

IMO MSC 91

Summary Report

Introduction & executive summary

The 91st session of the IMO Maritime Safety Committee (MSC) was held from 26 to 30 November 2012, at the IMO headquarters in London. This briefing summarises subjects discussed which are relevant to the work of Lloyd's Register.

Adoption of the mandatory instruments

The following were concluded for entry into force on 1 July 2014

- Amendments to the SOLAS Convention – Chapter II -1, II-2 and the Appendix with regard to the forms of the certificates
- New SOLAS Regulation III/17-1
- Amendments to the FSS Code
- New Code on noise levels on board ships
- Amendments to the IBC Code – chapters 17, 18 and 19 (entry into force on 1 June 2014)
- Amendments to the Protocol Of 1988 Relating To The International Convention On Load Lines, 1966, As Amended - Annex I, Chapter III (Freeboards), Regulations (27/11) and 27/(13)
- Amendments to the International Convention On Load Lines, 1966 (Annex I and new Annex IV)
- Amendments to the 1978 SOLAS Protocol with regard to the forms of the certificates
- Amendments to the 1988 SOLAS Protocol with regard to the forms of the certificates
- Amendments to Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin space of bulk carriers (MSC.215 (82)) &
- Performance Standard For Protective Coatings For Cargo Oil Tanks Of Crude Oil Tankers (Resolution MSC.288(87)) – editorial change only as consequences of the introduction of the ESP code.
- MSC resolution on Implementation of SOLAS regulation III/17-1 on ships other than those engaged in international voyages
- MSC Circular the Guidelines for the development of plans and procedures for recovery of persons from the water.

Goal Based Standard

There was progress on guidelines for how Administrations and others can consider and approve proposals for risk-based equivalent or alternative ship or system designs. There was also consideration of how IMO can take a risk-based approach to the development of regulations, and elements were identified for inclusion in future guidelines on developing a safety level approach. IACS updated the IMO on progress of the harmonised common structural rules for bulk carriers and oil tankers, including the plans for each society to make a submission for IMO's verification against the GBS guidelines.

Passenger ship safety

There were updates on casualty investigation of the Costa Concordia incidents. Taking into account information made available, MSC 91 prepared draft amendments to the SOLAS convention regarding operational matters that will improve safety of passenger ships. These proposed amendments will be adopted at MSC 92 for entry into force on 1 January 2015. MSC 91 also revised an MSC circular on recommended interim measures for passenger ships to enhance safety of passenger ships for introducing revised muster policy, briefing, policy for navigation bridge access, record of passenger nationality and boat drills.

Matters relating to ECDIS

Concerns are expressed about observed anomalies of ECDIS, for example, not displaying underwater obstruction in a operation mode. International Hydrographic Organization (IHO) will continue its effort of maintaining dialogue with Original Equipment Manufacturers (OEM) and sharing information on their website.

Details of discussions

Decision of other IMO bodies (Agenda item 2)

Under this agenda item, MSC 91 approved the following

Interim Guidelines For Determining Minimum Propulsion Power to Maintain The Manoeuvrability of Ships in Adverse Weather Conditions (MSC-MEPC.2/Circ.11)

MSC 91 approved the draft MSC-MEPC circular prepared by MEPC 64. For details of this development, please refer to Lloyd's Register's report on MEPC 64 found at <http://cdlive/information/default.asp?preOpen=Classification News>

Consideration and adoption of amendments to mandatory instruments (Agenda item 3)

MSC 91 adopted mandatory instruments as introduced below which will enter into force on 1 July 2014. Readers are to note that, among these amendments, new SOLAS regulation II-1/3-12 requirement noise measurements and compliance has significant impact on new ship construction. Shipowners and ship managers are to note retroactive requirements introduced by SOLAS II-2, such as the provision of two two-way portable radios for each fire-fighting team and an onboard plan and procedure for recovering a person from water as required by the new SOLAS regulation III/17-1.

SOLAS Convention

Regulation II-1/3-12 – Protection against noise & Code on noise levels on board ships

This new regulation requires applicable ships to be constructed to reduce onboard noise and protect people on board in accordance with the new Code.

The new Code has mandatory and recommendatory parts. The majority is mandatory but the recommendatory parts are stated at the beginning of the Code (paragraph 1.1.3). The Code includes requirements for measuring equipment specifications and use, information about how measurements are taken, limits on exposure to noise, measures to be taken in high noise areas, information about acoustic insulation in accommodation spaces and hearing protection options.

Application:

Regulation II-1/3-12 and the "Code on Noise Levels Onboard Ships" will be applicable to ships of 1600GT or above, based upon the following criteria:

- for which the building contract is placed on or after 1 July 2014; or
- in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 January 2015; or
- the delivery of which is on or after 1 July 2018

Ships satisfying the following criteria should comply with the requirements of existing regulation II-1/36, the text of which has been included in the new regulation II-1/3-12; consequentially II-1/36 will expire on 1 July 2014, when II-1/3-12 will enter into force.

Ships delivered before 1 July 2018 and:

- o contracted for construction before 1 July 2014 and constructed on or after 1 January 2009 but before 1 January 2015; or
- o in the absence of a building contract, the keels were laid or at a similar stage construction on or after 1 January 2009 but before 1 January 2015

The code is not applicable to ship types mentioned in paragraph 1.3.4 of the code, as shown below.

- dynamically supported craft;
- high-speed craft;
- fishing vessels;
- pipe-laying barges;
- crane barges;
- mobile offshore drilling units;
- pleasure yachts not engaged in trade;
- ships of war and troopships;
- ships not propelled by mechanical means;
- pile driving vessels; and
- dredgers.

“Code on Noise Levels Onboard Ships”-Mandatory and Non-Mandatory sections:

The new Code has mandatory and recommendatory parts. Paragraph 1.1.3 of the code clearly states that the requirements in the following paragraphs of the code are recommendatory in nature:

- Paragraphs 1.3.2 and 1.3.3
- Paragraphs 3.4.2 and 3.4.3
- Chapter 5
- Section 6.3
- Section 7.3
- Appendix 2
- Appendix 3
- Appendix

Regulation II-2/1

MSC 91 adopted amendments to Regulation II-1, to clarify that the amendments introduced by Resolution MSC.308(88) to chapter II-2, paragraph 23 of regulation 3 and paragraph 4.1 of regulation 7 only applies to ships constructed on or after 1 July 2012. It also clarifies that the all other regulations of SOLAS Chapter II-2 will apply to ships constructed on or after 1 July 2002.

Regulation II-2/9 - Fire integrity of bulkheads and decks of ro-ro spaces (including special category spaces) and cargo ships

The revised regulation imposed more rigorous fire boundary requirements.

For cargo ships, it was proposed that the fire integrity of bulkheads and decks between ro-ro spaces or vehicle spaces of such ships as prescribed in the present tables 9.5 and 9.6 of SOLAS chapter II-2 should be increased from the present “*h” to “A-30” class.

For ro-ro spaces on passenger ships carrying no more than 36 passengers, it was proposed that the fire integrity of bulkheads and decks between ro-ro spaces or special category spaces of such ships, as prescribed in present tables 9.3 and 9.4 of SOLAS chapter II-2, should be increased from the current “A-0” to “A-30” class.

Intended for new ships (both ro-ro passenger ships carrying less than 36 passengers (regardless tonnage) and ro-ro cargo ships (500 gt or over)) constructed on or after 1 July 2014.

Regulation II-2/10 - Fire fighting

The amendment consists of three elements, as follows.

1. Fixed local application of fire-fighting systems

FP 55 found that the systems should be installed for the protection of all internal combustion machinery in Category A machinery spaces and not just machinery used for the ship's main propulsion and power generation. For that reason, In regulation II-2/10.5.6.3.1, the words "used for the ship's main propulsion and power generation" are deleted.

This requirement will apply to new passenger ships of 500 gross tonnage and above and cargo ships of 2000 gross tonnage and above, constructed on or after 1 July 2014.

2. Fire-Fighter's Outfits (audible alarm device to notify low air pressure in SC BA cylinders)

MSC 91 adopted amendments to regulation II-2/10.1, to clarify that Self Contained Self-contained compressed air breathing apparatus of fire-fighter's outfits shall be fitted with an audible alarm and a visual or other device which will alert the user before the volume of the air in the cylinder has been reduced to no less than 200 litres, as required by amendments introduced to with paragraph 2.1.2.2 of chapter 3 of the Fire Safety Systems Code.

Application: This requirement will apply to all ships (not just tankers) and they all shall comply with this requirement by 1 July 2019

3. Radio-communication equipment for fire fighters

MSC 91 adopted amendments to SOLAS Regulation II-2/10.4, to clarify that a minimum of two two-way portable radiotelephone apparatus for each fire party for fire-fighter's communication shall be carried on board. These radio devices shall be of an explosion proof type or intrinsically safe.

Application: This requirement will apply to all SOLAS ships constructed on or after 1 July 2014. Existing ships should comply with this requirement, not later than the first survey after 1 July 2018.

II-2/15 - Instructions, onboard training and drills

Cargo ships and passenger ships carrying not more that 36 passengers will require either (a) an onboard means of recharging breathing apparatus cylinder used during drills; or (b) a suitable number of spare cylinders to replace those used during drills.

This amendment applies to new and existing cargo ships of 500 gt and above and passenger ships carrying not more that 36 passengers. The requirements will enter into force 1 July 2014

Regulation II-2/20 - Fixed gas and water spraying fire-extinguishing systems for vehicle spaces, ro-ro, container and general cargo spaces

Piping design requirements for fixed gas fire fighting systems for vehicle spaces and ro-ro spaces which are not special category spaces and for container and general cargo spaces were clarified in Chapter 5 of FSS Code. FSS code Chapter 7 was amended to include requirement for vehicle, ro-ro and special category spaces.

The amendments applies to ships constructed on or after 1 July 2014 with vehicle spaces ro-ro and special category spaces.

III/17-1 - Recovery of persons from the water & associated resolution and circular

New regulation III/17-1 requiring all ships to have ship-specific plans and procedures for the recovery of persons from the water was adopted. The plans and procedures shall identify the equipment intended to be used for recovery purposes and measures to be taken to minimize the risk to shipboard personnel involved in recovery operations.

An MSC resolution and MSC circular were also developed for the guidance of the development of the plan and procedure as well as actions for ships not covered by SOLAS Chapter III.

This applies to new SOLAS ships constructed on or after 1 July 2014 and to existing ships by the first periodical or renewal safety equipment survey after 1 July 2014.

Amendments to the appendices with regard to the forms of certificates:

The forms of certificates and associated records were also updated to align with the updates of the technical requirements.

FSS Code

Chapter 3, Section 2.1.2 - Breathing apparatus

The amendments require fitting breathing apparatus with an audible alarm and a visual or other device which would alert the user before the volume of the air in the cylinder has been reduced to no less than 200 litres. (see amendments to regulation II-2/10.1, item 2 above)

The requirement applies to ships constructed on or after the date 1 July 2014 and to existing ships by 1 July 2019.

Chapter 5 - Fixed Gas Fire-Extinguishing Systems

The amendment consists of two elements.

1. Sections 2.2.1.2 and 2.2.1.7

See above amendments to SOLAS regulation II-2/20

2. Sections 2.1.1.1., 2.1.1.3, 2.1.3.2 and 2.2.2

These amendments clarify that the spaces to be protected by fixed gas fire-extinguishing systems should be provided with means that automatically give audible and visual warning of the release of CO₂. In addition, adjacent spaces not separated by at least A-0 class divisions with independent ventilation systems should be considered as the same space. Further, the amendments state to avoid moving containers completely from their fixing position when checking remaining quantity and for other types of extinguishing media, suitable surface indicators may be used.

These changes apply to ships constructed on or after 1 July 2014.

Chapter 7 - Fixed Pressure Water-Spraying and water-mist fire-extinguishing systems-sections 2.4 and 2.5

See above amendments to SOLAS regulation II-2/20

Chapter 8 - Automatic Sprinkler, Fire Detection And Fire Alarm Systems - section 2.5.2.3

Sprinklers shall be placed in an overhead position and spaced in a suitable pattern to maintain an average application rate of not less than 5 l/m² /min over the nominal area covered by the sprinklers. The amendment clarified that "nominal area" cover by sprinklers is to be taken as the gross horizontal projection of the area to be covered.

These changes apply to ships constructed on or after 1 July 2014.

Chapter 9 - Fixed Fire Detection And Fire Alarm Systems - section 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.3.1.2, 2.3.1.3, 2.3.1.5

In the course of developing interpretations on MSC.1/Circ.1120 relevant to FSS Code chapter 9 (a warning for detectors installed in cold places to be tested using procedures that are applicable for that type of location) and a reference to IEC 60068-2-1, FP 53 agreed that draft amendments to chapter 9 were necessary following IACS unified interpretation SC 35 (SOLAS regulation II-2/13.1.3), related to sources of power supply for fixed fire detection and fire alarm systems, to clarify existing requirements. Operation of automatic changeover switch and the use of batteries of adequate capacity to ensure continuous changeover operation to avoid loss of fire detection capabilities and the use of accumulator batteries were proposed to be included as an option for the supply of emergency source of power.

These changes apply to ships constructed on or after 1 July 2014.

Chapter 12 - Fixed Emergency Fire Pumps - section 2.2.2.1

This amendment incorporates the unified interpretation contained in MSC/Circ.1120 related to heating of diesel driven power sources and other means of starting

These is amendments applies to new ships of 1000 gt or above contracted on or after 1 July 2014 (cargo ships of 2000GT and above and passenger ships less than 1000 GT)

Chapter 13 - Arrangement of Means of Escape - section 2.2.4

This amendment incorporates unified interpretations contained in MSC.1/Circ.1120 relevant to FSS Code chapter 13 addressing the size of landings and intermediate landings.

This amendment applies to new passenger ships on or after 1 July 2014

Chapter 14 - Fixed Deck Foam Systems - comprehensive revision

The amendment includes clarification of the supply rate of foam solution and foam concentration needed on tankers as indicated by the carriage requirements of SOLAS II-2 and the IBC Code. Additional foam concentrate is to be provided if the deck foam system is supplied by a common line from the fire main. Chapter 14 now indicates when type B foam concentrates and type A foam concentrates shall be applied and also prescribes that foam concentrate supplied on board shall be approved by the Administration for the cargoes intended to be carried. Incorporation of unified interpretations contained in MSC/Circ.1120 relevant to Ch. 14 regarding capacity, use and handling of deck foam systems.

The revised chapter applies to new tankers constructed on or after 1 July 2014. Readers should note that for tankers carrying chemicals in bulk listed in Chapter 17 of the IBC Code having a flashpoint not exceeding 60 degree Celsius (closed cup), the rate of supply of foam solution shall be as required by the IBC Code.

IBC Code

The revised IBC code chapters 17, 18 and 19 were adopted at MEPC 64. The amendments were adopted by the MSC 91. The entry into force date is 1 June 2014. This applies to all chemical tankers.

Primary discussion points and amendments made to the code are as follows:

- In total 43 new cleaning additives were presented and 29 accepted for Annex 10 of MEPC.2/Circ. series
- MEPC.2/Circ series – Provisional classification of liquid substances transported in bulk, and other related matters
- 2 new products were assessed: a discrepancy with regards to fire-fighting requirements for Hexamethylenediamine (molten) was identified. The new information will be in LIST 1 of the MEPC2/Circ 18 on 17 December 2012, all countries, no expiry. OLOA49819 16/3/3 by SINGAPORE for LIST 3 of the MEPC.2/Circ 18 all countries, no expiry.
- Inconsistencies in carriage requirements noted for a number of entries in chapters 17 and 18 of the IBC code including undertaking a review relevant chapter 21.
- Fully assessed LIST 1 MEPC.2/Circ 17 will go to Chapter 17 or Chapter 18, respective of their application.
- Missing column I products were updated

- Chapter 19 - The draft was in BLG 14/3 Annex 3. Now, UN Numbers were removed and 2 qualifying footnotes about subset and chain length introduced and new synonyms of cargoes implemented since BLG 14.
- Tall Oil, crude and Tall Oil pitch; reassessed at BLG 11 in 2007 will also be added.

Amendments to the Protocol To The International Convention On Load Lines, 1966, As Amended

Annex I, Chapter III (Freeboards), Regulations (27/11) and 27/(13)

The amendment provides clarification on the filling of ballast tanks, also that damage stability calculations are not required to be carried out for service loading conditions. Two methods for considering the free surface effect are given in detail: a virtual correction method and a method for using actual free surface moments.

Amendments apply to ships which have to comply with the damage stability requirements of the Load Line Convention, e.g., those assigned to reduced freeboards..

Consequential amendments as a result of introduction of the ESP Code

As the guidelines for enhance survey programme (A.744.(18)) is now replaced with the 2011 ESP code, editorial changes were made to the following instruments.

- **Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin space of bulk carriers (MSC.215 (82))**
- **Performance Standard For Protective Coatings For Cargo Oil Tanks Of Crude Oil Tankers (Resolution MSC.288(87))**

Expected entry into force date is 1 July 2014.

Goal-based new ship construction standards (Agenda item 5)

MSC 91 considered the following:

Although the agenda item name covers new ship construction standards, MSC 91 considered the concept of GBS more widely. There was further development of "Guidelines for the approval of equivalents and alternatives as provided for in various IMO instruments", which are intended to provide a consistent process for the coordination, review and approval of alternative and equivalent ship and system design. Some relatively minor changes were made, and other topics were identified for a following correspondence group to take further.

MSC 91 also considered the topic of interim guidelines for developing the safety level approach (SLA), which relates to IMO taking a risk-based approach to the development of regulations. Some items were identified for inclusion in these guidelines, but further meetings will be needed before a draft is developed.

MSC 91 noted an update provided by IACS on the progress of the harmonised common structural rules and the plans for each society to make a submission for IMO's verification against the GBS guidelines. This relates to SOLAS regulation 3-10, Goal-based ship construction standards for bulk carriers and oil tankers, adopted by MSC.287 (87) and the resolution on the guidelines for verification of conformity with goal based ship construction standards for bulk carriers and oil tankers (MSC.296(87)).

Passenger ship safety (Agenda item 7)

Following the unfortunate capsizing of the large cruise ship Costa Concordia in January 2012, the IMO Secretary-General has pledged that lessons from the incident were considered and appropriate actions were taken in light of those findings. MSC 91 was invited to consider comments and proposals on passenger ship safety submitted by Member States and international organizations, and may establish, as decided at MSC 90, a working group on passenger ship safety.

MSC 91 noted further updates on the casualty investigation on the Costa Concordia incident. Taking into account information made available, MSC 91 decided as follows with regard to short term operational matters and associated updates to the long term plan for passenger ship safety:

Strengthening operational and management measures

Amendments to SOLAS regulation III/19.2.2 and III/19.2.3 were approved with regard to mustering for ships where passengers will be onboard for more than 24 hours. This was with a view to adoption at MSC 92 in order to allow time for DE to review aspects of drill requirements featured in 2.3 and ensure a final chance to review consistency between the two paragraphs at MSC.

The group agreed that requirement for bridge control is adequately covered by existing SOLAS regulation V/15.6 together with the interim guidance on passenger safety provided by MSC.1/Circ.1446 and appropriate safety management systems. It was noted that this was an issue that relates to all ship types.

It was agreed that resolution A.893(21) Guidelines for voyage planning be reviewed as a long item. In the interim an amendment have been made to MSC.1/Circ. 1446 addressing circumstances under which changes to the voyage plan can be made consistent with Company policies put in place.

A long term work plan was introduced with regard to a requirement for the nationality of all persons onboard to be recorded. Originating as a recommendation from the cruise industry, issues with regard to ro-ro operations will need to be considered.

The recommendation that companies have in place a policy for at least one lifeboat be filled with crew members at least every six months in order to further enhance training and familiarity with equipment was agreed.

Format for new recommendations

In support of the above, MSC.1/Circ. 1446 will be revised to include the proposals culminating from the CLIA cruise ship safety review on operational and management areas. New revisions are expected in the future as this excellent work continues.

Passenger ship training

Document MSC 91/19/7, concerning a review of passenger ship training and competence was discussed, recognising that the mandatory minimum requirements have not been amended in a long time. It was found that the training requirements were not consistent with other training programs and as such it was agreed to submit an agenda to STW 45.

Advice to clients

Lloyd's Register recommends owner, operators, equipment suppliers and shipbuilders continue to monitor developments since there are both short and long term agendas in place.

Applicability

Revisions to SOLAS and the other instruments mentioned affect owners and operators. shipbuilders and equipment suppliers should continue to monitor developments

What is LR doing?

Lloyd's Register continues to monitor the reports from the Costa Concordia. We keep our clients informed on information we collect from continually reviewing our own practices and by participating in forums that look to support the industry in promoting ways to further enhance safety.

Training and Watchkeeping (report of the forty-third session of the Sub-Committee) (agenda item 11)

Matters emanating from STW 43 (held in April-May 2012) were considered in this session. The following is the discussion relating to the work of Lloyd's Register.

Draft Amendments to the International Safety Management (ISM) Code and

MSC 91, having reviewed the outcome of the STW 43, approved amendments to the draft amendments to the code. These amendments address elements, such as "major non-conformity", safe manning.

MSC 91, in approving the text prepared by STW 43, added the following footnotes:

"The footnotes given in this Code are inserted for reference and guidance purposes and do not constitute requirements under the Code. However, in accordance with paragraph 1.2.3.2, all relevant guidelines, etc., should be taken into account. In all cases the reader should make use of the latest version or revision of the document specified in a footnote."

It is expected that these amendment will enter into force on 1 July 2015.

The following are also revised in conjunction with these changes:

- **Amendments to the Revised Guidelines on Implementation of the International Safety Management (ISM) Code by Administrations (resolution A.1022(26))**
- **Amendments to the Guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies (MSC-MEPC.7/Circ.5)**

Draft Assembly resolution on Revised Guidelines for the structure of an integrated system of Contingency planning for shipboard emergencies (resolution A.852(20))

The main objectives of these Guidelines are:

- to assist companies in translating the requirements of the regulations into action by making use of the structure of the integrated system;
- to integrate relevant shipboard emergency situations into such a system;
- to assist in the development of harmonized contingency plans which will enhance their acceptance by shipboard personnel and their proper use in an emergency situation;
- to encourage Governments, in the interests of uniformity, to accept the structure of the integrated system as being in conformity with the provisions for development of shipboard contingency plans as required by various IMO instruments, and to refer to these Guidelines when preparing appropriate national legislation.

Safety of navigation (report of the fifty-seventh session of the Sub-Committee) (Agenda item 12)

MSC 91 reviewed the outcome of NAV 58. The following are the major issues:

Revised MSC.1/Circ.1350 on Unified Interpretations of SOLAS regulation V/22.1.6 relating to navigation bridge visibility

Limited use of camera meeting IEC standard is acceptable in lieu of ensuring visibility for specific ship type (ship of unconventional design). MSC.1/Circ. 1350 is revised accordingly.

Draft MSC resolution on the Performance Standards for Electronic Inclometers with a view to adoption by MSC 92

MSC 91, in general, approved the work done by the NAV Sub-Committee subject to further review by the SLF Sub-Committee with regard to specific stability relating elements, such as parametric role.

Revisions to interpretation Nos. 22 and 27 of appendix to MSC.1/Circ.1369 - Interim Explanatory Notes for the Assessment of Passenger Ship Systems' Capabilities After a Fire or Flooding Casualty, and issue an appropriate addendum

MSC 91 approved amendments to interpretations 22 and 27 contained in Appendix 1 of MSC.1/Circ. 1369 (Interim explanatory note for the assessment of passenger ship system's capabilities after a fire or flooding casualty), to address the elements of navigational equipment considered as essential elements of "Navigation system" and external communication system.

Operating anomalies within ECDIS

MSC 91 noted that NAV 58 circulated a circular (SN/Circ. 312) informing anomalies observed within ECDIS. In order to address this matter further a new work programme was discussed under agenda item 19.

MSC 91 also noted effort made by IHO and outcome of the workshop of Original Equipment Manufacturers (OEM).

Some delegations expressed concerns that ECDIS equipment was not compliant with the ECDIS performance standards and that an MSC resolution was necessary to provide flexibility relating to ECDIS carriage requirements. In this context, others were of the view that, as the issue of operating anomalies was being addressed by the IMO and IHO Secretariats, and the industry through CIRM delegation, there was no perceived need for an MSC resolution and that the Secretariat should continue its efforts and keep the Committee updated regularly.

The IHO observer, advised that it was unaware of any ECDIS in use at sea that could not be used to meet the carriage requirements, notwithstanding that a limited number required a software upgrade in order to work optimally, and that there were no safety implications involved. Lastly, IHO would continue its efforts, along with IMO, to address any operating anomalies by convening further workshops and meetings with OEMs.

Amendments to SOLAS regulation V/22 - Bridge visibility

MSC 91 recalled that MSC 90 did not approved the proposed amendment to the regulation as the proposed amendments prepared by the NAV Sub-Committee was not the task given to the Sub-Committee, i.e., it was not "clarification" of the requirements but significant change to the requirement.

MSC 91 reviewed the outcome of the NAV 58 and noted that there was no conclusion on this issue at NAV 58.

Dangerous goods, solid cargoes and containers (report of the sixteenth session of the Sub-Committee) (Agenda item 13)

MSC 91 considered matters emanating from DSC 17 held in September 2012.

MSC circular on early implementation of the amendments (02-13) to the IMSBC Code

DSC Sub-Committee is working on the development of scheduled to the IMSBC code to avoid casualties emanating from "liquefaction". Amendments 03-15 will enter into force 1 January 2017. It was decided to encourage implementation of the amendment at an earlier date to ensure safety of the carriage of solid bulk cargo.

Draft amendments to SOLAS chapter III/19 related to enclosed space entry and rescue drills

Entries into enclosed spaces are serious threat to life of personnel working onboard. IMO adopted Assembly resolution A.1050 (27) for the recommended measures. The amendments require drills for entry into enclosed spaces and rescue of personnel from such spaces. It was also recognized that the same problem occurs in other

ship types that are not covered by the SOLAS convention. Therefore, correspondence amendments to HSC codes (1994 and 2000), MODU, DSC was prepared for conclusion at MSC 92.

Draft amendments to the International Convention for Safe Containers (CSC), 1972

Amendments relating to marking s, one door off operation, structure, and inspection etc. of container were approved for adoption at MSC 92.

Formal safety assessment (Agenda item 16)

Formal Safety Assessment (FSA) is a structured methodology which the IMO uses to enhance maritime safety through risk analysis and cost benefit assessment. MSC 91 considered the report of the Experts Group on FSA and other submissions.

FSA Experts Group

The FSA Experts Group (EG) was convened in the week before MSC 91. It reviewed two FSA studies; one on crude oil tankers and one on sea transport of dangerous goods. The known ongoing problem of a lack of casualty data being submitted to IMO's GISIS was recognised again. MSC 91 agreed that GISIS should be enhanced to allow for better inclusion of root cause analysis data, and encouraged member states to submit casualty data to GISIS. The EG generally agreed that both FSA studies were conducted in accordance with the FSA guidelines, and MSC 91 agreed that some of the risk control options from each study should be taken forward for further consideration by relevant sub-committees.

Draft Revised FSA Guidelines and draft HEAP Guidelines

After some modifications from the previous draft, MSC 91 approved an MSC-MEPC circular on the "Revised Guidelines for Formal Safety Assessment (FSA) for use in the IMO rule-making process", and an MSC-MEPC circular on "Guidelines for the application of Human Element Analysing Process (HEAP) to the IMO rule-making process". They are now being forwarded to MEPC 65 (May 2013) for concurrent approval.

Despite this, there is some remaining disagreement over the way in which environmental criteria can be factored into an FSA, specifically the costs to society of an oil spill. This issue is likely to be considered further in future sessions.

Piracy and armed robbery against ships (Agenda item 17)

MSC 91 considered reports on acts of piracy and armed robbery against ships reported to IMO since MSC 90, together with a regional analysis and other information. The committee noted the recent downturn in piracy off the coast of Somalia but was concerned that this was not a reason for complacency and further noted the worrying signs that piracy was spreading and becoming more violent. Amongst notable incidents in particular the plight of the crew of the MV Iceberg who had been held for over 900 days was discussed. The importance of accurate, up to date information was highlighted.

Work of ISO

MSC 91 noted the completion of the vote on the new ISO Publicly Available Specification (PAS) 28007 and thanked ISO for their work and encouraged stakeholders to use the PAS.

Annex 1 - Summary List of decisions included in this report

Adoption of mandatory instruments

Instrument	Agenda item	Title	Expected entry into force/effective date
MSC.337(91)	3	Code on noise levels on board ships	1 July 2014
MSC.338(91)	3	Amendments to the SOLAS Convention <ul style="list-style-type: none"> • Regulation II-1/3-12 – Protection against noise & Code on noise levels on board ships • Regulation II-2/9 - Fire integrity of bulkheads and decks of ro-ro spaces (including special category spaces) and cargo ships • Regulation II-2/10 - Fire fighting • II-2/15 - Instructions, onboard training and drills • Regulation II-2/20 - Fixed gas and water spraying fire-extinguishing systems for vehicle spaces, ro-ro, container and general cargo spaces • III/17-1 - Recovery of persons from the water & associated resolution and circular • Appendix - certificate 	1 July 2014
MSC.343(91)	3	Amendment to the Protocol of 1978 relating to SOLAS Convention – Appendix-certificate	1 July 2014
MSC.344(91)	3	Amendment to the Protocol of 1988 relating to SOLAS Convention – Appendix-certificate	1 July 2014
MSC.339(91)	3	Amendments to the FSS Code <ul style="list-style-type: none"> • Chapter 3, Section 2.1.2 - Breathing apparatus • Chapter 5 - Fixed Gas Fire-Extinguishing Systems • Chapter 7 - Fixed Pressure Water-Spraying and water-mist fire-extinguishing systems-sections 2.4 and 2.5 • Chapter 8 - Automatic Sprinkler, Fire Detection And Fire Alarm Systems • Chapter 9 - Fixed Fire Detection And Fire Alarm Systems • Chapter 12 - Fixed Emergency Fire Pumps • Chapter 13 - Arrangement of Means of Escape • Chapter 14 - Fixed Deck Foam Systems 	1 July 2014
MSC.340(91) (Note – adopted as Resolution MEPC.225(64) by MEPC 64)	3	Amendments to the IBC Code – chapters 17, 18 and 19	1 July 2014
MSC.341(91)	3	Amendments to Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin space of bulk carriers	1 July 2014
MSC.342(91)	3	Performance Standard For Protective Coatings For Cargo Oil Tanks Of Crude Oil Tankers (Resolution MSC.288(87))	1 July 2014
MSC.345(91)	3	The Protocol Of 1988 Relating To The International Convention On Load Lines, 1966, As Amended - •Annex I, Chapter III (Freeboards), Regulations (27/11) and 27/(13)	1 July 2014

Non-mandatory Resolutions

Instrument	Agenda item	Title	Expected entry into force/effective date
MSC.346(91)	3	MSC resolution on Implementation of SOLAS regulation III-17-1 to ships other than those engaged in international voyages	1 July 2014

Circulars

Instrument	Agenda item	Title	Expected entry into force/effective date
MSC-MEPC.2/Circ.11	2	Interim Guidelines For Determining Minimum Propulsion Power to Maintain The Manoeuvrability of Ships in Adverse Weather Conditions	1 Jan 2013
MSC.1/Circ.1447	3	MSC circular on Guidelines for development of plans and procedures for recovery of persons from water	1 July 2014
MSC.1/Circ.1446/Rev.1	7	Recommended interim measures for passenger ships companies to enhance the safety of passenger ships	Not specified
MSC-MEPC.7/Circ.8	11	Revised Guidelines for the operational implementation of the International Safety (ISM) Code by Companies	Not specified
MSC.1/Circ.1350/Rev.1	12	Revised MSC.1/Circ.1350 on Unified Interpretations of SOLAS regulation V/22.1.6 relating to navigation bridge visibility	Not specified
MSC.1/Circ.1369/Add.1	12	Revisions to interpretation Nos. 22 and 27 of appendix to MSC.1/Circ.1369 - Interim Explanatory Notes for the Assessment of Passenger Ship Systems' Capabilities After a Fire or Flooding Casualty, and issue an appropriate addendum	Not specified

Approved for adoption at MSC 92 (June 2013) - Mandatory instruments

Instrument	Agenda item	Title	Expected entry into force/effective date
SOLAS	7	Regulation III/19 Emergency training and drills	1 January 2015
ISM Code	11	Various sections	1 January 2015
SOLAS	13	Regulation III/19 Emergency training and drills	1 January 2015
CSC 1972	13	Various sections	1 January 2015

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