SI) 3.1.1.3 if a sewage comminuting and disinfecting system is fitted, checking that it is approved by the Administration and that facilities for the temporary storage of sewage are provided (MARPOL Annex IV, reg. 9.1.2);
- (SI) 3.1.1.4 if a sewage holding tank is fitted, checking its capacity having regard to the number of persons on board (MARPOL Annex IV, regs. 9.1.3 and 9.2.2);
- (SI) 3.1.1.5 examining the arrangements for the provision of a standard discharge connection (MARPOL Annex IV reg.10);
- (SI) 3.1.1.6 examining the arrangements for the provision of a pipeline for the discharge of sewage to a reception facility (MARPOL Annex IV reg.10).
- (SI) 3.1.2 For sewage pollution prevention the survey during construction and after installation should consist of:
- (SI) 3.1.2.1 checking externally, as applicable, the sewage treatment plant or the sewage comminuting and disinfecting system, and confirming their operation (MARPOL Annex IV, regs. 4.1.1, 9.1.1, 9.1.2 and 9.2.1);
- (SI) 3.1.2.2 if a sewage holding tank is fitted, checking that it has been constructed in a satisfactory manner, and checking that the holding tank has a means to indicate visually the amount of its contents (MARPOL Annex IV, regs. 9.1.3 and 9.2.2);
- (SI) 3.1.2.3 confirming that a standard discharge connection is provided (MARPOL Annex IV reg.10);
- (SI) 3.1.2.4 confirming that a pipeline for the discharge of sewage to a reception facility is provided (MARPOL Annex IV reg.10).
- (SR) **3.2** **Renewal surveys** – See "General", section 4.5
- (SR) 3.2.1 For sewage pollution prevention the examination of current certificates and other records should consist of:

- (SR) 3.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate or Passenger Ship Safety Certificate;
- (SR) 3.2.1.2 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (SR) 3.2.1.3 checking the validity of the International Oil Pollution Prevention Certificate;
- (SR) 3.2.1.4 checking the validity of the International Air Pollution Prevention Certificate;
- (SR) 3.2.1.5 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (SR) 3.2.1.6 checking the validity of the International Ship Security Certificate;
- (SR) 3.2.1.7 checking the certificates of class, if the ship is classed with a classification society;
- (SR) 3.2.1.8 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in bulk or the Certificate of Fitness for the Carriage of Dangerous Chemical in Bulk;
- (SR) 3.2.1.9 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (SR) 3.2.1.10 checking when appropriate the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (SR) 3.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (SR) 3.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (SR) 3.2.1.13 checking the validity of the Safety management certificate(SMC) and that a copy of the Document of Compliance (DOC) is on board, where applicable;
- (SR) 3.2.1.14 checking whether any new equipment has been fitted and, if so, confirm that it has been approved before installation and that any changes are reflected in the certificate;
- (SR) 3.2.1.15 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 annex 4 reg.2), when applicable.
- (SR) 3.2.2 For sewage pollution prevention the renewal survey should consist of:

- (SR) 3.2.2.1 confirming that no change has been made nor any new equipment installed which would affect the validity of the certificate (MARPOL Annex IV reg.4.8);
- (SR) 3.2.2.2 examining externally the sewage pollution prevention system and confirming, as far as practicable its satisfactory operation (MARPOL Annex IV, reg. 9);
- (SR) 3.2.2.3 confirming that a procedure for discharge of animal effluent is implemented on board (MARPOL 73/78/07 Annex IV reg.11.1.1);
- (SR) 3.2.2.4 confirming, for ships where a sewage holding tank is fitted as a sewage system, that an approval for the rate of discharge is available (MARPOL Annex IV, regs. 9.1.3 and 11.1.1).
- (SR) 3.2.3 For sewage pollution prevention the completion of the renewal survey should consist of:
- (SR) 3.2.3.1 after satisfactory survey the International Sewage Prevention Certificate should be issued.
- (A) **4 GUIDELINES FOR THE SURVEYS FOR THE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE AND THE NO_x TECHNICAL CODE**
- (AI) **4.1 Initial surveys** – see part "General", section 4.1
- (AI) 4.1.1 For air pollution prevention the examination of plans and designs should consist of:
- (AI) 4.1.1.1 examining the arrangements for systems using ozone-depleting substances (MARPOL Annex VI reg.12);
- (AI) 4.1.1.2 examining the arrangements for NO_x emission control, if applicable (MARPOL Annex VI reg.13);
- (AI) 4.1.1.3 examining the arrangements for SO_x and particulate matter control, if applicable (MARPOL Annex VI reg.14);
- (AI) 4.1.1.4 examining the arrangements for vapour collection systems, if applicable (MARPOL Annex VI reg.15 and MSC/Circ.585);
- (AI) 4.1.1.5 examining the arrangements for shipboard incinerators, if applicable (MARPOL Annex VI reg.16).
- (AI) 4.1.2 For air pollution prevention the survey should consist of:
- (AI) 4.1.2.1 Ozone-depleting substances (MARPOL Annex VI reg.12):
- (AI) 4.1.2.1.1 confirming, if applicable, the satisfactory installation and operation of systems using ozone depleting substances;

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- (AI) 4.1.2.1.2 confirming that no installation or equipment containing ozone depleting substances has been installed after 19 May 2005, other than hydro-chlorofluorocarbons (MARPOL Annex VI reg.12.3.1);
- (AI) 4.1.2.1.3 confirming that no installation or equipment containing hydro-chlorofluorocarbons are fitted after 1 January 2020 (MARPOL Annex VI reg.12.3.2);
- (AI) 4.1.2.2 Nitrogen oxide emissions from marine diesel engines (MARPOL Annex VI reg.13):
- (AI) 4.1.2.2.1 confirming that all marine diesel engines which are required to be certified are pre-certified in accordance with section 2.2 of the NO_x Technical Code to the required Tier and installed in accordance with the approved duty cycle.
- (AI) 4.1.2.2.1.1 If engine parameter check method is used:
- (AI) 4.1.2.2.1.1.1 an onboard verification survey in accordance with section 6.2 of the NO_x Technical Code;
- (AI) 4.1.2.2.1.2 If the simplified method is used:
- (AI) 4.1.2.2.1.2.1 an onboard verification survey in accordance with section 6.3 of the NO_x Technical Code;
- (AI) 4.1.2.2.1.3 If direct measurement and monitoring method is used (for existing ships only):
- (AI) 4.1.2.2.1.3.1 an onboard verification survey, in accordance with section 6.4 of the NO_x Technical Code;
- (AI) 4.1.2.2.1.4 For marine diesel engines of an output more than 5,000 kW and a per cylinder displacement at or above 90 litres/cylinder installed on ships constructed between 1 January 1990 and 31 December 1999, check whether:
- .1 an approved method exists;
 - .2 an approved method is not commercially available; or
 - .3 that an approved method is installed and where this is the case, that there is an approved method file,
- and apply the verification procedures as given in the approved method file;
- .4 or that the engine has been certified, confirming that it operates within the limits set forth for Tier I, Tier II or Tier III (MARPOL Annex VI, reg. 13.7.3);

- (AI) 4.1.2.3 Sulphur Oxides and Particulate Matter (MARPOL Annex VI reg.14):
- (AI) 4.1.2.3.1 confirming, if appropriate, that:
- .1 satisfactory arrangements are in place for using compliant fuel as required; or
 - .2 satisfactory installation and operation of the fuel switching arrangements are in place when tanks are provided for different grades of fuel, and that a written procedure showing how the fuel oil changeover is done, is available; or
 - .3 satisfactory installation and operation of the exhaust gas cleaning system or other technological methods are examined (MARPOL Annex VI reg.4);
- (AI) 4.1.2.4 Volatile Organic Compounds (MARPOL Annex VI reg.15) (if applicable):
- (AI) 4.1.2.4.1 confirming the satisfactory installation of the vapour collection piping;
- (AI) 4.1.2.4.2 confirming the satisfactory installation and operation of the means provided to eliminate the collection of condensation in the system, such as drains in low points of the line end;
- (AI) 4.1.2.4.3 confirming the satisfactory installation and operation of the isolation valves at the vapour manifolds;
- (AI) 4.1.2.4.4 confirming that the ends of each line are properly identified as vapour collection lines;
- (AI) 4.1.2.4.5 confirming that the vapour collection flanges are in accordance with the IMO guidelines and industrial standards;
- (AI) 4.1.2.5 Shipboard Incinerators (MARPOL Annex VI reg.16) (installed on or after 1 January 2000):
- (AI) 4.1.2.5.1 confirming the satisfactory installation and operation of each incinerator;
- (AI) 4.1.2.5.2 confirming that the manufacturer's name, incinerator model number/type and capacity in heat units per hour is permanently marked on the incinerator.
- (AI) 4.1.3 For air pollution prevention the check that certificates and other relevant documentation have been placed on board should consist of:
- (AI) 4.1.3.1 the provision of (AA) 4.2.2.2 as applicable except (AA) 4.2.2.2.14.
- (AI) 4.1.4 For air pollution prevention the completion of the initial survey should consist of:
- (AI) 4.1.4.1 after satisfactory survey, issuing the International Air Pollution Prevention Certificate.

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- (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, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (AA) 4.2.1.6 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (AA) 4.2.1.7 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5)
- (AA) 4.2.1.8 checking the certificates of class, if the ship is classed with a classification society;
- (AA) 4.2.1.9 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) 4.2.1.10 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (AA) 4.2.1.11 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (AA) 4.2.1.12 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate.
- (AA) 4.2.2 For air pollution prevention the annual survey should consist of the following:

- (AA) 4.2.2.1 General:
- (AA) 4.2.2.1.1 confirm that no changes have been made or any new equipment installed which would affect the validity of the certificate;
- (AA) 4.2.2.2 Documentation:
- (AA) 4.2.2.2.1 confirm that there is an Ozone Depleting Substances Record Book, if applicable (MARPOL Annex VI reg.12.6);
- (AA) 4.2.2.2.2 confirm that there are Engine International Air Pollution Prevention (EIAPP) Certificates for each marine diesel engine, required to be certified, as described in chapter 2.1 of the NO_x Technical Code;
- (AA) 4.2.2.2.3 confirm that there is on board an approved Technical File for each marine diesel engine required to be certified;
- (AA) 4.2.2.2.4 confirm that there is a record book of engine parameters for each marine diesel engine required to be certified in the case where the engine parameter check method is used as a means of onboard NO_x verification (NO_x Technical Code para. 6.2.3);
- (AA) 4.2.2.2.5 confirm that there is an approved onboard monitoring manual for each marine diesel engine required to be certified in the case where the direct measurement and monitoring method is to be used as a means of onboard NO_x verification (NO_x Technical Code para. 6.4.17.1);
- (AA) 4.2.2.2.6 confirm that there are written procedures covering fuel change over, where applicable;
- (AA) 4.2.2.2.7 confirm that there is a record of fuel changeover, where applicable, and that this record should take the form of a log-book as prescribed by the Administration (MARPOL Annex VI reg.14.6)*;
- (AA) 4.2.2.2.8 confirm that there is for each Exhaust Gas Cleaning System (EGCS)-SO_x either a SO_x Emission Control Area (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 4 of Annex VI) or approved documentation in respect of other technological means of achieving compliance;
- (AA) 4.2.2.2.9 confirm that there is a VOC Management Plan, if required (MARPOL Annex VI reg.15.6);
- (AA) 4.2.2.2.10 confirm that there is a transfer procedure, if required, for the VOC collection system;
- (AA) 4.2.2.2.11 confirm that there is, if required, an IMO Type Approval Certificate for each incinerator on board (MARPOL Annex VI reg.16.6.1);

* When not prescribed by the Administration, this information could be contained in the engine-room log-book, the deck log-book, the official log-book, the oil record book or a separate log-book solely for this purpose.

† This will need to be updated when the exhaust gas cleaning system guidelines are updated to take into account the revised Annex VI, for consistency with the terminology used in the revised guidelines.

- (AA) 4.2.2.2.12 confirm that there is an instruction manual for each incinerator if required (MARPOL Annex VI reg.16.7);
- (AA) 4.2.2.2.13 confirm that records documenting training of the crew in operating each incinerator, if required;
- (AA) 4.2.2.2.14 confirm that there are the required bunker delivery notes on board and the required fuel oil samples are kept under the ships control (MARPOL Annex VI reg.18) or other relevant documentation;
- (AA) 4.2.2.3 Systems containing ozone-depleting substances, if fitted:
 - (AA) 4.2.2.3.1 confirm that no new installation or equipment containing ozone depleting substances except those covered by (AA) 4.2.2.3.2 have been fitted to the ship after 19 May 2005 (MARPOL Annex VI reg.12.3.1);
 - (AA) 4.2.2.3.2 confirm that no installations containing hydro-chlorofluocarbons have been fitted after 1 January 2020 (MARPOL Annex VI reg.12.3.2);
 - (AA) 4.2.2.3.3 examine externally any installation or equipment as far as practicable to ensure satisfactory maintenance and that there are no emissions of ozone-depleting substances;
 - (AA) 4.2.2.3.4 confirm through documentary evidence that there has been no deliberate emission of ozone-depleting substance;
- (AA) 4.2.2.4 Nitrogen oxide emissions from each diesel marine diesel engine:
 - (AA) 4.2.2.4.1 confirm that each marine diesel engine has been operated as required in accordance with its applicable NO_x emission limit(s);
 - (AA) 4.2.2.4.2 confirm that no marine diesel engine been subject to major conversion in the intervening period;
 - (AA) 4.2.2.4.3 if engine parameter check method is used:
 - (AA) 4.2.2.4.3.1 review engine documentation contained in the Technical File and the record book of engine parameters to check, as far as practicable, engine rating, duty and limitation/restrictions as given in the Technical File;
 - (AA) 4.2.2.4.3.2 confirm that the engine has not undergone any modifications or adjustments outside the options and ranges permitted in the Technical File since the last survey;
 - (AA) 4.2.2.4.3.3 conduct survey as detailed in the Technical File;
 - (AA) 4.2.2.4.4 if the simplified method is used:
 - (AA) 4.2.2.4.4.1 review engine documentation contained in the Technical File;
 - (AA) 4.2.2.4.4.2 confirm that the test procedure is acceptable to the Administration;

- (AA) 4.2.2.4.4.3 confirm that the analysers, engine performance sensors, ambient condition measurement equipment, span check gases and other test equipment are the correct type and have been calibrated in accordance with the NO_x Technical Code;
- (AA) 4.2.2.4.4.4 confirm that the correct test cycle, as defined in the engine's Technical File, is used for this onboard confirmation test measurements;
- (AA) 4.2.2.4.4.5 ensure that a fuel sample is taken during the test and submitted for analysis;
- (AA) 4.2.2.4.4.6 witness the test and confirm that a copy of the test report has been submitted for approval on completion of the test;
- (AA) 4.2.2.4.5 if the direct measurement and monitoring method is used:
- (AA) 4.2.2.4.5.1 review the Technical File and the onboard monitoring manual that the arrangements are as approved;
- (AA) 4.2.2.4.5.2 the procedures to be checked in the direct monitoring and measure method and the data obtained as given in the approved onboard monitoring manual should be followed (NO_x Technical Code para.6.4.16.1);
- (AA) 4.2.2.4.6 for a marine diesel engine with an output of more than 5,000 kW and a per cylinder displacement at or above 90 litres/cylinder installed on ships constructed between 1 January 1990 and 31 December 1999, check whether:
- .1 an approved method exists;
 - .2 an approved method is not commercially available; or
 - .3 that an approved method is installed and where this is the case, that there is an approved method file,
- and apply the verification procedures as given in the approved method file;
- .4 or that the engine has been certified, confirming that it operates within the limits set forth for Tier I, Tier II or Tier III (MARPOL Annex VI, reg. 13.7.3);
- (AA) 4.2.2.5 Sulphur Oxides and Particulate Matter:
- confirming, if appropriate, that:
- .1 satisfactory arrangements are in place for using compliant fuel as required; or
 - .2 satisfactory installation and operation of the fuel switching arrangements are in place when tanks are provided for different grades of fuel, including records of the changeover to and from low sulphur fuel during transit through an emission control area established for SO_x and particulate matter control; or

- .3 satisfactory installation and operation of the exhaust gas cleaning system or other technological methods are examined, (MARPOL Annex VI reg.4);
- (AA) 4.2.2.6 Volatile Organic Compounds (VOCs):
- (AA) 4.2.2.6.1 confirm that the vapour collect system, if required, is maintained in accordance with its approved arrangement;
- (AA) 4.2.2.6.2 for ships carrying crude oil, confirm the VOC management plan has been implemented as appropriate;
- (AA) 4.2.2.7 Incineration:
- (AA) 4.2.2.7.1 confirm that prohibited materials have not been incinerated;
- (AA) 4.2.2.7.2 confirm that shipboard incineration of sewage sludge or sludge oil in boilers or marine power plants is not undertaken while the ship is inside ports, harbours or estuaries;
- (AA) 4.2.2.8 Incinerators (installed on or after 1 January 2000):
- (AA) 4.2.2.8.1 confirm that operators have been trained as required;
- (AA) 4.2.2.8.2 confirm from an external examination that each incinerator is in a generally satisfactory condition and free from leaks of gas or smoke;
- (AA) 4.2.2.8.3 confirm that combustion chamber outlet temperatures have been maintained as required;
- (AA) 4.2.2.8.4 confirm that each incinerator is maintained according to its approved arrangement.
- (AA) 4.2.3 Fuel Oil Quality:
- (AA) 4.2.3.1 confirm that Bunker Delivery Notes as required conform to the requirements of MARPOL Annex VI, Appendix V;
- (AA) 4.2.3.2 confirm that MARPOL samples as required are retained on board and labels duly completed or otherwise retained under the ship's control;
- (AA) 4.2.3.3 confirm that documentation in lieu of that required by (AA) 4.2.3.1 or 4.2.3.2 is available on board.
- (AA) 4.2.4 For air pollution prevention the completion of the annual survey should consist of:
- (AA) 4.2.4.1 after a satisfactory survey, endorsing the International Air Pollution Prevention certificate;
- (AA) 4.2.4.2 if a survey shows that the condition of the ship or its equipment is unsatisfactory – see "General", section 4.8.

- (Aln) **4.3** **Intermediate surveys** – see "General", section 4.3
- (Aln) 4.3.1 For air pollution prevention the examination of current certificates and other records should consist of:
- (Aln) 4.3.1.1 the provisions of (AA) 4.2.1.
- (Aln) 4.3.2 For air pollution prevention the intermediate survey should consist of:
- (Aln) 4.3.2.1 the provisions of (AA) 4.2.2.
- (Aln) 4.3.3 For air pollution prevention the completion of the intermediate survey should consist of:
- (Aln) 4.3.3.1 after a satisfactory survey, endorsing the International Air Pollution Prevention Certificate;
- (Aln) 4.3.3.2 if a survey shows that the condition of the ship or its equipment is unsatisfactory see "General", section 4.8.
- (AR) **4.4** **Renewal surveys** – see "General", section 4.5
- (AR) 4.4.1 For air pollution prevention the examination of current certificates and other records should consist of:
- (AR) 4.4.1.1 the provisions of (AA) 4.2.1 except the validity of the International Air Pollution Prevention Certificate.
- (AR) 4.4.2 For air pollution prevention the renewal survey should consist of:
- (AR) 4.4.2.1 the provisions of (AA) 4.2.2;
- (AR) 4.4.2.2 for each incinerator the renewal survey should consist of;
- (AR) 4.4.2.2.1 confirming, if necessary by simulated test or equivalent, the satisfactory operation of the alarms and safety devices.
- (AR) 4.4.3 For air pollution prevention the completion of the renewal survey should consist of:
- (AR) 4.4.3.1 after satisfactory survey the International Air Pollution prevention Certificate should be issued.

ANNEX 4

SURVEY GUIDELINES UNDER MANDATORY CODES

- (D) 1 **GUIDELINES FOR THE SURVEYS FOR THE INTERNATIONAL CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK AND THE CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK**
- (DI) 1.1 **Initial surveys** – see part "General" section 4.1
- (DI) 1.1.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of plans and designs of the structure, equipment, fittings, arrangements and materials should consist of:
- (DI) 1.1.1.1 determining the products that it is intended that the ship will be permitted to carry and noting the corresponding minimum special requirements (IBC Code 12 ch. 17) and any other special requirements (IBC Code 83/90/00/04 ch. 15);
- (DI) 1.1.1.2 examining the plans for the ship type, location of the cargo tanks, cargo containment, materials of construction, cargo temperature control, cargo tank vent systems, continuous monitoring of the concentration of flammable vapours, environmental control, electrical installations, fire protection and fire extinction, instrumentation and the provision, specification and stowage of the equipment for personnel protection (IBC Code 83/90/00 chs.2, 4, 6, 7, 8, 9, 10, 11, 13 and 14);
- (DI) 1.1.1.3 examining the plans for the freeboard and intact stability, discharges below the bulkhead deck and survival capability (IBC Code 83/90/00 ch.2);
- (DI) 1.1.1.4 examining the plans for the ship arrangements (IBC Code 83/90/00 ch.3);
- (DI) 1.1.1.5 examining the plans for the cargo transfer (IBC Code 83/90/00 ch.5);
- (DI) 1.1.1.6 examining the plans for the mechanical ventilation in the cargo area (IBC Code 83/90/00 ch.12);
- (DI) 1.1.1.7 the provisions of (NI) 2.1.1 in Annex 3.
- (DI) 1.1.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, the survey during construction and after installation of the structure, equipment, fittings, arrangements and materials should consist of:
- (DI) 1.1.2.1 confirming that tanks containing cargo or residues of cargo are suitably segregated from accommodation, service and machinery spaces and from drinking water and stores for human consumption, that cargo piping does not pass through any accommodation, service or machinery space other than cargo pump rooms or pump rooms and that cargoes are not to be carried in either the fore or the aft peak tank (IBC Code 83/90/00 ch.3);

- (DI) 1.1.2.2 examining the air intakes and openings into the accommodation, service and machinery spaces in relation to the cargo piping and vent systems and their entrances, air inlets and openings in relation to the cargo area (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.3 examining the arrangements of the cargo pump rooms (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.4 examining the accesses to spaces in the cargo area (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.5 examining the bilge and ballast arrangements and confirming that pumps and pipelines are identified (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.6 examining, when applicable, the bow or stern loading and unloading arrangements with particular reference to the air inlets and entrances to the accommodation, machinery and service spaces, the electrical equipment, fire-fighting arrangements and means of communication and testing the remote shut down for the cargo pumps (IBC Code 83/90/00 ch.3);
- (DI) 1.1.2.7 confirming that the cargo tank types are arranged and installed in accordance with the approved plans, internally examining the cargo tanks, water ballast tanks and other spaces in the cargo area and pressure testing the boundaries (IBC Code 83/90/00 ch.4);
- (DI) 1.1.2.8 examining the cargo transfer arrangements and confirming that any hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IBC Code 83/90/00 ch.5);
- (DI) 1.1.2.9 examining and testing any cargo heating and cooling systems (IBC Code 83/90/00 ch.7);
- (DI) 1.1.2.10 confirming that the cargo tank vent systems have been installed in accordance with the approved plans (IBC Code 83/90/00 ch.8);
- (DI) 1.1.2.11 confirming that high-level alarms, or overflow control systems or spill valves or other equivalent means provided to control possible liquid rising in the venting system, are operating satisfactorily (IBC Code 83/90/00 ch.8);
- (DI) 1.1.2.12 confirming that suitable provision is made for drainage of vent lines and that no shut-off valves or other means of stoppage, including spectacle or blank flanges, are fitted either to the individual vents or to the header, if the vents are combined or either above or below pressure/vacuum relief valves with closed vent systems (IBC Code 83/90/00 ch.8);
- (DI) 1.1.2.13 confirming that suitable provisions are made for primary and secondary means (or alternative measures) for controlled tank venting (IBC Code 83/90/00 ch.8);
- (DI) 1.1.2.14 examining the location of the vent outlets in respect of the height above the weather deck or the fore and aft gangway, from the nearest air intakes or openings to accommodation, service and machinery spaces and ignition sources and confirming that any high velocity vents are of the approved type (IBC Code 83/90/00 ch.8);

- (DI) 1.1.2.15 examining the arrangements for environmental control, including the means of storing or generating and drying an inert gas (IBC Code 83/90/00 ch.9);
- (DI) 1.1.2.16 examining the electrical installations and confirming that, when appropriate, special materials have been used and that the electrical equipment installed in hazardous locations, as permitted, is certified by a recognized authority for the cargoes to be carried (IBC Code 83/90/00 ch.10);
- (DI) 1.1.2.17 confirming that independent cargo tanks are electrically bonded to the hull and that all gasketed cargo pipe joints and hose connections are electrically bonded (IBC Code 83/90/00 ch.10);
- (DI) 1.1.2.18 examining the arrangements for the fire protection and fire extinction (IBC Code 83/90/00 ch.11);
- (DI) 1.1.2.19 examining the fixed firefighting system for the cargo pump room and confirming that the installation tests have been satisfactorily completed and that its means of operation are clearly marked (IBC Code 83/90/00 ch.11);
- (DI) 1.1.2.20 checking the deck foam system for the cargo area, including the supplies of foam concentrate, and testing that the minimum number of jets of water at the required pressure in the fire main is obtained (see (EI) 1.1.3.1 in Annex 1), when the system is in operation (IBC Code 83/90/00 ch.11);
- (DI) 1.1.2.21 examining the system for continuous monitoring of the concentration of flammable vapours and confirming that the installation tests have been satisfactorily completed (IBC Code 83/90/00 ch.11);
- (DI) 1.1.2.22 confirming that suitable portable fire extinguishing equipment for the cargoes to be carried is provided in the cargo area (IBC Code 83/90/00, ch.11);
- (DI) 1.1.2.23 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces in the cargo area normally entered during cargo handling operations (IBC Code 83/90/00, ch.12) and checking in particular that:
 - (DI) 1.1.2.23.1 it may be controlled from outside the space;
 - (DI) 1.1.2.23.2 warning notices concerning its use have been posted;
 - (DI) 1.1.2.23.3 it is of the extraction type, with extraction from below the floor plates, unless the space houses electrical motors driving cargo pumps when it should be of the positive pressure type;
 - (DI) 1.1.2.23.4 the ducting does not pass through accommodation, machinery and service spaces and that the exhaust ducts are clear of the ventilation inlets and openings to such spaces;

- (DI) 1.1.2.23.5 the electric motors driving ventilation fans are positioned outside the ventilation ducts and the ventilation fans and the ducts, in way of the fans only, are of non-sparking construction in hazardous locations;
- (DI) 1.1.2.24 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces normally entered, other than those covered by (DI) 1.1.2.23 (IBC Code 83/90/00, ch.12);
- (DI) 1.1.2.25 confirming that double bottoms, cofferdams, duct keels, pipe tunnels, hold spaces and other spaces where cargo may accumulate are capable of being efficiently ventilated to ensure a safe environment when entry into the space is necessary and that, when appropriate, permanent ducting is provided and any ventilation fans comply with (DI) 1.1.2.23.5 (IBC Code 83/90/00, ch.12);
- (DI) 1.1.2.26 examining the intrinsically safe systems and circuits used for measurement, monitoring, control and communication purposes in all hazardous locations (IBC Code 83/90/00, ch.13);
- (DI) 1.1.2.27 checking the provision of equipment for personnel protection (IBC Code 83/90/00, ch.14) and in particular that:
 - (DI) 1.1.2.27.1 suitable protective clothing is available for the crew engaged in loading and discharging operations and that suitable storage is provided;
 - (DI) 1.1.2.27.2 the required safety equipment and associated breathing apparatus and air supplies and, when appropriate, emergency-escape respiratory and eye protection, are provided and are properly stowed;
 - (DI) 1.1.2.27.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment are provided;
 - (DI) 1.1.2.27.4 arrangements have been made for the antidotes for the cargoes actually carried to be on board;
 - (DI) 1.1.2.27.5 decontamination arrangements and eyewashes are operational;
 - (DI) 1.1.2.27.6 the required gas detection instruments are on board and that arrangements have been made for the supply of the appropriate vapour detection tubes;
 - (DI) 1.1.2.27.7 the stowage for cargo samples is satisfactory;
- (DI) 1.1.2.28 the provisions of (NI) 2.1.2 in annex 3;
- (DI) 1.1.2.29 confirming that sampling points or detector heads are located in suitable positions in order that potentially dangerous leakages are readily detected (IBC Code 07 ch.11.1.4, BCH Code ch.III, E 3.13).
- (DI) 1.1.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the check that all the required documentation has been placed on board the ship should consist of:

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- (DI) 1.1.3.1 confirming that a loading and stability information booklet, containing details of typical service and ballast conditions, provisions for evaluating other conditions of loading, a summary of the ship's survival capabilities and sufficient information to ensure that the ship is loaded and operated in a safe and seaworthy manner, is available on board (IBC Code 83/90/00 ch.2);
- (DI) 1.1.3.2 confirming that damage survival capability information is supplied on the basis of loading information for all anticipated conditions of loading and variations in draught and trim (IBC Code 83/90/00 ch.2);
- (DI) 1.1.3.3 confirming that a table giving the filling ratios for the cargo tanks at various densities has been provided (IBC Code 83/90/00 ch.16);
- (DI) 1.1.3.4 confirming that a copy of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, or the equivalent national regulations, has been provided (IBC Code 83/90/00 ch.16);
- (DI) 1.1.3.5 confirming that information relating to the chemical and physical properties of the products to be carried has been provided and that provision has been made for the measures to be taken in an accident (IBC Code 83/90/00 ch.16);
- (DI) 1.1.3.6 confirming that a manual covering procedures for cargo transfer, tank cleaning, gas freeing, ballasting, etc., has been provided (IBC Code 83/90/00 ch.16);
- (DI) 1.1.3.7 the provisions of (NI) 2.1.3 in annex 3;
- (DI) 1.1.3.8 confirming that compatibility information as to material of construction, protective linings and coating is provided on board. (IBC Code 83/04 ch.6).
- (DI) 1.1.4 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the completion of the initial survey should consist of:
- (DI) 1.1.4.1 after a satisfactory survey issuing the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk.
- (DA) **1.2 Annual surveys** – see part "General" section 4.2
- (DA) 1.2.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of current certificates and other records should consist of:
- (DA) 1.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;

- (DA) 1.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
- (DA) 1.2.1.3 checking the validity of the International Ship Security Certificate;
- (DA) 1.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
- (DA) 1.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;
- (DA) 1.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
- (DA) 1.2.1.7 checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (DA) 1.2.1.8 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (DA) 1.2.1.9 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (DA) 1.2.1.10 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (DA) 1.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (DA) 1.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (DA) 1.2.1.13 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (DA) 1.2.1.14 confirming that the loading and stability information booklet, containing details of typical service and ballast conditions, provisions for evaluating other conditions of loading, a summary of the ship's survival capabilities and sufficient information to ensure that the ship is loaded and operated in a safe and seaworthy manner, is available on board (IBC Code 83/90/00, ch.2) (No BCH Code 85/90/00 reference);
- (DA) 1.2.1.15 confirming that damage survival capability information is supplied on the basis of loading information for all anticipated conditions of loading and variations in draught and trim (IBC Code 83/90/00 ch.2) (No BCH Code 85/90/00 reference);
- (DA) 1.2.1.16 confirming that a table giving the filling ratios for the cargo tanks at various densities has been provided (IBC Code 83/90/00 ch.16) (BCH Code 85/90/00 ch.III, part G);

- (DA) 1.2.1.17 confirming that a copy of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk or the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, or the equivalent national regulations, has been provided (IBC Code 83/90/00 ch.16) (BCH Code 85/90/00 ch.V);
- (DA) 1.2.1.18 confirming that information relating to the chemical and physical properties of the products to be carried has been provided, and that provision has been made for the measures to be taken in an accident (IBC Code 83/90/00 ch.16) (BCH Code 85/90/00 ch.V);
- (DA) 1.2.1.19 confirming that a manual covering procedures for cargo transfer, tank cleaning, gas freeing, ballasting, etc., has been provided (IBC Code 83/90/00 ch.16) (BCH Code 85/90/00 ch.V);
- (DA) 1.2.1.20 confirming that the Procedures and Arrangements Manual is on board (IBC Code 83/90/00 ch.16A) (BCH Code 85/90/00 ch.VA);
- (DA) 1.2.1.21 confirming that the Shipboard marine pollution emergency plan is on board (MARPOL 04 Annex II, reg. 17);
- (DA) 1.2.1.22 confirming that the Cargo Record Book is on board and being correctly used (MARPOL 04 Annex II, reg. 15);
- (DA) 1.2.1.23 confirming that compatibility information as to material of construction, protective linings and coating is provided onboard. (IBC Code 83/04 ch.6) (BCH Code 85/90/00 ch.II, part G);
- (DA) 1.2.1.24 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 annex 4 reg.2), when applicable.
- (DA) 1.2.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the annual survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (DA) 1.2.2.1 confirming that wheelhouse doors and windows, sidescuttles and windows in superstructure and deckhouse ends facing the cargo area are in a satisfactory condition (IBC Code 83/90/00 ch.3) (BCH Code 85/90/00 ch.IIC);
- (DA) 1.2.2.2 confirming that potential sources of ignition in or near the cargo pump room are eliminated, such as loose gear, combustible materials, etc., that there are no signs of undue leakage and that access ladders are in a satisfactory condition (IBC Code 83/90/00 ch.3) (BCH Code 85/90/00 ch.IIC);
- (DA) 1.2.2.3 confirming that removable pipe lengths or other approved equipment necessary for cargo separation are available in the pump room and are in a satisfactory condition (IBC Code 83/90/00 ch.3) (BCH Code 85/90/00 ch.IIC);

- (DA) 1.2.2.4 examining all pump room bulkheads for signs of cargo leakage or fractures and, in particular, the sealing arrangements of all penetrations of pump room bulkheads (IBC Code 83/90/00 ch.3) (BCH Code 85/90/00 ch.IIC);
- (DA) 1.2.2.5 confirming that the remote operation of the cargo pump bilge system is satisfactory (IBC Code 83/90/00 ch.3) (BCH Code 85/90 ch.IIC);
- (DA) 1.2.2.6 examining the bilge and ballast arrangements and confirming that pumps and pipelines are identified (IBC Code 83/90/00 ch.3) (No BCH Code 85/90/00 reference);
- (DA) 1.2.2.7 confirming, when applicable, that the bow or stern loading and unloading arrangements are in order and testing the means of communication and the remote shut down for the cargo pumps (IBC Code 83/90/00 ch.3) (No BCH Code 85/90/00 reference);
- (DA) 1.2.2.8 examining the cargo transfer arrangements and confirming that any hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IBC Code 83/90/00 ch.5) (BCH Code 85/90/00 ch.IID);
- (DA) 1.2.2.9 examining, when applicable, the cargo heating or cooling systems, including any sampling arrangements, and confirming that the means for measuring the temperature and associated alarms are operating satisfactorily (IBC Code 83/90/00 ch.7) (BCH Code 85/90/00 ch.IIF);
- (DA) 1.2.2.10 examining, as far as practicable, the cargo tank vent system, including the pressure/vacuum valves and secondary means to prevent over- or under-pressure and devices to prevent the passage of flame (IBC Code 83/90/00 ch.8, MSC.102(73) and MEPC.79(43)) (BCH Code 85/90/00 ch.IIE and MEPC.80(43));
- (DA) 1.2.2.11 examining the gauging devices, high-level alarms and valves associated with overflow control (IBC Code 83/90/00 ch.8) (BCH Code 85/90/00 ch.IIE);
- (DA) 1.2.2.12 confirming that arrangements for sufficient gas to be carried or generated to compensate for normal losses, and that the means provided for monitoring ullage spaces, are satisfactory (IBC Code 83/90/00 ch.9) (BCH Code 85/90/00 ch.IIH);
- (DA) 1.2.2.13 confirming that arrangements are made for sufficient medium to be carried where drying agents are used on air inlets to cargo tanks (IBC Code 83/90/00 ch.9) (BCH Code 85/90/00 ch.IIH);
- (DA) 1.2.2.14 confirming that all electrical equipment in dangerous zones is suitable for such locations, is in satisfactory condition and has been properly maintained (IBC Code 83/90/00 ch.10) (BCH Code 85/90/00 ch.IIIB);
- (DA) 1.2.2.15 examining the fixed fire-fighting system for the cargo pump room and the deck foam system for the cargo area and confirming that their means of operation are clearly marked (IBC Code 83/90/00 ch.11) (BCH Code 85/90/00 ch.IIIIE);

- (DA) 1.2.2.16 confirming that the condition of the portable fire extinguishing equipment for the cargoes to be carried in the cargo area is satisfactory (IBC Code 83/90/00 ch.11) (BCH Code 85/90/00 ch.IIIE);
- (DA) 1.2.2.17 confirming that the system for continuous monitoring of the concentration of flammable vapours is satisfactory (IBC Code 83/90/00 ch.11);
- (DA) 1.2.2.18 examining, as far as practicable, and confirming the satisfactory operation of, the arrangements for the ventilation of spaces normally entered during cargo handling operations and other spaces in the cargo area (IBC Code 83/90/00 ch.12) (BCH Code 85/90/00 ch.IIIA);
- (DA) 1.2.2.19 confirming, as far as practicable, that the intrinsically safe systems and circuits used for measurement, monitoring, control and communication purposes in all hazardous locations are being properly maintained (IBC Code 83/90/00 ch.13) (BCH Code 85/90/00 ch.IIIC);
- (DA) 1.2.2.20 examining the equipment for personnel protection (IBC Code 83/90/00, ch.14) (BCH Code 85/90/00 ch.IIIF) and in particular that:
- (DA) 1.2.2.20.1 the protective clothing for crew engaged in loading and discharging operations and its stowage is in a satisfactory condition;
- (DA) 1.2.2.20.2 the required safety equipment and associated breathing apparatus and associated air supplies and, when appropriate, emergency-escape respiratory and eye protection, are in a satisfactory condition and are properly stowed;
- (DA) 1.2.2.20.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment are in a satisfactory condition;
- (DA) 1.2.2.20.4 arrangements have been made for the antidotes for the cargoes actually carried to be on board;
- (DA) 1.2.2.20.5 decontamination arrangements and eyewashes are operational;
- (DA) 1.2.2.20.6 the required gas detection instruments are on board and arrangements have been made for the supply of the appropriate vapour detection tubes;
- (DA) 1.2.2.20.7 the arrangements for the stowage of cargo samples are satisfactory;
- (DA) 1.2.2.21 the provisions of (NA) 2.2.2 in annex 3;
- (DA) 1.2.2.22 confirming that sampling points or detector heads are located in suitable positions in order that potentially dangerous leakages are readily detected (IBC Code 07 ch.11.1.4)(BCH Code ch.IIIE 3.13).
- (DA) 1.2.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the completion of the annual survey should consist of:

- (DA) 1.2.3.1 after a satisfactory survey, endorsing the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;
- (DA) 1.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory – see part "General" section 4.8.
- (DIn) **1.3 Intermediate surveys** – see part "General", section 4.3
- (DIn) 1.3.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of current certificates and other records should consist of:
- (DIn) 1.3.1.1 the provisions of (DA) 1.2.1.
- (DIn) 1.3.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the intermediate survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (DIn) 1.3.2.1 the provisions of (DA) 1.2.2;
- (DIn) 1.3.2.2 examination of vent line drainage arrangements (IBC Code 83/90/00 ch.8) (BCH Code 85/90/00 ch.IIE);
- (DIn) 1.3.2.3 confirmation, where applicable, that pipelines and independent cargo tanks are electrically bonded to the hull (IBC Code 83/90/00 ch.10) (BCH Code 85/90/00 ch.IIIB);
- (DIn) 1.3.2.4 generally examining the electrical equipment and cables in dangerous zones such as cargo pump rooms and areas adjacent to cargo tanks to check for defective equipment, fixtures and wiring. The insulation resistance of the circuits should be tested and in cases where a proper record of testing is maintained, consideration should be given to accepting recent readings (IBC Code 83/90/00 ch.10) (BCH Code 85/90/00 ch.IIIB);
- (DIn) 1.3.2.5 confirmation that spares are provided for cargo area mechanical ventilation fans (IBC Code 83/90/00 ch.12) (BCH Code 85/90/00 ch.IIIA);
- (DIn) 1.3.2.6 the provisions of (NIn) 2.3.2 in annex 3.
- (DIn) 1.3.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the completion of the intermediate survey should consist of:
- (DIn) 1.3.3.1 after a satisfactory survey endorsing the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;

- (DIn) 1.3.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory – see part "General", section 4.8.
- (DR) **1.4** **Renewal surveys** – see part "General" section 4.4
- (DR) 1.4.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the examination of current certificates and other records should consist of:
- (DR) 1.4.1.1 the provisions of (DA) 1.2.1, except the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk.
- (DR) 1.4.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the renewal survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (DR) 1.4.2.1 the provisions of (DIn) 1.3.3;
- (DR) 1.4.2.2 the provisions of (NR) 2.4.2 in annex 3.
- (DR) 1.4.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk the completion of the renewal survey should consist of:
- (DR) 1.4.3.1 after a satisfactory survey, issuing the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk.
- (G) 2** **GUIDELINES FOR SURVEYS FOR THE INTERNATIONAL CERTIFICATE OF FITNESS FOR THE CARRIAGE OF LIQUEFIED GASES IN BULK**
- (GI) **2.1** **Initial surveys** – see part "General", section 4.1.
- (GI) 2.1.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the examination of plans and designs of the structure, equipment, fittings, arrangements and materials should consist of:
- (GI) 2.1.1.1 determining the products that it is intended that the ship will be permitted to carry and noting the corresponding minimum special requirements (IGC Code 83/90/00 ch.19);
- (GI) 2.1.1.2 examining the plans for the ship type, cargo containment, control of vapour space within the cargo tanks, vapour detection, gauging, personnel protection, filling limits for cargo tanks and other special requirements (IGC Code 83/90/00 chs.2, 4, 6, 13, 14, 15, and 17);

- (GI) 2.1.1.3 examining the plans for the freeboard and intact stability, discharges below the bulkhead deck and survival capability (IGC Code 83/90/00 ch.2);
- (GI) 2.1.1.4 examining the plans for the ship arrangements (IGC Code 83/90/00 ch.3);
- (GI) 2.1.1.5 examining the plans for the process pressure vessels and liquid, vapour and pressure piping systems (IGC Code 83/90/00 chs.5 and 6);
- (GI) 2.1.1.6 examining the plans for the cargo pressure/temperature control (IGC Code 83/90/00 ch.7);
- (GI) 2.1.1.7 examining the plans for the cargo tank ventilation systems (IGC Code 83/90/00 ch.8);
- (GI) 2.1.1.8 examining the plans for the environmental control (IGC Code 83/90/00 ch.9);
- (GI) 2.1.1.9 examining the plans for the electrical installations (IGC Code 83/90/00 ch.10);
- (GI) 2.1.1.10 examining the plans for fire protection and fire extinction equipment (IGC Code 83/90/00 ch.11);
- (GI) 2.1.1.11 examining the plans for the mechanical ventilation in the cargo area (IGC Code 83/90/00 ch.12);
- (GI) 2.1.1.12 examining the plans for the instrumentation (gauging, gas detection) (IGC Code 83/90/00 ch.13);
- (GI) 2.1.1.13 examining, when applicable, the plans for the use of cargo as fuel (IGC Code 83/90/00 ch.16).
- (GI) 2.1.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the survey during construction and after installation of the structure, equipment, fittings, arrangements and materials should consist of:
 - (GI) 2.1.2.1 confirming that the segregation in the cargo area and the arrangement of the accommodation, service and machinery spaces are in accordance with the approved plans (IGC Code 83/90/00 ch.3);
 - (GI) 2.1.2.2 examining the arrangements of the cargo pump rooms and cargo compressor rooms (IGC Code 83/90/00 ch.3);
 - (GI) 2.1.2.3 confirming that the manually operated emergency shutdown system together with the automatic shutdown of the cargo pumps and compressors are satisfactory (IGC Code 83/90/00 ch.3);
 - (GI) 2.1.2.4 examining the arrangement of the cargo control room (IGC Code 83/90/00 ch.3);

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- (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 the designer's threshold values are exceeded, confirming that an investigation and additional testing, such as, thermo graphic or acoustic emission testing, has been carried out, (IGC Code 83/90/00 ch. 4);
- (GI) 2.1.2.11 examining during the initial cool down, loading and discharging of the first cargo, the overall performance of the cargo containment system and confirming that the system is in compliance with the design parameters. For vessels carrying liquefied natural gas, the examination includes witnessing the satisfactory operation of the following systems, if fitted:
- (GI) 2.1.2.11.1 Gas detection system;
- (GI) 2.1.2.11.2 Cargo control and monitoring systems such as level gauging; equipment, temperature sensors, pressure gauges, cargo pump room and compressors, and proper control of cargo heat exchanges, if operating;
- (GI) 2.1.2.11.3 Nitrogen generating plant or inert gas generator;
- (GI) 2.1.2.11.4 Nitrogen pressure control systems for insulation, interbarrier and annular spaces;
- (GI) 2.1.2.11.5 Re-liquefaction plant;
- (GI) 2.1.2.11.6 Equipment fitted for the burning of cargo vapours, such as boilers or engines gas combustion units;
- (GI) 2.1.2.11.7 Cofferdam heating systems;

- (GI) 2.1.2.11.8 On-deck cargo piping systems including expansion and supporting arrangements;
- (GI) 2.1.2.11.9 High level alarms, by witnessing topping-off process for cargo tanks (IGC Code 83/90/00 ch.4);
- (GI) 2.1.2.12 examining the hull for cold spots following the first loaded voyage (IGC Code 83/90/00 ch.4);
- (GI) 2.1.2.13 examining the cargo and process piping, including the expansion arrangements, insulation from the hull structure, pressure relief and drainage arrangements and carrying out a leak detection test (IGC Code 83/90/00 ch.5);
- (GI) 2.1.2.14 confirming that the cargo system valving arrangements are in accordance with the approved plans (IGC Code 83/90/00 ch.5);
- (GI) 2.1.2.15 confirming that any liquid and vapour hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IGC Code 83/90/00 ch.5);
- (GI) 2.1.2.16 examining the arrangements for the cargo pressure/temperature control including, when fitted, any refrigeration system and confirming that any associated alarms are satisfactory (IGC Code 83/90/00 ch.7);
- (GI) 2.1.2.17 confirming that the cargo tank vent systems, including, when appropriate, any additional pressure relieving system for liquid level control and vacuum pressure systems, have been installed in accordance with the approved plans (IGC Code 83/90/00 ch.8);
- (GI) 2.1.2.18 examining the arrangements for the environmental control, including the means of storing or generating and drying an inert gas (IGC Code 83/90/00 ch.9);
- (GI) 2.1.2.19 examining the electrical installations with particular reference to the certified safe type equipment fitted in gas-dangerous spaces and zones (IGC Code 83/90/00 ch.10);
- (GI) 2.1.2.20 examining the arrangements for the fire protection and fire extinction (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.21 examining the fixed 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);

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- (GI) 2.1.2.24 examining the dry chemical powder fire-extinguishing system for the cargo area, seeing that the fixed piping has been properly installed and has been proved clear and confirming that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.25 examining the carbon dioxide system for the cargo compressor and pump rooms and confirming that the installation tests have been satisfactorily completed and that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GI) 2.1.2.26 confirming the provision and examining the disposition of the firefighters' outfits including its self-contained compressed air breathing apparatus, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (IGC Code 83/90/00 ch. 11) (SOLAS 74/00/12 regs. II-2/10.10;FSSC ch. 3);
- (GI) 2.1.2.27 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces in the cargo area normally entered during cargo handling operations (IGC Code 83/90/00 ch.12) and checking in particular that:
- (GI) 2.1.2.27.1 it may be controlled from outside the space;
- (GI) 2.1.2.27.2 warning notices concerning its use have been posted;
- (GI) 2.1.2.27.3 it is fixed and is of the negative pressure type, permitting extraction from either the upper or lower parts of the space or from both the upper and lower parts when appropriate, for cargo compressor and pump rooms and for cargo control rooms when considered to be gas-dangerous spaces;
- (GI) 2.1.2.27.4 it is of the positive pressure type for spaces containing electric motors driving cargo compressors or pumps and other gas-safe spaces within the cargo area, except those containing inert gas generators;
- (GI) 2.1.2.27.5 exhaust ducts are clear of the ventilation inlets and openings to accommodation spaces, service spaces, control stations and other gas-safe spaces;
- (GI) 2.1.2.27.6 intakes are arranged to minimize the recycling or hazardous vapours;
- (GI) 2.1.2.27.7 ducts from gas-dangerous spaces are not led through accommodation, service and machinery spaces and control stations, except when (GI) 2.1.2.33 applies;
- (GI) 2.1.2.27.8 the electric motors driving ventilation fans are positioned outside the ventilation ducts when the carriage of flammable products is intended and the ventilation fans and the ducts, in way of the fans only, are of non-sparking construction in gas-dangerous spaces;
- (GI) 2.1.2.28 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces normally entered other than those covered by (GI) 2.1.2.27 (IGC Code 83/90/00 ch.12);

- (GI) 2.1.2.29 examining, and testing as appropriate, the liquid level indicators, overflow control, pressure gauges, high pressure and, when applicable, low pressure alarms, and temperature indicating devices for the cargo tanks (IGC Code 83/90/00 ch.13);
- (GI) 2.1.2.30 examining, and testing as appropriate, the gas detection equipment (IGC Code 83/90/00 ch.13);
- (GI) 2.1.2.31 confirming that two sets of portable gas detection equipment suitable for the cargoes to be carried and a suitable instrument for measuring oxygen levels have been provided (IGC Code 83/90/00 ch.13);
- (GI) 2.1.2.32 checking the provision of equipment for personnel protection (IGC Code 83/90/00 ch.14) and in particular that:
 - (GI) 2.1.2.32.1 two complete sets of safety equipment each permitting personnel to enter and work in a gas-filled space are provided and are properly stowed;
 - (GI) 2.1.2.32.2 the requisite supply of compressed air is provided and examining, when applicable, the arrangements for any special air compressor and low-pressure air line system;
 - (GI) 2.1.2.32.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment and antidotes, when available, for the products to be carried are provided;
 - (GI) 2.1.2.32.4 respiratory and eye protection suitable for emergency escape purposes are provided;
 - (GI) 2.1.2.32.5 decontamination arrangements and eyewashes are operational;
 - (GI) 2.1.2.32.6 when applicable, personnel are protected against the effects of a major cargo release by a special suitably designed and equipped space within the accommodation area;
 - (GI) 2.1.2.32.7 when applicable, the cargo control room is of the gas-safe type;
- (GI) 2.1.2.33 examining, when applicable, the arrangements for the use of cargo as fuel and testing that the gas supply to the machinery space is cut off should the exhaust ventilation not be functioning correctly and that the master gas fuel valve may be remotely closed from within the machinery space (IGC Code 83/90/00 ch.16).
- (GI) 2.1.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the check that all the required documentation has been placed on board the ship should consist of:

- (GI) 2.1.3.1 confirming that a loading and stability information booklet, containing details of typical service and ballast conditions, provisions for evaluating other conditions of loading, a summary of the ship's survival capabilities and sufficient information to ensure that the ship is loaded and operated in a safe and seaworthy manner, is available on board (IGC Code 83/90/00 ch.2);
- (GI) 2.1.3.2 confirming that damage survival capability information is supplied on the basis of loading information for all anticipated conditions of loading and variations in draught and trim (IGC Code 83/90/00 ch.2);
- (GI) 2.1.3.3 confirming that necessary information for the safe carriage of the products to be carried has been provided (IGC Code 83/90/00 ch.18);
- (GI) 2.1.3.4 confirming that a copy of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, or the equivalent national regulations, has been provided (IGC Code 83/90/00 ch.18).
- (GI) 2.1.4 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the completion of the initial survey should consist of:
 - (GI) 2.1.4.1 after a satisfactory survey, issuing the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk.
- (GA) **2.2** **Annual surveys** – see part "General", section 4.2.
- (GA) 2.2.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the examination of current certificates and other records should consist of:
 - (GA) 2.2.1.1 checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;
 - (GA) 2.2.1.2 checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;
 - (GA) 2.2.1.3 checking the validity of the International Ship Security Certificate;
 - (GA) 2.2.1.4 checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;
 - (GA) 2.2.1.5 checking the validity of the International Oil Pollution Prevention Certificate;
 - (GA) 2.2.1.6 checking the certificates of class, if the ship is classed with a classification society;
 - (GA) 2.2.1.7 checking the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;

- (GA) 2.2.1.8 checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;
- (GA) 2.2.1.9 checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
- (GA) 2.2.1.10 confirming, when appropriate, the validity of the International Energy Efficiency Certificate (MARPOL Annex VI, regs. 6.4 and 6.5);
- (GA) 2.2.1.11 checking that the ship's complement complies with the Minimum Safe Manning Document (SOLAS 74/00/12 reg. V/14) (SOLAS 74/88 reg. V/13(b));
- (GA) 2.2.1.12 checking that the master, officers and ratings are certificated as required by the STCW Convention;
- (GA) 2.2.1.13 checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;
- (GA) 2.2.1.14 confirming that the loading and stability information booklet, containing details of typical service and ballast conditions, provisions for evaluating other conditions of loading, a summary of the ship's survival capabilities and sufficient information to ensure that the ship is loaded and operated in a safe and seaworthy manner, is available on board (IGC Code 83/90/00 ch.2);
- (GA) 2.2.1.15 confirming that damage survival capability information is supplied on the basis of loading information for all anticipated conditions of loading and variations in draught and trim (IGC Code 83/90/00 ch.2);
- (GA) 2.2.1.16 confirming that necessary information for the safe carriage of the products to be carried has been provided (IGC Code 83/90/00 ch.18);
- (GA) 2.2.1.17 confirming that a copy of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, or the equivalent national regulations, has been provided (IGC Code 83/90/00 ch.18);
- 8
- (GA) 2.2.1.18 confirming that there are records of the performance of the cargo containment system (IGC Code 83/90/00 ch.4);
- (GA) 2.2.1.19 confirming the availability of the International Anti-Fouling System Certificate (AFS 2001 annex 4 reg.2), when applicable.
- (GA) 2.2.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the annual survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (GA) 2.2.2.1 confirming that any special arrangements to survive conditions of damage are in order (IGC Code 83/90/00 ch.2);

- (GA) 2.2.2.2 confirming that the wheelhouse doors and windows, sidescuttles and windows in superstructure and deckhouse ends in the cargo area are in a satisfactory condition (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.3 examining the cargo pump rooms and cargo compressor rooms (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.4 confirming that the manually operated emergency shutdown system together with the automatic shutdown of the cargo pumps and compressors are satisfactory (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.5 examining the cargo control room (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.6 examining the gas detection arrangements for cargo control rooms and the measures taken to exclude ignition sources where such spaces are not gas-safe (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.7 confirming the arrangements for the air locks are being properly maintained (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.8 examining, as far as practicable, the bilge, ballast and oil fuel arrangements (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.9 examining, when applicable, the bow or stern loading and unloading arrangements with particular reference to the electrical equipment, fire-fighting arrangements and means of communication between the cargo control room and the shore location (IGC Code 83/90/00 ch.3);
- (GA) 2.2.2.10 confirming that the sealing arrangements at the gas domes are satisfactory (IGC Code 83/90/00 ch.4);
- (GA) 2.2.2.11 confirming that portable or fixed drip trays or deck insulation for cargo leakage is in order (IGC Code 83/90/00 ch.4);
- (GA) 2.2.2.12 examining the cargo and process piping, including the expansion arrangements, insulation from the hull structure, pressure relief and drainage arrangements (IGC Code 83/90/00 ch.5);
- (GA) 2.2.2.13 confirming that the cargo tank and interbarrier space pressure and relief valves, including safety systems and alarms, are satisfactory (IGC Code 83/90/00 ch.5);
- (GA) 2.2.2.14 confirming that any liquid and vapour hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing (IGC Code 83/90/00 ch.5);
- (GA) 2.2.2.15 examining the arrangements for the cargo pressure/temperature control including, when fitted, any refrigeration system and confirming that any associated alarms are satisfactory (IGC Code 83/90/00 ch.7);
- (GA) 2.2.2.16 examining the cargo, bunker, ballast and vent piping systems, including vent masts and protective screens, as far as practicable (IGC Code 83/90/00 ch.8);

- (GA) 2.2.2.17 confirming that arrangements are made for sufficient inert gas to be carried to compensate for normal losses and that means are provided for monitoring the spaces (IGC Code 83/90/00 ch.9);
- (GA) 2.2.2.18 confirming that the use of inert gas has not increased beyond that needed to compensate for normal losses by examining records of inert gas usage (IGC Code 83/90/00 ch.9);
- (GA) 2.2.2.19 confirming that any air-drying system and any interbarrier and hold space purging inert gas system are satisfactory (IGC Code 83/90/00 ch.9);
- (GA) 2.2.2.20 confirming that electrical equipment in gas-dangerous spaces and zones is in a satisfactory condition and is being properly maintained (IGC Code 83/90/00 ch.10);
- (GA) 2.2.2.21 examining the arrangements for the fire protection and fire extinction and testing the remote means of starting one main fire pump (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.22 examining the fixed fire-fighting system for the cargo pump room and confirming that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.23 examining the water spray system for cooling, fire protection and crew protection and confirming that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.24 examining the dry chemical powder fire-extinguishing system for the cargo area and confirming that its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.25 examining the fixed installation for the gas-dangerous spaces and confirming its means of operation is clearly marked (IGC Code 83/90/00 ch.11);
- (GA) 2.2.2.26 confirming the provision and examining the condition of the firefighters' outfits including its self-contained compressed air breathing apparatus, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe. (IGC Code 83/90/00 ch.11) (SOLAS 74/00/12 regs.II-2/10.10;FSSC ch.3);
- (GA) 2.2.2.27 examining, as far as practicable, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces in the cargo area normally entered during cargo handling operations (IGC Code 83/90/00 ch.12);
- (GA) 2.2.2.28 examining, and confirming the satisfactory operation of, the arrangements for the mechanical ventilation of spaces normally entered other than those covered by (GI) 2.1.2.27 (IGC Code 83/90/00 ch.12);
- (GA) 2.2.2.29 examining, and testing as appropriate and as far as practicable, the liquid level indicators, overflow control, pressure gauges, high pressure and, when applicable, low pressure alarms, and temperature indicating devices for the cargo tanks (IGC Code 83/90/00 ch.13);

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- (GA) 2.2.2.30 examining, and testing as appropriate, the gas detection equipment (IGC Code 83/90/00 ch.13);
- (GA) 2.2.2.31 confirming that two sets of portable gas detection equipment suitable for the cargoes to be carried and a suitable instrument for measuring oxygen levels have been provided (IGC Code 83/90/00 ch.13);
- (GA) 2.2.2.32 checking the provision of equipment for personnel protection (IGC Code 83/90/00 ch.14) and in particular that:
- (GA) 2.2.2.32.1 two complete sets of safety equipment each permitting personnel to enter and work in a gas-filled space are provided and are properly stowed;
- (GA) 2.2.2.32.2 the requisite supply of compressed air is provided and examining, when applicable, the arrangements for any special air compressor and low-pressure air line system;
- (GA) 2.2.2.32.3 medical first-aid equipment, including stretchers and oxygen resuscitation equipment and antidotes, when available, for the products to be carried, are provided;
- (GA) 2.2.2.32.4 respiratory and eye protection suitable for emergency escape purposes are provided;
- (GA) 2.2.2.32.5 decontamination arrangements and eyewashes are operational;
- (GA) 2.2.2.32.6 examining, when applicable, the arrangements to protect personnel against the effects of a major cargo release by a special suitably designed and equipped space within the accommodation area;
- (GA) 2.2.2.33 examining, when applicable, the arrangements for the use of cargo as fuel and testing, as far as practicable, that the gas supply to the machinery space is cut off should the exhaust ventilation not be functioning correctly and that master gas fuel valve may be remotely closed from within the machinery space (IGC Code 83/90/00 ch.16).
- (GA) 2.2.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the completion of the annual survey should consist of:
- (GA) 2.2.3.1 after a satisfactory survey, endorsing the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (GA) 2.2.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory – see part "General" section 4.8.
- (GIn) **2.3 Intermediate surveys** – see part "General", section 4.3.
- (GIn) 2.3.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the examination of current certificates and other records should consist of:
- (GIn) 2.3.1.1 the provisions of (GA) 2.2.1.

- (GIn) 2.3.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the intermediate survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (GIn) 2.3.2.1 the provisions of (GA) 2.2.2;
- (GIn) 2.3.2.2 confirming, where applicable, that pipelines and independent cargo tanks are electrically bonded to the hull (IGC Code 83/90/00 ch.10);
- (GIn) 2.3.2.3 generally examining the electrical equipment and cables in dangerous zones such as cargo pump rooms and areas adjacent to cargo tanks to check for defective equipment, fixtures and wiring. The insulation resistance of the circuits should be tested and in cases where a proper record of testing is maintained consideration should be given to accepting recent readings (IGC Code 83/90/00 ch.10);
- (GIn) 2.3.2.4 confirming that spares are provided for cargo area mechanical ventilation fans (IGC Code 83/90/00 ch.12);
- (GIn) 2.3.2.5 confirming that the heating arrangements, if any, for steel structures are satisfactory.
- (GIn) 2.3.3 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the completion of the intermediate survey should consist of:
- (GIn) 2.3.3.1 after a satisfactory survey, endorsing the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;
- (GIn) 2.3.3.2 if a survey shows that the condition of a ship or its equipment is unsatisfactory – see part "General" section 4.8.
- (GR) **2.4** **Renewal surveys** – see part "General", section 4.4.
- (GR) 2.4.1 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the examination of current certificates and other records should consist of:
- (GR) 2.4.1.1 the provisions of (GA) 2.2.1, except the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk.
- (GR) 2.4.2 For compliance with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk the renewal survey of the structure, equipment, fittings, arrangements and materials should consist of:
- (GR) 2.4.2.1 the provisions of (GIn) 2.3.3;
- (GR) 2.4.2.2 examining the insulation and means of support of the cargo tanks and confirming that the secondary barrier remains effective (IGC Code 83/90/00 ch.4);
- (GR) 2.4.2.3 internal examination of selected cargo tanks (IGC Code 83/90/00 ch.4).

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

APPENDIX 1

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

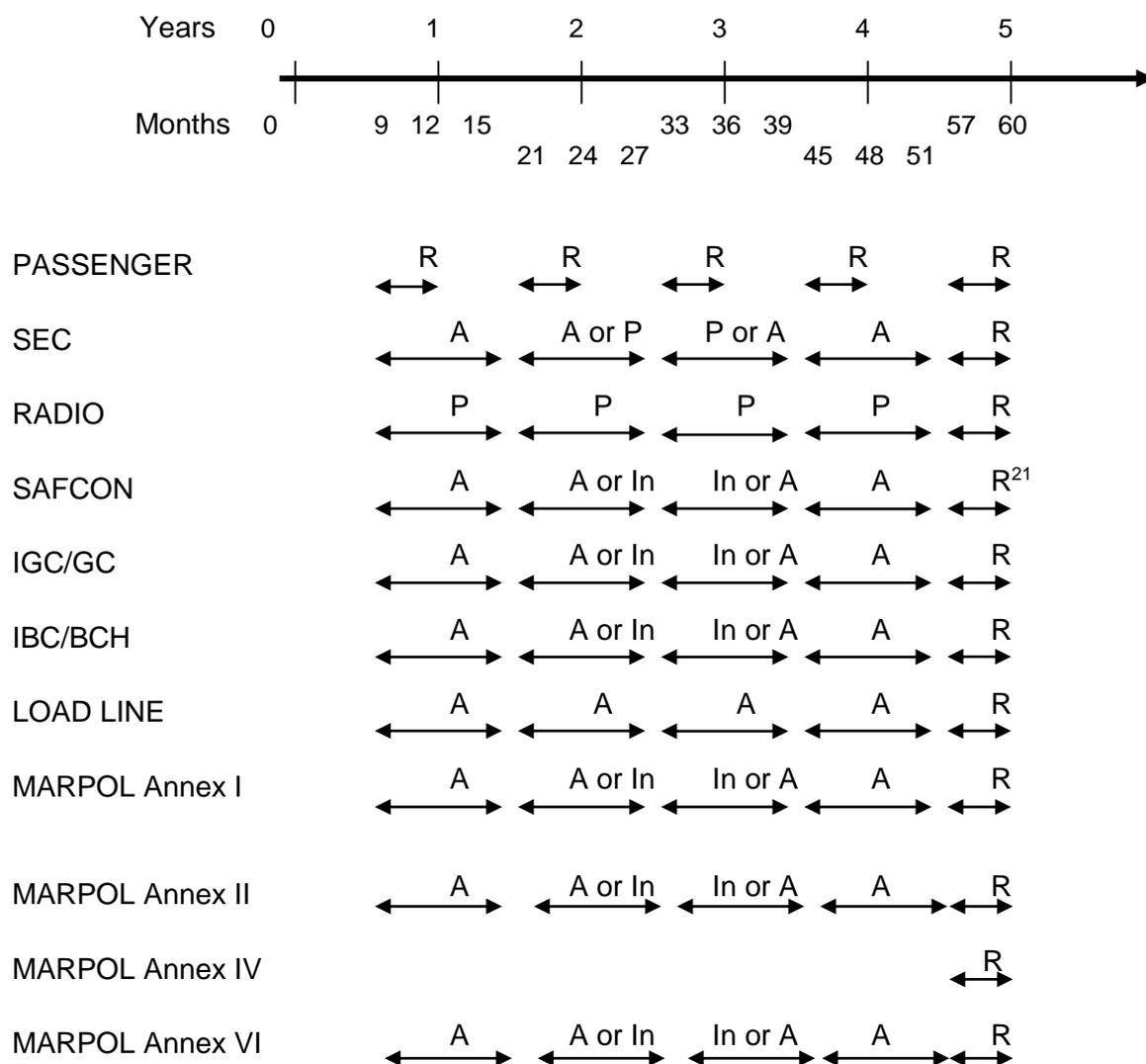
The amendments to mandatory instruments reflected in annexes 1 to 4 are summarized below to facilitate amendments to the Survey Guidelines under the HSSC in the future:

SOLAS 1974	up to and including the 2013 amendments, (resolution MSC.350(92))
SOLAS PROT 1988	up to and including the 2012 amendments (resolution MSC.344(91))
LL 1966	up to and including the 2005 amendments (resolution A.972(24))
LL PROT 1988	up to and including 2013 amendments (resolution MSC.356(92))
MARPOL	up to and including 2014 amendments (resolution MEPC.251(66)), but excluding resolutions MEPC.246(66), MEPC.247(66), MEPC.248(66), MEPC.249(66) and MEPC.250(66)
NO _x Technical Code 2008	up to and including 2014 amendments (resolution MEPC.217(63))
IBC Code	up to and including the 2012 amendments (resolution MEPC.225(64)/ resolution MSC.340(91))
IGC Code	up to and including the 2006/2007 amendments (resolution MSC.220(82) and resolution MEPC.166(56))
BCH Code	up to and including the 2006 amendments (resolution MSC.212(81)/resolution MEPC.144(54))

APPENDIX 2

THE HARMONIZED SYSTEM OF SURVEY AND CERTIFICATION

DIAGRAMMATIC ARRANGEMENT



Code of types of survey:

- R – Renewal
- P – Periodical
- In – Intermediate
- A – Annual

* The cargo ship safety construction renewal survey may be commenced at the fourth annual survey and may be progressed during the succeeding year with a view to completion by the fifth anniversary date. The survey items of the fourth annual survey should not be credited to the completion of the renewal survey.

ANNEX 12

DRAFT ASSEMBLY RESOLUTION

2015 NON-EXHAUSTIVE LIST OF OBLIGATIONS UNDER INSTRUMENTS RELEVANT TO THE IMO INSTRUMENTS IMPLEMENTATION CODE (RESOLUTION A.1070(28))

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 regarding maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO that, by resolution A.1077(28), it adopted the 2013 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (hereafter referred to as the "Non-exhaustive list of obligations") for guidance on the implementation and enforcement of IMO instruments, in particular concerning the identification of the auditable areas relevant to the IMO Member State Audit Scheme,

RECOGNIZING the need for the annexes to the above-mentioned Non-exhaustive list of obligations to be further revised to take account of the amendments to the IMO instruments referred to in the Code which have entered into force or become effective since the adoption of resolution A.1077(28),

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

REAFFIRMING that it is the primary responsibility of States 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 flag, 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 gain certain benefits by becoming party to instruments aimed at promoting maritime safety, security and protection of the marine environment, these benefits can be fully realized only when all parties carry out their obligations as required by the instruments concerned,

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

- (a) becoming party to all instruments related to maritime safety, security and pollution prevention and control;
- (b) implementing and enforcing such instruments fully and effectively; and
- (c) reporting to the Organization as required,

NOTING ALSO that, by resolution A.1070(28), it adopted the *IMO Instruments Implementation Code* (III Code),

NOTING ALSO that, by resolutions A.1083(28), A.1084(28) and A.1085(28), it adopted amendments to the *International Convention on Load Lines, 1966*, the *International Convention on Tonnage Measurement of Ships, 1969*, and the *Convention on the International Regulations for Preventing Collisions at Sea, 1972*, to make the use of the III Code mandatory under these conventions,

NOTING ALSO that the Maritime Safety Committee, by resolutions MSC.366(93), MSC.373(93), MSC.374(93), MSC.375(93), adopted amendments to the International Convention for the Safety of Life at Sea, 1974, the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, the Seafarers' Training, Certification and Watchkeeping (STCW) Code, and the Protocol of 1988 relating to the International Convention on Load Lines, 1966, respectively, to make the use of the III Code mandatory under these instruments,

NOTING FURTHER that the Marine Environment Protection Committee, by resolutions MEPC.246(66) and MEPC.247(66), adopted amendments to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, 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, respectively, to make the use of the III Code mandatory under these instruments,

HAVING CONSIDERED the recommendations made by the Marine Environment Protection Committee, at its sixty-seventh session, and the Maritime Safety Committee, at its ninety-fourth session,

- 1 ADOPTS the 2015 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code, as set out in the annex to the present resolution;
- 2 URGES Governments of all States, in their capacity as flag, port and coastal States, to make as much use as possible of the list in the implementation of IMO instruments on a national basis;
- 3 REQUESTS the Maritime Safety Committee and the Marine Environment Protection Committee to keep the list under review and, under the coordination of the Council, to propose amendments thereto to the Assembly;
- 4 REVOKES resolution A.1077(28).

ANNEX

**2015 NON-EXHAUSTIVE LIST OF OBLIGATIONS UNDER INSTRUMENTS
RELEVANT TO THE IMO INSTRUMENTS IMPLEMENTATION CODE (RESOLUTION
A.1070(28))**

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AND TO ENTER INTO FORCE BETWEEN 1 JANUARY 2016
AND 1 JULY 2016

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 88¹		
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)

¹ 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 cooperation	
Reg. I/2.12	Issue of certificates of competency	
Reg. I/2.14	Maintenance of a register or registers of all certificates and endorsements	
Regs. I/2.15 and 2.16	Availability of information on the status of certificates of competency, endorsements and dispensations (as of 1 January 2017, available in English through electronic means)	
Reg. I/3	Principles governing near-coastal voyages, communication of information and incorporation of limits in the endorsements	
Reg. I/5	National provisions – impartial investigation, enforcement measures including penalties or disciplinary measures and cooperation	
Reg. I/6.1	Training and assessment – administration, supervision and monitoring	
Reg. I/6.2	Qualification of those responsible for training and assessment	
Reg. I/7	Communication of the information as referred to in article IV of the STCW 78 Convention and A-I/7 of the STCW Code	
Regs. I/8.1 and 8.2	Quality standards system and periodical independent evaluation	
Reg. I/8.3	Communication of a report	
Regs. I/9.1 and 9.2	Medical standards, procedures for the issue of medical certificates and recognition of medical practitioners	

	OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES	
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. I/9.6	Procedures governing the validity of a medical certificate which expires in the course of a voyage	
Regs. I/11.4 and 11.5	Comparison of standards of competence – determination of need for appropriate refresher and updating training or assessment and formulation or promotion of the formulation of a structure of refresher and updating courses	
Reg. II/5.3	Comparison of standards of competence – determination of the need to update qualifications for able seamen to whom certificates are issued before 1 January 2012	
Reg. III/5.3	Comparison of standards of competence – determination of the need to update qualifications for ratings in engine department to whom certificates are issued before 1 January 2012	
Reg. III/6.3	Comparison of standards of competence – determination of the need to update qualifications for electro-technical officers to whom certificates are issued before 1 January 2012	
Reg. III/7.3	Comparison of standards of competence – determination of the need to update qualifications for electro-technical ratings to whom certificates are issued before 1 January 2012	
Reg. VII/3.1	Principles governing the issue of alternative 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	

	OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES	
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Art. XI	Denunciation	in SOLAS PROT 88 (Art. VII)
Reg. I/13	Issue or endorsement of certificates by another Government	in SOLAS PROT 88
Reg. I/17	Acceptance of certificates	also reg. I/19(b)
Reg. I/21(b)	Casualties – reporting	
Reg. IV/5	Provision of radiocommunication services and communication of information on such provision	
Reg. IV/5-1	Global maritime distress and safety system identities – ensuring suitable arrangements	
Reg. V/5	Meteorological services and warnings	
Reg. V/6	Ice Patrol Service	
Reg. V/10	Ships' routeing	
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 – coordination and cooperation	
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.	

	OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES	
SOURCE	SUMMARY DESCRIPTION	COMMENTS
MARPOL		
Art. 1	General obligations under the Convention	Art. I of MARPOL PROT 78
Arts. 4(2) and 4(4)	Violation	
Art. 5(1)	Certificates and special rules on inspection of ships – acceptance of certificates	
Art. 5(4)	Certificates and special rules on inspection of ships – no more favourable treatment	
Art. 6(1)	Detection of violations and enforcement of the Convention – cooperation	
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 cooperation	
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)	
Regs. 38.4 and 38.6	Consultation with IMO for circulation of information regarding reception facilities by Parties participating in regional arrangements	

	OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES	
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Annex II		
Reg. 6.3	Categorization and listing of noxious liquid substances and other substances – establish and agree on provisional assessment and notify IMO	
Regs. 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 prewash	
Regs. 18.3 and 18.4	Consultation with IMO for circulation of information regarding reception facilities by Parties participating in regional arrangements	
Reg. 18.5	Reception facilities and cargo unloading terminal arrangements – agreeing and establishing a date, notifying IMO	
Annex III		
Reg.1.3	Application – issue detailed requirements	
Annex IV		
Reg. 6	Issue or endorsement of a certificate by another Government	
eg. 12.2	Consultation with IMO for circulation of information regarding reception facilities by Parties participating in regional arrangements	
Annex V		
Reg. 8.3	Consultation with IMO for circulation of information regarding reception facilities by Parties participating in regional arrangements	
Annex VI		
Reg. 7	Issue or endorsement of a certificate by another Government	Addition related to IECC by MEPC.203(62)
Regs. 9.9.3 and 9.11.2	Transfer of flag – transmitting copies of the certificate and the relevant survey report	

	OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES	
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. 11.1	Detection of violations and enforcement – cooperation	
Reg. 11.2	Inspection report in case of detection of violations	
Reg. 11.3	Detection of violations and enforcement – information to flag State and master on violations detected	
Reg. 11.5	Transmission of report to requesting Party	
Reg. 13.7.1	Certification of an approved method and communication to IMO	
Reg. 17.1	Adequate reception facilities	
Reg. 17.2	Consultation with IMO for circulation of information regarding reception facilities by Parties participating in regional arrangement	
Reg. 17.4	Reception facilities unavailable or inadequate – communication to IMO	
Reg. 18.1	Availability of fuel oils and communication to IMO	
Reg. 18.2.1	Ship not compliant with fuel oil standards	
Reg. 18.2.3	Action taken, including not taking control measures	
Reg. 18.2.5	Evidence of the non-availability of compliant fuel oil – communication to IMO	
Reg. 18.9	Authorities designated for register of local suppliers, bunker delivery note and sample, fuel oil quality, actions against fuel oil suppliers of non-compliance, informing the Administration of any ship receiving non-compliant fuel oil and communication to IMO of non-compliant fuel oil suppliers as referred to in the paragraph	
ISM Code		
Para. 14.3	Extension of validity of Interim SMC by another Contracting Government	

	OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES	
SOURCE	SUMMARY DESCRIPTION	COMMENTS
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
IMDG Code		
Section 1.3.1	Training of shore-side personnel – establishment of the period of time for keeping records of training	
Section 1.5.2	Radiation protection programme – role of Competent Authority	
Section 1.5.3	Quality assurance programmes – role of Competent Authority	
Chapter 3.3, SP356	Approval of metal hydride storage systems installed in vehicles, vessels or aircrafts or in completed components or intended to be installed in vehicles, vessels or aircrafts	
Chapter 4.1	Approval of packagings as referred to in the Chapter – role of Competent Authority	
Section 5.1.5	General provisions for class 7 – role of Competent Authority	
Section 5.4.1	Information required in addition to the dangerous goods description – role of the competent authority	
Chapter 5.5	Determining the period between fumigant application and loading of fumigated cargo transport unit on board the ship	

	OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES	
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Chapter 6.2	Approval of pressure receptacles, aerosol dispensers, small receptacles containing gas and fuel cell cartridges containing liquefied flammable gas – role of Competent Authority	
Section 6.2.2.6.2	General provisions – role of Competent Authority	
Section 6.2.3	The marking of salvage pressure receptacles – determination by the competent authority	
Section 6.3.2	Quality assurance programme – role of Competent Authority	
Section 6.3.5	Procedures for performance and frequency of tests – role of Competent Authority	
Chapter 6.4	Approval of package design and materials for class 7 – role of Competent Authority	
Section 6.5.4	Testing, certification and inspection – role of Competent Authority	
Chapter 6.6	Provisions for the construction and testing of large packagings – role of Competent Authority	
Chapter 6.7	Provisions for the design, construction, inspection and testing of portable tanks and multiple-element gas containers – role of Competent Authority	
Chapter 6.8	Provisions for road tank vehicles – role of Competent Authority	
Section 7.1.4.5	Stowage of goods of class 7 – role of Competent Authority	
Chapter 7.9	Exemptions, approvals and certificates – notifying IMO and recognition of approvals and certificates	
IMSBC Code		
Para. 1.7	Independence of a competent authority	

Casualty Investigation Code		
Para. 4.1	Detailed contact information of the marine safety investigation authority(ies) to IMO	
Paras. 5.1 and 5.2	Notification of a marine casualty	
Paras. 7.1 and 7.2	Agreement to conduct a marine safety investigation	
Para. 8.1	Powers provided to investigator(s)	
Para. 9.2	Coordination for parallel investigations	
Para. 10.1	Cooperation in investigating	
Para. 11.1	Investigation not to be subject to external direction	
Paras. 13.1,13.4 and 13.5	Draft marine safety investigation reports	
Paras. 14.1 and 14.2	Marine safety investigation reports – communication to IMO	
Para. 14.4	Marine safety investigation reports – available to public and shipping industry	
IBC Code		
Para. 1.5.3	Maintenance of conditions after survey	
Para. 1.5.5.1	Issue or endorsement of International Certificate of Fitness by another Government	
BCH Code		
Para. 1.6.4.1	Issue or endorsement of certificate by another Government	
IGC Code		
Para. 1.5.5.1	Issue or endorsement of certificate by another Government	

STCW Code, part A		
Section A-I/6.1	Training and assessment of seafarers for certification	
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/7.2	Communication of information – initial communication (within one year of entry into force of regulation I/7)	
Sections A-I/7.3, 7.4 and 7.5	Communication of information – subsequent reports (within the periods as referred to in paragraphs 7.3, 7.4 and 7.5)	
Sections A-I/8.1 and 8.3	National objectives and quality standards	
Section A-I/9.1	Medical standards – eyesight standards and physical and medical fitness	
Section A-I/9.4	Provisions for recognizing medical practitioners and maintenance of a register of recognized medical practitioners	
Sections A-I/9.5 and 9.6	Guidance, processes and procedures for conducting medical fitness examinations and issuing medical certificates	
Section A-I/12.1	General performance standards for simulators used in training	
Section A-I/12.2	General performance standards for simulators used in assessment of competence	
Section A-I/12.6	Simulator training objectives	
Section A-I/12.9	Qualification of instructors and assessors	
Section A-VIII/2.9	Watchkeeping at sea – directing the attention of companies, masters, chief engineer officers and watchkeeping personnel to observe the principles in parts 4-1 and 4-2	

Annex 2

SPECIFIC FLAG STATE OBLIGATIONS

The following table contains 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 88²		
	Existing certificates	LL PROT 88 only (Art. II-2)
Art. 6(3)	Exemptions – reporting	
Art. 8(2)	Equivalentents – reporting	
Art. 9(2)	Approvals for experimental purposes – reporting	
Art. 13	Surveys and marking	amended by LL PROT 88
Art. 14	Initial, renewal and annual survey	amended by LL PROT 88
Art. 16(3)	Issue of certificates	
Art. 19	Duration and validity of certificates	amended by LL PROT 88
Art. 23	Casualties	

² 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
Annex I, reg. 1	Strength of hull	
	Strength and intact stability of ships	LL PROT 88 only (annex I, reg. I)
Annex I, reg. 2	Application – assignment of freeboard	amended by LL PROT 88
Annex I, Reg. 2-1	Authorization of recognized organizations	LL PROT 88 only
Annex I, reg. 8	Details of marking	
Annex I, reg. 10	Stability information – approval	amended by LL PROT 88
Annex I, reg. 12	Doors	amended by LL PROT 88
Annex I, reg. 14	Cargo and other hatchways	amended by LL PROT 88
Annex I, reg. 15	Hatchways closed by portable covers and secured weathertight by tarpaulins and battering devices	amended by LL PROT 88
Annex I, reg. 16(1)	Hatchway coamings – reduced heights	amended by LL PROT 88 (annex I, reg. 14-1(2))
Annex I, reg. 16(4)	Securing arrangements	amended by LL PROT 88 (annex I, reg. 16(6))
	Machinery space openings	LL PROT 88 only (annex I, reg. 17(4))
Annex I, reg. 19	Ventilators	amended by LL PROT 88
Annex I, reg. 20	Air pipes	amended by LL PROT 88
	Cargo ports and other similar openings – applicable national standards	LL PROT 88 only (annex I, reg. 21(5))
Annex I, reg. 22	Scuppers, inlets and discharges	amended by LL PROT 88
Annex I, reg. 25	Protection of the crew	amended by LL PROT 88
Annex I, reg. 27	Freeboards – types of ships	amended by LL PROT 88
Annex I, reg. 28	Freeboard tables	amended by LL PROT 88
Annex I, reg. 39	Minimum bow height and reserve buoyancy Lashing system	amended by LL PROT 88 LL PROT 88 only (annex I, reg. 44(6))

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
COLREG 72		
Annex I, para. 14	Approval of construction of lights and shapes and the installation of lights on board	
Annex III, para. 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)	Equivalentents – reporting	
Regs. I/2.1, 2.2, 2.7 and 2.8	Issue and endorsements of certificates of competency	
Regs. I/10.1 and 10.2	Recognition of certificates and seafarers' knowledge of maritime legislation	
Reg. I/11.6	Availability – recent changes in national and international regulations	
Reg. I/13.3	Conduct of trials – safety, security and pollution prevention	
Regs. I/13.5 and 13.8.1	Results of trials – communication	
Reg. I/13.7	Respect for objections to trials	
Reg. I/13.8	Respect for objections by other Parties when authorizing ships to continue to operate with the system under trial	
Reg. I/14.1	Responsibilities of companies	
Reg. IV/1.2	Application – appropriate certificates for radio operators	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. V/1-1.7	Mandatory minimum requirements for the training and qualification of masters, officers and ratings on oil and chemical tankers	
Reg. V/1-2.5	Mandatory minimum requirements for the training and qualification of masters, officers and ratings on liquefied gas tankers	
Reg. V/2.1	Applicability of the requirements to domestic voyages	
Reg. V/2.8	Mandatory minimum requirements for the training and qualification of masters, officers, ratings and other personnel on passenger ships	
Regs. VIII/1.1 and 1.2	Fitness for duty – preventing fatigue and preventing drug and alcohol abuse	
Regs. VIII/2.1 and 2.2	Watchkeeping arrangements and principles – direction and requirements	
SOLAS 74		
Reg. I/4(b)	Exemptions – reporting	
Reg. I/5(b)	Equivalentents – 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

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. I/18	Qualification of certificates	
Reg. I/21	Casualties	
Reg. II-1/1.2	Compliance with earlier requirements	revised SOLAS chapter II-1 adopted by MSC 80 and MSC 82
Reg. II-1/3-2	Approval of corrosion prevention systems of seawater ballast tanks	
Reg. II-1/3-2.4	Maintenance of the protective coating	
Reg. II-1/3-3.2	Approval of means of access to tanker bows	
Regs. II-1/3-4.1.2.2 and 3-4.1.3	Approval of emergency towing arrangements on tankers	
Reg. II-1/3-6.2.3	Means of access to cargo and other spaces – satisfaction of the Administration as well as survey	
Reg. II-1/3-6.4.1	Approval of Ship Structure Access Manual	
Reg. II-1/3-8.3	Appropriate requirements for towing and mooring equipment	
Reg. II-1/3-9.1	Means of embarkation and disembarkation	
Reg. II-1/3-12	Determination of acceptable noise levels in machinery spaces	
Reg. II-1/4.2	Alternative methodologies – communication to IMO	
Reg. II-1/4.4	Beneficial or adverse effects of fitting structures as defined by the regulation	
Reg. II-1/5-1.1	Stability information to the Administration	
Reg. II-1/7-2.5	Acceptance of equalization devices and their controls	
Reg. II-1/13.9.2	Number and arrangements of doors with a device preventing unauthorized opening	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. II-1/13.11.2	Special consideration for tunnels piercing watertight bulkheads	
Reg. II-1/15.2	Arrangement and efficiency of the means for closing any opening in the shell plating	
Reg. II-1/15.6	Special sanction for automatic ventilating sidescuttles	
Reg. II-1/15.8.5	Material of pipes as referred to in the regulation	
Reg. II-1/16.1.1	Construction and initial tests of watertight doors, sidescuttles, etc.	
Reg. II-1/16-1.1	Construction and initial tests of watertight decks, trunks, etc.	
Reg. II-1/17-1.2	Indicators for closing appliances that could lead to flooding of a special category space or ro-ro space	
Regs. II-1/19.3 and 19.4	Damage control information – general and specific precautions	
Reg. II-1/22.4	Determination as to whether watertight doors must be permitted to remain open	
Reg. II-1/26.2	Consideration of reliability of single essential propulsion components	
Regs. II-1/29.1, 29.2.1 and 29.6.3	Steering gear	
Reg. II-1/29.17.2	Adoption of regulations on rudder actuators for tankers, chemical tankers and gas carriers	
Regs. II-1/35-1.3.7.2 and 35-1.3.9	Bilge pumping arrangements	
Reg. II-1/40.2	Electrical installations – ensuring uniformity	
Reg. II-1/42.1.3	Emergency source of electrical power in passenger ships	
Reg. II-1/43.1.3	Emergency source of electrical power in cargo ships	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. II-1/44.2	Approval of automatically starting emergency generating sets	
Regs. 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	
Regs. II-1/46.2 and 46.3	Additional requirements for periodically unattended machinery space	
Reg. II-1/53.1	Special requirements for machinery, boiler and electrical installations	
Regs. II-1/55.3, 55.4.1 and 55.6	Evaluation of the alternative design and arrangements and re-evaluation due to change of conditions	
Reg. II-1/55.5	Alternative design and arrangements – communication to IMO	
Reg. II-2/1.2.1	Approval of fire protection arrangements in existing ships	
Regs. 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 systems 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 regs. II-2/8.3.3 and 9.5.2.3

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
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 periodic tests	
Reg. II-2/7.6	Protection of cargo spaces in passenger ships	
Reg. II-2/8.3.4	Release of smoke from machinery spaces – passenger ships	
Reg. II-2/9.2.2.1.5.1	Approval of equivalent means of controlling and limiting a fire on ships designed for special purposes	
Reg. II-2/9.2.2.3.1	Fire integrity of bulkheads and decks in ships carrying more than 36 passengers	
Regs. 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	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. II-2/10.7.1.2	Fixed gas fire-extinguishing systems for general cargo	
Reg. II-2/10.7.1.4	Issue of an Exemption Certificate	
Reg. II-2/13.3.1.4	Provision of means of escape from, or access to, radiotelegraph stations	
Reg. II-2/13.3.2.5.1	Lighting or photoluminescent equipment to be evaluated, tested and applied in accordance with the FSS Code	
Reg. II-2/13.3.2.6.2	Normally locked doors that form part of an escape route – quick release mechanisms	
Reg. II-2/13.5.1	Means of escape on passenger ships from special category and open ro-ro spaces to which any passengers carried can have access	
Regs. II-2/17.4.1 and 17.6	Evaluation and approval of the engineering analysis for alternative design and arrangements for fire safety	
Reg. II-2/17.5	Alternative design and arrangements for fire safety – communication of information to IMO	
Reg. II-2/19.4	Provision of document of compliance	
Reg. II-2/20.4.1	Provision and approval of fixed fire detection and fire alarm systems	
Reg. II-2/20.6.1.4.2	Adverse effect as referred to in the regulation – approval of stability information	
Reg. II-2/21.5.2	Alternate space for medical care	
Reg. III/4	Evaluation, testing and approval of life-saving appliances and arrangements	
Reg. III/5	Production tests for life-saving appliances	
Reg. III/20.8.1.2	Approval of servicing stations	
Reg. III/20.8.5	Extension of liferaft service intervals – notifying IMO	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Regs. 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	
Regs. 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	
Regs. III/38.3, 38.4.1 and 38.6	Evaluation of the alternative design and arrangements and re-evaluation due to change of conditions	
Reg. III/38.5	Alternative design and arrangements – communication to IMO	
Reg. IV/3.3	Exemptions – reporting to IMO	
Reg. IV/14.1	Type approval of radio equipment	
Reg. IV/15.5	Ensuring that 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	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Regs. 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	Ensuring radiation safety	
Reg. VIII/7(a)	Approval of safety assessment	
Reg. VIII/8	Approval of operating manual	
Reg. VIII/10(f)	Issue of certificates	
Reg. IX/4.1	Issue of Document of Compliance (DOC)	
Reg. IX/4.3	Issue of Safety Management Certificate (SMC)	
Reg. IX/6.1	Periodic verification of the safety management system	
Reg. XI-1/1	Authorization of recognized organizations	
Reg. XI-1/2	Enhanced surveys	
Reg. XI-1/3.5.4	Ship identification number – approval of method of marking	
Reg. XI-1/3-1.2	Registered owner identification number	
Reg. XI-1/5.3	Issue of Continuous Synopsis Record (CSR)	
Reg. XI-1/5.4.2	Amendments to CSR	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. XI-1/5.4.3	Authorization and requirement to amend CSR	
Reg. XI-1/5.8	Requirement for former flag State to send CSR to new flag State	
Reg. XI-1/5.9	Appending previous CSR to new CSR	
Reg. XI-1/6	Investigations of marine casualties and incidents	
Reg. XII/8.1	Endorsement of booklet required by reg. VI/7.2	
Reg. XII/9.2	Approval of bilge well high water level alarms	
Reg. XII/11.3	Loading instrument – approval of software for stability calculations	
MARPOL		
Arts. 4(1) and 4(3)	Violation	
Art. 6(4)	Detection of violations and enforcement of the Convention – investigations	
Art. 12(1)	Casualties to ships – investigations	
Annex I		
Reg. 2.6.2	Application – an oil tanker delivered on or before 1 June 1982 engaged in specific trades: agreement with port States	
Reg. 3.3	Exemptions and waivers – reporting	
Reg. 4.3	Exceptions – discharge of substances containing oil for the purpose of combating pollution incidents	
Reg. 5.2	Equivalents – reporting	
Reg. 6	Surveys	
Reg. 7	Issue or endorsement of certificate	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
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	
Regs. 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	
Regs. 18.8.2, 18.8.3 and 18.8.4	Requirements for product carriers of 40,000 tonnes deadweight and above – arrangement and operation, approval of oil content meter, clean ballast tank operational manual	
Reg. 18.10.1.1	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements: approval	
Reg. 18.10.1.2	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements: agreement with port States	
Reg. 18.10.3	Segregated ballast tanks – oil tanker delivered on or before 1 June 1982 having special ballast arrangements: communication to IMO	
Reg. 20.8.1	Double hull and double bottom requirements for oil tankers delivered before 6 July 1996 – communication to IMO	
Reg. 21.8.1	Prevention of oil pollution from oil tankers carrying heavy grade oil as cargo – communication to IMO	
Reg. 23.3.1	Accidental oil outflow performance – calculation of mean oil outflow parameter	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. 25.5	Hypothetical outflow of oil – information to IMO on accepted arrangements	
Reg. 27.3	Intact stability – approval of written procedures for liquid transfer operation	
Reg. 28.3.4	Subdivision and damage stability – sufficient stability during flooding	
Reg. 29.2.1	Slop tanks – approval	
Reg. 30.6.5.2	Pumping, piping and discharge arrangement – establishment of requirements	
Reg. 30.7	Pumping, piping and discharge arrangement – positive means of loading, transporting or discharging cargo	
Regs. 31.2 and 31.4	Oil discharge monitoring and control system – approval	
Reg. 32	Oil/water interface detector – approval	
Reg. 33.1	Crude oil washing requirement – compliance with requirement	
Reg. 33.2	Crude oil washing requirements – establishment of requirements	
Reg. 35.1	Crude oil washing operations – Operations and Equipment Manual	
Reg. 36.9	Oil Record Book Part II – development of Oil Record Book for ships of less than 150 gross tonnage	
Reg. 37.1	Shipboard oil pollution emergency plan – approval	
Reg. 38.7.2	Reception facilities within special areas: Antarctic area – sufficient capacity	
Reg. 38.8	Reception facilities – notification on alleged inadequacies of port reception facilities	
Reg. 39.2.2	Special requirements for fixed or floating platforms – approval of record form	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. 41.1	Approval of oil tankers' ship-to-ship (STS) operations plan	
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	
Regs. 5.3.4 and 5.3.5	Equivalents – pumping and piping arrangement, approval of manual	
Reg. 6.3	Establishment of tripartite agreements – notifying IMO	
Reg. 8	Surveys	
Reg. 9	Issue or endorsement of certificates	
Reg. 10.7	Expiry date of existing certificate	
Reg. 10.9.3	Transfer of flag	
Reg. 11.2	Design, construction, equipment and operations – establishment of appropriate measures	
Reg. 12.5	Pumping, piping, unloading arrangements and slop tanks – approval of pumping performance test	
Reg. 13.3	Control of discharges of residues of NLS – approval of ventilation procedure	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
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 of 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. 9.1	Approval of sewage systems	
Reg. 9.2	Approval of sewage systems (passenger ships operating in special areas)	
Reg. 11.1.1	Approval of rate of discharge	
Reg. 12.2	Notification of alleged inadequacies of port reception facilities	
Annex V		
Reg. 6.3.2	Sufficient capacity for the retention of all garbage on board ships before entering the Antarctic area	
Reg. 8.2	Notification of alleged inadequacies of port reception facilities	
Annex VI		
Regs. 3.2 and 3.3.2	Exceptions and exemptions	
Regs. 4.2 and 4.4	Equivalents and communication to IMO	
Reg. 5	Surveys and certification	Addition related to IEEC by MEPC.203(62)

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. 6	Issue or endorsement of certificates	Addition related to IEEC by MEPC.203(62)
Regs. 9.1 and 9.10	Duration and validity of certificates	Addition related to IEEC by MEPC.203(62)
Reg. 9.9.3	Transfer of flag	
Reg. 11.4	Detection of violations and enforcement – investigations and communication to the Party and IMO	
Reg. 12.6	Ozone-depleting substances record book – approval of alternative forms of record-keeping	
Regs. 13.1.1.2 and 13.1.2.2	Nitrogen oxides – acceptance of identical replacement and alternative control measures	
Reg. 13.2.2	Acceptance of installation of Tier-II engine in lieu of Tier-III engine where Tier-III engine cannot be accommodated	
Reg. 13.5.2.2	Combined nameplate diesel engine – application as referred to in the paragraph	
Reg. 13.7.2	Approved method not commercially available	
Reg. 14.6	Sulphur oxides – prescription of logbook	
Reg. 15.5	Volatile organic compounds – approval of vapour collection systems	
Reg. 15.6	VOC management plan – approval	
Reg. 16.6.1	Shipboard incineration – approvals	
Reg. 19.6	Information regarding decision to allow, suspend, withdraw or decline application of reg. 19.4 on waiving the requirement for compliance with regs. 20 and 21 – communication to the Organization	Refer to Reg. 19.4
Reg. 20.1	Verification of the attained EEDI	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. 23	Cooperation with other parties to promote development and transfer of technology and exchange of information relating to the improvement of energy efficiency of ships	
Appendix IV, para. 1	Type approval as referred to in the paragraph	
Appendix VI, paras. 1.2, 2.1 and 3.1	Fuel verification procedure – management and sample delivery	
Res. MSC.133(76), as amended	Technical provisions for means of access for inspections	
Para. 3.7	Vertical or spiral ladders – acceptance	
Para. 3.9.7	Other means of access – approval and acceptance	
RO Code		
Part. 1/4.2	Delegation of authority	
Part. 1/5	Communication to IMO – a list of ROs	
Part. 2/8	Authorization of RO	
Part. 3/7.1.1	Verification that recognized organizations fulfil the requirements of the RO Code as per part 2/2.1	
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 issue of Interim SMC	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
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 ships)	
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	
Noise Code		
Para. 1.3.1	Application of the Code	
Para. 1.3.7	Special consideration for ships designed for and employed on voyages of short duration ³ , or on other services involving short periods of operation of the ship	
Para. 1.3.9	Repairs, alterations and modifications of a major character and outfitting of existing ships – determination of application of the Code	
Para. 2.1.1	Acceptance of equivalent standard for sound level meter	
Para. 2.1.2	Acceptance of equivalent standard for octave filter set	

³ Voyages of short duration: Voyages where the ship is not generally underway for periods long enough for seafarers to require sleep, or long off-duty periods, during the voyages (Noise Code para.1.4.34).

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 3.3.9	Agreement on a process to simulate the operation of the dynamic positioning (DP) thruster system	
Para. 6.2.2	Acceptance of laboratory tests of airborne sound insulation properties	
Para. 7.4	Description of a warning notice comprising symbol and supplementary sign in working language	
FSS Code		
Para. 1/4	Use of toxic extinguishing media	
Para. 4/2	Type approval of fire extinguishers	
Para. 4/3.1.1.2	Determining equivalents of fire extinguishers	
Para. 4/3.2.2.2	Approval of foam concentrate	
Para. 5/2.1.1.4	Containers for the storage of fire-extinguishing medium, etc.	
Para. 5/2.1.2.1	System flow calculations	
Para. 5/2.1.2.3	Spare parts	
Para. 5/2.3	Steam systems	
Para. 5/2.4	Equivalent systems – approval	
Para. 6/1	Specific acceptance of fixed foam fire-extinguishing systems used for cargo pump-rooms of chemical tankers carrying liquid cargoes referred to in regulation II-2/1.6.2 of the Convention	
Paras. 6/3.1.2 and 6/4.1.1 and 6/2.3.1.1	Foam concentrates – approval	
Paras. 6/3.1.3 and 6/3.4.1	System test of fixed high-expansion foam fire-extinguishing systems	
Para. 6/4.2.1	Acceptance of means for proving effective distribution of the foam	
Para. 7/2.1	Fixed pressure water-spraying fire-extinguishing systems – approval	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 7/2.2	Equivalent systems – approval	
Paras. 7/2.3 and 7/2.4	Fixed pressure water-spraying fire-extinguishing systems for cabin balconies – approval	
Para. 8/2.1.2	Equivalent sprinkler systems – approval	
Para. 9/2.3.1.2	Sensitivity limits of smoke detectors in other spaces	
Para. 9/2.3.1.3	Heat detector temperature limits	
Para. 9/2.3.1.7	Fixed fire detection and fire alarm systems for cabin balconies – approval	
Para. 9/2.4.1.3	Limiting the number of enclosed spaces included in each section	
Para. 9/2.5.2	Testing on ships with self-diagnostic system – determination of requirements	
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. 12/2.2.2.1	Approval of heating arrangement of the diesel engine cooling water or lubricating oil system if the room for the diesel driven power source is not heated	
Para. 14/2.2.1.4	Foam concentrate supplied on board for cargoes intended to be carried – approval of additional arrangements if foam is not effective or is incompatible	
Para. 14/2.2.2.1 P	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
2010 FTP Code		
Para. 4.2	Recognition of testing laboratories	
Paras. 5.1.1 and 5.1.2	Approval of products in accordance with established approval procedures or authorization of competent authorities to issue approvals	
Para. 5.2.2	Requirement for manufacturers to have a quality control system audited by a competent authority, or, alternatively, use of final product verification procedures as referred to in the paragraph	
Para. 7.2	Use of equivalents and modern technology – communication of information to the Organization	
Annex 1, part 3/3.3	Structural core of a material other than steel or aluminium alloy – decision on limits for rise in temperature	
Annex 1, part 3 appendix 1, para. 2.3.2.9	Insulation system of "A" class door – approval to the same standard as that which the door is intended to achieve	
LSA Code		
Para. 1.2.3	Determine the period of acceptability of LSAs subject to deterioration with age	
Para. 4.4.1.2	Endorsement of lifeboat affixed approval plate	
Para. 4.5.4	Fixed two-way VHF radiotelephone apparatus – sheltered space	
Para. 5.1.1.4	Rescue boats – combination of rigid and inflatable construction	
Para. 5.1.3.8	Rubbing strips on inflated rescue boats	
Paras. 6.1.2.9 and 6.1.2.10	Lowering speed of a fully equipped liferaft	
Para. 6.2.1.2	MES – strength and construction of passage and platform	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 7.2.2.1	Broadcast of messages from other places on board	
1994 HSC Code		
Para. 1.3.5	Verification	
Para. 1.4.29	Determination of "maximum operational weight"	
Para. 1.5.1.2	Specifying intervals for renewal surveys	
Para. 1.5.4	Inspection and survey	
Para. 1.5.5	Recognized organizations and nominated surveyors	
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	Equivalentents – 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	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 7.7.6.1.5	Additional quantity of fire-extinguishing medium	
Para. 7.7.6.1.12	Containers for the storage of fire-extinguishing medium, etc. – design	
Para. 7.7.8.5	Maximum length of fire hoses	
Para. 8.1	Approval and acceptance of LSA and arrangements	
Para. 8.9.1.2	Approval of novel life-saving appliances or arrangements	
Para. 8.9.1.3	Notifying the Organization	
Para. 8.9.7.1.2	Approval of servicing stations	
Para. 8.9.7.2	Deployment intervals of MES	
Para. 8.9.11	Novel life-saving appliances or arrangements	
Para. 8.9.12	Notifying the Organization	
Para. 10.2.4.9	Flexible oil fuel pipes	
Para. 10.3.7	Internal diameters of suction branches	
Para. 12.6.2	Specified voltages to earth	
Para. 13.1.2	Navigational equipment and its installation	
Para. 13.13	Approval of systems, equipment and performance standards	
Para. 14.3.3	Exemptions – reporting	
Para. 14.13.1	Type approval	
Para. 14.14.5	Ensuring maintenance	
Para. 14.15	Radio personnel	
Para. 14.16	Radio records	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 15.3.1	Operating station – field of vision	
Para. 15.7.2	Ensuring clear view through windows	
Para. 17.8	Acceleration and deceleration	
Para. 18.1.4	Determining maximum allowable distance from a base port or place of refuge	
Para. 18.2	Craft documentation	
Paras. 18.3.1 to 18.3.7	Training and qualifications	
Chapter 19	Inspection and maintenance requirements	
2000 HSC Code		
Para. 1.3.7	Verification	
Para. 1.4.37	Determination of "maximum operational weight"	
Para. 1.5.1.2	Specifying intervals for renewal surveys	
Para. 1.5.4	Inspection and survey	
Para. 1.5.5	Recognized organizations and nominated surveyors	
Para. 1.5.7	Completeness of survey and inspection	
Para. 1.7.3	Investigation to determine the need of survey	
Para. 1.8.1	Issue/endorsement of certificate	
Para. 1.9.1.1.4	Transit voyage – arrangements satisfactory	
Para. 1.9.2	Issue of permit to operate	
Para. 1.9.7	Worst intended conditions and operational limitations	
Para. 1.11.2	Equivalentents – reporting	
Para. 1.12.1	Adequate information and guidance provided to the craft by the company	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
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. 2.7.5 and 2.14.2	Inclining and stability information – approval	
Para. 3.4	Determination of service life	
Para. 3.5	Design criteria	
Para. 4.2.2	Approval of public address system	
Para. 4.8.3	Documentation and verification of evacuation time	
Para. 4.8.10	Evacuation demonstration	
Para. 7.3.3	Approval of structural fire protection details	
Para. 7.5.6.3	Safe outlets for exhaust fans in fuel tank spaces	
Para. 7.7.1.1.8	Limitation of number of enclosed spaces in each section	
Para. 7.7.1.3.2	Sensitivity limits of smoke detectors	
Para. 7.7.3.3.6	Additional quantity of fire-extinguishing medium	
Para. 7.17.1	Reduced requirements for cargo craft of less than 500 GT	
Para. 7.17.3.1.5	Water spray system – approval	
Para. 7.17.3.3	Smoke detection systems – equivalent protection	
Para. 7.17.4	Issue of Document of Compliance for craft carrying dangerous goods	
Para. 8.1	Approval and acceptance of LSA and arrangements	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
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	Shipborne navigational systems and equipment and voyage data recorders 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	
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	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Chapter 19	Inspection and maintenance requirements	
2011 ESP Code		
Annex A, part A Single-side skin bulk carriers		
3.3.4	Supervision on repair of cargo hatch securing system	
5.1.1	Cooperation on development of a specific survey programme	
5.1.4	Advice on the maximum acceptable structural diminution levels	
5.2.2	Agreement on provisions for proper and safe access	
8.1.2	Evaluation of survey report	
8.2.3	Endorsement on condition evaluation report	
Annex 4B, para 1	Cooperation on development of a survey programme	
Annex 5, para 3.1	Certification of a company engaged in thickness measurement	
Annex 13, para 3	Approval of materials and welding	
Annex A, part B Double-side skin bulk carriers		
3.3.4	Supervision on repair of cargo hatch securing System	
5.1.1	Cooperation on development of a specific survey programme	
5.1.4	Advice on the maximum acceptable structural diminution levels	
5.2.2	Agreement on provisions for proper and safe access	
8.1.2	Evaluation of survey report	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
8.2.3	Endorsement on condition evaluation report	
Annex 4B, para 1	Cooperation on development of a survey programme	
Annex 5, para 3.1	Certification of a company engaged in thickness measurement	
Annex 11, para 3	Approval of materials and welding	
Annex B, part A Double hull oil tankers		
5.1.1	Cooperation on development of a specific survey programme	
5.1.4	Advice on the maximum acceptable structural diminution levels	
5.2.1.1	Agreement on provisions for proper and safe access	
8.1.3	Evaluation of survey report	
8.2.3	Endorsement on condition evaluation report	
Annex 6B	Cooperation on development of a survey programme	
Annex 7, para 3.1	Certification of a company engaged in thickness measurement	
Annex B, part B Oil tankers other than double hull oil tankers		
5.1.1	Cooperation on development of a specific survey programme	
5.1.4	Advice on the maximum acceptable structural diminution levels	
5.2.1.1	Agreement on provisions for proper and safe access	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
8.1.3	Evaluation of survey report	
8.2.3	Endorsement on condition evaluation report	
Annex 6B	Cooperation on development of a survey programme	
Annex 7, para 3.1	Certification of a company engaged in thickness measurement	
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	
NO_x Technical Code 2008		
Chapter 1	Assumption of full responsibility for the approval of documentation as required by the Code together with the acceptance of procedures and alternatives as permitted by the Code	
Chapter 2	Issue of the Engine International Air Pollution Prevention Certificate, arrangements for the parent engine test and pre-certification of engines, usage of the engine family/engine group concepts and approval of the technical file and any subsequent amendments	
Chapter 2, para. 2.2.5.1	Approval and pre-certification in the case referred to in the paragraph	
Chapter 3	Acceptance of modification of engine speed at E2 test cycle 25% power mode point	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Chapter 4	Assignment of engine family/engine group status, as applicable, and selection of associated parent engine; acceptance of conformity of production arrangements; adjustment of parent engine relative to engine group reference values	
Chapter 5	Ensuring that the parent engine test and subsequent calculations are undertaken in accordance with Code requirements and that, where alternatives are applied, these meet the Code's equivalency requirements and any deviations are within the permitted margins; filing of parent engine test report	
Chapter 6	Onboard NO _x verification procedures are in accordance with the provisions of the Code and are adequate to provide verification that an engine, as so surveyed, will be in accordance with the applicable Annex VI requirements; acceptance of aspects within onboard NO _x verification procedure – simplified measurement method if applicable; approval of aspects within onboard NO _x verification procedure – direct measurement and monitoring method including the onboard monitoring manual, if applicable	
Chapter 7	Installation of approved method – amendment of IAPP Certificate	
Appendix IV	Verification that the calibration of all necessary measurement equipment meets Code requirements	
Appendix VII	Aspects to be included within onboard NO _x verification procedure – parameter check method	
Appendix VIII	Approval of alternative exhaust gas measurement principles	
IBC CODE		
Para. 1.1.6	Prescribe preliminary suitable conditions for carriage of products not listed in chapter 17 or 18	
Para. 1.4.2	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 that 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 system	
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	
Para. 18.2	Safety requirements – list of products to which the Code does not apply	
BCH CODE		
Para. 1.5.2	Equivalentents – communication to IMO	
Section 1.6	Survey requirements	
Section 1.8	New products – establishing suitable conditions – notifying IMO	
Para. 2.2.4	Determination of the ability to survive flooding of the machinery space in Type 3 below 125 m 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	
Para. 3.1.2(f)	Ventilation fans – approval	
Para. 3.14.1	Alternative provisions for ships dedicated to the carriage of specific cargoes	
Para. 3.14.2	Additional arrangements when foam is not effective or is incompatible	
Para. 3.14.7	Foam monitors on ships of less than 4,000 tonnes deadweight – minimum capacity	
Para. 3.15.2	Protection of cargo pump-rooms with fire-extinguishing systems – approval	
Para. 3.15.5	Products evolving flammable vapours – fire-extinguishing systems – approval	
Chapter IV	Approval of special requirements for specific chemicals	
IGC CODE		
Para. 1.1.6	Establishment of preliminary suitable conditions of carriage and notification	
Para. 1.4.2	Equivalents – reporting	
Section 1.5	Surveys and certification	
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	
Para. 2.8.2	Alternative measures – approval	
Para. 2.9.1.3	Residual stability during intermediate stages of flooding	
Para. 3.5.3.2	Decreased clear opening in the cargo area	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Section 3.8	Bow or stern loading and unloading arrangements – approval	
Para. 4.2.7	Design temperature	
Paras. 4.4.2.5 and 4.4.4.1	Structural analysis of the hull	
Paras. 4.4.6.1.1, 4.4.6.2.1 and 4.4.6.3.2	Setting standards	
Para. 4.4.7.2.1	Three-dimensional structural analysis	
Para. 4.4.7.3	Analysis	
Para. 4.5.1.11	Allowable stresses – approval	
Para. 4.7.3	Secondary barriers for non-basic tank types	
Para. 4.7.7	Checking method – approval	
Para. 4.8.4.4	Design and construction of the heating system	
Para. 4.9.8	Insulation materials	
Para. 4.10.1.2.2	Bevel preparation, etc. – acceptance and approval	
Para. 4.10.2	Workmanship	
Para. 4.10.5.2	Quality control specifications	
Para. 4.10.6	Integral tank-testing	
Para. 4.10.8.3	Tightness test	
Para. 4.10.9	Type C independent tanks – inspection and NDT	
Para. 4.10.10.3.7	Consideration of pneumatic testing	
Para. 4.11.1	Soaking temperature and holding times	
Para. 4.11.2	Alternative to heat treatment – approval	
Paras. 5.2.4.4 and 5.2.4.5	Flanges, valves and other fittings	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 5.4.2.2	Dimensions	
Para. 5.4.2.3	Screwed couplings – acceptance	
Para. 5.5.2	Cargo and process piping – alternative testing approval	
Para. 6.1.5	Tensile strength, yield stress and elongation	
Para. 6.3.7.4	Schedule for inspection and NDT	
Section 7.1	Cargo pressure/temperature control	
Paras. 8.2.2, 8.2.5 and 8.2.7	Pressure relief devices	
Para. 9.5.2	A means of preventing the backflow of cargo	
Para. 10.1.5	Electrical equipment installation	
Para. 11.4.1	Dry chemical powder fire-extinguishing system	
Para. 11.5.2	Approval of appropriate fire-extinguishing system for cargo compressor and pump-rooms	
Para. 13.5.4	Number and position of temperature indicating devices	
Para. 13.6.1	Gas detector equipment	
Para. 13.6.13	Portable gas detection equipment	
Para. 14.4.5	Provision of space to protect personnel	
Section 15.2	Maximum allowable loading limits – approval of list	
Para. 16.5.2	Forced draught system for boilers	
Para. 16.5.6	Purging of combustion chambers of boilers	
Para. 17.14.2.1	Non-acceptance of cargo discharge compressors on board	
Para. 17.20.3.1	Valves, flanges, fittings and accessory equipment material – acceptance	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
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 of recognition – communication to the Party that issued the certificate	
Section A-II/4.4	Determining the requirements of training, assessment and certification where there are no tables of competence for the support level	
Section A-III/4.4	Determining the requirements of training, assessment and certification where there are no tables of competence for the support level	
Section A-VIII/1.1	Fitness of duty – consideration of the danger posed by fatigue of seafarers	
Section A-VIII/1.5	Requirement for watch schedules to be posted in a standardized form	
Section A-VIII/1.7	Requirement for maintaining records of daily hours of rest of seafarers	
Section A-VIII/1.10	Establishment of a limit of alcohol concentration for personnel performing designated duties	
Section A-VIII/2.84	Principles to be observed in keeping radio watch – directing the attention of companies, masters and radio watchkeeping personnel to comply with provisions of part 4-3 to ensure that an adequate safety radio watch is maintained while the ship is at sea	
Res. MEPC.94(46), as amended	Condition assessment scheme	
Para. 4.1	Issue of instructions to the recognized organization (RO) for Condition Assessment Scheme (CAS) survey	
Para. 4.3	Requirement for oil tankers to remain out of service until Statement of Compliance is issued	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 7.1.3	CAS surveyors' requirements	
Para. 11	Verification of CAS	
Para. 12	Reassessment of ships that have failed	
Para. 13	Issue, suspension or withdrawal of Statement of Compliance	
Para. 14	Communication to IMO	
Res. MSC.215(82)	Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers	
Para. 3.2	Inspection of surface preparation and coating processes	
Para. 3.4.1	Coating technical file	
Para. 4.4.3	Technical Data Sheet and Statement of Compliance or Type Approval Certificate – verification	
Section 5	Coating system approval	
Para. 6.1.1	Verification of equivalent qualification of coating inspector	
Section 7	Verification requirements	
Res. MSC.288(87)	Performance standard for protective coatings for cargo oil tanks of crude oil tankers	
Para. 3.2	Inspection of surface preparation and coating processes – review	
Para. 4.6.3	Verification of the Technical Data Sheet and Statement of Compliance or Type Approval Certificate for the protective coating system	
Para. 6.1.1	Equivalent to NACE Coating Inspector Level 2 and FROSIO Inspector Level III – verification	
Para. 7	Coating verification requirement as referred to in paragraph 7	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Res. MSC.289(87)	Performance standard for alternative means of corrosion protection for cargo oil tanks of crude oil tankers	
Para. 2.2	Verification of Technical File	
Para. 4.2	Issuance of Type Approval Certificate for corrosion-resistant steel	
Para. 5	Survey(s) during the construction process to verify that approved corrosion-resistant steel has been applied to the area required	
Casualty Investigation Code		
Para. 1/1.3	Qualified person(s) for investigation	
Para. 6/6.2	Investigation into a very serious marine casualty	
IS Code, 2008	International Code on Intact Stability, 2008	
Part A, Ch. 1.2	Criteria demonstrating sufficient ship stability in critical stability situation in waves	
Part A, Ch. 2.1.3	Stability criteria where anti-rolling devices are installed	
Part A, Ch. 2.3	Severe wind and stability criterion	
Part A, Ch. 3	Special criteria for certain types of ships	
IMSBC Code	International Maritime Solid Bulk Cargoes Code	
Section 1.3	Conditions for the carriage of cargoes not listed in the Code	
Section 1.5	Exemptions	
Para. 7.3.2.2	Approval of specially constructed cargo ships	
Para. 7.3.2.3	Approval of plan of special arrangements and details of the stability conditions on which the design has been based	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Appendix 1, Schedule for Aluminium Ferrosilicon Powder, UN 1395, and Aluminium Silicon Powder, Uncoated, UN 1398	Inspection and approval of gastight bulkheads between cargo spaces and engine-room	
Appendix 1, Schedule for Ferrosilicon, UN 1408, and Ferrosilicon	Inspection and approval of gastight bulkheads between cargo spaces and engine-room and approval of safety of bilge pumping arrangement	

ANNEX 3

SPECIFIC COASTAL STATE OBLIGATIONS

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

SPECIFIC PORT STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
TONNAGE 69		
Art. 12	Inspection	
LL 66 AND LL PROT 88		
Art. 21	Control	amended by LL PROT 88
STCW 78		
Art. X	Control	
Reg. I/4	Control procedures	
SOLAS 74		
Reg. I/6(c)	Ships not allowed to sail	
Reg. I/19	Control	
Reg. VII/7-2.2	Documents relating to carriage of dangerous goods in solid form	
Reg. VIII/11	Special control for nuclear ships	
Reg. XI-1/4	Port State control on operational requirements	
MARPOL		
Art. 5(2)	Certificates and special rules on inspection of ships – port State control	
Art. 5(3)	Certificates and special rules on inspection of ships – denial of entry	
Art. 6(2)	Detection of violations and enforcement of the Convention – inspection	

SPECIFIC PORT STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
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	
Regs. 38.1, 38.2 and 38.3	Reception facilities outside special areas	
Regs. 38.4 and 38.5	Reception facilities within special areas	
Reg. 38.6	Reception facilities within special areas – notifying IMO	
Reg. 38.7.1	Reception facilities within special areas: "Antarctic area"	
Annex II		
Reg. 4.3.3	Exemptions – approval of adequacy of reception facilities	
Reg. 13.6.1	Control of discharges of residues – endorsement of cargo record book	
Reg. 15.6	Cargo record book – inspection without undue delay	

SPECIFIC PORT STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Reg. 16.1	Measures of control	
Regs. 16.6 and 16.7	Measures of control – exemption granted (endorsement of cargo record book)	
Reg. 16.9	Port State control on operational requirement	
Regs. 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. 13.1	Provision of reception facilities for passenger ships in special areas	
Reg. 13.2	Measures taken regarding reception facilities for passenger ships in special areas – notifying the Organization	
Reg. 14	Port State control on operational requirements	
Annex V		
Reg. 6.3.1	Provision of reception facilities – all garbage from all ships departing en route to or arriving from the Antarctic area	
Reg. 8.1	Reception facilities	
Reg. 8.2.2	Reception facilities within special areas	
Reg. 8.4	Measures taken regarding provision of reception facilities – notifying the Organization	
Reg. 9	Port State control on operational requirements	
Reg.10.5	Inspection of Garbage Record Book or ship's official log-book	

SPECIFIC PORT STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Annex VI		
Reg. 5.3.3	Necessary assistance to the surveyor as referred to in the paragraph	
Reg. 10	Port State control on operational requirements – in relation to chapter 4 of Annex VI, limiting of inspection to verification that there is a valid International Energy Efficiency Certificate on board	
Regs. 15.2 and 15.3	Volatile organic compounds – approvals of vapour emission control systems and notifying IMO	
Reg. 17.2	Reception facilities as referred to in the paragraph – communication to IMO	
Reg. 18.10	Fuel oil quality – communication to Party or non-Parties and remedial action	
IBC Code		
Para. 15.8.25.3	Certification verifying that the required piping separation has been achieved	
1994 HSC Code		
Para. 1.3.5	Acceptance of the Code	
Para. 1.5.6	Providing assistance to 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	Providing assistance to surveyors	
Para. 1.6	Design approval	
Para. 1.9.3	Operational conditions – Permit to Operate	

SPECIFIC PORT STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 1.9.4	Port State control	
Para. 18.3.8	Training and qualifications	
Grain Code		
Para. 3.4	Document of authorization	
Para. 3.5	Document of authorization	
Para. 5	Exemptions for certain voyages	
Para. 7.2	Stability requirements	
IMSBC Code	International Maritime Solid Bulk Cargoes Code	
Section 1.3	Conditions for the carriage of cargoes not listed in the Code	
Section 1.5	Exemptions	
Para.4.3.2	Concentrate of cargo which may liquefy – recognition of entity issuing the certificate or declaration of moisture content	
Para.4.3.3	Procedures for sampling, testing and controlling – role of the competent authority as referred to in the paragraph	

ANNEX 5

INSTRUMENTS MADE MANDATORY UNDER IMO CONVENTIONS

SOLAS 74	Res. MSC.215(82)	reg. II-1/3-2.2
	Res. MSC.133(76), amended	as reg. II-1/3-6.2.1
	Res. MSC.287(87)	reg. II-1/3-10.3
	Res. MSC.288(87)	reg. II-1/3-11.1
	Res. MSC.289(87)	reg. II-1/3-11.2
	Noise Code	reg. II-1/3-12
	2008 IS Code, part A	reg. II-1/5.1
	FSS Code	reg. II-2/3.22
	2010 FTP Code	reg. II-2/3.23
	LSA Code	reg. III/3.10
	IMSBC Code	reg. VI/1-2
	CSS Code, sub-chapter 1.9	reg. VI/2.1
	Grain Code	reg. VI/8.1
	IMDG Code	reg. VII/1.1
	IBC Code	reg. VII/8.1
	IGC Code	reg. VII/11.1
	INF Code	reg. VII/14.1
	ISM Code	reg. IX/1.1
	1994 HSC Code	reg. X/1.1
	2000 HSC Code	reg. X/1.2
RO Code	reg. XI-1/1	
2011 ESP Code	reg. XI-1/2	
Casualty Investigation Code, parts I and II	reg. XI-1/6	
Res. 4 of the 1997 SOLAS Conf.	reg. XII/1.7	
Res. MSC.169(79)	reg. XII/7.2	
Res. MSC.168(79)	reg. XII/14	
MARPOL	RO Code	Annex I, Reg. 6 Annex II, Reg. 8
	Res. MEPC.94(46), as amended	Annex I, reg. 20.6
	IBC Code	Annex II, reg. 1.4
	BCH Code	Annex II, reg. 1.4
	NO _x Technical Code 2008	Annex VI, reg. 5.3.2
STCW 78	STCW Code, part A	reg. I/1.2.3
LL PROT 1988	2008 IS Code	Annex 1, reg. 1
	RO Code	Annex I, reg. 2-1

ANNEX 6

**SUMMARY OF AMENDMENTS TO MANDATORY INSTRUMENTS
REFLECTED IN THE NON-EXHAUSTIVE LIST OF OBLIGATIONS
(ANNEXES 1 TO 4)**

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

SOLAS 1974	up to and including 2013 amendments (res. MSC.350(92) except chapter XI-2, regulation V/19-1 and ISPS Code)
Res. MSC.215(82)	up to and including the 2012 amendments (res. MSC.341(91))
Res. MSC.133(76), as amended	up to and including the 2004 amendments (res. MSC.158(78))
Res. MSC.287(87)	as adopted
Res. MSC.288(87)	up to and including the 2012 amendments (res. MSC.342(91))
Res. MSC.289(87)	as adopted
Noise Code	as adopted by res. MSC.337(91)
2008 IS Code	up to res. MSC.319(89)(part B only)
FSS Code	up to and including the 2012 amendments (res. MSC.339(91))
2010 FTP Code	up to and including the 2010 amendments (res. MSC.307(88))
LSA Code	up to res. MSC.320(89)
IMSBC Code	up to and including the 2013 amendments (res. MSC.354(92))
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 2012 amendments (res. MSC.328(90))
IBC Code	up to and including the 2012 amendments (res. MSC.340(91) and res. MEPC.225(64))
IGC Code	up to and including the 2006 amendments (res. MSC.220(82))
INF Code	up to and including the 2007 amendments (res. MSC.241(83))
ISM Code	up to and including the 2013 amendments (res. MSC.353(92))
1994 HSC Code	up to and including the 2013 amendments (res. MSC.351(92))
2000 HSC Code	up to and including the 2013 amendments (res. MSC.352(92))
RO Code	as adopted by res. MSC.349(92)
2011 ESP Code	as adopted by res. A.1049(27)

Casualty Investigation Code	up to and including 2014 amendments (res.MSC.390(94))
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 2012 amendments (res. MSC.343(91))
SOLAS PROT 1988	up to and including the 2012 amendments (res. MSC.344(91))
MARPOL	up to and including the 2014 amendments (resolution MEPC.251(66), but excluding MEPC.246(66), MEPC.247(66), MEPC.248(66), MEPC.249(66) and MEPC.250(66))
RO Code	as adopted by res. MEPC.237(65)
Res. MEPC.94(46), as amended	up to and including the 2013 amendments (res.MEPC.236(65))
IBC Code	up to and including the 2012 amendments (res. MEPC.225(64) and res. MSC.340(91))
BCH Code	up to and including the 2006 amendments (res. MEPC.144(54) and res. MSC.212(81))
NO _x Technical Code 2008	up to and including the 2014 amendments (res. MEPC. 251(66))
STCW 1978	up to and including the Manila amendments (STCW/Conf.2/res.1), except regulations VI/5.2, 6.3 and 6.6
STCW Code, part A	up to and including the Manila amendments (STCW/Conf.2/res.2)
LL 1966	up to and including the 2005 amendments (res. A.972(24))
LL PROT 1988	up to and including the 2013 amendments (res. MSC.356(92))
RO Code	as adopted by res. MSC.349(92)
TONNAGE 1969	no amendments yet adopted
COLREG 1972	up to and including the 2001 amendments (res. A.910(22))

ANNEX 7

**AMENDMENTS⁴ TO IMO INSTRUMENTS EXPECTED TO BE ACCEPTED
AND TO ENTER INTO FORCE BETWEEN 1 JANUARY 2016 AND 1 JULY 2016**

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

ANNEX 1

OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES

OBLIGATIONS OF CONTRACTING GOVERNMENTS/PARTIES		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
IMDG Code		
Section 1.5.3	Management system – Quality assurance programmes – role of competent authority	<u>In force 1/1/2016 by MSC.372(93)</u>
IGC Code		
<u>Para. 1.4.5</u> Para. 1.5.5.1}	Issue or endorsement of certificate by another Government	<u>In force 1/1/2016 by MSC.370(93)</u>
III Code	<u>IMO Instruments Implementation Code – Application of the provisions of the III Code under related mandatory IMO Instruments</u>	<u>In force 1/1/2016 by MSC.366(93) and MEPC.246(66)</u>

⁴ The struck-out text indicates deletions and the underlined text shows additions or changes to the non-exhaustive list of obligations.

ANNEX 2

SPECIFIC FLAG STATE OBLIGATIONS

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
MARPOL		
Annex I		
<u>Reg. 28.6.3</u>	<u>Subdivision and damage stability-Issuing a document of approval for the stability instrument</u>	<u>In force 1/1/2016 by MEPC.248(66)</u>
FSS Code		
Para. 15/ <u>2.2.1.1-2.1.2</u>	Inert gas systems – approval	<u>In force 1/1/2016 by MSC.367(93)</u>
Para. 15/ <u>2.2.4.6</u>	Adequate reserve of water	<u>In force 1/1/2016 by MSC.367(93)</u>
IBC Code		
<u>Para. 2.2.6.3</u>	<u>Issuing a document of approval for the stability instrument</u>	<u>In force 1/1/2016 by MEPC.250(66) and MSC.369(93)</u>
BCH Code		
<u>Para. 2.2.1.2.2</u>	<u>Issuing a document of approval for the stability instrument</u>	<u>In force 1/1/2016 by MEPC.249(66) and MSC.376(93)</u>
IGC Code		
Para. 1.1.6	Establishment of preliminary suitable conditions of carriage and notification	
Para. 1.4.2	Equivalents – reporting	
Section 1.5	Surveys and certification	
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	
Para. 2.8.2	Alternative measures – approval	
Para. 2.9.1.3	Residual stability during intermediate stages of flooding	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 3.5.3.2	Decreased clear opening in the cargo area	
Section 3.8	Bow or stern loading and unloading arrangements approval	
Para. 4.2.7	Design temperature	
Paras. 4.4.2.5 and 4.4.4.1	Structural analysis of the hull	
Paras. 4.4.6.1.1, 4.4.6.2.1 and 4.4.6.3.2	Setting standards	
Para. 4.4.7.2.1	Three-dimensional structural analysis	
Para. 4.4.7.3	Analysis	
Para. 4.5.1.11	Allowable stresses – approval	
Para. 4.7.3	Secondary barriers for non-basic tank types	
Para. 4.7.7	Checking method – approval	
Para. 4.8.4.4	Design and construction of the heating system	
Para. 4.9.8	Insulation materials	
Para. 4.10.1.2.2	Bevel preparation, etc. – acceptance and approval	
Para. 4.10.2	Workmanship	
Para. 4.10.5.2	Quality control specifications	
Para. 4.10.6	Integral tank testing	
Para. 4.10.8.3	Tightness test	
Para. 4.10.9	Type C independent tanks – inspection and NDT	
Para. 4.10.10.3.7	Consideration of pneumatic testing	
Para. 4.11.1	Soaking temperature and holding times	
Para. 4.11.2	Alternative to heat treatment – approval	
Paras. 5.2.4.4 and 5.2.4.5	Flanges, valves and other fittings	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
Para. 5.4.2.2	Dimensions	
Para. 5.4.2.3	Screwed couplings – acceptance	
Para. 5.5.2	Cargo and process piping – alternative testing approval	
Para. 6.1.5	Tensile strength, yield stress and elongation	
Para 6.3.7.4	Schedule for inspection and NDT	
Section 7.1	Cargo pressure/temperature control	
Paras. 8.2.2, 8.2.5 and 8.2.7	Pressure relief devices	
Para. 9.5.2	A means of preventing the backflow of cargo	
Para. 10.1.5	Electrical equipment installation	
Para. 11.4.1	Dry chemical powder fire-extinguishing system	
Para. 11.5.2	Approval of appropriate fire-extinguishing system for cargo compressor and pump-rooms	
Para. 13.5.4	Number and position of temperature indicating devices	
Para. 13.6.1	Gas detector equipment	
Para. 13.6.13	Portable gas detection equipment	
Para. 14.4.5	Provision of space to protect personnel	
Section 15.2	Maximum allowable loading limits – approval of list	
Para. 16.5.2	Forced draught system for boilers	
Para. 16.5.6	Purging of combustion chambers of boilers	
Para. 17.14.2.1	Non-acceptance of cargo discharge compressors on board	
Para. 17.20.3.1	Valves, flanges, fittings and accessory equipment material – acceptance	

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
<u>Para. 17.20.13.2</u>	<u>Cargo handling plans – approval</u>	
<u>Para. 17.20.14</u>	<u>Maximum allowable tank filling limits – approval of list</u>	
<u>Para. 1.1.2.3</u>	<u>Compliance with relevant requirements for existing ships</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 1.1.6.1</u>	<u>Establishment of a Tripartite Agreement, where applicable</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 1.1.6.3</u>	<u>Assessment form and a proposal for a new and complete entry – submission to IMO</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 1.1.10</u>	<u>Actions for ships operating in some modes, and establishment of additional requirements</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 1.3.2</u>	<u>Equivalentents – communication to IMO</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Paras. 1.4.1.1, 1.4.1.5, 1.4.6</u>	<u>Survey and certification</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 1.4.1.3</u>	<u>Information of nominated surveyors or ROs – communication to IMO</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 1.4.6.9.3</u>	<u>Flag changes – providing information regarding survey and certificate</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 2.2.6.3</u>	<u>Issuing a document of approval for the stability instrument</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 2.2.8</u>	<u>Damage survival capability investigation</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 2.6.2</u>	<u>Alternative measures – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 4.3.6</u>	<u>Inspection/survey plan for the cargo containment system – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 4.6.2.5</u>	<u>Inspection/test means for secondary barrier – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 4.14.1.3</u>	<u>Methods to predict accelerations due to ship motion – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 4.18.1.5</u>	<u>Allowable stress for materials other than those covered by chapter 6 – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>

SPECIFIC FLAG STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
<u>Para. 4.18.2.6.3</u>	<u>Load distribution and sequence for longer periods – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 4.19.1.6.3</u>	<u>Design and construction of the heating system – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 4.20.3.3</u>	<u>Determining requirements of inspection for secondary barriers</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 6.4.1.1</u>	<u>Requirements for metallic materials as referred to in tables 6.1 to 6.5 of IGC Code</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 6.6.3</u>	<u>Requirements for testing and inspection of secondary barriers</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 8.2.6</u>	<u>Setting and sealing of pressure relief valves (PRVs)</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 8.2.18</u>	<u>Adequacy of the vent system fitted on tanks</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 10.2.4</u>	<u>Recognition of accredited testing authority or notified body</u>	<u>[In force 1/1/2016 by MSC.370(93)]</u>
<u>Para. 11.4.1</u>	<u>Fixed dry chemical powder fire-extinguishing systems – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 13.6.16</u>	<u>Value of alarm of vapour concentration in primary space – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 15.6.1</u>	<u>Information on maximum allowable loading limits – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 17.14.7</u>	<u>Maximum set pressure of PRVs (Ethylene oxide) – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 17.18.24</u>	<u>Cargo handling plans – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 18.2.1</u>	<u>Cargo system operation manuals – approval</u>	<u>In force 1/1/2016 by MSC.370(93)</u>

ANNEX 4

Specific Port State Obligations

SPECIFIC PORT STATE OBLIGATIONS		
SOURCE	SUMMARY DESCRIPTION	COMMENTS
<u>IGC Code</u>		
<u>Para. 1.1.6.1</u>	<u>Establishment of a Tripartite Agreement, where applicable</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 1.1.10</u>	<u>Actions for ships operating in some modes, and establishment of additional requirements</u>	<u>In force 1/1/2016 by MSC.370(93)</u>
<u>Para. 1.4.1.4</u>	<u>Ships not allowed to sail</u>	<u>In force 1/1/2016 by MSC.370(93)</u>