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REPORT TO THE MARITIME SAFETY COMMITTEE

Table of Contents

Section	Page
1 GENERAL	3
2 DECISIONS OF OTHER IMO BODIES	3
3 VALIDATED MODEL TRAINING COURSES	3
4 REPORTS ON UNLAWFUL PRACTICES ASSOCIATED WITH CERTIFICATES OF COMPETENCY	16
5 GUIDANCE FOR THE IMPLEMENTATION OF THE 2010 MANILA AMENDMENTS	17
6 COMPREHENSIVE REVIEW OF THE 1995 STCW-F CONVENTION	26
7 ROLE OF THE HUMAN ELEMENT	31
8 REVISION OF THE GUIDELINES ON FATIGUE	33
9 DRAFT MODERNIZATION PLAN OF THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)	36
10 AMENDMENTS TO THE IGF CODE AND DEVELOPMENT OF GUIDELINES FOR LOW-FLASHPOINT FUELS	37
11 REVISION OF REQUIREMENTS FOR ESCAPE ROUTE SIGNS AND EQUIPMENT LOCATION MARKINGS IN SOLAS AND RELATED INSTRUMENTS	37
12 REVISED SOLAS REGULATION II-1/3-8 AND ASSOCIATED GUIDELINES (MSC.1/CIRC.1175) AND NEW GUIDELINES FOR SAFE MOORING OPERATIONS FOR ALL SHIPS	38
13 BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR HTW 5	38
14 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2018	40
15 ANY OTHER BUSINESS	41
16 REPORT TO THE MARITIME SAFETY COMMITTEE	44

LIST OF ANNEXES

- ANNEX 1 REVIEW GROUPS FOR DEVELOPMENT, REVIEW AND VALIDATION OF MODEL COURSES
- ANNEX 2 DRAFT FRAMEWORK FOR THE GISIS MODULE RELATING TO REPORTING AND INFORMATION REQUIREMENTS UNDER ARTICLES IV, VIII AND IX OF THE STCW CONVENTION
- ANNEX 3 STCW.7/CIRC.24 – INTERIM GUIDANCE FOR PARTIES, ADMINISTRATIONS, PORT STATE CONTROL AUTHORITIES, RECOGNIZED ORGANIZATIONS AND OTHER RELEVANT PARTIES ON THE REQUIREMENTS OF THE STCW CONVENTION, 1978, AS AMENDED
- ANNEX 4 DRAFT AMENDMENTS TO THE PROCEDURES FOR PORT STATE CONTROL, 2011 (RESOLUTION A.1052(27))
- ANNEX 5 DRAFT MSC CIRCULAR ON AMENDMENTS TO MSC.1/CIRC.1503 ON ECDIS – GUIDANCE FOR GOOD PRACTICE
- ANNEX 6 BIENNIAL STATUS REPORT FOR 2016-2017
- ANNEX 7 PROPOSED AGENDA FOR THE 2018-2019 BIENNIUM
- ANNEX 8 PROVISIONAL AGENDA FOR HTW 5
- ANNEX 9 DRAFT GUIDELINES FOR PORT STATE CONTROL OFFICERS ON CERTIFICATION OF SEAFARERS, MANNING AND HOURS OF REST
- ANNEX 10 DRAFT MSC CIRCULAR ON GUIDELINES FOR DYNAMIC POSITIONING SYSTEM (DP) OPERATOR TRAINING
- ANNEX 11 DRAFT STCW.6 CIRCULAR ON AMENDEMENTS TO PART B OF THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE
- ANNEX 12 STATEMENT BY GHANA

1 GENERAL

1.1 The Sub-Committee on Human Element, Training and Watchkeeping (HTW) held its fourth session from 30 January to 3 February 2017, chaired by Ms. Mayte Medina (United States). The Vice-Chair, Ms. Farrah Fadil (Singapore), was also present.

1.2 The session was attended by delegations from Member States and Associate Members of IMO; by representatives from United Nations specialized agencies; by observers from intergovernmental organizations and non-governmental organizations in consultative status, as listed in document HTW 4/INF.1.

Secretary-General's opening address

1.3 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>.

Chair's remarks

1.4 In responding, the Chair thanked the Secretary-General for his words of guidance and encouragement and assured the Secretary-General that his advice and requests would be given every consideration in the deliberations of the Sub-Committee.

Adoption of the agenda and related matters

1.5 The Sub-Committee adopted the agenda (HTW 4/1) and agreed to be guided in its work, in general, by the annotations to the provisional agenda contained in document HTW 4/1/1 (Secretariat) and arrangements in document HTW 4/1/2 (Secretariat). The agenda, as adopted, with the list of documents considered under each agenda item, is set out in document HTW 4/INF.8.

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the decisions and comments pertaining to its work by NCSR 3, SSE 3, MEPC 69, MSC 96, III 3 and MSC 97, as reported in documents HTW 4/2 and HTW 4/2/1 (Secretariat) and took them into account in its deliberations under the relevant agenda items.

3 VALIDATED MODEL TRAINING COURSES

Preliminary review and report on the model courses programme

3.1 The Sub-Committee considered document HTW 4/3 (Secretariat) providing a preliminary review of IMO model courses with the aim of identifying the Sub-Committee that should be primarily responsible for reviewing, updating and developing each model course in accordance with the *Revised guidelines for the development, review and validation of model courses* (MSC-MEPC.2/Circ.15).

3.2 The Sub-Committee noted the current and anticipated future workload and resources required of the Secretariat to review those model courses which were older than five years and derived from requirements of the STCW Convention and Code, in order to identify those courses that required updating to meet the Knowledge, Understanding and Proficiency (KUP) requirements of the STCW Code, as well as industry best practices.

- 3.3 In the ensuing discussion the following views were expressed:
- .1 the work done by the course developers, review groups and the Secretariat to finalize the nine draft model courses for submission to this session was appreciated;
 - .2 the Secretariat's proposed principles for revision of model courses were accepted for future revision of model courses;
 - .3 the new review process had simplified the validation process of model courses;
 - .4 review group coordinators could impartially act as conduits between course developers and the review groups from the beginning of the process to its conclusion;
 - .5 course developers were reminded that model courses should be developed for global use;
 - .6 model courses should be based on STCW competences and the KUPs as has been done for model courses in the past;
 - .7 agreement to the merger of the review periods to provide more time for the review;
 - .8 the revised model courses should be brought in line with requirements of the Code and technological advances;
 - .9 the lack of relevant model courses might exacerbate potential issues concerning availability of courses and insufficient supply of qualified and certified personnel as the first LNG-fuelled ships were delivered or conversions completed; and therefore if overall capacity and time constraints were concerns ahead of HTW 5, the Sub-Committee considered affording the model courses for seafarers on ships subject to the IGF Code the highest possible priority among these model courses;
 - .10 while the use of model courses of the IMO by the administrations or training institutions was not mandatory, model courses were an essential aid to the development of courses and training programmes;
 - .11 educational objectives recommended in such courses should be a proper model, and therefore, developing and reviewing them regularly were key to the uniform and effective implementation of the STCW Convention;
 - .12 taking account of amendments to regulation V/2 of the STCW Convention and considering the four distinct elements of the amended passenger ship-specific training, revision of the existing model courses 1.28 and 1.29 into four model courses was necessary to reflect the important differences between each in terms of applicability and content; and
 - .13 the new review and development process for model courses had improved the quality of draft model courses submitted for validation.

3.4 Subsequently, the Sub-Committee:

- .1 noted the challenges faced by the Secretariat to meet the increased responsibility for the process for the continuous review of existing, and the development of new IMO model courses (HTW 4/3, paragraphs 4 and 5);
- .2 agreed to the proposed principles to be observed to improve and expedite future work on the model course development or review, including the general time frame for all model courses to be submitted to HTW 5 for validation (HTW 4/3, paragraph 6);
- .3 agreed that the existing terms of reference for the Basic and Advanced training for masters, officers, ratings and other personnel on ships subject to the IGF Code should comply with the new time frame referred to in .2 above (HTW 4/3, paragraph 9);
- .4 instructed the Secretariat to inform the NCSR Sub-Committee of the need to revise/update model course 3.14 on *SAR Mission Coordinator (IAMSAR Manual Vol.2)* (HTW 4/3, paragraph 10);
- .5 agreed that the modified and customized template for the terms of reference for course developers to be used for model courses, be submitted to HTW 5 (HTW 4/3, paragraph 12 and annex 3); and
- .6 urged subject-matter experts to volunteer as review group members/coordinators for the model courses agreed to be developed at this session and to notify the Secretariat accordingly (HTW 4/3, paragraph 13).

3.5 The Sub-Committee endorsed the prioritization categories assigned in document HTW 4/3, annex 2, and instructed the Secretariat to continue reporting on IMO model courses in the current format.

3.6 The Sub-Committee urged interested Member States and international organizations to assist the Organization in developing, reviewing and updating IMO model courses for which the Sub-Committee (HTW 4/3, paragraph 8 and annex 2) had assigned Priority 1 (new model courses to be developed as a result of new or amended IMO instruments) and 2 (existing model courses that required significant changes, either individual or cumulative, owing to amendments to IMO instruments and/or significant industry/technological changes).

3.7 The Sub-Committee, noting the need to identify potential course developers at this session for the model courses listed in document HTW 4/3, paragraph 8, invited Member States and international organizations interested in developing new, and revising existing model courses to provide their details to the Secretariat during this session.

3.8 In this regard, the Sub-Committee appreciated the offers by the following countries to revise or develop relevant model courses as listed below:

- .1 The Philippines offered to develop or revise the following model courses:
 - .1 new model course on *Electro-technical Rating* supported by Greece and China;
 - .2 new model course on *Leadership and managerial skills* supported by Argentina;

- .3 revision of existing model course 1.28 on *Crowd Management, Passenger Safety and Safety Training for Personnel Providing Direct Services to Passengers in Passenger Spaces*, with a view to developing two separate new model courses reflecting the passenger ship-related STCW amendments adopted at MSC 97 (MSC 97/22/Add.1, annexes 8 and 9); and
 - .4 revision of existing model course 1.29 on *Proficiency in Crisis Management and Human Behaviour Training* including *Passenger Safety, Cargo Safety and Hull Integrity Training*, with a view to developing two separate new model courses reflecting the passenger ship-related STCW amendments adopted at MSC 97 (MSC 97/22/Add.1, annexes 8 and 9).
- .2 China offered to revise existing model course 1.19 on *Proficiency in Personal Survival Techniques*.
- .3 India offered to revise existing model course 2.03 on *Advanced Training in Firefighting*.
- .4 Malaysia offered to revise the following existing model courses:
- .1 model course 1.34 on *Automatic Identification Systems (AIS)*, supported by Argentina; and
 - .2 model course 1.36 on *Liquefied Natural Gas (LNG) Tanker Cargo and Ballast Handling Simulator*.

3.9 Taking into account the decision of the Sub-Committee to authorize the revision and development of the model courses as listed in paragraph 3.8, the delegation of Argentina offered to assist in the translation of the model courses validated by this session, into the Spanish language.

Revision of model course 1.08 on Radar Navigation at Management Level

3.10 The Sub-Committee, having considered document HTW 4/3/9 (China), accepted, with appreciation, the offer by China to revise model course 1.08 on *Radar Navigation at Management Level*, and invited them to submit the revised model course, in accordance with the Revised guidelines (MSC-MEPC.2/Circ.15), to the next session of the Sub-Committee for validation.

Validation of model courses

New draft model courses on Basic and Advanced training for ships operating in polar waters

3.11 The Sub-Committee considered the report of the Review Group (HTW 4/3/1) for the draft new model courses on *Basic training for ships operating in polar waters* (HTW 4/3/1/Add.1) and the *Advanced training for ships operating in polar waters* (HTW 4/3/1/Add.2).

3.12 The Sub-Committee gave preliminary consideration to the draft new model courses on *Basic training for ships operating in polar waters* (HTW 4/3/1/Add.1) and the *Advanced training for ships operating in polar waters* (HTW 4/3/1/Add.2).

3.13 In the ensuing discussion, the following views were expressed:

- .1 the suggestion that experience in the Baltic might be considered appropriate for seagoing service could be very challenging as there were other areas where such conditions also applied for some times of the year and, therefore, caution was urged when stating where sea going service might be obtained, as there were other areas in the Arctic and Antarctic where personnel might operate;
- .2 it was inappropriate to state in a model course where seagoing service could be gained with regard to the Polar Code, and these requirements should not exceed those of the Polar Code;
- .3 the qualifications required for instructors were too prescriptive;
- .4 the student-to-instructor ratio should follow internationally accepted practice in other IMO model courses;
- .5 all human and technical aspects had been covered to satisfy all the competence required for training and targeted the personnel serving on ships operating in polar waters; and
- .6 the instructor manual should be retained as a compendium as it would be of use to instructors.

3.14 In this context, the Sub-Committee recalled that MSC 96 had instructed the HTW Sub-Committee to take into consideration the items listed in paragraph 13 of MSC 96/3/4 (Report of the Correspondence Group on Development of Guidance on a Methodology for Determining Limitations for Operation in Ice) when developing a relevant model course (MSC 96/25, paragraph 3.78).

3.15 The Sub-Committee noted that the Correspondence Group had identified the following issues that should be part of the required training for operation in polar waters:

- .1 ice decay;
- .2 identification and avoidance of glacial ice;
- .3 ice breaker escort; and
- .4 knowledge of various methodologies for setting operational limitations in ice such as POLARIS, Canada's Arctic Ice Regime Shipping System and the Russian Ice Certificate.

3.16 After some discussion, the Sub-Committee referred documents HTW 4/3/1, HTW 4/3/1/Add.1 and HTW 4/3/1/Add.2 to the Drafting Group to be established on validation of model courses, to compare the scope of the provisions in the STCW Code related to *Basic training for ships operating in polar waters*, and *Advanced training for ships operating in polar waters*, with the contents of the draft model courses as presented, with a view to their validation by the Sub-Committee.

3.17 The Sub-Committee expressed its appreciation to the course developers, Transport Canada, and its coordinator, Capt. Anthony Patterson, and the Review Group members and the Group's coordinator, Professor Hervé Baudu (France), for their excellent work to finalize the drafts for submission to this session for validation.

Draft new model courses on:

Ratings as able seafarer engine in a manned engine-room or designated to perform duties in a periodically unmanned engine-room

Ratings forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room

3.18 The Sub-Committee considered the report of the Review Group (HTW 4/3/2) and draft new model course on *Ratings as able seafarer engine* (HTW 4/3/2/Add.1) and the report of the Review Group (HTW 4/3/3) and draft new model course on *Ratings forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room* (HTW 4/3/3/Add.1) together, due to the close links between the contents of the two model courses.

3.19 In the ensuing discussion, the following views were expressed:

- .1 taxonomy for skills should not exceed the standards in the KUPs of the STCW Code;
- .2 duplications in part D should be deleted and instead reference should be made to the model course for engine-room watchkeeping ratings;
- .3 requirements for equipment were not adequately covered;
- .4 the detailed teaching syllabus was a repetition of the course outline and therefore required further revision;
- .5 part E should be generic and not specific;
- .6 the issue of copyright/image rights for the use of the pictures, raised concerns;
- .7 too many pictures might distract students from referring to teaching materials; and
- .8 validation of the draft model course in principle was needed until the course developers had confirmed that image rights allowed global use of pictures in the model course.

3.20 After some discussion, the Sub-Committee referred documents HTW 4/3/2, HTW 4/3/2/Add.1, HTW 4/3/3 and HTW 4/3/3/Add.1 to the Drafting Groups to be established on validation of model courses, to compare the scope of the provisions in the STCW Code related to training for *Ratings as able seafarer engine*, and *Ratings forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room*, with the contents of the draft model courses as presented, with a view to their validation by the Sub-Committee. In relation to the copyright for the pictures in the model course, the Sub-Committee confirmed that Singapore has allowed the use of the pictures contained in the model course by users of this model course.

3.21 The Sub-Committee expressed its appreciation to the course developer, Singapore, and the coordinator, Capt. Khoo Gek Hung (Maritime and Port Authority of Singapore), and Review Group members and the Group's coordinator, Capt. Vinayak Mohla (GlobalMET), for their excellent work to finalize the drafts for submission to this session for validation.

Revised draft model courses on:

3.12 – Assessment, examination and certification of seafarers

6.09 – Training course for Instructors

1.30 – On-board Assessment

3.22 The Sub-Committee considered the report of the Review Group (HTW 4/3/4) and draft revised model course 3.12 on *Assessment, examination and certification of seafarers* (HTW 4/3/4/Add.1), the report of the Review Group (HTW 4/3/5) and draft revised model course 6.09 on *Training course for Instructors* (HTW 4/3/5/Add.1) and the report of the Review Group (HTW 4/3/6) and draft revised model course 1.30 on *On-Board Assessment* (HTW 4/3/6/Add.1) together, as the contents of the three revised model courses were closely linked.

3.23 The Sub-Committee agreed to delete references to training material producers in the draft model courses to maintain the generic character of model courses.

3.24 No comments were made regarding draft model courses 3.12 and 6.09. However, with regard to model course 1.30, the Sub-Committee noted the following views:

- .1 clarity was required regarding the interpretation of requirements for assessment and standards for assessors;
- .2 the proposed course duration needed to be reduced from 31 to 16 hours;
- .3 the performance standards proposed were more suitable for shore-based personnel than those serving on board ships; and
- .4 on-board assessors did not develop assessment following standard prepared assessment, and it was timely to examine behavioural competences as part of the competency framework.

3.25 Taking into account the above views, the Sub-Committee referred documents HTW 4/3/4, HTW 4/3/4/Add.1, HTW 4/3/5, HTW 4/3/5/Add.1, HTW 4/3/6 and HTW 4/3/6/Add.1 to the Drafting Groups to be established on validation of model courses, to compare the scope of the provisions in the STCW Code related to *Assessment, examination and certification of seafarers*, *Training for Instructors* and *On-board Assessment*, with the contents of the draft model courses as presented, with a view to their validation by the Sub-Committee.

3.26 The Sub-Committee expressed its appreciation to the joint course developers, International Association of Maritime Universities (IAMU) and the International Maritime Lecturers Association (IMLA), and the coordinator, Professor Takeshi Nakazawa (IAMU), and Review Group members and the Group's coordinator, Mr. Davis Breyer (United States), for their excellent work to finalize the drafts for submission to this session for validation.

Revised model course 2.07 on Engine-room simulators

3.27 The Sub-Committee considered the report of the Review Group (HTW 4/3/7) and the draft revised model course related to *Training in Engine-Room Simulators* (HTW 4/3/7/Add.1), which had been further revised/updated, as instructed by HTW 2 and HTW 3.

3.28 In the ensuing discussion, the following views were expressed:

- .1 while minor editorial changes were required, the model course could be strengthened by inclusion of sample exercises;
- .2 the staffing requirements to deliver the course were too prescriptive;
- .3 the instructor-to-student ratio should follow internationally agreed standards in other IMO model courses; and
- .4 the facilities and equipment requirements specified were too prescriptive, and could be placed as a sample for type of simulators for specific training.

3.29 After some discussion, the Sub-Committee referred documents HTW 4/3/7 and HTW 4/3/7/Add.1 to the Drafting Group to be established for finalization of the model courses, to compare the scope of the provisions in the STCW Code related to training in engine-room simulators with the contents of the draft model course as presented, with a view to its validation by the Sub-Committee.

3.30 The Sub-Committee expressed its appreciation to the course developer, Turkey, and the Review Group members and the Group's coordinator, Capt. Tim Wilson (GlobalMET), for their excellent work to finalize the drafts for submission to this session for validation.

Basic and Advanced training for masters, officers, ratings and other personnel on ships subject to the IGF Code

3.31 The Sub-Committee recalled that HTW 3, noting the information from Norway on its progress in preparing the draft new model courses on *Basic training, and Advanced training, for masters, officers, ratings and other personnel on ships subject to the IGF Code*, had invited them to finalize the draft model courses and submit them to this session for validation.

3.32 The Sub-Committee noted the information from Norway that they had not been able to submit the draft model courses in accordance with the deadlines agreed at HTW 3, and that they planned to finalize the draft model courses for submission to the next session of the Sub-Committee, in accordance with the new timeframe referred to in paragraph 3.4.2 above and HTW 4/3, paragraph 9.

New model course on Ratings as Able Seafarer Deck

3.33 The Sub-Committee considered the report of the Review Group (HTW 4/3/8) and draft new model course on *Ratings as able seafarer deck* (HTW 4/3/8/Add.1).

3.34 In the ensuing discussion, the Sub-Committee noted the view that the KUP requirements in the draft model courses exceeded the requirements of the STCW Code.

3.35 After some discussion, the Sub-Committee referred documents HTW 4/3/8 and HTW 4/3/8/Add.1 to the Drafting Group to be established on validation of model courses, to compare the scope of the provisions in the STCW Code related to training for *Ratings as able seafarer deck*, with the contents of the draft model courses as presented, with a view to its validation by the Sub-Committee.

3.36 The Sub-Committee expressed its appreciation to the course developer, Germany, and the coordinator, Ms. Simone Wilde, and Review Group members and the Group's coordinator, Capt. Forkanul Quader (United Kingdom), for their excellent work to finalize the drafts for submission to this session for validation.

Establishment of Review Groups

3.37 The Sub-Committee recalled that, in accordance with paragraph 2.1.3 of the *Revised guidelines for the development, review and validation of model courses* (MSC MEPC.2/Circ.15), Review Groups need to be established that would be tasked to review the content of the model courses against the specific instructions/terms of reference for course developers, prior to submission of drafts to the relevant sessions of the Sub-Committee.

3.38 The Sub-Committee invited Member States and international organizations to facilitate the successful development and revision of model courses by contributing to the work of Review Groups for the model courses to be authorized by this session for submission to the next session of the Sub-Committee.

3.39 The Sub-Committee reiterated that Review Groups should comprise of all stakeholders with the required expertise, including Member States, international organizations, representatives from the maritime industry, maritime training and education establishments, seafarer representatives and other relevant professional organizations, and that Review Groups were not envisaged as standing groups.

3.40 The Sub-Committee reaffirmed that Review Group coordinators needed to be identified at this session for each model course authorized to be developed or updated, to ensure the timely submission of draft new/revised model courses to the next session.

3.41 The Sub-Committee requested delegates interested in participating in Review Groups to kindly provide their details to the Secretariat for inclusion in the email distribution list for each model course, or, alternatively, interested delegates may send their contact details by email to htw@imo.org after the close of this session.

3.42 The Sub-Committee acknowledged with appreciation the expressions of interest by delegations and established the following Review Groups:

- .1 Review Group for new model course on *Electro-technical rating* developed by the Philippines supported by China and Greece, with the Review Group coordinator to be confirmed in due course;
- .2 Review Group for new model course on *Use of Leadership and Managerial Skill*, developed by the Philippines supported by Argentina with Capt. Sanjay Bugnait (GlobalMET), as Review Group coordinator;
- .3 Review Group for revision of model course 1.28 on *Crowd Management, Passenger safety training for personnel providing direct services to passengers in passenger spaces*, to be developed as two separate new model courses reflecting the passenger ship-related STCW amendments adopted at MSC 97 (MSC 97/22/Add.1, annexes 8 and 9) by the Philippines with, Capt. Richard Dunham (GlobalMET), as Review Group coordinator;
- .4 Review Group for revision of model course 1.29 on *Proficiency in crisis management and Human behaviour training including passenger safety, cargo safety and hull integrity training* to be developed as two separate new model courses reflecting the passenger ship-related STCW amendments adopted at MSC 97 (MSC 97/22/Add.1, annexes 8 and 9) by the Philippines, with Capt. Richard Dunham (GlobalMET), as Review Group coordinator;

- .5 Review Group for revision of model course 2.03 on *Advanced Training in Firefighting* developed by India with Mr. Jan Willem Verhoeff (Netherlands), as Review Group coordinator;
- .6 Review Group for revision of model course 1.34 on *Automatic Identification Systems (AIS)*, developed by Malaysia and Argentina, with the Review Group coordinator to be confirmed in due course;
- .7 Review Group for revision of model course 1.36 on *Liquefied natural gas (LNG) tanker cargo & ballast handling simulator*, developed by Malaysia with, Capt. Stephen Cross (The Netherlands/IMLA), as Review Group coordinator;
- .8 Review Group for revision of model course 1.08 on *Radar, ARPA, bridge teamwork and search and rescue – Radar navigation at management level* developed by China, with Capt. Mohamed Halim Bin Ahmed (Malaysia), as Review Group coordinator;
- .9 Review Group for new model course on *Basic training for masters, officers, ratings and other personnel on ships subject to the IGF Code* developed by Norway, with Mr. Davis Breyer (United States), as Review Group coordinator;
- .10 Review Group for new model course on *Advanced training for masters, officers, ratings and other personnel on ships subject to the IGF Code*, developed by Norway, with Mr. Davis Breyer (United States), as Review Group coordinator; and
- .11 Review Group for revision of model course 1.19 on *Proficiency in personal survival techniques*, developed by China, with Capt. Vinayak Mohla (GlobalMET), as Review Group coordinator.

3.43 The composition of the Review Groups established at this session is set out in annex 1.

3.44 The Sub-Committee, taking into account the urgent need for new and updated model courses by STCW Parties to effectively implement the STCW Convention and Code, referred document HTW 4/3, annex 3 (Template for draft terms of reference for the development of model courses) to the drafting groups to be established on validation of model courses, for the preparation of the terms of reference for course developers and the review groups for those courses identified in paragraph 3.42 above. Furthermore, the Sub-Committee noted that the terms of reference for the *Basic training for masters, officers, ratings and other personnel on ships subject to the IGF Code* and *Advanced training for masters, officers, ratings and other personnel on ships subject to the IGF Code* were developed and agreed during HTW 3.

Establishment of drafting groups

3.45 The Sub-Committee agreed to establish two drafting groups for detailed consideration of the nine draft model courses that were submitted for validation to this session, in order to facilitate completion of the work.

3.46 The Sub-Committee also tasked the drafting groups with developing the terms of reference for development of model courses that had been assigned with Priority 1 or 2 and authorized by the Sub-Committee at this session, in order to facilitate the development of these model courses.

Drafting Group 1

3.47 The Sub-Committee established Drafting Group 1 on Validation of model courses, chaired by Capt. George Edenfield (United States), and instructed it, taking into account decisions and comments in plenary, and the urgent need for the model courses by STCW Parties to implement the 2010 Manila Amendments to the STCW Convention and Code, to:

- .1 compare the scope of the provisions in the STCW Code related to training in documents HTW 4/3/1, Add.1 and Add. 2 (draft new *Basic training and Advanced training for ships operating in polar waters*); HTW 4/3/4 and Add.1 (draft revised model course 3.12 on *Assessment, examination and certification of seafarers*), HTW 4/3/5 and Add.1 (draft revised model course 6.09 on *Training course for instructors*) and HTW 4/3/6 and Add.1 (draft revised model course 1.30 on *On-board Assessment*) and the contents of the aforementioned draft model courses as presented, with a view to validation by the Sub-Committee;
- .2 taking into account document HTW 4/3, annex 3, which provides a template, prepare draft terms of reference in accordance with MSC-MEPC.2/Circ.15, annex 2, as a basis, for the following model course which had been authorized by the Sub-Committee to be developed or reviewed with a view to validation by HTW 5:
 - .1 new draft model course on *Use of leadership and managerial skill*;
 - .2 revision of existing model course 1.28 on *Crowd management, passenger safety training for personnel providing direct services to passengers in passenger spaces*, with a view to developing two separate new model courses reflecting the passenger ship-related STCW amendments adopted at MSC 97 (MSC 97/22/Add.1, annexes 8 and 9);
 - .3 revision of existing model course 1.29 on *Proficiency in crisis management and human behaviour training including passenger safety, cargo safety and hull integrity training*, with a view to developing two separate new model courses reflecting the passenger ship-related STCW amendments adopted at MSC 97 (MSC 97/22/Add.1, annexes 8 and 9);
 - .4 revision of existing model course on 1.36 *Liquefied Natural Gas (LNG) tanker cargo and ballast handling simulator*;
 - .5 revision of existing model course 1.34 on *Automatic Identification Systems (AIS)*; and
- .3 submit its report on Thursday, 2 February 2017.

Drafting Group 2

3.48 The Sub-Committee established Drafting Group 2 on Validation of model courses, chaired by Capt. Kersi Deboo (India), and instructed it, taking into account decisions and comments in plenary, and the urgent need for the model courses by STCW Parties to implement the 2010 Manila Amendments to the STCW Convention and Code, to:

- .1 compare the scope of the provisions in the STCW Code related to training in documents HTW 4/3/2 and HTW 4/3/2 Add.1 (draft new model course on *Ratings as able seafarer engine in a manned engine-room or designated to perform duties in a periodically unmanned engine-room*), HTW 4/3/3 and HTW 4/3/3 Add.1 (draft new model course on *Ratings forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room*), HTW 4/3/7 and HTW 4/3/7/Add.1 (draft revised model course 2.07 on *Engine-room Simulators*) and HTW 4/3/8 and HTW 4/3/8 /Add.1 (draft new model course on *Ratings as able seafarer deck*) and the contents of the aforementioned draft model courses as presented, with a view to validation by the Sub-Committee;
- .2 taking into account document HTW 4/3, annex 3, which provides a template, prepare draft terms of reference in accordance with MSC-MEPC.2/Circ.15, annex 2 as a basis for the following model course which had been authorized by the Sub-Committee to be developed or reviewed with a view to validation by HTW 5:
 - .1 new draft model course on *Electro-technical rating*;
 - .2 revision of existing model course 2.03 on *Advanced training in firefighting*;
 - .3 revision of existing model course 1.08 on *Radar, ARPA, bridge teamwork and search and rescue – Radar navigation at management level*;
 - .4 revision of existing model course 1.34 on *Automatic Identification Systems (AIS)*;
 - .5 revision of existing model course 1.19 on *Proficiency in personal survival techniques*; and
- .3 submit its report on Thursday, 2 February 2017.

Reports of the Drafting Groups

3.49 On receipt of the reports of the Drafting Groups (HTW 4/WP.6 and HTW 4/WP.7), the Sub-Committee approved them in general, and took action as summarized in the following paragraphs.

Validation of Model Courses

3.50 The Sub-Committee validated:

- .1 four new model courses on:
 - .1 *Basic training for ships operating in polar waters*;
 - .2 *Advanced training for ships operating in polar waters*;

- .3 *Ratings forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room; and*
- .4 *Ratings as able seafarer deck; and*
- .2 four revised model courses on:
 - .1 3.12 on *Assessment, examination and certification of seafarers;*
 - .2 6.09 on *Training course for Instructors;*
 - .3 1.30 on *On-board Assessment;* and
 - .4 2.07 on *Engine-room Simulator,*

and instructed the Secretariat to finalize and publish them, as soon as possible.

3.51 The Sub-Committee recalled that validation of model courses by the Sub-Committee in this context meant that it found no grounds to object to their contents. In doing so, the Sub-Committee did not approve the documents and they could, therefore, not be regarded as official interpretations of the Convention.

3.52 The Sub-Committee, noting that the Group had been unable to finalize the draft of the new model course on *Ratings as able seafarer engine in a manned engine-room or designated to perform duties in a periodically unmanned engine-room*, agreed to refer it back to the course developer for further revision, taking into account the views and comments in the Drafting Group, for resubmission to HTW 5, in accordance with MSC-MEPC.2/Circ.15 on *Revised guidelines for the development, review and validation of model courses*, with a view to validation.

Course Developers and Review Groups for development, review and updating of model courses

3.53 The Sub-Committee agreed to the terms of reference for the course developers, as set out in documents HTW 4/WP.6, annexes 6 to 11, and HTW 4/WP.7, annexes 4 to 8, and established Review Groups, as set out in annex 1, appendices 1 to 11, for the development of new and revision of existing, model courses listed below, with a view to their validation at the next session of the Sub-Committee:

- .1 new model course on *Electro-technical rating*
- .2 new model course on *Use of leadership and managerial skill;*
- .3 new model courses on *Crowd Management Training,* and *Crisis Management and Human Behaviour Training;*
- .4 new model courses on *Passenger safety, cargo safety and hull integrity training,* and *Safety training for personnel providing direct service to passengers in passenger space;*
- .5 revision of model course 2.03 on *Advanced training in firefighting;*
- .6 revision of model course 1.34 on *Automatic Identification System (AIS);*

- .7 revision of model course 1.36 on *Liquefied Natural Gas (LNG) tanker cargo and ballast-handling simulator*;
- .8 revision of model course 1.08 on *Radar, ARPA, Bridge Teamwork and Search and Rescue - Radar Navigation at Management Level*;
- .9 new model course on *Basic training for masters, officers, ratings and other personnel on ships subject to the IGF Code*;
- .10 new model course on *Advanced training for masters, officers, ratings and other personnel on ships subject to the IGF Code*; and
- .11 revision of model course 1.19 on *Proficiency in Personal Survival Techniques*.

3.54 The composition of the Review Groups may be updated, as and when, further expressions of interest are received by the Secretariat.

3.55 The Sub-Committee, when validating the model courses, noted the concerns raised by some delegations relating to the inclusion, or not, of timetables in IMO model courses. Taking into account that the Revised guidelines (MSC-MEPC.2/Circ.15) also includes timetables, the Sub-Committee decided to consider the matter further at HTW 5.

4 REPORTS ON UNLAWFUL PRACTICES ASSOCIATED WITH CERTIFICATES OF COMPETENCY

Reports on fraudulent certificates reported to the Secretariat

4.1 The Sub-Committee noted the information provided by the Secretariat (HTW 4/4), detailing fraudulent certificates found on board ships during inspections or reportedly being used, as reported to the Secretariat for the years 2015 and 2016, and urged Member States to report details of fraudulent certificates detected in the revised reporting format (STW 38/17, annex 1).

4.2 The Sub-Committee, noting the large number of fraudulent certificates reported by Parties, reiterated the invitation to Member States and international organizations, to submit proposals on a strategy to address the problems associated with fraudulent certificates of competency to the next session.

4.3 The delegation of the Russian Federation informed the Sub-Committee that they had advised Member States of the International Maritime Organization that qualification documents of crew members of sea-going ships issued by the Russian Federation were in full compliance with the requirements of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, including the 2010 Manila Amendments, which was promulgated by STCW.2/Circ.69 in November 2016.

4.4 The statement by the delegation of Ghana is set out in annex 12.

Information document

4.5 The Sub-Committee noted the information contained in document HTW 4/INF.3 (Ukraine) on fraudulent certificates issued in the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol, Ukraine, and thanked Ukraine for it.

Certification verification facility

4.6 The Sub-Committee noted the information provided by the Secretariat that the certification verification facility through the IMO website had been used 20,262 times during the year 2016.

4.7 In this context, the Sub-Committee urged Member States to provide the Secretariat with updated information to facilitate verification of certificates and to respond in a timely manner to requests for verification of certificates.

5 GUIDANCE FOR THE IMPLEMENTATION OF THE 2010 MANILA AMENDMENTS

5.1 The Sub-Committee recalled that MSC 93, taking into account the need for further guidance on implementation of the 2010 Manila Amendments, had extended the target completion date of the output on "Development of guidance for the implementation of the 2010 Manila Amendments", until the end of the transitional arrangements, i.e. 2017.

STCW related information to be communicated through GISIS to reduce administrative burdens

5.2 The Sub-Committee recalled that HTW 3 had endorsed, and MSC 96 had approved, sections 1 to 5 of the draft framework for the proposed new GISIS module related to reporting and information communication requirements under articles IV, VIII and IX of the STCW Convention.

5.3 The Sub-Committee also recalled that HTW 3 had agreed that the remaining sections 6 to 21 of the draft framework relating to reporting and information communication requirements under section A-I/7 of the STCW Code, required further consideration and instructed the Secretariat to report on the benefits of this module to this session.

5.4 The Sub-Committee was informed that MSC 97, while recalling the work carried out by MSC 96 on "Analysis of recommendations to reduce administrative burdens in environment-related IMO instruments as identified by the SG RAR" (MSC 96/25, paragraph 19.4) and its related decisions, with regard to matters related to the STCW Convention and Code, had noted that MSC 96 had instructed HTW 4 to continue its work on the development of a framework for a GISIS module, and requested the Secretariat to provide updated information thereon, as appropriate (MSC 97, paragraph 9.19.3).

5.5 The Sub-Committee considered document HTW 4/5 (Secretariat), which proposed:

- .1 a new STCW Convention-related GISIS module, which took into account the entire scope of reporting requirements required under the STCW Convention, so as to reduce the administrative burden on Parties to the Convention and on the Secretariat; and
- .2 to establish four categories of STCW-related data which allowed STCW information to be shared in accordance with each category assigned to them, and provided at annex an overview of the STCW information that could be included in the proposed GISIS module.

5.6 The Sub-Committee also considered document HTW 4/5/3 (United States), which proposed a change to the current status of information relating to article IV(1)(c) that requires STCW Parties to communicate information on "specimen certificates" to the Secretary-General, which currently reads "Restricted" in the draft framework in the new STCW GISIS module.

5.7 In this regard, the Sub-Committee noted that the Secretariat had promulgated information on specimen certificates by means of STCW circulars, but if STCW Parties could upload their specimen certificates directly onto GISIS, it would eliminate the need to issue circulars, which would also help port State control officers, who could view the GISIS information in order to detect fraudulent certificates. Hence, the Secretariat proposed a change to the status from "Restricted" to "All Parties".

5.8 In the ensuing discussion, the following views were expressed:

- .1 there was broad support for all the proposals in document HTW 4/5 in recognizing the need for a GISIS module for the STCW Convention reporting requirements;
- .2 the change of access rights from "Restricted" to "All Parties" and the ability to upload specimen certificates by Parties directly to GISIS supported facilitation of the work of port State control officers;
- .3 the framework should consist of the four categories of transparency;
- .4 Member States had the responsibility for accuracy of information uploaded;
- .5 there was broad support for the proposal in document HTW 4/5/3 to change the access rights for communication of "specimen certificates" to the Secretary-General, from "Restricted" to "All Parties";
- .6 if the Sub-Committee agreed to make access to information public, then this should be facilitated by including hyperlinks to websites of information sources; and
- .7 information uploaded by Member States should be made available to other Parties on a voluntary basis.

5.9 After discussion, the Sub-Committee referred documents HTW 4/5 (Secretariat) and HTW 4/5/3 (United States) together with document HTW 3/WP.4, annex 1, to Working Group 3 on Training Matters, to be established, to finalize the framework for the GISIS module relating to the STCW Convention and Code, for consideration by the Sub-Committee, with a view to approval by the Committee.

5.10 The Sub-Committee agreed, when finalizing the framework of the proposed new STCW GISIS module, to task the Secretariat to:

- .1 include the additional proposed functions to facilitate uploading of information by STCW Parties directly on to GISIS relating to: the nomination of competent persons; information on simulators used for maritime training; reporting requirements attesting compliance with regulation I/7 (Communication of information) and I/8 (Quality standards); and
- .2 integrate the existing information on simulators into the proposed STCW GISIS module.

Guidance relating to the provision of documentary evidence required under the STCW Convention by seafarers to port State control officers and other third-party inspection regimes

5.11 The Sub-Committee was advised that MSC 96 had considered document MSC 96/12/2 (United States and ICS) in relation to the practice by which seafarers were being requested to provide documentary evidence to port State control officers (PSCOs) and representatives from third-party inspection regimes, for training course completion certificates with references to the applicable IMO model courses. MSC 96 had agreed that appropriate guidance should be developed by the Organization to provide the necessary clarity and, subsequently, instructed HTW 4 to consider document MSC 96/12/2 under this agenda item, along with any relevant proposals submitted to this session on this issue.

5.12 The Sub-Committee was also advised that MSC 96, recalling that the III Sub-Committee was currently reviewing the *Procedures for port State control, 2011* (resolution A.1052(27)), had instructed the HTW Sub-Committee to provide relevant input to the III Sub-Committee for its consideration on this matter.

5.13 The Sub-Committee considered document HTW 4/5/2 (United States and ICS), which contained in its annexes two draft circulars on:

- .1 advice for port State control officers, recognized organizations and other relevant parties on the certificates and documentary evidence required under the STCW Convention, 1978, as amended, and provision of the documentation for verification, to provide the necessary guidance to address the inconsistency in the interpretation of the Convention; and
- .2 draft amendments for consideration, as instructed by MSC 96, by the III Sub-Committee relating to the revision of the *Procedures for port State control, 2011* (resolution A.1052(27)).

5.14 The Sub-Committee considered document HTW 4/5/6 (China), which supported the proposals in document HTW 4/5/2 relating to the practice of some port State control officers (PSCOs) and representatives from third-party inspection regimes to request documentation not required by the STCW Convention, including training course completion certificates with references to the applicable IMO model courses. It requested clarification on the status of IMO model courses in *Procedures for port State control, 2011* (resolution A.1052(27)), which was currently being reviewed, and the scope of documentary evidence as required by the STCW Convention.

5.15 In the ensuing discussion, the following views were expressed:

- .1 some port State control officers and representatives from third-party inspection regimes were requesting training course completion certificates with specific references to the applicable IMO model courses;
- .2 some industry organization-accredited inspectors had mistakenly raised observations relating to linking ECDIS training with the IMO model course 1.27, and that the inspectors had been instructed not to raise observations in the case where there was no reference in a certificate of competency that the training complied with IMO model course 1.27. Furthermore, the training materials and inspection guidance notes had been modified accordingly;

- .3 seafarers should not be requested to provide documentary evidence of either having completed the training course or updated their training within the last five years;
- .4 multiple guidance might cause confusion, so every attempt should be made to consolidate or revoke existing guidance;
- .5 guidance should concentrate on regulation I/4;
- .6 the guidance provided in MSC/Circ.1032 should be taken into account in preparing relevant guidance to address the concern raised and to avoid duplication;
- .7 additional clarification was required in respect of refresher training, particularly, as holders of certificates of proficiency in basic training, survival craft, rescue boats and fast rescue boats, and advanced fire-fighting were required, from 1 January 2017, to provide evidence of having maintained the required standards of competence every five years;
- .8 port State control inspectors had requested seafarers holding certificates of competency to produce the original certificate of proficiency as well as evidence of refresher training;
- .9 guidance on *Procedures for Port State Control* should contain a clear statement to the effect that seafarers providing evidence of updated training within the last five years, were not required to provide the original Certificate of Proficiency on which the updated training was based;
- .10 there should be a unified interpretation of the documents required to be provided by seafarers in accordance with the STCW Convention, as any request for certificates above the minimum requirements of the STCW Convention was inappropriate;
- .11 unnecessary difficulties for seafarers and delays to ships should be avoided; and
- .12 appropriate guidance should be provided to all Parties concerned.

5.16 After discussion, the Sub-Committee referred documents HTW 4/5/1, HTW 4/5/2 and HTW 4/5/6 to Working Group 3 on Training Matters, to be established, for detailed consideration and preparation of the draft STCW.7 circular on guidance relating to the provision of documentary evidence under the STCW Convention by seafarers to PSCOs and other third-party inspection regimes, and draft amendments to the *Procedures for port State control, 2011* (resolution A.1052(27)), for consideration by the Sub-Committee, with a view to providing relevant input to the III Sub-Committee for its consideration when reviewing resolution A.1052(27). The Sub-Committee further agreed to instruct Working Group 3 to take into account the content of MSC Circ.1032 with a view to ensuring that there was only one circular on the issue.

Issues identified during implementation of the 2010 Manila Amendments to the STCW Convention and Code

5.17 The Sub-Committee was informed that, with the approaching end of the transitional provisions of the 2010 Manila Amendments on 31 December 2016, at MSC 97, several delegations expressed their concern regarding the status of compliance of some Parties with the 2010 Manila Amendments to the STCW Convention, as some Administrations might not be in a position to issue STCW certificates in accordance with the requirements of the Convention by 1 January 2017.

5.18 The Sub-Committee was also informed that, subsequently, MSC 97 had approved MSC.1/Circ.1560 on *Advice for Parties, Administrations, port State control authorities and recognized organizations on action to be taken in cases where not all seafarers carry certificates and endorsements meeting the 2010 Manila Amendments to the STCW Convention and Code from 1 January 2017*. In this regard, the Committee instructed HTW 4 to consider the above issue and to report to MSC 98.

5.19 The Sub-Committee considered HTW 4/5/5 (ICS and CLIA), which highlighted the various underlying issues that led to the difficulties experienced with implementation of the 2010 Manila Amendments, namely timing issues, capacity issues, interpretation issues and practical matters, and proposed that the Sub-Committee should consider the development of appropriate guidance that might be taken into account to address these and other related issues and identify any lessons learnt regarding implementation of the 2010 Manila Amendments to the STCW Convention and Code, to facilitate effective, timely and consistent implementation of these and any future amendments.

5.20 The Sub-Committee considered document HTW 4/5/7 (Bahamas), which commented on document HTW 4/5/5 and identified similar concerns to those set out in document HTW 4/5/5 in relation to interpretation issues and practical matters, and stated that some of the identified issues might result in deficiencies being raised against ships as a result of the differences in interpretation of STCW Convention provisions. They proposed the development of guidance as a matter of urgency relating to the following three main issues:

- .1 certificates referring to STCW 1995 amendments and response to requests for verification;
- .2 officers being required to have separate STCW Convention, chapter VI documentary evidence; and
- .3 delay in issuance of Electro-Technical Officer (ETO) and Electro-Technical Rating (ETR) certification.

5.21 In the ensuing discussion, the following views were expressed:

- .1 the interdependency between the many stakeholders concerned with seafarer certification, and the interrelated actions required of them, might have significantly contributed to the difficulties experienced before the end of the transition period;
- .2 the delegations recognized that there were difficulties as highlighted in the documents;

- .3 in accordance with the 2010 amendments to the STCW Code, seafarers had to provide evidence of completion of chapter VI training within the last five years;
- .4 relevant and valid guidance was already available to address the concerns raised, and there was a need to focus on the requirements in regulation I/4 and avoid a proliferation of circulars providing guidance;
- .5 the guidance provided in STCW Convention regulation I/15, MSC/Circ.1030 and MSC/Circ.1032 should be taken into account in preparing relevant guidance to address the concerns raised;
- .6 a discussion was needed on the extension of expiry date of MSC.1/Circ.1560;
- .7 there should be no discussion relating to extension of expiry date of MSC.1/Circ.1560;
- .8 guidance provided in STCW.7/Circ.16 on *Clarification of transitional provisions relating to the 2010 Manila Amendments to the STCW Convention and Code* was clear and no further guidance was necessary, although it might be necessary to provide some guidance relating to certification of ETO and ETR;
- .9 in accordance with STCW regulation I/2.16, paragraph 15, as of 1 January 2017, the information on the status of information was required to be available in the English language, through electronic means. However, there was a need for a regulated method for responding to request verification of the authenticity and validity of certificates; and
- .10 taking into account MSC.1/Circ.1560, and the instruction of the Committee to provide advice on actions to be taken to implement future amendments to the STCW Convention, the quality of on-board training should also be considered in this context.

5.22 In light of the foregoing, the Sub-Committee further agreed that all guidance that was agreed to be developed should be consolidated in one circular.

5.23 With regards to the extension of the validity of MSC.1/Circ.1560, the Sub-Committee, having noted that Parties had seven years to implement the 2010 amendments, agreed that there was no need to discuss any further extension of the expiry date of MSC.1/Circ.1560.

5.24 After an in-depth discussion, the Sub-Committee referred documents HTW 4/5/5 (ICS and CLIA) and HTW 4/5/7 (Bahamas) to WG 3 on Training Matters, to be established, to consider:

- .1 documents HTW 4/5/5 and HTW 4/5/7 and, taking into account existing related guidance in MSC/Circ.1030, MSC/Circ.1032 and STCW.7/Circ.16 and the discussion in plenary, prepare a preliminary draft text for proposed guidance, for consideration by the Sub-Committee; and
- .2 document HTW 4/5/5, taking into account the discussion in plenary, and have preliminary discussions on lessons learned that could be taken into account when deciding on implementation dates for future amendments for further consideration at HTW 5.

Guidance in STCW Code, section B-1/2

5.25 The delegation of Germany recalled the *Guidelines for port State control officers on certification of seafarers, manning and hours of rest* finalized under agenda item 15, and table B-1/2 in the annex to the Guidelines providing a list of certificates or documentary evidence required under the STCW Convention, and referred to annexes that provided an overview of documents required. In their opinion, a port State control document was not the correct location for such an overview. Furthermore, an overview document would be of much assistance in providing guidance to address many of the issues identified during implementation of the 2010 Manila Amendments to the STCW Convention and Code, and that such an overview should be developed for inclusion in part B-1/2 of the STCW Code.

5.26 In light of the foregoing, on the need for this table providing an overview in part B-1/2 of the STCW Code, the Sub-Committee agreed to invite the Committee to rename this agenda item as "Guidance for STCW Code section B-1/2" to address this specific issue only, with a target completion year of 2018.

Clarification of the training requirement for ECDIS equipment

5.27 The Sub-Committee considered document HTW 4/5/4 (United States) providing information that inspectors requested documentary evidence of approved type-specific training for ships fitted with ECDIS equipment from seafarers. In their view, it was not realistic in the merchant marine as there were numerous manufacturers and models of equipment, in addition to variances in the installation of each type of this equipment, and as such, it would be impractical to develop courses for each type of system. They proposed the issuance of a STCW.7 circular on *Guidance on the training requirements for Electronic Chart Display and Information Systems (ECDIS)*, and provided a draft circular as set out in the annex to document HTW 4/5/4.

5.28 The Sub-Committee also considered document HTW 4/5/8 (ICS), which supported the proposal in document HTW 4/5/4 to develop an STCW.7 circular providing guidance on the training requirements for ECDIS, underlying a further source of possible confusion in the requirements for ECDIS training and familiarization in MSC.1/Circ.1503 (*ECDIS – Guidance for good practice*), specifically in section E on "ECDIS training", and further proposed to amend MSC.1/Circ.1503, so as to clarify the common misconception that ECDIS type-specific training was the only acceptable means of complying with the familiarization requirements under the STCW Convention and ISM Code.

5.29 In the ensuing discussion, the following views were expressed:

- .1 ECDIS training was part of STCW Code, chapter II competence tables;
- .2 some countries required revalidating Marine Deck Officers to take the approved updating training;
- .3 being part of Chapter II competence tables, it was not required to issue separate documentary evidence for courses such as the ECDIS training; and
- .4 there was a practical need to issue guidance to clarify the training requirements for ECDIS.

5.30 After some discussion, the Sub-Committee referred documents HTW 4/5/4 and HTW 4/5/8 to Working Group 3 on Training Matters, to be established, for detailed consideration and preparation of a draft STCW.7 circular providing guidance on the training requirements for ECDIS and draft amendments to MSC.1/Circ.1503, annex, section E, on ECDIS training, respectively, for consideration by the Sub-Committee.

Establishment of Working Group 3

5.31 The Sub-Committee established Working Group 3 on Training Matters, chaired by Ms. Marina Angsell (Sweden), and instructed it, taking into account comments and decisions in the plenary, to:

STCW-related information to be communicated through GISIS to reduce administrative burden

- .1 consider documents HTW 4/5 and HTW 4/5/3 together with HTW 3/WP.4, annex 1, and finalize the development of the framework for the GISIS module relating to the STCW Convention and Code for consideration by the Sub-Committee, with a view to approval by the Committee;

Guidance relating to the provision of documentary evidence required under the STCW Convention by seafarers to port State control officers and other third-party inspection regimes

- .2 consider documents HTW 4/5/1 on the outcome of MSC 96, taking into account document MSC 96/12/2, HTW 4/5/2 and HTW 4/5/6, and prepare the draft STCW.7 circular on guidance relating to the provision of documentary evidence under the STCW Convention by seafarers to PSCOs and other third-party inspection regimes, and draft amendments to the *Procedures for port State control, 2011* (resolution A.1052(27)), for consideration by the Sub-Committee, with a view to providing relevant input to the III Sub-Committee for its consideration when reviewing resolution A.1052(27);

Guidance on the training requirements for Electronic Chart Display and Information Systems (ECDIS)

- .3 consider document HTW 4/5/4 and prepare a draft STCW.7 circular on guidance on the training requirements for Electronic Chart Display and Information Systems (ECDIS) required under the STCW Convention in order to address the inconsistency in the interpretation of the Convention, for consideration by the Sub-Committee;
- .4 consider document HTW 4/5/8 (ICS) and prepare the draft MSC circular on amendments to MSC.1/Circ.1503 on ECDIS – Guidance for good practice, section E on ECDIS training, for consideration by the Sub-Committee;

Issues identified during implementation of the 2010 amendments to the STCW Convention and Code

- .5 consider document HTW 4/5/7 (Bahamas) in detail and, taking into account existing related guidance in MSC/Circ.1030, MSC/Circ.1032 and STCW.7/Circ.16 and the discussion in plenary, prepare preliminary draft text for proposed guidance, for consideration by the Sub-Committee;

- .6 consider document HTW 4/5/5 (ICS/CLIA), taking into account the discussion in plenary, and have preliminary discussions on lessons learned that could be taken into account when deciding on implementation dates for future amendments for further consideration at HTW 5; and
- .7 submit its report on Thursday, 2 February 2017.

Report of the Working Group

5.32 On receipt of the report of Working Group 3 on Training Matters (HTW 4/WP.5), the Sub-Committee approved it in general, and took action as summarized in the following paragraphs.

STCW-related information to be communicated through GISIS to reduce administrative burden

5.33 The Sub-Committee endorsed the framework for the GISIS module related to reporting and information communication requirements under articles IV, VIII, IX of the STCW Convention, 1978, as amended, as set out in annex 2, and invited the Committee to approve it, as well as instruct the Secretariat to develop it.

Guidance relating to the provision of documentary evidence required under the STCW Convention by seafarers to port State control officers and other third party inspection regimes

5.34 The Sub-Committee in view of the urgency, approved STCW.7/Circ.24 on *Interim Guidance for Parties, Administrations, port State control authorities, recognized organizations and other relevant parties on the requirements under the STCW Convention, 1978, as amended*, as set out in annex 3, and invited the Committee to endorse this decision.

5.35 Noting that the guidance in the aforementioned STCW.7/Circ. 24 had taken into account the existing guidance in MSC/Circ.1030 (*Guidance for port State control officers on issues related to certificates of competency*) and MSC/Circ.1032 (*Guidance for port State control officers on references to STCW 95 in certificates, endorsements and documentary evidence*), the Sub-Committee agreed to invite the Committee to revoke MSC/Circ.1030 and MSC/Circ.1032 and reissue STCW.7/Circ.24 as STCW.7/Circ.24/Rev.1, with a view to providing consolidated guidance.

5.36 The Sub-Committee endorsed the draft text to the *Procedures for port State control, 2011* (resolution A.1052(27)), as set out in annex 4, and invited the Committee to refer it to III 4 for its consideration when reviewing resolution A.1052(27).

Guidance on the training requirements for Electronic Chart Display and Information Systems (ECDIS)

5.37 The Sub-Committee endorsed the draft MSC circular on amendments to MSC.1/Circ.1503 on *ECDIS – Guidance for good practice*, as set out in annex 5, for approval by the Committee, and instructed the Secretariat to inform NCSR 4 of the revision to MSC.1/Circ.1503.

Issues identified during implementation of the 2010 amendments to the STCW Convention and Code

5.38 The Sub-Committee noted the preliminary discussions on lessons learned during implementation of the 2010 amendments to the STCW Convention and Code, which could be taken into account when deciding on implementation dates for future amendments, for further consideration at HTW 5.

6 COMPREHENSIVE REVIEW OF THE 1995 STCW-F CONVENTION

6.1 The Sub-Committee recalled that HTW 3 had endorsed the principles and the provisional scope for the comprehensive review of the STCW-F Convention, and had invited the Committee to approve them to enable the Sub-Committee to commence a systematic and comprehensive review of the 1995 STCW-F Convention (HTW 3/19, paragraph 6.11 and annex 3).

6.2 The Sub-Committee noted that MSC 96 (MSC 96/25, paragraph 12.3) had approved the list of principles and the provisional scope for the comprehensive review of the 1995 STCW-F Convention.

Proposed amendments to the annex of the 1995 STCW-F Convention

6.3 The Sub-Committee considered document HTW 4/6 (Japan), which proposed draft amendments to the annex of the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel, 1995 (1995 STCW-F Convention), including a new STCW-F Code, divided into two parts, A and B, in place of the appendices to each regulation, taking into account the instructions and the principles and provisional scope for the comprehensive review of the 1995 STCW-F Convention, approved by the Committee.

6.4 The Sub-Committee also considered document HTW 4/6/2 (China), which proposed the introduction of tonnage as an alternative approach to classification of certificates of competence for fishing vessel officers.

6.5 In the ensuing discussion, the following views were expressed that:

- .1 while some delegations did not support the introduction of the equivalence of gross tonnage (GT) as an alternative measure to the length, others supported this proposal;
- .2 the GT versus length alternative was a mature provision reflected in the 2012 Cape Town Agreement and in ILO Convention 188;
- .3 introduction of tonnage will exclude more than 80% of fishing vessel personnel on vessels less than 300 gross tonnage from the scope of the Convention;
- .4 it was difficult to understand how inclusion of GT equivalence will exclude fishing vessel personnel on fishing vessels between 24 m and 45 m length, since it may introduce wider ratification;
- .5 equivalence may lead to a relaxation of standards and requirements that already exist in the Convention which would be contrary to the general principles agreed at HTW 3;

- .6 aligning the STCW-F Convention with the STCW Convention would provide a strong and modern basis covering all areas of training, certification and watchkeeping;
- .7 the specific standards required on fishing vessels are not represented in the STCW Convention;
- .8 include only the fishing vessel-specific standards, and in all other cases, refer back to the STCW Convention, so that certificates issued in line with the STCW Convention would also be valid on fishing vessels;
- .9 aligning the STCW-F Convention with the STCW Convention could provide advantages to reduce drafting difficulties, inconsistencies, implementation and administrative burden;
- .10 the STCW-F Convention should contain specific training requirements for the master and deck department which should not duplicate the STCW Convention;
- .11 conference resolution 7 of the 1995 STCW-F Convention required that specific standards for officers in charge of an engineering watch and watchkeeping provisions had to be developed;
- .12 modern technology must be taken into account when developing training requirements to avoid unnecessary training requirements beyond the minimum required;
- .13 it was difficult to conduct port State control on fishing vessels and therefore the revised standards must be internationally accepted;
- .14 some critical provisions were absent in Japan's proposal (HTW 4/6) on chapter I of the annex of the STCW-F Convention;
- .15 chapter I, regulation I/1 lacks some critical terms and explanations;
- .16 "Functions" in tables A-II/1 to A-II/6 is absent and "competence" in the first Column is incomplete;
- .17 "function" in tables A-II/1 to A-II/6 should be determined and some necessary items of competence added; and
- .18 the principles agreed at HTW 3 must be adhered to, and there should be no downscaling of standards.

6.6 The Sub-Committee agreed that document HTW 4/6 should be considered by the Working Group as the base document in its deliberations, and confirmed the principles agreed at HTW 3 (HTW 3/19, annex 3).

Seagoing service on board a fishing vessel

6.7 The Sub-Committee considered document HTW 4/6/1 (New Zealand) stating that the STCW-F Convention currently required a candidate to complete, inter alia, a period of seagoing service on board a fishing vessel in order to be certified as a deck officer, and expressing the view that seagoing service on board a fishing vessel was an essential

component of the practical learning required for a deck officer, which could not be gained to an equivalent level solely via seagoing service on board a non-fishing vessel, nor through land-based training, and that the requirements relating to seagoing service on board fishing vessels should not be downscaled.

Proposed amendments to the mandatory minimum requirements for certification of skippers on fishing vessels of 24 metres in length and over operating in unlimited waters

6.8 The Sub-Committee considered document HTW 4/6/3 (China), which proposed amendments to the mandatory minimum requirements for certification of skippers on fishing vessels of 24 metres in length and over, operating in unlimited waters, in the appendix to regulation 1 in chapter II of the STCW-F Convention, taking into account technical progress and the functional certification approach in the STCW Convention, based on the standards and requirements of the proposed Code, in order not to reduce the standards and requirements of the STCW-F Convention.

Proposed amendments to the mandatory minimum requirements for certification of chief engineer officers of fishing vessels powered by main propulsion machinery of 750 kW propulsion power or more

6.9 The Sub-Committee considered document HTW 4/6/4 (China), which proposed that mandatory minimum requirements for certification of chief engineer officers of fishing vessels, powered by main propulsion machinery of 750 kW propulsion power or more, should be included in the appendix to regulation 5 in chapter II of the STCW-F Convention.

6.10 The Sub-Committee considered document HTW 4/6/6 (China), which commented on the proposed amendments in document HTW 4/6 relating to the mandatory minimum requirements for certification of skippers on fishing vessels of 24 metres in length and over, operating in unlimited waters, and chief engineer officers of fishing vessels powered by main propulsion machinery of 750 kW propulsion power or more.

Comments on the proposed amendments

6.11 The Sub-Committee considered document HTW 4/6/5 (Iceland) wherein Iceland supported, in principle, the proposal by Japan (HTW 4/6), and provided a list of subjects and items to be considered by the Sub-Committee.

6.12 The Sub-Committee further considered document HTW 4/6/7 (FAO), which commented on the proposed amendments to the 1995 STCW-F Convention in document HTW 4/6, and provided a list of proposed items to be taken into account, when considering the proposed amendments.

6.13 In the ensuing discussion of documents HTW 4/6/1, HTW 4/6/3, HTW 4/6/4, HTW 4/6/5 and HTW 4/6/6, the following views were expressed that:

- .1 many delegations did not support the deletion of references to SMCP and English language proficiency;
- .2 requirements for effective communication should be considered to facilitate communications between vessels, port State control officers, vessel traffic systems and rescue services and operations;
- .3 some proposed requirements and standards were higher than proposed by Japan to align with the STCW Convention and cannot be supported;

- .4 ECDIS and ARPA training requirements should be included in part A of the Code;
- .5 sea service gained on ships covered by the STCW Convention should be taken into account for the issue and revalidation of navigation certificates on fishing vessels to provide better mobility between the trades;
- .6 there was too much emphasis on international knowledge; and
- .7 fishing vessel personnel should focus on practical operations.

6.14 After an in-depth discussion, the Sub-Committee referred documents HTW 4/6, HTW 4/6/1, HTW 4/6/2, HTW 4/6/3, HTW 4/6/4, HTW 4/6/5, HTW 4/6/6 and HTW 4/6/7 to Working Group 2 on Training Matters, to be established, for detailed consideration, taking into account the discussions and decisions in plenary.

Information documents

6.15 The Sub-Committee noted with appreciation the information provided in HTW 4/INF.6 (New Zealand) on its fishing deck-hand competency framework, and thanked New Zealand for it.

6.16 The Sub-Committee noted with appreciation the information provided in HTW 4/INF.7 (Iceland) on the structure and requirements for certification of fishing vessel personnel as required by Icelandic legislation, and thanked Iceland for it.

Establishment of the Working Group

6.17 The Sub-Committee established Working Group 2 on Training Matters, chaired by Ms. Farrah Fadil (Singapore), and instructed it, taking into account comments and decisions in the plenary, to:

- .1 consider documents HTW 4/6 (Japan), HTW 4/6/1 (New Zealand), HTW 4/6/2 (China), HTW 4/6/3 (China), HTW 4/6/4 (China), HTW 4/6/5 (Iceland), HTW 4/6/6 (China) and HTW 4/6/7 (FAO), and prepare draft amendments to the annex of the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel, 1995, for consideration by the Sub-Committee; and
- .2 submit its report on Thursday, 2 February 2017.

Report of the Working Group

6.18 On receipt of the report of Working Group 2 on Training Matters (HTW 4/WP.4), the Sub-Committee approved it in general, and took action as summarized in the following paragraphs.

6.19 The Sub-Committee noted the preliminary revised draft texts of chapter I (General provisions) and chapter II (Certification of skippers, officers, engineer officers and radio operators), with a view to further consideration at HTW 5.

6.20 The delegation of the United Kingdom referred to a paragraph which had been moved from its previous location under regulation I/2 on Application, and placed in regulation I/9 on Dispensations, and that this paragraph should be relocated under regulation I/2 as it does not relate to Dispensations. The Sub-Committee agreed to retain the aforementioned paragraph under regulation I/2 on Application.

6.21 The Sub-Committee agreed that, in the absence of other proposals or comments on chapter I, part A of the proposed STCW-F Code, further discussions should be deferred pending the submission of relevant proposals for consideration at the next session.

6.22 With regard to referencing the FAO/ILO/IMO Document for *Guidance on training and certification of fishing vessel personnel*, and FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels, in the main text of the proposed STCW-F Code, the Sub-Committee agreed to adhere to the Guidelines in resolution A.911(22) on *Uniform wording for referencing IMO instruments*.

6.23 The Sub-Committee noted that the Working Group, owing to time constraints, was unable to continue discussions beyond regulation II/2 of the STCW-F Convention and proposed section A/II-2 of the STCW-F Code, and took note of the preliminary consideration on proposals for new regulations by the Working Group.

6.24 The Sub-Committee established a correspondence group under the coordination of Japan¹, to work intersessionally, and instructed it, taking into account documents HTW 4/WP.4 and the Sub-Committee's decisions thereof, as well as the principles and provisional scope for the comprehensive review of the 1995 STCW-F Convention as approved by MSC 96, and using HTW 4/WP.4, annex 1, in order of priority, to:

- .1 continue work on chapter I, excluding the definitions of limited waters and unlimited waters, as well as regulation I/2;
- .2 continue work on regulations II/1 and II/2, as well as on sections A-II/1 and A-II/2 of the proposed text of the STCW-F Code;
- .3 consider whether table A-II/5 of the proposed text of the STCW-F Code could be aligned with tables A-III/1 and A-III/2 of the STCW Code;
- .4 give consideration to the remaining tables in section A-II of the proposed text of the STCW-F Code, if possible; and
- .5 submit a report to HTW 5.

6.25 The Sub-Committee, noting that some of the proposals submitted to this session had not been discussed by the Working Group due to time constraints, deferred their consideration to HTW 5.

6.26 The delegation of Spain stated that before continuing the preparation of draft amendments, the Sub-Committee should have an in-depth discussion at HTW 5 on the impact of the proposed amendments, taking into account a number of fundamental issues such as,

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inter alia, to what extent the STCW Convention should be used as a reference, the drafting methodology for the tables, issues that may arise when using the STCW Convention as a reference and, in this context, informed that they would submit relevant proposals for consideration at the next session.

6.27 In this context, Sub-Committee recognized that the work which had commenced at this session on the review of the STCW-F Convention was the beginning of a process, and invited Member States and international organizations to submit relevant proposals to HTW 5 to facilitate in-depth discussions and preparation of relevant amendments.

7 ROLE OF THE HUMAN ELEMENT

Manning and seafarer fatigue

7.1 New Zealand, IFSMA, InterManager, ITF and The Nautical Institute (HTW 4/7) provided information relating to a concern of seafarers, in particular the Master/Chief Mate two-watch system, which in their view, compromised the requirements of resolution A.1047(27) on *Principles of minimum safe manning* and paragraph 6.1.3 of the ISM Code, where the master of a vessel cannot safely carry out the obligations of keeping a proper navigational watch (STCW Code, section A-III/I), as well as complying with all other Administration and Company imposed duties and staying within their hours of rest and work.

7.2 The Sub-Committee recalled that the Committee (MSC 95/22, paragraphs 9.18 and 9.19) had agreed with the clarification of the scope in relation to manning and had instructed the Sub-Committee to take this into account when revising the *Guidance on fatigue mitigation and management* (MSC/Circ.1014), and had also agreed that SOLAS regulation V/14 and resolution A.1047(27) on *Principles of minimum safe manning* should not be amended.

7.3 In the ensuing discussion, the following views were expressed that:

- .1 no additional information has been provided for consideration at this session since a similar proposal was submitted to HTW 3 which had not been supported;
- .2 resolution A.1047(27) which provides a framework for proper manning and rest hours had been reviewed by the Committee;
- .3 a two-watch system is among a number of factors when considering ship's manning levels, and is also an important factor when addressing seafarer fatigue;
- .4 consideration of the full range of factors contributing to fatigue, including manning and development of advice, guidance, knowledge and practical tools on the full range of factors affecting fatigue, including manning, to be included in the revision of the non-mandatory *Guidance on fatigue mitigation and management* was within the scope; and
- .5 proposals to amend or review any mandatory provisions of the Organization relating to manning of ships was out of the scope of this output, and would need to be approved as a new output.

7.4 After some discussion, the Sub-Committee did not agree to the proposal in document HTW 4/7 to amend annex 5 to resolution A.1047(27) as it was out of the scope of the Sub-Committee under the current agenda item, and that any work on manning issues has to be approved by, and is a prerogative of the Committee.

Dissemination of lessons learned from marine casualties

7.5 The Sub-Committee recalled that at MSC 96, China and IMLA (MSC 96/9/2) had proposed possible new ways to improve the dissemination of lessons learned with a view to establishing an effective linkage between casualty investigation and seafarers training.

7.6 The Sub-Committee was informed that MSC 96 (MSC 96/25, paragraph 9.17.2) had instructed HTW 4, under the existing agenda item "Role of the human element", to consider document MSC 96/9/2 with a view to developing a methodology on how to utilize lessons learned for seafarers training and education; the development of further guidance in the relevant model course; and the way in which these lessons should be received, so that the information could be used more effectively.

7.7 The Sub-Committee was also informed that III 3 (III 3/14, paragraph 4.17) had agreed, inter alia, to encourage the inclusion of supporting information, such as diagrams or photographs. In this context, the III Sub-Committee approved the Lessons Learned from Marine Casualties for release on the IMO website (III 3/14, annex 1).

Facilitation of access to marine casualty investigation reports and use of lessons learned therefrom by maritime lecturers

7.8 China (HTW 4/7/1) proposed that the Sub-Committee should invite the III Sub-Committee to:

- .1 illustrate marine casualties as detailed as possible in order to facilitate maritime lecturers to replay or simulate them more precisely and to help seafarers to better understand the causes of and lessons learned from casualties through training and education;
- .2 label each lesson learned from marine casualties with a specific reference number; and
- .3 make lessons learned from marine casualties accessible to the public.

7.9 China (HTW 4/7/2), based on its own experience of using marine casualty cases in seafarers' training and education, proposed to the Sub-Committee to collate the practices of using marine casualty cases in seafarers' training and education by other Administrations, to summarize these practices and experience, and analyse better approaches for applying lessons learned in seafarers' training and education.

7.10 China (HTW 4/7/3) provided information on the Seafarers Administration-Company-Seafarers mode (SACS mode) applied by its Administration for effective use of marine casualty cases and proposed to the Sub-Committee to collect information on other Administrations' practice in order to summarize the practical experience gained, and figure out a better approach with respect to using marine casualty cases in seafarers' training and education.

7.11 In the ensuing discussion of documents HTW 4/7/1, HTW 4/7/2 and HTW 4/7/3, the following views were expressed that:

- .1 the III Sub-Committee is currently undertaking work in this regard and it would be pragmatic to await the likely outcome of this work that could facilitate the work of the HTW Sub-Committee;
- .2 caution needs to be exercised in considering the advice being given to seafarers to better understand the causes of and lessons learned from casualties to prevent accidents in paragraph 6 of HTW 4/7/1;
- .3 using marine casualties is an important tool for seafarers' education but it is premature for HTW to provide advice to the III Sub-Committee;
- .4 the action to be taken by this Sub-Committee at this stage to develop a global methodology is unclear; and
- .5 the outcome of III 4 on this matter could be referred to HTW 5 for consideration, as appropriate.

7.12 After some discussion, the Sub-Committee agreed to await the outcome of the work undertaken by the III Sub-Committee, while agreeing that lessons learned from marine casualties would be beneficial for training of seafarers.

Human element competencies template

7.13 The Sub-Committee noted with appreciation information provided by The Nautical Institute (HTW 4/INF.2) on the required competencies for addressing human element issues by maritime stakeholder groups, to ensure that it is properly considered across the maritime industry to provide the basis for a curriculum for human element awareness training.

Quality of On-Board Training (OBT)

7.14 The Sub-Committee noted with appreciation the information provided by the International Association of Maritime Universities (IAMU) (HTW 4/INF.4) on the IAMU research project entitled "Comprehensive study on quality of on-board training".

8 REVISION OF THE GUIDELINES ON FATIGUE

8.1 The Sub-Committee recalled that HTW 3 (HTW 3/19, paragraph 8.7) agreed that:

- .1 the principles listed below should be followed during the review of circular MSC/Circ.1014:
 - .1 guidelines should be practical;
 - .2 guidelines should be drafted using non-mandatory language;
 - .3 guidelines should be non-academic, user-friendly and use simple language;
- .2 the Guidelines should include a module for the Administrations;
- .3 document HTW 3/8 should be the base document; and

- .4 the Fatigue Risk Management System, as proposed in document HTW 3/8, is not the only way to address fatigue (Module 2) and, therefore, document HTW 3/8/1 should be taken into account when amending Module 2.

8.2 The Sub-Committee also recalled that HTW 3 (HTW 3/19, paragraph 8.14) established a correspondence group, coordinated by Australia, and instructed it, taking into account comments and decisions made in the plenary (HTW 3/19, paragraphs 8.6 to 8.8), to review the proposed amendments to the *Guidelines on fatigue* (MSC/Circ.1014), using as a basis, document HTW 3/8, as amended by the Working Group during HTW 3 (HTW 3/WP.5, annex 1).

Revision of the guidelines on fatigue in the annex to MSC/Circ.1014

8.3 Australia (HTW 4/8) provided the report of the Correspondence Group on the revision of the *Guidelines on fatigue* (annex to MSC/Circ.1014), which contained the draft guidelines in its annex.

8.4 ICS, CLIA and ITF (HTW 4/8/1) provided comments on the revision of the *Guidelines on fatigue* (annex to MSC/Circ.1014), in particular, on provision of guidance for "other stakeholders", and proposed a draft new module (Module 7) to address "other stakeholders", as set out in the annex to their document.

8.5 In the ensuing discussion, the following views were expressed:

- .1 several concerns still remained in a number of areas in the draft guidelines that required considerable work and there was no guidance related to manning in the revised draft;
- .2 there was no consensus on the inclusion of a fatigue risk management system, and many of the provisions are not practical in a shipboard watch standing environment where there is little flexibility or alternatives to the work required and a limited number of crew members available;
- .3 while the Guidelines are non-mandatory for Member States, the ISM Code's requirement that companies should take into account in the Guidelines, could place a prescriptive burden on seafarers;
- .4 there was no agreement to include the proposed module 7 for other stakeholders;
- .5 proposed content for module 7 should be addressed in the other modules, as appropriate; and
- .6 references to the Maritime Labour Convention, 2006, should be retained in the Guidelines.

8.6 Following the discussion, the Sub-Committee agreed to refer documents HTW 4/8 and HTW 4/8/1 to Working Group 1 on Human element issues for detailed consideration, and preparation of draft amendments to the *Guidelines on fatigue* in the annex to MSC/Circ.1014 (*Guidance on fatigue mitigation and management*), for consideration by the Sub-Committee.

Result of a research project on seafarer's workload

8.7 The Sub-Committee noted with appreciation the information provided by the Republic of Korea in document HTW 4/INF.5 on the result of a research project on seafarer's workload.

Establishment of Working Group 1

8.8 The Sub-Committee established Working Group 1 on Human Element Issues and instructed it, taking into account comments and decisions in the plenary, to:

- .1 review document HTW 4/8 (Australia) providing the report of the Correspondence Group on the revision of the *Guidelines on fatigue* in the annex to MSC/Circ.1014 as the base document, taking into account the proposed principles set out in paragraphs 11 to 14 of document HTW 3/8/2 (ICS);
- .2 consider the relevant part of document HTW 4/8/1 (ICS, CLIA and ITF) proposing a new module to address other stakeholders, to be incorporated as appropriate, in the modules in the annex to document HTW 4/8, and finalize draft revised *Guidelines on fatigue* for consideration by the Sub-Committee; and
- .3 submit its report on Thursday, 2 February 2017.

Report of the Working Group

8.9 Having considered the report of Working Group 1 on Human Element Issues (HTW 4/WP.3), the Sub-Committee approved it in general and took action as summarized in the following paragraphs.

8.10 The Sub-Committee noted the progress made relating to the revision of the *Guidelines on fatigue* (HTW 4/WP.3, annex) and that work could not be completed at this session owing to time constraints.

8.11 In this context, the Sub-Committee agreed to invite the Committee to extend the target completion year of the output to 2018 with a view to finalization of the revised *Guidelines on fatigue*.

8.12 The Sub-Committee concurred with the view of the Group to consider the outcome of HTW 4 (HTW 4/WP.3, annex) as the basis for further work at the next session, and invited Member States and international organizations to submit relevant proposals to the next session of the Sub-Committee for consideration.

8.13 The delegation of France, supported by others, drew attention to references to the Maritime Labour Convention (MLC), 2006 in the revised *Guidelines* (HTW 4/WP.3, annex) and proposed that reference should be maintained in the document, although the Working Group decided that it was not in line with policies of IMO. They stated that coherence between IMO and ILO instruments on an issue such as fatigue is essential and that no rule has been adopted that prevented making a reference to an instrument from another Organization, and that resolution A.911(22) provided guidance on making references to mandatory instruments. Therefore, they requested the Sub-Committee to make a clear decision regarding the retention of references to the Maritime Labour Convention (MLC) 2006.

8.14 In this regard, other delegations proposed that the Sub-Committee should follow established practices of the Organization when referencing instruments other than IMO instruments as there were broader implications for the work of other Sub-Committees as well, and urged caution because there had been difficulties in the past where provisions of the Maritime Labour Convention (MLC) 2006 have been referenced in IMO instruments, which had been taken out of context.

8.15 The Sub-Committee having noted that resolution A.911(22) does not provide specific reference to referencing non-mandatory guidelines agreed that the information included in the Guidelines should be accurate.

8.16 The Sub-Committee agreed to draw the attention of the Committee to this matter and seek advice whether the Maritime Labour Convention (MLC) 2006 could be referenced in the body of the revised *Guidelines on fatigue*, to facilitate work related to the revision of *Guidelines on fatigue* at the next session. Furthermore, the Sub-Committee invited a representative of ILO to attend the next session to facilitate a decision on this matter.

9 DRAFT MODERNIZATION PLAN OF THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)

9.1 The Sub-Committee noted that MSC 96 had approved the outcome of the Detailed Review of the GMDSS (NCSR 3/29, annex 7) and the continuation of the project in developing the Modernization Plan.

9.2 The Sub-Committee was informed that MSC 97, having noted the information provided by the Secretariat regarding the progress on the development of the Draft Modernization Plan of the GMDSS and the need for the involvement of HTW 4 (MSC 97/7/1), instructed the Correspondence Group on the Modernization of the GMDSS, established by NCSR 3, to submit a document to HTW 4, containing a draft of the Modernization Plan of the GMDSS, and specifically providing focus on issues for the HTW Sub-Committee's consideration, and instructed HTW 4 to provide comments and advice to NCSR 4, as appropriate.

Draft of the Modernization Plan for the GMDSS

9.3 The Sub-Committee considered documents HTW 4/9 (United States) which provided the interim report of the Correspondence Group on the Modernization Plan of the Global Maritime Distress and Safety System (GMDSS) containing a draft of the Modernization Plan for the GMDSS, and HTW 4/9/1 (United States) that, as instructed by MSC 97, provided additional information in paragraph 10, in particular, on the issues the Sub-Committee was invited to focus on, with a view to providing comments and advice to NCSR 4 as appropriate, from a training, human element and end-user perspective, to be taken into account for the implementation of the modernized GMDSS.

9.4 In the ensuing discussion, the following views were expressed that the:

- .1 proposed revision of the functional requirements, in particular, separating security-related communications and other communications from the GMDSS, might confuse users to understand the coherence between all types of radiocommunications;
- .2 modernization of the GMDSS should take place from the end-user's perspective and align the SOLAS Convention with the ITU Radio Regulations to keep the system simple, practical and usable;

- .3 introduction of new satellite providers would have direct implications on training, in particular, in relation to anticipated complexity of the interoperability of different systems;
- .4 human-machine interface should be duly taken into account in the development of new, or amendments to performance standards;
- .5 language in the current draft of the Modernization Plan was too prescriptive in certain places and some text should be changed to provide flexibility for the Sub-Committee in future;
- .6 design of user-friendly equipment should take into account the issue of familiarization in order to reduce the burden on the seafarers; and
- .7 work on the modernization of the GMDSS was too premature to provide at this stage detailed comments with respect to the effect on training and relevant model courses.

9.5 After some discussion, the Sub-Committee agreed that it was too premature to provide detailed comments and advice to NCSR 4, as appropriate, from a training, human element and end-user perspective, at this stage, as the work on the modernization of the GMDSS was in progress, and invited the NCSR Sub-Committee to take the outcome of the discussion, as set out above, into account when finalizing the Draft Modernization Plan.

10 AMENDMENTS TO THE IGF CODE AND DEVELOPMENT OF GUIDELINES FOR LOW-FLASHPOINT FUELS

10.1 The Sub-Committee recalled that MSC 97 had approved the draft amendments to the IGF Code and had requested the Secretary-General to circulate the draft amendments in accordance with SOLAS article VIII, with a view to adoption at MSC 98 (MSC 97/22, paragraph 3.100 and annex 10).

10.2 The Sub-Committee, noting that no documents had been submitted for consideration or referred to the Sub-Committee by CCC 3, deferred consideration to HTW 5, pending further input from CCC 4.

11 REVISION OF REQUIREMENTS FOR ESCAPE ROUTE SIGNS AND EQUIPMENT LOCATION MARKINGS IN SOLAS AND RELATED INSTRUMENTS

11.1 The Sub-Committee noted that MSC 94 had considered document MSC 94/18/6 (United States and ISO), and included in the 2014-2015 biennial agenda of the SSE Sub-Committee a new unplanned output on "Revision of requirements for escape route signs and equipment location markings in SOLAS and related instruments", with a target completion date of 2016, assigning the SSE Sub-Committee as the coordinating organ, in association with the HTW Sub-Committee.

11.2 The Sub-Committee recalled that SSE 3 had:

- .1 considered document SSE 3/10 (United States), providing proposals for harmonizing the requirements of SOLAS regulations II-2/13, III/9, III/11 and III/20 related to escape route signs and equipment location markings, which contained two options: 1) to reference a new chapter of the Fire Safety Systems (FSS) Code consistent with the format of the existing chapter 11 (Low-location lighting systems) of the FSS Code; and 2) to refer to the ISO 24409 series of standards in footnotes as international standards acceptable to the Organization (SSE 3/16, paragraphs 10.2 to 10.7); and

- .2 requested the Secretariat, in cooperation with the ISO Central Secretariat, to prepare a draft MSC resolution containing only the graphical symbols from ISO 24409-2:2014, similar to resolution A.952(23), for consideration at SSE 4, and that the above document should not be published until after MSC 97 had considered the course of action proposed by the Sub-Committee and the views of the ISO Central Secretariat on this matter, and invited the Committee to extend the target completion date to 2017.

11.3 The Sub-Committee further recalled that MSC 97, as an interim measure in order to encourage use of the ISO standard 24409 series on a voluntary basis, had approved MSC.1/Circ.1553 on *Shipboard escape route signs and emergency equipment location markings* and instructed the Secretariat, in cooperation with the ISO Central Secretariat, to prepare a draft MSC resolution containing the graphical symbols from ISO 24409-2:2014, for consideration at SSE 4.

11.4 The Sub-Committee considered document HTW 4/11 from China which proposed that the design of the escape route signs and equipment location markings used on board ships should be attached with explanatory texts, as set out in the annex to document HTW 4/11, so as to facilitate the clear identification and understanding of the signs and markings in a correct and effective manner by seafarers, passengers and other personnel involved, and to forward the proposal to the SSE Sub-Committee for further consideration.

11.5 Following discussion, the Sub-Committee agreed to forward document HTW 4/11 to SSE 4 for its consideration.

12 REVISED SOLAS REGULATION II-1/3-8 AND ASSOCIATED GUIDELINES (MSC.1/CIRC.1175) AND NEW GUIDELINES FOR SAFE MOORING OPERATIONS FOR ALL SHIPS

12.1 The Sub-Committee recalled that MSC 95 (MSC 95/22, paragraph 19.2) had included in the 2016-2017 biennial agenda of the SDC Sub-Committee and the provisional agenda of SDC 3 an output on "Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships", with a target completion year of 2017, in association with the SSE and HTW Sub-Committees, as and when requested by the SDC Sub-Committee.

12.2 The Sub-Committee also recalled that MSC 96 (MSC 96/25, paragraph 11.37) had noted the progress made by SDC 3 on matters related to the revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and the new *Guidelines for safe mooring operations for all ships*.

12.3 The Sub-Committee, noting that no documents had been submitted for consideration or referred to it by SDC 3, deferred consideration to HTW 5, pending further input from SDC 4.

13 BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR HTW 5

Outcome of MSC 97

13.1 The Sub-Committee recalled that MSC 96 had approved, and MSC 97 had confirmed, the Sub-Committee's biennial status report for 2016-2017 and the provisional agenda for HTW 4, as set out in annexes 22 and 23, respectively, to document MSC 97/22.

Biennial status report for the 2016-2017 biennium

13.2 Taking into account the progress made at the session, the Sub-Committee prepared the biennial status report (see document HTW 4/WP.2, annex 1), as set out in annex 6, for approval by the Committee.

Proposed agenda for the 2018-2019 biennium

13.3 Taking into account the progress made at the session and the relevant decisions of MSC 96 and MSC 97, the Sub-Committee prepared its proposed agenda for the 2018-2019 biennium (HTW 4/WP.2, annex 2), as set out in annex 7, for approval by the Committee.

Proposed provisional agenda for HTW 5

13.4 Taking into account the progress made at the session, the Sub-Committee prepared its proposed provisional agenda for HTW 5 (see HTW 4/WP.2, annex 3), as set out in annex 8, for approval by the Committee.

Correspondence Group and review groups established at the session

13.5 The Sub-Committee established a Correspondence Group on the Comprehensive review of the 1995 STCW-F Convention, coordinated by Japan, to work intersessionally and report back to HTW 5 (see paragraph 6.24 for the terms of reference).

13.6 The Sub-Committee established Review Groups to develop and update model courses, as set out in paragraph 3.53, and report back to HTW 5.

Arrangements for the next session

13.7 The Sub-Committee agreed to establish at its next session working/drafting groups on subjects to be selected from the following (HTW 4/WP.2, annex 4):

- .1 Validated model training courses;
- .2 Guidance for STCW section B-1/2;
- .3 Comprehensive review of the 1995 STCW-F Convention;
- .4 Revision of the Guidelines on fatigue;
- .5 Draft Modernization Plan of the GMDSS;
- .6 Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships;
- .7 Amendments to the IGF Code and development of guidelines for low-flashpoint fuels;
- .8 Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new *Guidelines for safe mooring operations for all ships*; and
- .9 Measures to harmonize port State control (PSC) activities and procedures worldwide,

whereby the Chair, taking into account the submissions received on the respective subjects, would advise the Sub-Committee before HTW 5 on the final selection of such groups.

Strategic Plan (2018–2023)

13.8 The Sub-Committee noted the outcome of C 117 on the Strategic Plan (2018-2023), as set out in the annex to C 117/WP.3.

13.9 The Sub-Committee also noted that C 117 had agreed to:

- .1 a new Strategic Plan for the period 2018-2023 that is being developed through an inclusive process, where all Member States, IGOs and NGOs in consultative status have been invited to participate; and
- .2 a new Vision Statement, overarching principles (set out in the annex to C 117/WP.3) to be taken into account in all of the Organization's work, and seven Strategic Directions as follows:
 - .1 improve implementation;
 - .2 integrate new and advancing technologies in the regulatory framework;
 - .3 respond to climate change;
 - .4 engage in ocean governance;
 - .5 enhance global facilitation and security of international trade;
 - .6 ensure regulatory effectiveness; and
 - .7 ensure organizational effectiveness.

13.10 The Sub-Committee further noted that the alignment of outputs would be presented to the Committees in the course of 2017, and collated for presentation to C 118, for onward harmonization of the new Strategic Plan to the Assembly for adoption. Since the outputs for the consideration of the Sub-Committee were presented in the usual format in the annex, the outputs would be renumbered and reorganized for the 2018-2019 biennium.

Date of the next session

13.11 The Sub-Committee noted that the fifth session of the Sub-Committee has been tentatively scheduled to take place from 16 to 20 July 2018.

14 ELECTION OF THE CHAIR AND VICE-CHAIR FOR 2018

14.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously elected Ms. Mayte Medina (United States), as Chair and Ms. Farrah Fadil (Singapore), as Vice-Chair for the year 2018.

15 ANY OTHER BUSINESS

Guidelines for port State control officers on certification of seafarers, hours of rest and manning

15.1 The Sub-Committee recalled that HTW 3 (HTW 3/19, paragraphs 18.10 to 18.13) agreed that:

- .1 the existing tables in the annexes to the draft guidelines (HTW 3/WP.3, annex 2) needed to be retained as they were considered a useful tool by port State control officers; and
- .2 the annexes were expected to be finalized at HTW 4, with a view to approval by the Committees and required further work given the many inconsistencies identified therein, however, they should be restructured and condensed into two tables only, as follows:
 - .1 table B-I/2 of the STCW Code; and
 - .2 a table as an aide memoire, combining the information in the current annexes 2, 3 and 4.

15.2 The Sub-Committee noted that III 3 had recommended to MSC 97 to refer the outcome of the consideration of the draft *Guidelines for port State control officers on certification of seafarers, hours of rest and manning* (III 3/WP.6, annex 1) to HTW 4, and the final outcome of the work of HTW 4 to III 4, in order to finalize the draft Assembly resolution on procedures for port State control to be considered by A 30 for consideration with a view to adoption (III 3/14, paragraph 5.46).

15.3 The Sub-Committee was advised that MSC 97 referred the outcome of the consideration by III 3 (III 3/14, paragraph 5.46) of the specific issues referred to it by HTW 3, to HTW 4, and instructed the Sub-Committee to finalize the draft *Guidelines for port State control officers on certification of seafarers, hours of rest and manning*, for approval by MSC 98 and subsequent referral to III 4 (MSC 97/22, paragraph 9.12).

15.4 In the ensuing discussion, the Sub-Committee noted that there was no benefit combining the proposed annexes 2, 3 and 4 into a single annex, and retaining it in the draft revised guidelines, as it provided no benefit to port State control officers.

15.5 The Sub-Committee agreed to include table B-I/2 of STCW Code, part B as the annex to the revised guidelines, and instructed the Secretariat to finalize the draft *Guidelines for port State control officers on certification of seafarers, hours of rest and manning*, which is set out in annex 9, which the Committee is invited to approve, and refer to III 4 for inclusion in the ongoing work on the revision of resolution A.1052(27) on *Procedures for port State control, 2011*.

Guidelines on the Training and Experience of Key DP Personnel (MSC.1/Circ.738/Rev.1)

15.6 The Sub-Committee was advised that MSC 97 (MSC 97/22, paragraphs 21.18 to 21.19) considered documents MSC 97/21/7 and MSC 97/INF.9 (IMCA) on IMCA's revised guidelines "Training and Experience of Key DP Personnel" (IMCA M 117 Rev.2), proposing to amend the *Guidelines for dynamic positioning system (DP) operator training* (MSC.1/Circ.738/Rev.1), which refer to IMCA's previous guidelines (IMCA M 117 Rev.1). Bearing in mind the time constraints to consider the proposals in documents MSC 97/21/7 and MSC 97/INF.9, MSC 97 decided to forward them to HTW 4 for detailed consideration and appropriate action.

15.7 The Sub-Committee considered document HTW 4/15/1 (IMCA) providing information relating to the second revision of IMCA M 117 on guidelines on the "Training and Experience of Key Dynamic Positioning (DP) Personnel" (IMCA M117. Rev 2), which had a bearing on the current provisions in MSC.1/Circ.738/Rev.1 that relate to the *Guidelines for dynamic positioning system (DP) operator training*.

15.8 The Sub-Committee recalled that MSC.1/Circ.738/Rev.1 was referenced in the footnotes in section 4.12 of the 1989 MODU Code, section 4.13 of the 2009 MODU Code, and in the recommendations for the training and certification of personnel on mobile offshore units (MOUs) in resolution A.1079(28), while guidance on DPO training was included in section B -V/f of the STCW Code as part of the 2010 Manila Amendments.

15.9 The Sub-Committee noted that IMCA had invited HTW 4 to:

- .1 approve the updated guidelines (MSC 97/21/7 and MSC 97/INF.9) with a view to inviting MSC 98 to replace footnotes referring to MSC.1/Circ.738/Rev.1 by MSC/Circ.738/Rev.2; and
- .2 consider making a reference, taking into account the revised guidelines provided in MSC 97/INF.9, in section B-V/f of the STCW Code, by introducing a footnote referring to MSC/Circ.738/Rev.2 on the *Guidelines for dynamic positioning system (DP) operator training*, subject to its approval by MSC 98.

15.10 After some discussion, the Sub-Committee instructed the Secretariat to prepare the draft MSC circular on *Guidelines for dynamic positioning system (DP) operator training* to be issued as MSC.1/Circ.738/Rev.2, and a draft STCW.6 circular on Amendments to part B of the STCW Code, to include the reference to MSC/Circ.738/Rev.2 in section B-V/f, which are set out in annexes 10 and 11 respectively, which the Committee is invited to approve.

Revision of the Guidelines for vessels with dynamic positioning (DP) systems (MSC/Circ.645)

15.11 The Sub-Committee was informed that the Correspondence Group on Amendments to the *Guidelines for vessels with dynamic positioning systems* (MSC/Circ.645), established at SSE 2, recognizing that guidance on DP training has been included in part B of the STCW Code, agreed to include a section on training in the draft guidelines in square brackets.

15.12 The Sub-Committee noted that SSE 3 had included a section on training in the proposed section 6 of the annex to the draft *Guidelines for vessels and units with dynamic positioning systems*, and a sentence referring to MSC.1/Circ.738/Rev.1 (SSE 3/16, paragraph 9.4.5).

15.13 The Sub-Committee concurred with the decision of SSE 3 to include a section on training in the draft guidelines, and instructed the Secretariat to inform SSE 4 to take into account the outcome of the Sub-Committee's consideration of document HTW 4/15/1 (IMCA) proposing amendments to MSC.1/Circ.738/Rev.1, subject to approval by MSC 98 (see paragraph 15.10), when preparing amendments to the *Guidelines for vessels with dynamic positioning (DP) systems* (MSC/Circ.645).

Training requirements for master, chief mate and officers in charge of a navigational watch for ships operating in polar waters

15.14 The Sub-Committee was advised that MSC 97, noting with appreciation the information contained in the document MSC 97/3/9, invited Japan to submit an appropriate submission to HTW 4 for specific actions to be taken on the matter, if any.

15.15 In document HTW 4/15/2, Japan proposed a comparison table to facilitate the understanding of training requirements for the master, chief mate and officers in charge of a navigational watch for ships operating in polar waters, in case an Administration allowed the use of a person(s) other than the aforementioned, as set out in paragraph 12.3.2 of the Polar Code, and suggested the issuance of a STCW circular for a unified interpretation of the Code.

15.16 In the ensuing discussion the following views were expressed that:

- .1 during discussions to develop the Polar Code, while text for the requirements for training were refined, the original proposed table had been retained;
- .2 there was no need to issue a circular to provide any guidance as proposed but to make reference to the discussion in the Sub-Committee report;
- .3 the table may facilitate an understanding of the training requirements, but it is imperative that the table provides a correct interpretation;
- .4 any guidance on manning should be prepared by the SDC Sub-Committee while training requirements which were within the purview of the HTW Sub-Committee could provide appropriate advice;
- .5 the SDC Sub-Committee was responsible for safety issues related to design and construction, and it invited other Sub-Committees to provide advice related to their expertise when developing the Polar Code, and HTW could therefore advise the Committee as appropriate; and
- .6 if the Sub-Committee considered that there was any problem with the training requirements in the Polar Code, it should be brought to the attention of the Committee for its consideration and action, as appropriate.

15.17 After some discussion, the Sub-Committee could not achieve consensus on whether the proposal merited clarification and guidance for a unified interpretation, and decided to note the discussion, and invited Member States and international organizations to submit relevant proposals to HTW 5 for consideration.

Dispensations issued under Article VIII of the STCW Convention

15.18 The Sub-Committee noted information provided by the Secretariat (HTW 4/15 and Add.1) on the submissions made by the Parties in accordance with article VIII of the STCW Convention on dispensations granted by them in the years 2015 and 2016. The Sub-Committee also requested Member States to submit the information related to dispensations issued in the format, as set out in the annex to document HTW 3/18.

Reports of independent evaluation pursuant to regulation I/8 of the STCW Convention and section A-I/8 of the STCW Code

15.19 The Sub-Committee reminded Member States of the requirement for the submission of the reports of independent evaluation pursuant to regulation I/8 of the STCW Convention and section A-I/8 of the STCW Code, which requires a periodical independent evaluation of a Party's quality standards system to be conducted at intervals of not more than five years, and for the report of this evaluation to be communicated to the Secretary-General. In this context, the Sub-Committee urged STCW Parties to refer to MSC.1/Circ.1164/Rev.17, with a view to ensuring that reports of independent evaluation pursuant to regulation I/8 of the STCW Convention and section A-I/8 of the STCW Code are submitted to the Secretary-General in a timely manner.

Expressions of appreciation

15.20 The Sub-Committee expressed appreciation to those delegates and observers, who had recently relinquished their duties, retired, were or were about to be, transferred to other duties, 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.

15.21 The Sub-Committee also expressed its appreciation to Mr. Milhar Fuazudeen, Head, Maritime Training and Human Element, for his loyalty and dedication to this Sub-Committee for over 20 years, which is unparalleled. He joined IMO in 1997 in what was then a newly-established STCW section and retires at the end of this year, and has served the Sub-Committee as its Secretary for the past six years.

16 ACTION REQUESTED OF THE COMMITTEE

16.1 The Maritime Safety Committee, at its ninety-eighth session, is invited to:

- .1 rename the output on *Guidance for the implementation of the 2010 Manila Amendments* as "*Guidance for STCW Code, section B-1/2*" and extend the target completion year to 2018 (paragraph 5.26);
- .2 approve the framework for the proposed new GISIS module related to Reporting and information communication requirements under articles IV, VIII, IX of the STCW Convention, 1978, as amended and instruct the Secretariat to develop this new GISIS module (paragraph 5.33 and annex 2);
- .3 bearing in mind the urgent need, endorse the decision of the Sub-Committee to approve STCW.7/Circ.24 on *Interim Guidance for Parties, Administrations, port State control authorities, recognized organizations and other relevant parties on the requirements under the STCW Convention, 1978, as amended* (paragraph 5.34 and annex 3);
- .4 revoke MSC/Circ.1030 and MSC/Circ.1032 and instruct the Secretariat to reissue STCW.7/Circ.24 as STCW.7/Circ.24/Rev.1 (paragraph 5.35);
- .5 refer the draft proposed amendments to the *Procedures for port State control, 2011* (resolution A.1052(27)), as set out in annex 4, to III 4 for its consideration, when reviewing resolution A.1052(27) (paragraph 5.36 and annex 4);
- .6 approve the draft MSC Circular on amendments to MSC.1/Circ.1503 on *ECDIS – Guidance for good practice*, and instruct the Secretariat to issue it as MSC.1/Circ.1503/Rev.1 (paragraph 5.37 and annex 5);
- .7 extend the target completion year of the output on *Revision of guidelines on fatigue* to 2018, with a view to finalization of the work for approval by the Committee (paragraph 8.11);
- .8 advise whether the Maritime Labour Convention (MLC) 2006 could be referenced in the body of the revised *Guidelines on Fatigue* (paragraph 8.16);
- .9 approve the biennial status report of the Sub-Committee (paragraph 13.2 and annex 6);

- .10 approve the proposed agenda of the Sub-Committee for the 2018-2019 biennium (paragraph 13.3 and annex 7);
- .11 approve the proposed provisional agenda for HTW 5 (paragraph 13.4 and annex 8);
- .12 approve the draft *Guidelines for port State control officers on certification of seafarers*, hours of rest and manning, and refer the same to III 4 (paragraph 15.5 and annex 9);
- .13 approve the draft MSC circular on *Guidelines for dynamic positioning system (DP) operator training*, to be issued as MSC.1/Circ.738/Rev.2 (paragraph 15.10 and annex 10); and
- .14 approve the draft STCW.6 circular on Amendments to part B of the STCW Code, relating to section B-V/f (paragraph 15.10 and annex 11).

ANNEX 1

**REVIEW GROUPS FOR DEVELOPMENT, REVIEW AND
VALIDATION OF MODEL COURSES**

APPENDIX 1

Review Group on new model course Electro-technical Rating

Course Developer: the Philippines supported by China and Greece

Coordinator of Review Group: (to be confirmed)

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APPENDIX 2

Review Group on new model course on Use of leadership and managerial skill

Course Developer: the Philippines supported by Argentina

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APPENDIX 3

Review Group on new model courses on Crowd Management Training, and Crisis Management and Human Behaviour Training (based on former model course 1.28 on Crowd management, passenger safety training for personnel providing direct services to passengers in passenger spaces)

Course Developer: the Philippines

Coordinator of Review Group: Capt. Richard Dunham (GlobalMET)

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APPENDIX 4

Review Group on new model courses on Passenger safety, cargo safety and hull integrity training, and Safety training for personnel providing direct service to passengers in passenger spaces (based on former model course 1.29 on Proficiency in Crisis Management and Human Behaviour training including passenger safety, cargo safety and hull integrity training)

Course Developer: the Philippines

Coordinator of Review Group: Capt. Richard Dunham (GlobalMET)

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APPENDIX 5

Review Group on revised model course 2.03 on Advanced training in fire fighting

Course Developer: India

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APPENDIX 6

Review Group on revised model course 1.34 on Automatic Identification System (AIS)

Course Developer: Malaysia and Argentina

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APPENDIX 7

Review Group on revised model course 1.36 on Liquefied Natural Gas (LNG) Tanker Cargo & Ballast Handling Simulator

Course Developer: Malaysia

Coordinator of Review Group: Capt. Stephen Cross (IMLA)

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APPENDIX 8

Review Group on revised model course 1.08 on Radar, ARPA, Bridge Teamwork and Search and Rescue – Radar Navigation at Management Level

Course Developer: China

Coordinator of Review Group: Capt. Mohamed Halim Bin Ahmed (Malaysia)

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APPENDIX 9

Review Group on new model course on Basic training for masters, officers, ratings and other personnel on ships subject to the IGF Code

Course Developer: Norway

Coordinator of Review Group: Mr. Davis Breyer (United States)

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APPENDIX 10

Review Group on new model course on Advanced training for masters, officers, ratings and other personnel on ships subject to the IGF Code

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APPENDIX 11

Review Group on revised model course 1.19 on Proficiency in Personal Survival Techniques

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ANNEX 2

DRAFT FRAMEWORK FOR THE GISIS MODULE RELATING TO REPORTING AND INFORMATION REQUIREMENTS UNDER ARTICLES IV, VIII AND IX OF THE STCW CONVENTION

**Reporting and information communication requirements
under articles IV, VII, IX of the STCW Convention and Section A-1/7 of the STCW Code**

No.	STCW reference No.	Description	Reporting time	Type of Information ²	Transparency ³
Article IV of the STCW Convention					
1	Article IV(1)(a)	The text of laws, decrees, orders, regulations and instruments promulgated on the various matters within the scope of the Convention	As soon as practicable	TEXT	Public
2	Article IV(1)(b)	Full details, where appropriate, of contents and duration of study courses, together with their national examination and other requirements for each certificate issued in compliance with the Convention			Restricted
3	Article IV(1)(c)	Sufficient number of specimen certificates issued in compliance with the Convention			All Parties

² There are two types of information references:
TEXT: refers to detailed information submitted to Secretary-General or the Organization.
RESULT: refers to summarized outcome/output from the Secretary-General or the Organization as described by the STCW Convention and Code.

³ There are three types of transparency references:
ALL PARTIES: refers to information that would be available to all Parties.
RESTRICTED: refers to information that would be available only to Parties identified by the reporting Party.
PUBLIC: refers to information that would be available to public registered GISIS users.

No.	STCW reference No.	Description	Reporting time	Type of Information ²	Transparency ³
Article VIII of the STCW Convention					
4	Article VIII(3)	Report to the Secretary-General giving information of the total number of dispensations in respect of each capacity for which a certificate is required that have been issued during the year to seagoing ships, together with information as to the numbers of those ships above and below 1,600 gross register tons respectively	As soon as possible after 1 January of each year		All Parties
Article IX of the STCW Convention					
5	Article IX(2)	Details of arrangements described in article IX(1) ⁴ shall be reported as early as practicable to the Secretary-General who shall circulate such particulars to all Parties	As early as practicable	TEXT	Public

⁴ Article IX(1): The Convention shall not prevent an Administration from retaining or adopting other educational and training arrangements, including those involving seagoing service and shipboard organization especially adapted to technical developments and to special types of ships and trades, provided that the level of seagoing service, knowledge and efficiency as regards navigational and technical handling of ship and cargo ensures a degree of safety at sea and has a preventive effect as regards pollution at least equivalent to the requirements of the Convention.

No.	STCW reference No.	Description	Reporting time	Type of Information ²	Transparency ³
Section A-I/7, part 1 of the STCW Code					
6	Section A-I/7, 2.1	Contact details and organization chart of the ministry, department or governmental agency responsible for administering the Convention			
7	Section A-I/7, 2.2	A concise explanation of the legal and administrative measures provided and taken to ensure compliance, particularly with regulations I/2, I/6 and I/9			
8	Section A-I/7, 2.3	A clear statement of the education, training, examination, competency assessment and certification policies adopted	Within one calendar year of enter into force of regulation I/7 With the exception that the date of amendments entering into force later than the date of scheduled date of information communication to Secretary-General	RESULT / TEXT	If the type of information is RESULT, then transparency to All Parties If the type of information is TEXT, then transparency is Restricted
9	Section A-I/7, 2.4	A concise summary of the courses, training programmes, examinations and assessments provided for each certificate issued pursuant to the Convention			

No.	STCW reference No.	Description	Reporting time	Type of Information ²	Transparency ³
10	Section A-I/7, 2.5	A concise outline of the procedures followed to authorize, accredit or approve training and examinations, medical fitness and competency assessments required by the Convention, the conditions attached thereto, and a list of the authorizations, accreditations and approvals granted	Within one calendar year of enter into force of regulation I/7	RESULT / TEXT	If the type of information is RESULT, then transparency to All Parties If the type of information is TEXT, then transparency is Restricted
11	Section A-I/7, 2.6	A concise summary of the procedures followed in granting any dispensation under article VIII ⁵ of the Convention	With the exception that the date of amendments entering into force later than the date of scheduled date of information communication to Secretary-General		
12	Section A-I/7, 2.7	The results of the comparison carried out pursuant to regulation I/11 and a concise outline of the refresher and upgrading training mandate			
Section A-I/7, part 2, paragraph 3 of the STCW Code					
13	Section A-I/7, 3.1	A full description of retention or adoption of any equivalent education or training arrangements pursuant to article IX	Within 6 months of such arrangements	TEXT	All Parties

⁵ Article VIII:

- (1) In circumstances of exceptional necessity, Administrations, if in their opinion this does not cause danger to persons, property or the environment, may issue a dispensation permitting a specified seafarer to serve in a specified ship for a specified period not exceeding six months in a capacity, other than that of the radio officer or radiotelephone operator, except as provided by the relevant Radio Regulations, for which he does not hold the appropriate certificate, provided that the person to whom the dispensation is issued shall be adequately qualified to fill the vacant post in a safe manner, to the satisfaction of the Administration. However, dispensations shall not be granted to a master or chief engineer officer except in circumstances of force majeure and then only for the shortest possible period.
- (2) Any dispensation granted for a post shall be granted only to a person properly certificated to fill the post immediately below. Where certification of the post below is not required by the Convention, a dispensation may be issued to a person whose qualification and experience are, in the opinion of the Administration, of a clear equivalence to the requirements for the post to be filled, provided that, if such a person holds no appropriate certificate, he shall be required to pass a test accepted by the Administration as demonstrating that such a dispensation may safely be issued. In addition, Administrations shall ensure that the post in question is filled by the holder of an appropriate certificate as soon as possible.

No.	STCW reference No.	Description	Reporting time	Type of Information ²	Transparency ³
14	Section A-I/7, 3.2	A report summarizing the measures taken to ensure compliance with regulation I/10	Within 6 months of recognizing certificates issued by other Parties	RESULT	All Parties
15	Section A-I/7, 3.3	Provision to the Secretary-General a specimen copy of the type of safe manning documents issued to such ships	Within 6 months of authorizing the employment of seafarers holding alternative certificates issued under regulation VII/1 on ships entitled to fly its flag		
Section A-I/7, part 2, paragraph 4 of the STCW Code					
16	Section A-I/7, para. 4	Report of the results of evaluations carried out pursuant to regulation I/8, paragraph 2	Within 6 months of completion of the evaluation	TEXT	Restricted
Section A-I/7, part 2, paragraph 6 of the STCW Code					
17	Section A-I/7, 6.1	A concise explanation of the legal and administrative measures provided and taken to ensure compliance with the amendment	To be included in the next cycle report pursuant to regulation I/8, paragraph 3, following the entry into force of any subsequent mandatory amendments	RESULT / TEXT	If the type of information is RESULT, then transparency to All Parties If the type of information is TEXT, then transparency is Restricted
18	Section A-I/7, 6.2	A concise summary of any courses, training programmes, examinations and assessments provided to comply with the amendment			
19	Section A-I/7, 6.3	A concise outline of the procedures followed to authorize, accredit or approve training and examinations, medical fitness and competency assessments required under the amendment			
20	Section A-I/7, 6.4	A concise outline of any refresher training and upgrading training required to meet the amendments			
21	Section A-I/7, 6.5	A comparison between the measures to implement the amendment and existing measures contained in previous reports pursuant to regulation I/7, paragraph 1, and/or regulation I/8, paragraph 2, where applicable			

ANNEX 3

STCW.7/Circ.24
6 February 2017

INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS (STCW), 1978, AS AMENDED

Interim Guidance for Parties, Administrations, port State control authorities, recognized organizations and other relevant parties on the requirements of the STCW Convention, 1978, as amended

1 The Sub-Committee on Human Element, Training and Watchkeeping, at its fourth session (30 January to 3 February 2017), noted the urgent need for some clarification on the implementation of the 2010 Manila Amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended.

2 The Sub-Committee also noted that:

- .1 problems associated with requests for documentation during inspections or surveys that is not required by the STCW Convention, 1978, as amended, were resulting in significant and unnecessary administrative burdens on Administrations, companies and seafarers. It was further noted that some problems were linked to inconsistencies in interpretations regarding the status of IMO model courses;
- .2 references to the STCW Convention, 1978, as amended, were made in varied ways within certificates and documentary evidence;
- .3 there were reported misinterpretations of the training and familiarization provisions for Electronic Chart Display and Information Systems (ECDIS) as required by the STCW Convention, 1978, as amended; and
- .4 the 2010 Manila Amendments to the STCW Convention and STCW Code introduced four new certificates as set out in regulation II/5 (able seafarer deck), III/5 (able seafarer engine), III/6 (electro-technical officers) and III/7 (electro-technical ratings), and that misinterpretation of the applicable provisions had been reported.

3 To assist all concerned, the Sub-Committee prepared clarifications on a number of issues in the interim Guidance, as set out in the annex.

4 Member States are invited to be guided accordingly and to bring this Guidance to the attention of all concerned, in particular, port State control officers, recognized organizations, companies and other relevant parties.

5 The content of this circular takes account of the guidance in MSC/Circ.1030 and MSC/Circ.1032.

ANNEX

INTERIM GUIDANCE FOR PARTIES, ADMINISTRATIONS, PORT STATE CONTROL AUTHORITIES, RECOGNIZED ORGANIZATIONS AND OTHER RELEVANT PARTIES ON THE REQUIREMENTS OF THE STCW CONVENTION, 1978, AS AMENDED

Provision of documentation for verification

1 Under regulation I/2 of the STCW Convention, 1978, as amended, the documentation authorizing the holder to serve in certain functions on board ship are certificates of competency and certificates of proficiency and, only with regard to regulation V/2, documentary evidence. The list of certificates or documentary evidence required under the STCW Convention, 1978, as amended, is set out in table B-I/2 of the STCW Code.

2 Certificates of competency, certificates of proficiency and documentary evidence issued in accordance with chapters II, III, IV, V, VI and VII of the STCW Convention, 1978, as amended, are evidence of having successfully completed all required training and that the required standard of competence has been achieved.

3 While IMO model courses may assist with the development of training programmes, they are not mandatory, and Administrations are not required to use them when preparing and approving training courses to meet the objectives of the STCW Code, as amended.

4 The validation of an IMO model course means that no reason was found to object to its contents. It does not mean that it is an official interpretation of the Convention, or that approval was granted by the IMO bodies.

5 It is agreed that:

- .1 in accordance with regulation I/4 of the STCW Convention, 1978, as amended, seafarers should not be required to provide documentation for verification that is not required by the Convention; and
- .2 certificates or documentary evidence issued under the STCW Convention, 1978, as amended, should not be required to contain reference to IMO model courses.

References to the STCW Convention, 1978, as amended

6 The normal practice within the IMO is to refer to international conventions by an acronym of the title of the convention and the date on which it was made (e.g. SOLAS 1974). Where amendments are made to the original convention, the title is then amended to reflect the amendments (e.g. SOLAS 1974, as amended) but it is not normal practice to append the year/dates of the amendments to the title of the amended convention.

7 It has been reported that different references to the STCW Convention, 1978, as amended, can be found in certificates and endorsements, which has led to some confusion. In particular, if the references had different meanings, or if the differences were unintentional.

8 The format of certificates and endorsements provided in section A-I/2 of the STCW Code refers to "the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended".

9 In order to avoid confusion, it is recommended that certificates and endorsements referring to the STCW Convention use the reference "the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended", without appending the year/dates of the amendments.

10 It is important to note that seafarers may hold certificates and documentary evidence that contain a different reference to the STCW Convention that remain valid and should be accepted.

Training requirements for Electronic Chart Display and Information Systems (ECDIS) and provision of the documentation for verification

11 The STCW Code contains requirements for approved training on ECDIS. In cases where the approved training has not been completed, a limitation shall be included on the certificate and endorsements issued to the seafarer. Where such a limitation is not specified, the certificate and endorsements are evidence of having successfully completed the required approved training and that the standard of competence has been achieved.

12 No requirement exists for the approved training on ECDIS equipment to be type-specific. The knowledge, understanding and proficiency required to be demonstrated is generalized to ensure seafarers have the necessary skills for basic operation of all types of equipment.

13 In accordance with regulation I/14, companies are responsible for ensuring that seafarers employed on their ships are familiarized with the installed equipment, including ECDIS.

14 It is agreed that seafarers required to have training in the use of ECDIS:

- .1 should not be required to provide documentation of training in ECDIS that is specific to the installed equipment; and
- .2 are required to be familiarized with the ECDIS equipment installed on board.

Regulations II/5 (able seafarer deck), III/5 (able seafarer engine), III/6 (electro-technical officers) and III/7 (electro-technical ratings)

15 Misinterpretation of the applicable provision of regulations II/5, III/5, III/6 and III/7 has been reported. In particular, port State control officers have required personnel on board to possess applicable Certificate of Competency or Certificate of Proficiency, when such personnel are not included in the Minimum Safe Manning Document (MSMD) of the ship.

16 Port State control officers, recognized organizations and other relevant parties are reminded that under paragraph 2.1 of appendix 11 of the *Procedures for Port State Control, 2011* (resolution A.1052(27)), "If a ship is manned in accordance with a MSMD or equivalent document issued by the flag State, the port State control officers should accept that the ship is safely manned".

ANNEX 4

DRAFT AMENDMENTS TO THE PROCEDURES FOR PORT STATE CONTROL, 2011 (RESOLUTION A.1052(27))

In Chapter 2, "Initial Inspections" of the Procedures for Port State Control, consider amending section 2.2 as follows:

2.2.3 On boarding and introduction to the master or the responsible ship's officer, the PSCO should examine the ship's relevant certificates and documents required by the applicable conventions, as listed in appendix 12. When examining 1969 International Tonnage Certificates, the PSCO should be guided by appendix 10. When examining certificates or documentary evidence of seafarers issued in accordance with the STCW Convention, 1978, as amended, the PSCO should be guided by appendix [11]. The list of certificates or documentary evidence required under the STCW Convention, 1978, as amended, is also found in table B-1/2 of the STCW Code.

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

2.2.5 In conducting an initial inspection, the PSCO should check both the validity of the relevant certificates and other documents required by the applicable conventions and the overall condition of the ship, including its equipment, navigational bridge, decks including forecastle, cargo holds/areas, engine-room and pilot transfer arrangements.

In section 5, "Definitions and Abbreviations" of the draft proposed "Guidelines for port State control officers on certification of seafarers, hours of rest and manning" (annex 1 of document III 3/WP.6), which is anticipated to replace appendix 11 in the revised Procedures for Port State Control, consider amending paragraph 5.3 as follows:

5.3 Documentary evidence means documentation, other than a Certificate of Competency or Certificate of Proficiency, used to establish that the relevant requirements of the STCW Convention, 1978, as amended, have been met. The only documentary evidence required under the STCW Convention, 1978, as amended, is issued to personnel meeting the mandatory minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on passenger ships (regulation V/2).

In section 6.2, "Initial Inspection – Seafarers' certificates and documents" of the draft proposed "Guidelines for port State control officers on certification of seafarers, hours of rest and manning" (annex 1 of document III 3/WP.6), which is anticipated to replace appendix 11 in the revised Procedures for Port State Control, consider inserting a new paragraph 6.2.2*ter* as follows:

6.2.2 The verification should be limited to the seafarers' certificates and documents required under the STCW Convention, 1978, as amended. Certificates of Competency, Certificates of Proficiency and documentary evidence issued in accordance with chapters II, III, IV, V, VI and VII of the STCW Convention, 1978, as amended, are evidence of having successfully completed all required training and that the required standard of competence has been achieved.

ANNEX 5

DRAFT MSC CIRCULAR ON AMENDMENTS TO MSC.1/CIRC.1503 *ECDIS – GUIDANCE FOR GOOD PRACTICE*

[MSC.1/Circ.1503/Rev.1]
[16 June 2017]

ECDIS – GUIDANCE FOR GOOD PRACTICE

1 The Maritime Safety Committee, at its ninety-fifth session (3 to 12 June 2015), approved the *ECDIS – Guidance for Good Practice*, drawing together relevant guidance from seven previous ECDIS circulars into a single, consolidated document.

2 The undeniable safety benefits of navigating with Electronic Chart Display and Information Systems (ECDIS) were recognized through Formal Safety Assessments submitted to the Organization and experience gained by the voluntary use of ECDIS for many years. ECDIS was mandated for carriage by High-Speed Craft (HSC) as early as 1 July 2008. Subsequently, the mandatory carriage of ECDIS for ships other than HSC (depending on the ship type, size and construction date, as required by SOLAS regulation V/19.2.10) commenced in a phased manner from 1 July 2012 onwards.

3 ECDIS is a complex, safety-relevant, software-based system with multiple options for display and integration. The ongoing safe and effective use of ECDIS involves many stakeholders including seafarers, equipment manufacturers, chart producers, hardware and software maintenance providers, shipowners and operators, and training providers. It is important that all these stakeholders have a clear and common understanding of their roles and responsibilities in relation to ECDIS.

4 ECDIS was accepted as meeting the chart carriage requirements of SOLAS regulation V/19 in 2002. Over the years, IMO Member States, hydrographic offices, equipment manufacturers and other organizations have contributed to the development of guidance on a variety of ECDIS-related matters. Over the years, IMO has issued a series of complementary circulars on ECDIS.

5 While most useful IMO guidance on ECDIS was developed in this incremental manner, the information needed to be consolidated, where possible, to have ECDIS-related guidance within a single circular, which could be easily kept up to date without duplication or need for continual cross-referencing. Such consolidation of information offers clear and unambiguous understanding of the carriage requirements and use of ECDIS.

6 The consolidated guidance termed "*ECDIS – Guidance for Good Practice*" is set out in the annex to this circular (referred to as "Guidance" hereafter). Ship operators, masters and deck officers on ECDIS-fitted ships are encouraged to use this guidance to improve their understanding and facilitate safe and effective use of ECDIS.

7 The Maritime Safety Committee, at its [ninety-eighth session (7 to 16 June 2017)], based on a recommendation from the fourth session of the Sub-Committee on Human Element, Training and Watchkeeping (30 January to 3 February 2017), and noting the need to clarify the requirement of ECDIS familiarization as specified in the STCW Convention, 1978, as amended, and the ISM Code, approved the revision of the *ECDIS – Guidance for Good Practice*, as set out in the annex.

8 Members of the Organization and all Contracting Governments to the SOLAS Convention are invited to bring this circular to the attention of all entities concerned. In particular, port States are invited to make the guidance available to their port State control inspectors, and flag States to shipowners, masters, recognized organizations, flag State control inspectors and surveyors. An electronic copy of this circular can be downloaded from the Organization's website at: (<http://www.imo.org/OurWork/Circulars/Pages/Home.aspx>).

9 This circular revokes MSC.1/Circ.1391, MSC.1/Circ.1503 and corrigenda 1, SN.1/Circ.207/Rev.1, SN.1/Circ.266/Rev.1, SN.1/Circ.276, SN.1/Circ.312, STCW.7/Circ.10 and STCW.7/Circ.18.

ANNEX

ECDIS – GUIDANCE FOR GOOD PRACTICE

TABLE OF CONTENTS

INTRODUCTION	4
A CHART CARRIAGE REQUIREMENT OF SOLAS	4
B MAINTENANCE OF ECDIS SOFTWARE	6
C OPERATING ANOMALIES IDENTIFIED WITHIN ECDIS	6
D DIFFERENCES BETWEEN RASTER CHART DISPLAY SYSTEM (RCDS) AND ECDIS	8
E ECDIS TRAINING	8
F TRANSITIONING FROM PAPER CHART TO ECDIS NAVIGATION	9
G GUIDANCE ON TRAINING AND ASSESSMENT IN THE OPERATIONAL USE OF ECDIS SIMULATORS	10
APPENDIX 1 – LIST OF ECDIS APPARENT OPERATING AND DISPLAY ANOMALIES	
APPENDIX 2 – DIFFERENCES BETWEEN RASTER CHART DISPLAY SYSTEM RCDS) AND ECDIS	
APPENDIX 3 – GUIDANCE ON TRAINING AND ASSESSMENT IN THE OPERATIONAL USE OF ECDIS SIMULATORS	
REFERENCES	

INTRODUCTION

1 The undeniable safety benefits of navigating with Electronic Chart Display and Information Systems (ECDIS) were recognized through Formal Safety Assessments submitted to the Organization and experience gained by the voluntary use of ECDIS for many years. ECDIS was mandated for carriage by High-Speed Craft (HSC) as early as 1 July 2008. Subsequently, the mandatory carriage of ECDIS for ships other than HSC (depending on the ship type, size and construction date, as required by SOLAS regulation V/19.2.10) commenced in a phased manner from 1 July 2012 onwards.

2 ECDIS is a complex, safety-relevant, software-based system with multiple options for display and integration. The ongoing safe and effective use of ECDIS involves many stakeholders including seafarers, equipment manufacturers, chart producers, hardware and software maintenance providers, shipowners and operators, and training providers. It is important that all these stakeholders have a clear and common understanding of their roles and responsibilities in relation to ECDIS.

3 This *ECDIS – Guidance for Good Practice*, referred to as "Guidance" hereafter, draws together relevant guidance from seven previous ECDIS circulars into a single, consolidated document.

It has been laid out in seven sections, namely:

- A. Chart carriage requirement of SOLAS
- B. Maintenance of ECDIS software
- C. Operating anomalies identified within ECDIS
- D. Differences between raster chart display system (RCDS) and ECDIS
- E. ECDIS training
- F. Transitioning from paper chart to ECDIS navigation
- G. Guidance on training and assessment in the operational use of ECDIS simulators

This guidance is intended to assist smooth implementation of ECDIS and its ongoing safe and effective use on board ships. Ship operators, masters and deck officers on ECDIS-fitted ships are encouraged to use this guidance to improve their understanding and facilitate safe and effective use of ECDIS.

4 Although this guidance replaces seven IMO ECDIS-related circulars, there remain several other IMO circulars that also address ECDIS matters to varying degree and reference should also be made to these circulars where necessary. A list containing the IMO ECDIS performance standards and the other IMO circulars that relate to ECDIS is provided in the reference section.

A CHART CARRIAGE REQUIREMENT OF SOLAS

5 The mandatory carriage of ECDIS, as required by SOLAS regulation V/19.2.10, is subject to a staged entry into force between 1 July 2012 and 1 July 2018. As per SOLAS regulations V/18 and V/19, for a ship to use ECDIS to meet the chart carriage requirements of SOLAS, the ECDIS equipment must conform to the relevant IMO performance standards. ECDIS units on board are required to comply with one of two performance standards

(either IMO resolution A.817(19), as amended or resolution MSC.232(82)), depending on the date of their installation. Essentially, where an ECDIS is being used to meet the chart carriage requirements of SOLAS, it must:

- i) be type-approved;
- ii) use up to date electronic nautical charts (ENC);
- iii) be maintained so as to be compatible with the latest applicable International Hydrographic Organization (IHO) standards; and
- iv) have adequate, independent back-up arrangements in place.

6 According to SOLAS regulation V/18, ECDIS units on board ships must be type-approved. Type approval is the certification process that ECDIS equipment must undergo before it can be considered as complying with IMO performance standards. The process is carried out by flag Administration-accredited type-approval organizations or marine classification societies in accordance with the relevant test standards developed by, inter alia, the International Electrotechnical Commission (IEC) (e.g. IEC 61174).

7 In accordance with SOLAS regulation V/19.2.1.4, ships must carry all nautical charts necessary for the intended voyage. As defined by SOLAS regulation V/2.2, nautical charts are issued officially by or on the authority of a Government, authorized Hydrographic Office or other relevant government institutions. Ships required to fit ECDIS and ships choosing to use ECDIS to meet the chart carriage requirements of SOLAS should carry Electronic Navigational Charts (ENCs) or, where ENCs are not available at all or are not of an appropriate scale for the planning and display of the ship's voyage plan, Raster Navigational Charts (RNC) and/or any needed paper charts should be carried.

8 IHO provides an online chart catalogue that details the coverage of ENCs together with references to coastal State guidance on any requirements for paper charts (where this has been provided). The catalogue also provides links to IHO Member States' websites where additional information may be found. The IHO online chart catalogue can be accessed from the IHO website at: www.iho.int.

9 As per SOLAS regulation V/27, all nautical charts necessary for the intended voyage shall be adequate and up to date. For ships using ECDIS to meet the chart carriage requirement of SOLAS, all ENCs and RNCs must be of the latest available edition and be kept up to date using both the electronic chart updates (e.g. ENC updates) and the latest available notices to mariners. Additionally, ECDIS software should be kept up to date such that it is capable of displaying up-to-date electronic charts correctly according to the latest version of IHO's chart content and display standards.

10 Relevant appendices of IMO performance standards for ECDIS specify the requirements for adequate independent back-up arrangements to ensure safe navigation in case of ECDIS failure. Such arrangements include: 1) facilities enabling a safe take-over of the ECDIS functions in order to ensure that an ECDIS failure does not result in a critical situation; 2) a means to provide for safe navigation for the remaining part of the voyage in case of ECDIS failure.

B MAINTENANCE OF ECDIS SOFTWARE

11 ECDIS in operation comprises hardware, software and data. It is important for the safety of navigation that the application software within the ECDIS works fully in accordance with the performance standards and is capable of displaying all the relevant digital information contained within the ENC.

12 ECDIS that is not updated to the latest version of the IHO Standards may not meet the chart carriage requirements as set out in SOLAS regulation V/19.2.1.4.

13 For example, in January 2007, Supplement No.1 to the IHO ENC Product Specification was introduced in order to include, within the ENC, the then recently introduced IMO requirements for Particularly Sensitive Sea Areas (PSSA), Archipelagic Sea Lanes (ASL) and to cater for any future safety of navigation requirements.

14 Any ECDIS which is not upgraded to be compatible with the latest version of the IHO ENC Product Specification or the Presentation Library may be unable to correctly display the latest charted features. Additionally, the appropriate alarms and indications may not be activated even though the features have been included in the ENC. Similarly, any ECDIS which is not updated to be fully compliant with the latest version of the IHO Data Protection Standard may fail to decrypt or to properly authenticate some ENCs, leading to failure to load or install. An up-to-date list of all the relevant IHO standards relating to ECDIS equipment can be accessed from the IHO website (www.iho.int).

15 The need for safe navigation requires that manufacturers should provide a mechanism to ensure software maintenance arrangements are adequate. This may be achieved through the provision of software version information using a website. Such information should include the IHO Standards which have been implemented.

16 Administrations should inform shipowners and operators that proper ECDIS software maintenance is an important issue and that adequate measures need to be implemented by masters, shipowners and operators in accordance with the International Safety Management (ISM) Code.

C OPERATING ANOMALIES IDENTIFIED WITHIN ECDIS

17 A number of ECDIS operating anomalies have been identified. Due to the complex nature of ECDIS, and in particular because it involves a mix of hardware, software and data, it is possible that further anomalies may exist.

18 These anomalies are particularly apparent in ECDIS units that have been built and type-approved to ECDIS performance standards (resolution A.817(19), as amended), (i.e. before 2009). However, ECDIS units type-approved to the revised ECDIS performance standards (resolution MSC.232(82)) are still vulnerable to the limitations in as set out in appendix 1, item 5(a).

19 An ECDIS anomaly is an unexpected or unintended behaviour of an ECDIS unit which may affect the use of the equipment or navigational decisions made by the user. Examples include, but are not limited to:

- failure to display a navigational feature correctly, such as:
 - navigation areas recently recognized by IMO such as PSSA and ASL

- navigational lights with complex characteristics; and
- underwater features and isolated dangers;
- failure to detect objects by "route checking" in voyage planning mode;
- failure to alarm correctly; and
- failure to manage a number of alarms correctly.

20 The existence of such anomalies highlights the importance of maintaining ECDIS software to ensure that it is capable of displaying up-to-date electronic charts correctly according to the latest version of the IHO's chart content and display standards. It is recommended that appropriate checks are made with the equipment manufacturer. This is of particular importance where ECDIS is the only source of chart information available.

21 IHO has produced an ECDIS Data Presentation and Performance Check (DPPC) dataset that allows mariners to check some important aspects of the operation of their ECDIS. This dataset contains two fictitious ENC cells which deck officers can load into their ECDIS units to assess operating performance and to determine whether there may be any display anomalies that either need to be remedied or otherwise managed in the way that the ECDIS is operated. If the check highlights a problem, the accompanying guidance notes with the check dataset offer suggested courses of action. The check dataset and accompanying instructions can be obtained from ENC service providers, or can be downloaded from the IHO website at: www.iho.int.

22 A list of the known anomalies with advice and information on whether or not the DPPC dataset checks for each anomaly is set out in appendix 1.

23 Given the widespread use and the implementation of the ECDIS carriage requirement, the Committee considered it important that any anomalies identified by mariners are reported to and investigated by the appropriate authorities to ensure their resolution.

24 In order to better understand the extent of the issue, Administrations are invited to collect, investigate and disseminate information about ECDIS anomalies. Administrations or designated bodies are invited to:

- .1 encourage vessels under their flag to report such anomalies, with sufficient detail on the ECDIS equipment and ENCs, to allow analysis;
- .2 treat the identity of the reporter as confidential;
- .3 agree to share information with other IMO Member States and international organizations on request; and
- .4 issue alerts to mariners where such anomalies might affect safety of navigation.

D DIFFERENCES BETWEEN RASTER CHART DISPLAY SYSTEM (RCDS) AND ECDIS

- 25 ECDIS may be operated in one of the two modes:
- .1 the ECDIS mode when ENC's are used; and
 - .2 the RCDS mode when ENC's are not available and RNC's are used instead.

Although in recent years ENC coverage has increased rapidly there could be some areas for which suitably detailed ENC's may not have been issued.

26 The RCDS mode does not have the full functionality of ECDIS and can only be used together with an appropriate portfolio of up-to-date paper charts. Limitations of the RCDS mode is set out in appendix 2.

E ECDIS TRAINING

27 The information provided below aims to assist Member States, Parties to the STCW Convention, companies and seafarers in ensuring that training programmes on the use of ECDIS provided to masters and deck officers⁶ serving on ships fitted with ECDIS meet the mandatory training requirements of the STCW Convention:

- .1 under the provisions of the STCW Convention and Code, all officers in charge of a navigational watch on ships of 500 gross tonnage or more must have a thorough knowledge and ability to use nautical charts and nautical publications (refer STCW Code table A-II/1);
- .2 masters and officers in charge of a navigational watch (both at management and operational level) serving on ships fitted with ECDIS should as a minimum, undertake appropriate generic ECDIS training, meeting the competence requirements of the 2010 Manila Amendments to the STCW Convention and Code;
- .3 the 2010 Manila Amendments to the STCW Convention and Code have reinforced ECDIS training requirements and introduced several additional specific competencies in the use of ECDIS for officers both at management and operational level serving on ECDIS-fitted ships (refer to STCW Code tables A-II/1 and A-II/2). Training in accordance with the 2010 Manila Amendments became effective from 1 July 2013;
- .4 masters and officers certificated under chapter II of the STCW Convention serving on board ships fitted with ECDIS are to be familiarized (in accordance with STCW regulation I/14) with the ship's equipment including ECDIS;

⁶ Training and assessment in the use of ECDIS is not required for those who serve exclusively on ships not fitted with ECDIS. This limitation shall be reflected in the endorsements issued to the seafarer concerned (refer to tables A-II/1 and A-II/2 of the STCW Code).

- .5 STCW Convention regulation I/14, paragraph 1.5, as well as sections 6.3 and 6.5 of the International Safety Management (ISM) Code, require companies to ensure seafarers are provided with familiarization training. A ship safety management system should include familiarization with the ECDIS equipment fitted, including its backup arrangements, sensors and related peripherals. ECDIS manufacturers are encouraged to provide training resources including type-specific materials. These resources may form part of the ECDIS familiarization training;
- .6 STCW Convention regulation I/14, paragraph 1.4, requires companies to maintain evidence of the training and ensures that it is readily accessible. For certificates of competency that have expiry dates beyond 1 January 2017, port State control authorities should accept the certificate issued as *prima facie* evidence that the seafarer has met the standard of competence required by the 2010 Amendments in accordance with the control provisions of article X and regulation I/4 of the STCW Convention;
- .7 companies should also maintain evidence of the familiarization training in compliance with STCW Convention regulation I/14, paragraph 1.5;
- .8 Administrations should inform their port State control officers of the requirements for ECDIS training as detailed in sub-paragraph 6 above; and
- .9 attention is also drawn to:
 - STCW.7/Circ.16 – Clarification of transitional provisions relating to the 2010 Manila Amendments to the STCW Convention and Code;
 - STCW.7/Circ.17 – Advice for port State control officers on transitional arrangements leading up to the full implementation of the requirements of the 2010 Manila Amendments to the STCW Convention and Code on 1 January 2017; and
 - STCW.7/Circ. 24 – *Interim guidance for Parties, Administrations, port State control authorities, recognized organizations and other relevant parties on the requirements under the STCW Convention, 1978, as amended.*

F TRANSITIONING FROM PAPER CHART TO ECDIS NAVIGATION

28 As an initial step, shipowners and operators should undertake an assessment of the issues involved in changing from paper chart to ECDIS navigation. Ships' masters and deck officers should participate in any such assessment so as to capture any practical concerns or needs of those that would be required to use ECDIS. Such a process will help facilitate an early understanding of any issues to be addressed and will aid masters and deck officers prepare for change.

29 Documenting the assessment of issues, combined with the development of ECDIS standard operating procedures, will help lead to the adoption of robust ECDIS navigation practices, simplification of masters and deck officers' training and facilitate smooth handovers.

30 In addition, shipowners and operators should ensure that their ships' masters and deck officers are provided with a generic ECDIS training and an ECDIS familiarization programme so that the ships' masters and deck officers fully understand the use of ECDIS for passage planning and navigation.

31 In addition to national and international rules and regulations, IMO model course 1.27 and IMO performance standards, IHO has published an online publication *Facts about electronic charts and carriage requirements*. It is a recommended source of information on ECDIS hardware, training and the technical aspects of electronic chart data. Copies are available free of charge from various sources including: www.iho.int.

32 Shipowners and operators should always refer to their national Administrations for the latest information on ECDIS carriage and use.

G GUIDANCE ON TRAINING AND ASSESSMENT IN THE OPERATIONAL USE OF ECDIS SIMULATORS

33 When simulators are being used for training or assessment in the operational use of Electronic Chart Display and Information Systems (ECDIS), the following interim guidance should be taken into consideration in any such training or assessment.

34 Training and assessment in the operational use of the ECDIS should:

- .1 incorporate the use of ECDIS simulation equipment; and
- .2 conform to standards not inferior to those given in paragraphs 35 to 37 below.

35 ECDIS simulation equipment should, in addition to meeting all applicable performance standards set out in section A-I/12 of the STCW Code, as amended, be capable of simulating navigational equipment and bridge operational controls which meet all applicable performance standards adopted by the Organization, incorporate facilities to generate soundings and:

- .1 create a real-time operating environment, including navigation control and communications instruments and equipment appropriate to the navigation and watchkeeping tasks to be carried out and the manoeuvring skills to be assessed; and
- .2 realistically simulate "own ship" characteristics in open-water conditions, as well as the effects of weather, tidal stream and currents.

36 Demonstrations of, and practice in, ECDIS use should be undertaken, where appropriate, through the use of simulators. Training exercises should preferably be undertaken in real time, in order to increase trainees' awareness of the hazards of the improper use of ECDIS. Accelerated timescale may be used only for demonstrations.

37 Detailed guidance is provided in appendix 3.

APPENDIX 1

LIST OF ECDIS APPARENT OPERATING AND DISPLAY ANOMALIES (NOT IN PRIORITY ORDER)

In the following list, items 1, 2, 3, 4, 5(b), 6, 7, and 11 are checked against the IHO DPPC data set dated November 2011:

1 Inability to correctly display symbols for IMO-approved features such as ASLs or PSSAs – ECDIS equipment that does not have the latest version of the IHO Presentation Library installed will, instead of displaying the correct symbol, either show question marks (?) or nothing at all. In some cases the ECDIS may fail to load an ENC that includes such data. An ECDIS retains its type approval certificate regardless of the version of the Presentation Library installed.

Workaround – interrogate any "?" symbol displayed using the "pick report" or refer to paper charts and/or publications.

2 Incorrect display of foul areas and obstructions in some ECDIS equipment – some ECDIS models do not show some underwater features in Standard display mode as expected (however they do activate appropriate alarms). These features are only displayed when the "All" or "Other" display mode is used. Also in some cases different symbols are used to depict these features.

Workaround – use Mode "All" or "Other".

3 On some occasions some stranded/dangerous wrecks and obstructions may not display in any mode; it is believed that this is limited to some ECDIS versions from a single manufacturer who has now produced a software amendment to resolve the problem.

Workaround – use paper charts.

4 An object that falls on a contour line may fail to display in "Standard" mode in some ECDIS equipment.

Workaround – use Mode "All" or "Other".

5 Small (point) land areas, especially those depicted only on small scale (usage band 1 and 2) ENCs may not always be clearly displayed and do not always activate alarms in route planning or route monitoring modes in some ECDIS equipment:

- (a) it is possible for small land features to be obscured by other chart detail such as names or contour labels; and
- (b) some ECDIS equipment may not conduct route checks on small scale ENCs and may therefore not provide an appropriate warning. Where this is the case the land area may not be detected by the "look-ahead" function during route monitoring.

Workaround – careful manual inspection of the largest scale ENC available.

Due to the limitations of ECDIS referred to in 5(a) above, mariners (even those using the most modern systems) should always undertake careful visual inspection of the entire planned route using the "Other/All" display mode to confirm that it, and any deviations from it, are clear of dangers.

6 Incorrect display of the coloured arcs of light sectors – some ECDIS may not display the coloured arcs of complex lights as intended. This is especially prevalent where the sectors straddle 0/360 deg (North).

Workaround – use "pick report" function to check light sectors.

7 Some early models of ECDIS are unable to display correctly time-variable data encoded in ENCs. For example features with Date Start and Date End attributes used for the implementation of new traffic routing measures in ENCs may not be depicted correctly; the result being that both old and new instances are displayed simultaneously. Tests for this were not included in IEC61174 Edition1.

Workaround – use "pick report" function to determine Start/End date/time.

8 Tidal stream data not available in usable form – some early models of ECDIS only provide a comma-separated list of values which is difficult to interpret and use.

Workaround – use Tidal Stream Atlases external to ECDIS.

9 Display of anchorage, berth and channel names may not be easily visible to the mariner and the radius of a maximum swinging circle may not be shown.

Workaround – use "All" or "Other" display mode and "pick report" function to obtain swinging circle information; VTS/Port Authority communications will be able to clarify any necessary names.

10 Three hundred and sixty degree landfall lights not always prominent in comparison to shorter range sector lights.

Workaround – mariners to be aware – use "pick report" to verify light characteristic.

11 ENCs may include certain shoal soundings, especially reported depths, which have been encoded in such a way that they do not display in "Standard" Mode and might not activate an alarm even where the depth is less than the safety contour setting. Most Hydrographic Offices have reported to IHO that they have updated the relevant ENCs to ensure that significant depths are displayed in Standard Mode.

Workaround – operate in a display Mode where all soundings are shown.

12 Areas of foul ground that have no known depth value may be depicted in some ECDIS as isolated dangers and shown in "Standard" mode; this can result in unnecessary screen clutter.

Workaround – no workaround for clutter problem, mariners to be aware and use "pick report" function to determine if the feature is a danger.

13 Where ECDIS includes an option to show isolated dangers in waters shoaler than the safety contour value the symbology used may vary between manufacturers.

Workaround – mariners to be aware and to use "All" or "Other" Mode when operating in such areas.

14 Screen clutter can be a problem when displaying smaller scale ENC's for areas where larger scale coverage is also loaded in ECDIS. This can be more apparent when the user zooms out. This is due to a combination of each manufacturer's ENC loading strategy and the individual ENC producer's encoding policy. Where Hydrographic Offices use SCAMIN (scale minimum) attributes on chart features then this problem is minimized. The intention of the IHO standard is that ECDIS should not display ENC data which has a compilation scale significantly different from the display scale in use. Improvements could be made, in future, by adopting a standardized ENC loading strategy based on a scale range defined within the ENC.

Workaround – the situation can be improved through use of the standard display mode during voyage monitoring and appropriate (but not over) use of the zoom function. This technique has been included in the syllabus of IMO model course 1.27.

15 In some ECDIS equipment the text for some notes in the ENC may be truncated or not displayed at all, and therefore is not available to the mariner.

Workaround – no workaround available; mariners should advise ENC service providers where they observe this problem.

16 Unnecessary alarms and indications – feedback from mariners shows that ECDIS can produce excessive and distracting alarms. This is due to a combination of the interpretation of the requirements of the ECDIS performance standards and the ENC encoding. Some control over the number of alarms and indications is available to the mariner in ECDIS built to the revised performance standards (resolution MSC.232(82)), but this is not always recognized.

Workaround – the methods available to minimize alarms are included in the syllabus of IMO model course 1.27.

APPENDIX 2

DIFFERENCES BETWEEN RASTER CHART DISPLAY SYSTEM (RCDS) AND ECDIS

The mariners' attention is drawn to the following limitations of the RCDS mode:

- 1 Unlike ENC, where there are no displayed boundaries, RNCs are based on paper charts and as such have boundaries which are evident in ECDIS;
- 2 RNCs will not trigger automatic alarms (e.g. anti-grounding). However alarms and indications can be generated with the manual addition, during passage planning, e.g. of clearing lines, ship safety contour lines, isolated danger markers and danger areas to mitigate these limitations;
- 3 Horizontal datums and chart projections may differ between RNCs. Mariners should understand how a chart's horizontal datum relates to the datum of the position fixing system in use. In some instances, this may appear as a shift in position. This difference may be most noticeable at grid intersections;
- 4 A number of RNCs cannot be referenced to either WGS-84 or PE 90 geodetic datums. Where this is the case, ECDIS should give a continuous indication;
- 5 The display of RNCs features cannot be simplified by the removal of features to suit a particular navigational circumstance or task at hand. This could affect the superimposition of radar/ARPA;
- 6 Without selecting different scale charts the look-ahead capability may be limited. This may lead to inconvenience when determining range and bearing or the identity of distant objects;
- 7 Orientation of the RCDS display to other than chart-up, may affect the readability of chart text and symbols (e.g. course-up, route-up);
- 8 It is not possible to interrogate RNC features to gain additional information about charted objects. Whether using ENC or RNC, in the planning process a mariner should consult all relevant publications (such as sailing directions, etc.);
- 9 With RNC, it is not possible to display a ship's safety contour or safety depth and highlight it on the display unless these features are manually entered during route planning;
- 10 Depending on the source of the RNC, different colours may be used to show similar chart information. There may also be differences in colours used during day and night time;
- 11 An RNC is intended to be used at the scale of the equivalent paper chart. Excessive zooming in or zooming out can seriously degrade the displayed image. If the RNC is displayed at a larger scale than the equivalent paper chart, the ECDIS will provide an indication; and
- 12 ECDIS provides an indication in the ENC which allows a determination of the quality of hydrographic the data. When using RNCs, mariners are invited to consult the source diagram or the zone of confidence diagram, if available.

APPENDIX 3

GUIDANCE ON TRAINING AND ASSESSMENT IN THE OPERATIONAL USE OF ECDIS SIMULATORS

GENERAL

Goals of an ECDIS training programme

- 1 The ECDIS trainee should be able to:
 - .1 operate the ECDIS equipment, use the navigational functions of ECDIS, select and assess all relevant information and take proper action in the case of a malfunction;
 - .2 state the potential errors of displayed data and the usual errors of interpretation; and
 - .3 explain why ECDIS should not be relied upon as the sole reliable aid to navigation.

Theory and demonstration

2 As the safe use of ECDIS requires knowledge and understanding of the basic principles governing ECDIS data and their presentation rules as well as potential errors in displayed data and ECDIS-related limitations and potential dangers, a number of lectures covering the theoretical explanation should be provided. As far as possible, such lessons should be presented within a familiar context and make use of practical examples. They should be reinforced during simulator exercises.

3 For safe operation of ECDIS equipment and ECDIS-related information (use of the navigational functions of ECDIS, selection and assessment of all relevant information, becoming familiar with ECDIS man-machine interfacing), practical exercises and training on the ECDIS simulators should constitute the main content of the course.

4 For the definition of training objectives, a structure of activities should be defined. A detailed specification of learning objectives should be developed for each topic of this structure.

Simulator exercises

5 Exercises should be carried out on individual ECDIS simulators, or full-mission navigation simulators including ECDIS, to enable trainees to acquire the necessary practical skills. For real-time navigation exercises, navigation simulators are recommended to cover the complex navigation situation. The exercises should provide training in the use of the various scales, navigational modes, and display modes which are available, so that the trainees will be able to adapt the use of the equipment to the particular situation concerned.

6 The choice of exercises and scenarios is governed by the simulator facilities available. If one or more ECDIS workstations and a full-mission simulator are available, the workstations may primarily be used for basic exercises in the use of ECDIS facilities and for passage-planning exercises, whereas full-mission simulators may primarily be used for exercises related to passage-monitoring functions in real time, as realistic as possible in connection with the total

workload of a navigational watch. The degree of complexity of exercises should increase throughout the training programme until the trainee has mastered all aspects of the learning subject.

7 Exercises should produce the greatest impression of realism. To achieve this, the scenarios could be located in a fictitious sea area. Situations, functions and actions for different learning objectives which occur in different sea areas can be integrated into one exercise and experienced in real time.

8 The main objective of simulator exercises is to ensure that trainees understand their responsibilities in the operational use of ECDIS in all safety-relevant aspects and are thoroughly familiar with the system and equipment used.

Principal types of ECDIS and their display characteristics

9 The trainee should gain knowledge of the principal types of ECDIS in use; their various display characteristics, data structure and an understanding of:

- .1 differences between vector and raster charts;
- .2 differences between ECDIS and ECS;
- .3 differences between ECDIS and RCDS;
- .4 characteristics of different types of ECDIS; and
- .5 characteristics of systems for special purposes (unusual situations/emergencies).

Risks of over-reliance on ECDIS

10 The training in ECDIS operational use should address:

- .1 the limitations of ECDIS as a navigational tool;
- .2 potential risk of improper functioning of the system;
- .3 system limitations, including those of its sensors;
- .4 hydrographic data inaccuracy; limitations of vector and raster electronic charts (ECDIS vs RCDS and ENC vs RNC); and
- .5 potential risk of human errors.

Emphasis should be placed on the need to keep a proper look-out and to perform periodical checking, especially of the ship's position, by ECDIS-independent methods.

Detection of misrepresentation of information

11 Knowledge of the limitations of the equipment and detection of misrepresentation of information is essential for the safe use of ECDIS. The following factors should be emphasized during training:

- .1 performance standards of the equipment;
- .2 radar data representation on an electronic chart, elimination of discrepancy between the radar image and the electronic chart;

- .3 possible projection discrepancies between an electronic and paper charts;
- .4 possible scale discrepancies (overscaling and underscaling) in displaying an electronic chart and its original scale;
- .5 effects of using different reference systems for positioning;
- .6 effects of using different horizontal and vertical datums;
- .7 effects of the motion of the ship in a seaway;
- .8 ECDIS limitations in raster chart display mode;
- .9 potential errors in the display of:
 - .1 the own ship's position;
 - .2 radar data and ARPA and AIS information;
 - .3 different geodetic coordinate systems; and
- .10 verification of the results of manual or automatic data correction:
 - .1 comparison of chart data and radar picture; and
 - .2 checking the own ship's position by using other independent position-fixing systems.

12 False interpretation of the data and proper action to be taken to avoid errors of interpretation, should be explained. The implications of the following should be emphasized:

- .1 ignoring overscaling of the display;
- .2 uncritical acceptance of the own ship's position;
- .3 confusion of display mode;
- .4 confusion of chart scale;
- .5 confusion of reference systems;
- .6 different modes of presentation;
- .7 different modes of vector stabilization;
- .8 differences between true north and gyro north (radar);
- .9 using the same data reference system;
- .10 using the appropriate chart scale;
- .11 using the best-suited sensor to the given situation and circumstances;

- .12 entering the correct values of safety data:
 - .1 the own ship's safety contour;
 - .2 safety depth (safe water); and
 - .3 events; and
- .13 proper use of all available data.

13 Appreciation that RCDS is only a navigational aid and that, when operating in the RCDS mode, the ECDIS equipment should be used together with an appropriate portfolio of up-to-date paper charts:

- .1 appreciation of the differences in operation of RCDS mode as described in appendix 2; and
- .2 ECDIS, in any mode, should be used in training with an appropriate portfolio of up-to-date charts.

Factors affecting system performance and accuracy

14 An elementary understanding should be attained of the principles of ECDIS, together with a full practical knowledge of:

- .1 starting and setting up ECDIS; connecting data sensors: satellite and radio navigation system receivers, radar, gyro-compass, log, echo-sounder; accuracy and limitations of these sensors, including effects of measurement errors and ship's position accuracy, manoeuvring on the accuracy of course indicator's performance, compass error on the accuracy of course indication, shallow water on the accuracy of log performance, log correction on the accuracy of speed calculation, disturbance (sea state) on the accuracy of an echo-sounder performance; and
- .2 the current performance standards for electronic chart display and information systems adopted by the Organization⁷.

Practice

Setting up and maintaining display

15 Knowledge and skills should be attained in:

- .1 the correct starting procedure to obtain the optimum display of ECDIS information;
- .2 the selection of display presentation (standard display, display base, all other information displayed individually on demand);
- .3 the correct adjustment of all variable radar/ARPA display controls for optimum display of data;

⁷ See relevant/appropriate performance standards adopted by the Organization.

- .4 the selection of convenient configuration;
- .5 the selection, as appropriate, of required speed input to ECDIS;
- .6 the selection of the timescale of vectors; and
- .7 performance checks of position, radar/ARPA, compass, speed input sensors and ECDIS.

Operational use of electronic charts

16 Knowledge and skills should be attained in:

- .1 the main characteristics of the display of ECDIS data and selecting proper information for navigational tasks;
- .2 the automatic functions required for monitoring ship's safety, such as display of position, heading/gyro course, speed, safety values and time;
- .3 the manual functions (by the cursor, electronic bearing line, range rings);
- .4 selecting and modification of electronic chart content;
- .5 scaling (including underscaling and overscaling);
- .6 zooming;
- .7 setting of the own ship's safety data;
- .8 using a daytime or night-time display mode;
- .9 reading all chart symbols and abbreviations;
- .10 using different kinds of cursors and electronic bars for obtaining navigational data;
- .11 viewing an area in different directions and returning to the ship's position;
- .12 finding the necessary area, using geographical coordinates;
- .13 displaying indispensable data layers appropriate to a navigational situation;
- .14 selecting appropriate and unambiguous data (position, course, speed, etc.);
- .15 entering the mariner's notes;
- .16 using north-up orientation presentation and other kinds of orientation; and
- .17 using true- and relative-motion modes.

Route planning

- 17 Knowledge and skills should be attained in:
- .1 loading the ship's characteristics into ECDIS;
 - .2 selection of a sea area for route planning:
 - .1 reviewing required waters for the sea passage; and
 - .2 changing over of chart scale;
 - .3 verifying that proper and updated charts are available;
 - .4 route planning on a display by means of ECDIS, using the graphic editor, taking into consideration rhumb line and great-circle sailing:
 - .1 using the ECDIS database for obtaining navigational, hydro-meteorological and other data;
 - .2 taking into consideration turning radius and wheel-over points/lines when they are displayed on chart scale;
 - .3 marking dangerous depths and areas and exhibiting guarding depth contours;
 - .4 marking waypoints with the crossing depth contours and critical cross-track deviations, as well as by adding, replacing and erasing of waypoints;
 - .5 taking into consideration safe speed;
 - .6 checking pre-planned route for navigational safety; and
 - .7 generating alarms and warnings;
 - .5 route planning with calculation in the table format, including:
 - .1 waypoints selection;
 - .2 recalling the waypoints list;
 - .3 planning notes;
 - .4 adjustment of a planned route;
 - .5 checking a pre-planned route for navigational safety;
 - .6 alternative route planning;
 - .7 saving planned routes, loading and unloading or deleting routes;
 - .8 making a graphic copy of the monitor screen and printing a route;
 - .9 editing and modification of the planned route;

- .10 setting of safety values according to the size and manoeuvring parameters of the vessel;
- .11 back-route planning; and
- .12 connecting several routes.

Route monitoring

18 Knowledge and skills should be attained in:

- .1 using independent data to control ship's position or using alternative systems within ECDIS;
- .2 using the look-ahead function:
 - .1 changing charts and their scales;
 - .2 reviewing navigational charts;
 - .3 vector time selecting;
 - .4 predicting the ship's position for some time interval;
 - .5 changing the pre-planned route (route modification);
 - .6 entering independent data for the calculation of wind drift and current allowance;
 - .7 reacting properly to the alarm;
 - .8 entering corrections for discrepancies of the geodetic datum;
 - .9 displaying time markers on a ship's route;
 - .10 entering ship's position manually; and
 - .11 measuring coordinates, course, bearings and distances on a chart.

Alarm handling

19 Knowledge and ability to interpret and react properly to all kinds of alarm systems, such as navigational sensors, indicators, data and charts alarms and indicator warnings, including, switching the sound and visual alarm signalling system on/off, should be attained in case of:

- .1 absence of the next chart in the ECDIS database;
- .2 crossing a safety contour;
- .3 exceeding cross-track limits;
- .4 deviation from planned route;

- .5 approaching a waypoint;
- .6 approaching a critical point;
- .7 discrepancy between calculated and actual time of arrival to a waypoint;
- .8 information on under-scaling or over-scaling;
- .9 approaching an isolated navigational danger or danger area;
- .10 crossing a specified area;
- .11 selecting a different geodetic datum;
- .12 approaching other ships;
- .13 watch termination;
- .14 switching timer;
- .15 system test failure;
- .16 malfunctioning of the positioning system used in ECDIS;
- .17 failure of dead-reckoning; and
- .18 inability to fix vessel's position using the navigational system.

Manual correction of a ship's position and motion parameters

- 20 Knowledge and skills should be attained in manually correcting:
- .1 the ship's position in dead-reckoning mode, when the satellite and radio navigation system receiver is switched off;
 - .2 the ship's position, when automatically obtained coordinates are inaccurate; and
 - .3 course and speed values.

Records in the ship's log

- 21 Knowledge and skills should be attained in:
- .1 automatic voyage recording;
 - .2 reconstruction of past track, taking into account:
 - .1 recording media;
 - .2 recording intervals;
 - .3 verification of database in use;

- .3 viewing records in the electronic ship's log;
- .4 instant recording in the electronic ship's log;
- .5 changing ship's time;
- .6 entering the additional data;
- .7 printing the content of the electronic ship's log;
- .8 setting up the automatic record time intervals;
- .9 composition of voyage data and reporting; and
- .10 interface with a voyage data recorder (VDR).

Chart updating

22 Knowledge and skills should be attained in:

- .1 performing manual updating of electronic charts. Special attention should be paid to reference ellipsoid conformity and to conformity of the measurement units used on a chart and in the correction text;
- .2 performing semi-automatic updating of electronic charts, using the data obtained on electronic media in the electronic chart format; and
- .3 performing automatic updating of electronic charts, using update files obtained via electronic data communication lines.

In the scenarios where non-updated data are employed to create a critical situation, trainees should be required to perform ad hoc updating of the chart.

Operational use of ECDIS where radar/ARPA is connected

23 Knowledge and skills should be attained in:

- .1 connecting ARPA to ECDIS;
- .2 indicating target's speed vectors;
- .3 indicating target's tracks;
- .4 archiving target's tracks;
- .5 viewing the table of the targets;
- .6 checking alignment of radar overlay with charted geographic features;
- .7 simulating one or more manoeuvres;
- .8 corrections to own ship's position, using a reference point captured by ARPA; and
- .9 corrections using the ARPA's cursor and electronic bar.

See also STCW Code section B-I/12, Guidance regarding the use of simulators (pertaining to radar and ARPA), especially paragraphs 17 to 19 and 36 to 38.

Operational use of ECDIS where AIS is connected

24 Knowledge and skills should be attained in:

- .1 interface with AIS;
- .2 interpretation of AIS data;
- .3 indicating target's speed vectors;
- .4 indicating target's tracks; and
- .5 archiving target's tracks.

Operational warnings, their benefits and limitations

25 Trainees should gain an appreciation of the uses, benefits and limitations of ECDIS operational warnings and their correct setting, where applicable, to avoid spurious interference.

System operational tests

26 Knowledge and skills should be attained in:

- .1 methods of testing for malfunctions of ECDIS, including functional self-testing;
- .2 precautions to be taken after a malfunction occurs; and
- .3 adequate back-up arrangements (take over and navigate using the back-up system).

Debriefing exercise

27 The instructor should analyse the results of all exercises completed by all trainees and print them out. The time spent on the debriefing should take between 10% and 15% of the total time used for simulator exercises.

REFERENCES

IMO PERFORMANCE STANDARDS FOR ECDIS

- 1 RESOLUTION A.817(19): *PERFORMANCE STANDARDS FOR ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS (ECDIS)*
- 2 RESOLUTION MSC.64(67): *RECOMMENDATIONS ON NEW AND AMENDED PERFORMANCE STANDARDS*
- 3 RESOLUTION MSC.86(70): *ADOPTION OF NEW AND AMENDED PERFORMANCE STANDARDS FOR NAVIGATIONAL EQUIPMENT*
- 4 RESOLUTION MSC.232(82): *ADOPTION OF THE REVISED PERFORMANCE STANDARDS FOR ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS (ECDIS)*

OTHER IMO CIRCULARS RELATED TO ECDIS

- 1 MSC.1/Circ.982: *GUIDELINES ON ERGONOMIC CRITERIA FOR BRIDGE EQUIPMENT AND LAYOUT*
- 2 MSC.1/Circ.1091: *ISSUES TO BE CONSIDERED WHEN INTRODUCING NEW TECHNOLOGY ON BOARD SHIP*
- 3 MSC.1/Circ.1221: *VALIDITY OF TYPE APPROVAL CERTIFICATION FOR MARINE PRODUCTS*
- 4 MSC.1/Circ.1389: *GUIDANCE ON PROCEDURES FOR UPDATING SHIPBORNE NAVIGATION AND COMMUNICATION EQUIPMENT*
- 5 SN.1/Circ.213: *GUIDANCE ON CHART DATUMS AND THE ACCURACY OF POSITIONS ON CHARTS*
- 6 SN.1/Circ.243/Rev.1: *AMENDED GUIDELINES FOR THE PRESENTATION OF NAVIGATIONAL-RELATED SYMBOLS, TERMS AND ABBREVIATIONS*
- 7 SN.1/Circ.255: *ADDITIONAL GUIDANCE ON CHART DATUMS AND THE ACCURACY OF POSITIONS ON CHARTS*
- 8 SN.1/Circ.265: *GUIDELINES ON THE APPLICATION OF SOLAS REGULATION V/15 TO INS, IBS AND BRIDGE DESIGN*
- 9 SN.1/Circ.288: *GUIDELINES FOR BRIDGE EQUIPMENT AND SYSTEMS, THEIR ARRANGEMENT AND INTEGRATION (BES)*

ANNEX 6

BIENNIAL STATUS REPORT FOR 2016-2017

Sub-Committee on Human Element, Training and Watchkeeping (HTW)								
Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.1.1.6	Amendments to SOLAS chapter II-1 and associated guidelines on damage control drills for passenger ships	2016	MSC	HTW	SDC	Completed		MSC 93/22, paragraphs 6.28.4, 20.5 and 20.14; MSC 96/25, paragraphs 11.17, 11.19 and 12.7
5.1.2.4	Revision of requirements for escape route signs and equipment location markings in SOLAS and related instruments	2016	MSC	HTW	SSE	In progress	In progress	MSC 94/21, paragraph 18.24 HTW 4/16, [Section 11]
5.2.1.1	Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships	2017	MSC	HTW/SSE	SDC	In progress	In progress	MSC 95/22, paragraphs 19.2 and 19.22
5.2.1.2	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2016	MSC	HTW / PPR / SDC / SSE	CCC	In progress	In progress	MSC 94/21, paragraphs 18.5 and 18.6; HTW 3/19, section 14 HTW 4/16, section 10

Sub-Committee on Human Element, Training and Watchkeeping (HTW)								
Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.14	Review MODU Code, LSA Code and MSC.1/Circ.1206/Rev.1	2016	MSC	HTW	SSE	Completed		MSC 93/22, paragraph 20.17; HTW 3/19, paragraph 15.9
5.2.1.29	Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships (2019)	2017	MSC	HTW / SDC	SSE		In progress	MSC 97/22 paragraph 19.19
5.2.2.1	Guidance for the implementation of the 2010 Manila Amendments	2017	MSC	HTW		In progress	Completed	MSC 93/22, paragraph 11.4 HTW 4/16, section 5
5.2.2.2	Review of STCW passenger ship-specific safety training	2016	MSC	HTW		Completed		HTW 3/19, section 10; MSC 96/25, paragraph 12.5
5.2.2.3	Validated model training courses	Continuous	MSC	HTW		Ongoing	Ongoing	HTW 4/16, section 3
5.2.2.4	Reports on unlawful practices associated with certificates of competency	Annual	MSC	HTW		Completed	Completed	HTW 4/16, section 4
5.2.5.2	Completion of the detailed review of the Global Maritime Distress and Safety System (GMDSS)	2016	MSC	HTW	NCSR	Completed		MSC 90/28, paragraph 25.18 HTW 3/19, section 12; MSC 96/25, paragraph 14.9

Sub-Committee on Human Element, Training and Watchkeeping (HTW)								
Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.5.3	Draft Modernization Plan of the Global Maritime Distress and Safety System (GMDSS) (2018)	2017	MSC	HTW	NCSR		In progress	MSC 95/22, paragraph 19.17.5; MSC 96/25, paragraph 14.9 HTW 4/16, section 9
<i>Note: MSC 96 approved the outcome of the GMDSS Review (output 5.2.5.2) and the continuation of the project in developing the Modernization Plan (5.2.5.3)</i>								
5.3.1.1	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	HTW	III		Completed	MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3 HTW 4/16, paragraphs 15.1 to 15.5
<i>Note: MSC 97 approved the III biennial status report which amended this output to include HTW as associated organ, together with NCSR and PPR</i>								
5.4.1.1	Comprehensive review of the 1995 STCW-F Convention (2018)	2017	MSC	HTW		In progress	In progress	MSC 95/22, paragraph 19.3 HTW 4/16, section 6
5.4.1.2	Revision of the Guidelines on fatigue	2017	MSC	HTW		In progress	In progress	MSC 95/22, paragraph 19.18 HTW 4/16, section 8
12.2.1.1	Revised Guidelines on the implementation of the ISM Code by Administrations (resolution A.1071(28)) on training audits	2016	MSC	HTW		Completed		MSC 95/22, paragraph 19.5 HTW 3/19, section 9; MSC 96/25, paragraph 12.4

ANNEX 7

PROPOSED AGENDA FOR THE 2018-2019 BIENNIUM*

Output number	Description	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Target completion Year
5.1.1.6	Amendments to SOLAS chapter II-1 and associated guidelines on damage control drills for passenger ships	MSC	SDC	HTW	2016
5.1.2.4	Revision of requirements for escape route signs and equipment location markings in SOLAS and related instruments	MSC	SSE	HTW	2018
5.2.1.1	Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships	MSC	SDC	HTW/SSE	2018
5.2.1.2	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	MSC	CCC	HTW / PPR / SDC / SSE	2018
5.2.1.14	Review MODU Code, LSA Code and MSC.1/Circ.1206/Rev.1	MSC	SSE	HTW	2016
5.2.1.29	Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships (2019)	MSC	SSE	HTW/SDC	2019
5.2.2.1	[Guidance for the implementation of the 2010 Manila Amendments][Guidance for STCW section B-1/2]	MSC		HTW	2018
5.2.2.2	Review of STCW passenger ship-specific safety training	MSC		HTW	2016
5.2.2.3	Validated model training courses	MSC		HTW	Annual
5.2.2.4	Reports on unlawful practices associated with certificates of competency	MSC		HTW	Annual

* The Sub-Committee's 2018-2019 biennial agenda, as set out in annex 22 to document MSC 97/22. Outputs printed in bold have been selected for the draft provisional agenda for HTW 5, as shown in annex 8. Struck-out text indicates proposed deletions. Output numbers are subject to change by A 30.

Output number	Description	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Target completion Year
5.2.5.2	Completion of the detailed review of the Global Maritime Distress and Safety System (GMDSS)	MSC	NCSR	HTW	2016
5.2.5.3	Draft Modernization Plan of the Global Maritime Distress and Safety System (GMDSS)	MSC	NCSR	HTW	2019
<i>Note: MSC 96 approved the outcome of the GMDSS Review (output 5.2.5.2) and the continuation of the project in developing the Modernization Plan (5.2.5.3)</i>					
5.3.1.1	Measures to harmonize port State control (PSC) activities and procedures worldwide	MSC / MEPC	III	HTW	Continuous
<i>Note: MSC 97 approved the III biennial status report which amended this output to include HTW as associated organ, together with NCSR and PPR</i>					
5.4.1.1	Comprehensive review of the 1995 STCW-F Convention	MSC		HTW	2018
5.4.1.2	Revision of the Guidelines on fatigue	MSC		HTW	2018
12.2.1.1	Revised Guidelines on the Implementation of the ISM Code by Administrations (resolution A.1071(28)) on training audits	MSC		HTW	2016

ANNEX 8

PROVISIONAL AGENDA FOR HTW 5

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Validated model training courses (5.2.2.3)
 - 4 Reports on unlawful practices associated with certificates of competency (5.2.2.4)
 - 5 [Guidance for the implementation of the 2010 Manila Amendments (5.2.2.1)]
[Guidance for STCW section B-1/2]
 - 6 Comprehensive review of the 1995 STCW-F Convention (5.4.1.1)
 - 7 Role of the Human Element
 - 8 Revision of the Guidelines on fatigue (5.4.1.2)
 - 9 Draft Modernization Plan of the GMDSS (5.2.5.3)
 - 10 Review of SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships (5.2.1.29)
 - 11 Amendments to the IGF Code and development of guidelines for low-flashpoint fuels (5.2.1.2)
 - 12 Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships (5.2.1.1)
 - 13 Measures to harmonize port State control (PSC) activities and procedures worldwide (5.3.1.1)
 - 14 Biennial agenda and provisional agenda for HTW 6
 - 15 Election of Chair and Vice-Chair for 2019
 - 16 Any other business
 - 17 Report to the Maritime Safety Committee

ANNEX 9

GUIDELINES FOR PORT STATE CONTROL OFFICERS ON CERTIFICATION OF SEAFARERS¹; MANNING AND REST HOURS OF REST BASED ON THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS AND MANNING REQUIREMENTS FROM THE FLAG STATE

1 GENERAL

1.1 The International Convention for the Safety of Life at Sea (SOLAS) was adopted in 1974 and entered into force in 1980. Similarly, the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) was adopted in 1978 and entered into force in 1984. The Convention has since been amended several times, the latest by the Manila Amendments in 2010. Both have been amended several times since their entry into force.

2 GOALS AND PURPOSE

2.1 This circular is intended to provide guidance for a harmonized approach of port State control (PSC) inspections in compliance with SOLAS regulation V/14.2 (manning) and regulation I/2.4 (seafarer certification) and chapter VIII (hours of rest) of the STCW Convention, as amended.

3 APPLICATION

3.1 SOLAS regulation V/14.2 only applies to ships covered by chapter I of SOLAS. The STCW Convention as amended applies to all seafarers serving on board seagoing ships. The STCW Code is divided into a mandatory part A and a non-mandatory part B. Part B of the STCW Code is not applicable during the inspection.

3.2 All passenger ships regardless of size and all other ships of ~~over~~ 500 gross tonnage or more should have a "Minimum Safe Manning Document or equivalent" on board issued by the flag State.

3.3 Any new or single deficiency which is either a deficiency related to SOLAS, STCW or other IMO Conventions, should preferably be registered with these conventions references.

4 RELEVANT DOCUMENTATION

4.1 The documentation required for the inspection referred to in these guidelines consist of:

Seafarer certification

- ~~.1~~ the minimum safe manning document;
- ~~.2~~^{.1} certificate of competency;
- ~~.3~~^{.2} certificate of proficiency;
- ~~.4~~^{.3} endorsement attesting the recognition of a certificate (flag State endorsement) ~~to attest the recognition of a certificate;~~

.54 documentary evidence (passenger ships only);

.95 medical certificate;

Manning

.46 the minimum safe manning document;

~~.6 records of daily hours of rest;~~

.7 muster list;

Hours of rest

.8 table of ship working arrangements and/or watch schedule; and

~~.69 records of daily hours of rest. and~~

~~.9 medical certificate.~~

5 DEFINITIONS AND ABBREVIATIONS

5.1 Certificate of Competency means a certificate issued and endorsed for masters, officers and Global Maritime Distress and Safety System (GMDSS) radio operators in accordance with the provisions of chapters II, III, IV or VII of the STCW Convention and entitling the lawful holder thereof to serve in the capacity and perform the functions involved at the level of responsibility specified therein.

5.2 Certificate of Proficiency means a certificate, other than a certificate of competency issued to a seafarer, stating that the relevant requirements of training, competencies or seagoing service in the STCW Convention have been met.

5.3 Documentary evidence means documentation, other than a Certificate of Competency or Certificate of Proficiency, used to establish that the relevant requirements of the STCW Convention have been met.

5.4 The following abbreviations have been used:

.1 CoC (Certificate of Competency);

.2 CoP (Certificate of Proficiency); and

.3 MSMD (Minimum Safe Manning Document).

6 INSPECTION OF SHIP

6.1 Pre-boarding preparation

6.1.1 Taking into account the type, size, engine power and other particulars of the ship, the port State control officer (PSCO) should be aware of the relevant requirements of SOLAS regulation V/14 and the STCW Convention.

6.1.2 The PSCO should be aware that resolutions are non-mandatory documents and not applicable during a PSC inspection.

6.1.3 The PSCO should also identify if the flag State is part of MSC.1/Circ.1163 latest edition as a Party to the STCW Convention, as amended. If the flag State is not a Party to the Convention or is a Party, but not listed in MSC.1/Circ.1163 a more detailed inspection should be carried out. confirmed by the Maritime Safety Committee to have communicated information which demonstrates that full and complete effect is given to the relevant provisions of the Convention. If the flag State is not included in the list, a more detailed inspection should be conducted as the ship may be considered as a ship from a country not having ratified the Convention (no more favourable treatment).]

6.2 Initial inspection

Seafarer Certificates and documents

6.2.1 The PSCO should examine the applicable documents, found in section 4, where applicable.

6.2.1bis The inspection should be limited to verification that all seafarers serving on board, who are required to be certificated, hold a CoC, CoP and, if applicable, their relevant flag State endorsement or a valid dispensation, or provide documentary proof that an application for an endorsement has been submitted to the flag State Administration.

6.2.2 During the verification of the seafarers' certificates and documents, the PSCO should confirm that must check if they are applicable to the ship's characteristics, operation and their position on board of the seafarers.

6.2.3 If the flag State Administration has not issued a MSMD due to the ship's size the PSCO should examine the CoC, CoP and their relevant flag State endorsement for the crew and compare with the requirements of the STCW Convention. Regarding the number of seafarers, the PSCO should then use his/her professional judgement, taking into account chapter VIII of the STCW Convention and Code and the duration and area of the next voyage, to determine if it can be undertaken safely. The PSCO can also check the numbers of seafarers on board during the previous voyage. If necessary the PSCO should consult the flag State Administration.

6.2.4 If a ship is manned in accordance with a MSMD or equivalent document issued by the flag State, the PSCO should accept that the ship is safely manned unless the document has clearly been issued without regard to the principles contained in the relevant instruments, in which case the PSCO should act according to the procedure defined in section 7.4.

6.2.5 The PSCO should be aware that the requirement for radio operators contained in STCW regulation I/4 and II/1 may differ from the minimum requirements specified in the MSMD.

The inspection should be limited to the following:

- .1 verification that all seafarers serving on board, who are required to be certificated, hold a CoC, CoP and their relevant flag State endorsement or a valid dispensation, or provide documentary proof that an application for an endorsement has been submitted to the flag State Administration; and
- .2 verification that the numbers and certificates of the seafarers serving on board are in conformity with the applicable Safe Manning requirements of the flag State.

Certificates and endorsements]

6.2.6 ~~According to~~In accordance with the provision of article VI paragraph 2 of the STCW Convention, certificates for masters and officers should be endorsed by the issuing Administration in the form prescribed in regulation I/2 of the annex to the convention.

~~6.2.7 The requirement in article VI covers CoC to for masters and officers and CoP issued in accordance with the provisions of regulations V/1-1 and V/1-2 to masters and officers.~~

6.2.8 The certificates may be issued as one certificate with the required endorsement incorporated. If so incorporated, the form used should be that set forth in section A-I/2, paragraph 1 of the STCW Code.

6.2.9 The endorsement may also be issued as a separate document. If so, the form used should be that set forth in section A-I/2, paragraph 2 of the STCW Code.

6.2.10 However, Administrations may use a format for certificates and endorsements different from the format those given in section A-I/2 of the STCW Code, provided that, at a minimum, the required information is provided in Roman characters and Arabic figures. Permitted variations to the format are set out in section A-I/2, paragraph 4 of the STCW Code.

6.2.11 Certificates and endorsements issued as separate documents should each be assigned a unique number, except that endorsements attesting the issuance of a certificate may be assigned the same number as the certificate concerned, provided that number is unique.

6.2.12 Certificates and endorsements issued as separate documents should include a date of expiry. The date of expiry on an endorsement issued as a separate document should not exceed 5 years from the date of issue and may never exceed the date of expiry on the certificate.

~~6.2.13 The capacity in which the holder of a certificate is authorized to serve should be identified in the form of endorsement in terms identical to those used in the applicable safe manning requirements of the Administration.~~

Recognition by endorsement of a certificate issued by an Administration that is not the flag State of the ship

6.2.14 A CoP issued to masters and officers in accordance with regulation V/1-1 or V/1-2, as well as a CoC that have been issued by a State that is not other than the flag State of the ship in which the seafarer is engaged are required to be recognized by the ship's flag State. If the PSCO identifies that the flag State has recognized CoC and CoP from a Party not listed in MSC.1/Circ.1163, clarification should be sought from the flag Administration. According to regulation I/10, paragraph 4 of the STCW Convention, certificates issued by or under the authority of a non-Party shall not be recognized by the ship's flag State Administration. ~~Certificates issued by an Administration which is not a party included in MSC.1/Circ.1163 cannot be recognized by the ship's flag State Administration.~~

6.2.15 An Administration which recognizes under regulation I/10 a CoC or CoP issued to masters and officers in accordance with regulation V/1-1 or V/1-2 should endorse that certificate to attest to its recognition. The form of the endorsement used should be that prescribed found in section A-I/2 paragraph 3 of the STCW code.

~~6.2.16 However, Administrations may use a format different from the format given in section A-I/2 of the STCW Code, provided that, as at a minimum, the required information is provided in Roman characters and Arabic figures.~~

6.2.17 Incorrect wording or missing information may be a cause for suspicion regarding fraudulent certificates or endorsements.

6.2.18 Endorsements attesting to the recognition of a certificate should each be assigned a unique number, however they may be assigned the same number as the certificate concerned, provided that number is unique.

6.2.19 Endorsements attesting to the recognition of a certificate should include a date of expiry. The date of expiry on an endorsement attesting to the recognition may never exceed the date of expiry on the certificate being recognized.

6.2.20 The capacity in which the holder of a certificate is authorized to serve should be identified in the form of endorsement in terms identical to those used in the applicable safe manning requirements of the Administration. This may result in slight variations of terminology between the original CoC and the endorsement to the effect of recognition.

6.2.21 Seafarers must have their original CoC on board as well as any original endorsements to the effect of recognition. An endorsement to attesting the recognition of a certificate should not entitle a seafarer to serve in a higher capacity than the original CoC.

6.2.22 If circumstances require it, a flag State Administration may permit a seafarer to serve for a period not exceeding three months on ships entitled to fly its flag whilst holding a valid CoC issued by another party and valid for service on that party's ships. If such a situation exists, documentary proof must be readily available that an application for endorsement has been made to the Administration of the flag State. This is often referred to as the confirmation of receipt of application (CRA). This provision allows Administrations to permit seafarers to serve on their ships whilst the application for recognition is being processed.

~~6.2.23 Documentary proof must be readily available that an application for endorsement has been made to the Administration of the flag State. This is often referred to as the confirmation of receipt of application (CRA). This provision allows Administrations to permit seafarers to serve on their ships whilst the application for recognition is being processed.~~

6.2.24 If an endorsement to attest recognition or certificate of equivalent competency has expired or has not been issued or documentary proof of application for endorsement is not readily available, the PSCO should consider whether or not the ship can comply with STCW regulation I/4.1.2 regarding the numbers and certificates on board being in compliance with the applicable safe manning requirements of the flag State. This may be considered a deficiency in accordance with regulation I/4.2.4 and rectify before departure or detention may be applied. The officer carrying out the control should forthwith inform, in writing, the master of the ship and the Consul or, in his absence, the nearest diplomatic representative or the maritime authority of the State whose flag the ship is entitled to fly, so that appropriate action may be taken.

6.2.25 In cases of suspected intoxication of masters, officers and/or other seafarers while performing designated safety, security and marine environmental protection duties, the appropriate Authorities of the port and flag State should be notified in accordance with chapters 3 and 4 of the Procedures for Port State Control.

6.2.26 ~~Seafarers and supernumerary should have a valid "medical certificate" (regulation I/9) and "familiarization training" (regulation VI/1). If such crewmembers are assigned to any designated safety, security or environmental pollution prevention duties, they must be trained and qualified for such duties in accordance with Annexes of this guideline the applicable chapter of the STCW Code.~~

6.2.27 In accordance with section A-VI/1, paragraph 5 of the STCW Code, the flag State administration may exempt the seafarers engaged on ships, other than passenger ships, of more than 500 gross tonnage on international voyages and tankers from some of the requirements of that section requirements of the regulation VI/1.

Manning

6.2.28 The PSCO should examine the applicable documents, found in section 4.

6.2.29 The guiding principles for port State control of the manning of a foreign ship should be:

- .1 verification that the numbers and certificates of the seafarers serving on board are in conformity with the applicable Safe Manning requirements of the flag State; and
- .2 verification that the vessel and its personnel conform to the international provisions as laid down in SOLAS and STCW.

6.2.30 If a ship is manned in accordance with a MSMD or equivalent document issued by the flag State, the PSCO should accept that the ship is safely manned unless the document has clearly been issued without regard to the principles contained in the relevant instruments, in which case the PSCO should consult the flag State Administration

6.2.31 If the flag State Administration has not issued a safe manning document or equivalent due to the ship's size the PSCO should examine the CoC, CoP and their relevant flag State endorsement for the crew and compare with the requirements of the STCW Convention. Regarding the number of seafarers, the PSCO should then use his/her professional judgment, taking into account chapter VIII of the STCW Convention and Code and the duration and area of the next voyage, to determine if it can be undertaken safely. The PSCO should note the number of seafarers on board during the previous voyage as another indicator of standard manning levels for the ship. The PSCO should consult the flag State Administration, if additional information is necessary.

6.2.32 If an endorsement to attest recognition or certificate of [equivalent] competency has expired or has not been issued or documentary proof of application for endorsement (CRA) is not readily available, the PSCO should consider whether the ship can comply with regulation I/4.1.2 regarding the numbers and certificates on board being in compliance with the applicable safe manning requirements of the flag State Administration. In cases where the PSCO finds that additional information is necessary, the flag State Administration should be consulted.

6.2.33 If the flag State does not respond to the request this should be considered as clear grounds for a more detailed inspection to ensure that the number and composition of the crew is in accordance with the principles laid down in paragraph 6.2.29 above. The ship should only be allowed to proceed to sea if it is safe to do so, taking into account the criteria for detention indicated in section 7.3. In any such case, the minimum standards to be applied should be no more stringent than those applied to ships flying the flag of the port State.

Hours of rest

6.2.34 All persons who are assigned duty as officer in charge of a watch or as a rating forming part of a watch and those whose duties involve designated safety, security and environmental protection duties shall be provided with a rest period of not less than:

- .1 A minimum of 10 hours of rest in any 24-hour period; and
- .2 77 hours in any 7-day period.

6.2.35 The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length, and the intervals between consecutive periods of rest shall not exceed 14 hours.

6.2.37 The PSCO should examine the applicable documents, found in section 4. Specifically, the watch schedule and the records of daily hours of rest. The PSCO may inspect the seafarer's personal copy of his/her records pertaining to the hours of rest being held by the seafarer on board in order to verify that the records are accurate.

6.2.38 The watch schedule shall be in a standardized format⁸, easily accessible to the crew and posted in the working language or languages of the ship and in English.

6.2.40 Daily hours of rest shall be maintained in a standardized format¹, in the working language or languages of the ship and in English.

6.2.xx PSCO should consider that seafarers who are on call, such as when a machinery space is unattended, are to be provided with an adequate compensatory rest period if the normal period is disturbed by call-outs to work.

6.2.46 While assessing hours of rest, the PSCO should take into account any emergency conditions encountered which required a seafarer to perform additional hours of work for the immediate safety of the ship. In such cases, the master should be consulted for an explanation of the events and how impacted seafarers were provided with an adequate period of rest.

6.2.47 Flag State Administrations may provide exceptions to the requirements of 6.2.30 above for no more than two consecutive weeks provided that the rest period for the seafarer is not less than 70 hours in any 7-day period.

6.3 Clear grounds

6.3.1 Clear grounds, is defined in section 1.7.2 of the Procedures for port State control. ~~means evidence that the ship, its equipment, or its crew does not correspond substantially with the requirements of the relevant conventions or that the master or crew members are not familiar with essential shipboard procedures relating to the safety of ships or the prevention of pollution. Examples of clear grounds are included section 2.4 of the Procedures for port State control.~~

6.3.2 In addition to the general examples of clear grounds in section 2.4 of the Procedures for port State control, ~~the specific~~ occurrences below are considered as factors leading to a more detailed inspection:

- .1 the ship has been involved in a collision, grounding or stranding; or

⁸ The IMO/ILO Guidelines for the development of tables of seafarers' shipboard working arrangements and formats of records of seafarers' hours of rest may be used.

- .2 there has been a discharge of substances from the ship when under way, at anchor or at berth which is illegal under any international convention; or
- .3 the ship has been manoeuvred in an erratic or unsafe manner whereby routing measures adopted by IMO or safe navigation practices and procedures have not been followed; or
- .4 the ship is otherwise being operated in such a manner as to pose a danger to persons, property, the environment, or a compromise to security;
- .5 missing illegible or fraudulent certificates and records;
- .6 flag State does not respond to requests for clarification of manning scales;
- .7 failure to conform to flag State requirements regarding watch arrangements (e.g. flag State requirements regarding certain ratings required to be on the bridge/in the engine-room during specific evolutions);
- .8 inability of crew member(s) to perform their assigned duties during abandon ship or firefighting drills;
- .9 inability of watchkeeping officer(s) to communicate with the PSCO in English;
- .10 inability of crew member(s) to operate shipboard equipment necessary to complete operational tests as required during the general examination;
- .11 clear indication, based on personal observations of performance during the inspection, that the master and/or crew are not familiar with their specific duties and with ship arrangements, installations, equipment, procedures and ship characteristics that are relevant to their routine or emergency duties;
- .12 indication that key crew members are not able to communicate or coordinate with each other, or with other persons on board;
- .13 failure to comply with the work hour/fitness for duty provisions;
- .14 complaints received from a seafarer or knowledgeable party; and
- .15 the ship has a master, officer or rating holding a certificate issued by a country which has not ratified the STCW Convention.]

6.4 More detailed inspection

6.4.1 The PSCO should verify:

- .1 that seafarers are sufficiently rested and otherwise fit for duty for the first watch at the commencement of the intended voyage and for subsequent relieving watches. This may be done by comparing records of daily hours of rest with the requirements in the STCW Convention for an appropriate period, which should at least include, whenever possible, the seven-day period immediately prior to departure. The rest period must reflect actual hours worked;

- .2 a sufficient number of certificates from all departments to demonstrate that the vessel and the composition of the crew complies with the requirements of the STCW Convention; and
- .3 that navigational or engineering watch arrangements conform to the requirements specified for the ship in the MSMD by the flag State and the requirements of STCW Convention regulation VIII/2, and STCW Code section A-VIII/2.

6.4.2 An assessment of seafarers can only be conducted by the port State if there are clear grounds for believing that the ability of the seafarers of the ship to maintain watchkeeping and security standards, as appropriate, as required by the STCW Convention are not being maintained because any of the situations mentioned in paragraph 6.3-2 have occurred:

- .1 the assessment procedure provided in the STCW Convention regulation I/4, paragraph 1.3, should take the form of a verification that members of the crew who are required to be competent do in fact possess the necessary skills related to the occurrence;
- .2 it should be borne in mind when making this assessment that onboard procedures are relevant to the International Safety Management (ISM) Code and that the provisions of the STCW Convention are confined to the competence to safely execute those procedures ~~and security~~;
- .3 control procedures under the STCW Convention should be confined to the standards of competence of the individual seafarers on board and their skills related to watchkeeping as defined in part A of the STCW Code. Onboard assessment of competency should commence with verification of the certificates of the seafarers;
- .4 notwithstanding verification of the certificate, the assessment under the STCW Convention regulation I/4, paragraph 1.3 can require the seafarer to demonstrate the related competency at the place of duty. Such demonstration may include verification that operational requirements in respect of watchkeeping standards have been met and that there is a proper response to emergency situations within the seafarer's level of competence;
- .5 in the assessment, only the methods for demonstrating competence together with the criteria for its evaluation and the scope of the standards given in part A of the STCW Code should be used. In cases where doubt of knowledge on operational use of equipment exist, the relevant officer or crew member should be asked to perform a functional test. Failure to perform a functional test could indicate the lack of familiarization or competency; and
- .6 assessment of competency related to security should be conducted for those seafarers with specific security duties only in case of clear grounds, as provided for in chapter XI/2 of SOLAS by the competent security Authority. In all other cases, it should be confined to the verification of the certificates and/or endorsements of the seafarers.

7 FOLLOW-UP ACTION

7.1 Possible action

7.1.1 Possible action to be considered by PSCO for the **manning** control in compliance with **STCW** or **SOLAS Conventions** may be dealt with in ~~two~~ **the following** ways:

- .1 exercise of control with regard to the documentation concerning the ship; and
- .2 exercise of control with regard to the documentation for individual seafarers on board.

7.2 Possible deficiencies

The following is a non-exhaustive list of possible deficiencies:

Ship-related:

- ~~.1 ——— manning (number or qualification) not in accordance with the MSMD STCW regulation I/4.2.2 and SOLAS regulation V/14;~~
- ~~.2 ——— watch schedule not posted or not being followed STCW regulations I/4.2.3 and I/4.2.5;~~
- ~~.3 ——— unqualified person on duty STCW regulation I/4.2.4;~~
- ~~4 ——— the absence of a table of shipboard working arrangement or of records of hours of work or rest of seafarers; and~~
- ~~.5 ——— the records of hours of rest are inaccurate or incomplete.~~

Seafarers' documentation:

- ~~.6~~ **1** no CoC, CoP, flag State endorsements or "documentary proof of application" (STCW regulations I/4.2.1 and I/10), ~~I/4.2.2, I/4.2.3 and I/4.2.4;~~
- ~~.7~~ **2** ~~tanker~~ **Documentations special training requirements:** Mandatory basic or advanced training or endorsement not presented. ~~If rating, replace before the ship is allowed to sail~~ STCW regulations I/4.2.1, I/4.2.2, I/4.2.3 and I/4.2.4;
- ~~.8~~ **3** no evidence of basic training, or other certificate of proficiency, if not included in a qualification certificate held (STCW regulations ~~I/9~~, VI/1, VI/1.2 VI/3, VI/4 and VI/6);
- ~~.9~~ ~~the ship has a master, officer or rating holding a certificate issued by a country which has not ratified the STCW Convention (STCW regulation I/2);~~
- ~~.10~~ **4** information or evidence that the master or crew is not familiar with essential shipboard operations relating to the safety of ships or the prevention of pollution, or that such operations have not been carried out; ~~and~~

Manning:

- .47 no Minimum Safe Manning Document (MSMD) or the manning (number or qualification) not in accordance with the MSMD (STCW regulation I/4.2.2 and SOLAS regulation V/14); and
- .38 unqualified person on duty (STCW regulation I/4.2.4).

Hours of rest:

- .29 watch schedule not posted or not being followed (STCW regulations I/4.2.3 and I/4.2.5 and STCW Code A-VIII/1-5);
- .410 the absence of a table of shipboard working arrangement or of records of hours of work or rest of seafarers (STCW Code A-VIII/1-7);
- .511 the records of hours of rest are inaccurate or incomplete. (STCW Code A-VIII/1-7); and
- .12 watchkeeper is receiving less than 10 hours rest in 24-hour period (i.e. working in excess of 14 hours) or 77 hours rest in any 7-day period.

7.3 Deficiencies warranting detention

7.3.1 A non-exhaustive list of grounds for detention is contained in regulation I/4 of the STCW Convention as amended.

- .1 failure of seafarers to hold a certificate, to have an appropriate certificate, to have a valid dispensation or to provide documentary proof that an application for an endorsement has been submitted to the Administration in accordance with regulation I/10, paragraph 5;
- .2 failure to comply with the applicable safe manning requirement of the Administration;
- .3 failure of navigational or engineering watch arrangements to conform to the requirements specified for the ship by the Administration;
- .4 absence in a watch of a person qualified to operate equipment essential to safe navigation, safety radiocommunications or the prevention of marine pollution; and
- .5 inability to provide, for the first watch at the commencement of a voyage and for subsequent relieving watches, persons who are sufficiently rested and otherwise fit for duty.

7.3.2 Other grounds for detention are listed below:

Ship-related:

- .1 MSMD or equivalent not presented (SOLAS regulation V/14.2); and
- .2 records of daily hours of rest required by A-VIII/1 section 7 are not on board (STCW Code A-VIII/1.7).

Seafarers' documentation:

- .3 not available or serious discrepancy in the CoC, (STCW regulation I/4.2.1);
- ~~.4 tanker documentation: Mandatory basic or advanced training or endorsement not presented.~~
- ~~If Officer, [replace before the ship is allowed to sail – STCW regulations I/4.2.1, I/4.2.2, I/4.2.3 and I/4.2.4];~~
- .54 absence in watch of a radio operator (general/restricted GMDSS) Certificates and endorsement not available: (STCW regulations I/4.2.1, I/4.2.2, I/4.2.3, I/4.2.4 and II/1.2.1);
- .65 documentation for personnel with designated safety, security and marine environmental duties not available: (STCW regulation I/4.2.1, I/4.2.2, I/4.2.3 and I/4.2.4);
- ~~.7 fraudulent certificates STCW regulations I/4.2.1, I/4.2.2, I/4.2.3 and I/4.2.4;~~
- .86 expired certificates (Note: For medical certificate cf. regulation I/9 paragraphs 6 and 7), STCW regulation I/4.2.5;
- ~~.9 failure of seafarers to hold a certificate, to have an appropriate certificate, to have a valid dispensation or to provide documentary proof that an application for an endorsement has been submitted to the flag State administration;~~
- .107 evidence that a certificate has been fraudulently obtained or the holder of a certificate is not the person to whom that certificate was originally issued;
- ~~.11 failure to comply with the applicable safe manning requirements of the flag State administration;~~
- ~~.12 failure of navigational or engineering watch arrangements to conform to the requirements specified for the ship by the flag State administration;~~
- ~~.13 absence in a watch of a person qualified to operate equipment essential to safe navigation, safety radio communications or the prevention of marine pollution;~~
- ~~.148 failure to provide proof of professional proficiency as [required by regulation VII/2] for the duties assigned to seafarers for the safety of the ship prevention of pollution; and~~
- ~~.15 inability to provide for the first watch at the commencement of a voyage and for subsequent relieving watches persons who are sufficiently rested and otherwise fit for duty.~~

7.4 Actions to be considered

Ship-related

7.4.1 If the actual number of crew or composition does not conform to the manning document, the port State should request the flag State for advice as to whether or not the ship should be allowed to sail with the actual number of crew and composition of crew. Such a request and response should be by the most expedient means and either party may request the communication in writing. If the actual crew number or composition is not brought into

compliance with the MSMD or the flag State does not advise that the ship may sail, the ship may be considered for detention after the criteria set out in section 7.3 have been taken into account.

7.4.1 *bis* Before detaining the ship the PSCO should consider the following:

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

Deficiency-related

7.4.2 When the manning is not in accordance with the MSMD and no flag State Endorsements or no "documentary proof of application" can be presented, the port State, should consult the flag State whenever possible ~~due to~~ taking into account time differences or other conditions. However, if it is not possible to establish contact with the flag State, the port State should forthwith inform, in writing, the master of the ship and the Consul or, in their absence, the nearest diplomatic representative or the maritime authority of the State whose flag the ship is entitled to fly, so that appropriate action may be taken.

7.4.3 In cases where an unqualified seafarer has been on duty and/or the watch schedule has not been followed, the flag State should be informed and this could be considered as an ISM deficiency.

7.4.4 In cases where there is a seafarer on duty who is not qualified to carry out an operation, that particular operation should be stopped immediately.

8 NOTE ON REPORTING DEFICIENCIES

8.1 The PSCO should be aware that ~~more than one relevant Convention (STCW SOLAS or Maritime Labour Convention, 2006 and any other applicable ILO Conventions in addition to SOLAS and STCW, there may be other applicable international instruments) could be applicable.~~ The PSCO should decide which one is the most appropriate.

ANNEX

Table B-I/2

List of certificates or documentary evidence required under the STCW Convention

The list below identifies all certificates or documentary evidence described in the STCW Convention which authorize the holder to serve in certain functions on board ships. The certificates are subject to the requirements of regulation I/2 regarding language and their availability in original form.

The list also references the relevant regulations and the requirements for endorsement, registration and revalidation.

STCW Regulation	Type of certificate	Endorsement attesting recognition¹	Registration²	Revalidation³
II/1, II/2, II/3, III/1, III/2, III/3, III/6, IV/2, VII/2	Certificate of Competency – for masters, officers and GMDSS radio operators	Yes	Yes	Yes
II/4, III/4, VII/2	Certificate of Proficiency – for ratings duly certified to be part of a navigational or engine-room watch	No	Yes	No
II/5, III/5, III/7, VII/2	Certificate of proficiency – for ratings duly certified as able seafarer deck, able seafarer engine or electro-technical rating	No	Yes	No
V/1-1, V/1-2	Certificate of Proficiency or endorsement to a Certificate of Competency – for masters and officers on oil, chemical or liquefied gas tankers	Yes	Yes	Yes
V/1-1, V/1-2	Certificate of Proficiency – for ratings on oil, chemical or liquefied gas tankers	No	Yes	No
V/2	Documentary evidence – Training for masters, officers, ratings and other personnel serving on passenger ships	No	No	No ⁴
VI/1	Certificate of Proficiency ⁵ – Basic training	No	Yes	Yes ⁶
VI/2	Certificate of Proficiency ⁵ – Survival craft, rescue boats and fast rescue boats	No	Yes	Yes ⁶
VI/3	Certificate of Proficiency ⁵ – Advanced fire fighting	No	Yes	Yes ⁶
VI/4	Certificate of Proficiency ⁵ – Medical first aid and medical care	No	Yes	No
VI/5	Certificate of proficiency – Ship security officer	No	Yes	No
VI/6	Certificate of Proficiency ⁷ – security awareness training or security training for seafarers with designated security duties	No	Yes	No

Notes:

- 1 *Endorsement attesting recognition of a certificate* means endorsement in accordance with regulation I/2, paragraph 7.
- 2 *Registration required* means as part of register or registers in accordance with regulation I/2, paragraph 14.
- 3 *Revalidation of a certificate* means establishing continued professional competence in accordance with regulation I/11 or maintaining the required standards of competence in accordance with sections A-VI/1 to A-VI/3, as applicable.
- 4 As required by regulation V/2, paragraph 3 seafarers who have completed training in "crowd management", "crisis management and human behaviour" or "passenger safety, cargo safety and hull integrity" shall at intervals not exceeding five years, undertake appropriate refresher training or to provide evidence of having achieved the required standards of competence within the previous five years.
- 5 The certificates of competency issued in accordance with regulations II/1, II/2, II/3, III/1, III/2, III/3, III/6 and VII/2 include the proficiency requirements in "basic training", "survival craft and rescue boats other than fast rescue boats", "advanced firefighting" and "medical first aid" therefore, holders of mentioned certificates of competency are not required to carry Certificates of Proficiency in respect of those competences of chapter VI.
- 6 In accordance with sections A-VI/1, A-VI/2 and A-VI/3, seafarers shall provide evidence of having maintained the required standards of competence every five years.
- 7 Where security awareness training or training in designated security duties is not included in the qualification for the certificate to be issued.

ANNEX 10

[MSC.1/Circ.738/Rev.2]
[16 June 2017]

DRAFT MSC CIRCULAR ON GUIDELINES FOR DYNAMIC POSITIONING SYSTEM (DP) OPERATOR TRAINING

1 The Maritime Safety Committee, at its sixty-sixth session (28 May to 6 June 1996), considered the issue of training of dynamic positioning system (DP) operators in relation to paragraph 4.12 of the 1989 MODU Code and, noted that the International Marine Contractors' Association (IMCA) had prepared a publication on the "Training and Experience of Key DP Personnel (Issue 1/Rev.1)" which could be used as a guideline for the training of DP operators.

2 The Committee, recalling the obligations contained in regulation I/14 of the 1978 STCW Convention, as amended, and noting the importance of adequate training of DP operators and the recommendation of the Sub-Committee on Ship Design and Equipment, at its thirty-ninth session (22 to 26 January 1996), invited Member States to bring the aforementioned guidelines to the attention of the bodies concerned and apply them to the training of key DP personnel employed on dynamically positioned vessels defined in paragraph 1.3.1 of the annex to MSC/Circ.645.

3 The Committee also agreed to make a reference to the Guidelines in the footnote to section 4.12 of the 1989 MODU Code, as well as STCW Code, section B-V/f.

4 The Committee, at its ninety-seventh session (21 to 25 November 2016), noted information by IMCA that the Guidelines had been updated to ensure conformance with current best practice and reissued as IMCA M 117 Rev.2, which is annexed to document MSC 97/INF.9. The Committee also noted that there have been no changes to the core content of the Guidelines and may be amended by IMCA from time to time in future.

5 The Committee noted that the above-mentioned IMCA publication identifies training programmes, levels of competency and experience for the safe operation of DP vessels, the most recent one of which is available from: The International Marine Contractors' Association (IMCA); Website: www.imca-int.com.

6 The Committee, at its [ninety-eighth session (7 to 16 June 2017)], approved the revised circular and requested all Member States to bring it to the attention of all parties concerned.

7 The Committee invited IMCA to keep IMO informed of future amendments to the IMCA guidelines, as appropriate, and make them available on above website.

8 This circular revokes MSC.1/Circ.738/Rev.1.

ANNEX 11

**DRAFT STCW.6 CIRCULAR ON AMENDMENTS TO PART B OF THE SEAFARERS'
TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE**

STCW.6/Circ.[12]
[16 June 2017]

1 The Maritime Safety Committee, [at its ninety-eighth session (7 to 16 June 2017)], adopted amendments to part B of the STCW Code as follows:

Section B-V/f

Guidance on the training and experience for personnel operating dynamic positioning systems

2 In section B-V/f, a footnote with the following text is inserted at the end of the existing title:

"Refer to MSC/Circ.738/Rev.2 on *Guidelines for Dynamic Positioning System (DP) operator training* for training and experience of key DP personnel"

3 STCW Parties and all others concerned are invited to note the above and take action, as appropriate.

ANNEX 12

STATEMENT BY GHANA

Report on unlawful practices related to certificates of competency

"Thank you Madame Chair and good afternoon to everybody.

May we first thank the Secretariat for the report. We note with concern from the report the forged certificates claiming to have been issued by the Ghanaian maritime administration.

As you may be aware Ghana has a long and distinguished tradition of producing competent and experienced Seafarers for the maritime industry. The presence of the Regional Maritime University for West Africa in Ghana, external audits by countries and regional bodies intending to recruit Ghanaian Seafarers, coupled with stringent oversight by the Ghana Maritime authority and an effective quality management system, ensures provisions of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers are effectively implemented and adhered to.

Additionally, in a bid to enhance the security and authenticity of Ghanaian issued certificates, it might interest the Sub-Committee to know that in November 2016 the Ghana Maritime Authority introduced a new enhanced system for the issuance of certificates. The new system means the certificates the authority now issues are computer based, biometric, and machine readable.

The administration also continues to maintain a verification system for other parties to check the validity and authenticity of seafarers' certificates of competency issued by the administration in keeping with the Convention.

We take this opportunity to assure the international community that the administration will continue to respond to verification requests in a timely manner to deter and eliminate unlawful practices related to certificates of competency. Thank you Madam Chair."
