**The 100th session of the Maritime Safety Committee**

**3 to 7 December 2018**

***Proposed amendments to the 2011 ESP Code***

MSC 99 had approved draft amendments to the 2011 ESP Code with a view to adoption at this session.

MSC 100 has decided to hold the adoption of the draft amendments to the 2011 ESP Code in abeyance and invited IACS to work together with the Secretariat intersessionaly to prepare a revised set of draft amendments to the 2011 ESP Code.

The consolidated version of the 2019 draft ESP Code is expected to be finalized by SDC 6 for approval at MSC 101, with a view to adoption by A 31 as the 2019 ESP Code, superseding the 2011 ESP Code, as amended.

An associated SOLAS amendment would be prepared by SDC 6 to make the 2019 ESP Code mandatory, for submission to MSC 101 for approval with a view to subsequent adoption at MSC 102, following the adoption of the 2019 ESP Code by A 31.

***Draft amendments to the SPS Code***

MSC 99 had adopted amendments to SOLAS chapter IV and the appendix (Certificates) by resolution MSC.436(99) and an associated amendment to the 2008 SPS Code by resolution MSC.445(99).

MSC 99 had requested the Secretariat to prepare a draft MSC resolution on amendments to the SPS Code (resolution A.534(13)), incorporating the amendments adopted by MSC/Circ.739 and resolution MSC.183(79).

MSC 100 has adopted amendments to the SPS Code incorporating the amendments previously adopted by circular MSC/Circ.739 and resolution MSC.183(79), and the consequential amendment to the Record of Equipment.

The amendments should become effective on 1 January 2020, in conjunction with the entry into force of the amendments to SOLAS chapter IV and the appendix (Certificates) adopted by resolution MSC.436(99).

***Regulatory scoping exercise for the use of maritime autonomous surface ships (MASS)***

MSC 99 endorsed a framework for the scoping exercise and established a Correspondence Group on MASS. It had also agreed to the development of interim guidelines for MASS trials.

MSC 100 approved the framework for the regulatory scoping exercise, including the plan of work and procedures.

The aim of the regulatory scoping exercise is to determine how safe, secure and environmentally sound Maritime Autonomous Surface Ships (MASS) operations might be addressed in IMO instruments.

To facilitate the process of the regulatory scoping exercise, the degrees of autonomy are organized as follows:

Degree one: Ship with automated processes and decision support: Seafarers are on board to operate and control shipboard systems and functions. Some operations may be automated and at times be unsupervised but with seafarers on board ready to take control.

Degree two: Remotely controlled ship with seafarers on board: The ship is controlled and operated from another location. Seafarers are available on board to take control and to operate the shipboard systems and functions.

Degree three: Remotely controlled ship without seafarers on board: The ship is controlled and operated from another location. There are no seafarers on board.

Degree four: Fully autonomous ship: The operating system of the ship is able to make decisions and determine actions by itself.

The list of mandatory instruments related to maritime safety and security to be considered as part of the regulatory scoping exercise is as follows:

* COLREG 1972 – International Regulations for Preventing Collisions at Sea, 1972;
* CSC 1972 – International Convention for Safe Containers (CSC), 1972, as amended;
* LL 1966 – International Convention on Load Lines, 1966;
* LL PROT 1988 – Protocol of 1988 relating to the International Convention on Load Lines, 1966
* SAR 1979 – International Convention on Maritime Search and Rescue, 1979;
* SOLAS 1974 – International Convention for the Safety of Life at Sea, 1974, as amended;
* SOLAS AGR 1996 – Agreement concerning specific stability requirements for ro-ro passenger ships;
* SOLAS PROT 1978 – Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974;
* SOLAS PROT 1988 – Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974;
* SPACE STP 1973 – Protocol on Space Requirements for Special Trade Passenger Ships, 1973;
* STCW 1978 – International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended;
* STCW-F 1995 – International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel, 1995;
* STP 1971 – Special Trade Passenger Ships Agreement, 1971;
* TONNAGE 1969 – International Convention on Tonnage Measurement of Ships, 1969

As a first step, the regulatory scoping exercise will identify provisions in IMO instruments which, as currently drafted:

* apply to MASS and prevent MASS operations; or
* apply to MASS and do not prevent MASS operations and require no actions; or
* apply to MASS and do not prevent MASS operations but may need to be amended or clarified, and/or may contain gaps; or
* have no application to MASS operations.

Once the first step is completed, a second step will be conducted to analyze and determine the most appropriate way of addressing MASS operations:

* equivalences as provided for by the instruments or developing interpretations; and/or
* amending existing instruments; and/or
* developing new instruments; or
* none of the above as a result of the analysis.

Having noted the development of international standards for terminology and concepts for ship autonomy by ISO, MSC 100 invited interested Member States to participate in the work of ISO on this matter. However, MSC 100 has estimated that IMO should be the leading organization in defining the different degrees of autonomy and related terminology.

***Instruments and level of detail of their analysis***

The analysis of regulations/rules during the scoping exercise should be high level, i.e. at the level of rules and regulations, and that the review of mandatory instruments should be the priority.

MSC 100 agreed with the amendments proposed by the Correspondence Group to the "Methodology" section and made further modifications to the text in order to clarify that the second step (i.e. the analysis to determine the most appropriate way of addressing MASS operations) should only be conducted after completing the first step (i.e. the identification of rules/regulations in IMO instruments that apply or not to MASS).

The initial review of instruments could be conducted simultaneously by different volunteering Member States, in collaboration with interested international organizations.

Concerning the completion of the first step before moving into the second step, MSC 100 agreed that either the Committee or a group authorized by the Committee should review the results of the first step and decide whether the second step could commence or if further work would be required before commencing the second step.

Due to the time required to conduct the initial review of instruments and the deadlines for submissions of documents to MSC 101 (i.e. April 2019), it would not be possible to consider the results of the first step at MSC 101.

MSC 100 agreed to the holding of an intersessional MSC working group from 2 to 6 September 2019. the terms of reference of the intersessional MSC working group could be prepared at MSC 101, which should include the relevant authorization to review the results of the first step and to decide whether the second step could commence or not, on behalf of the Committee. By referring this work to an intersessional meeting, MSC 101 would be able to focus on the development of guidelines on MASS trials.

A summary with recommended actions should be prepared by each volunteering Member State and submitted to MSC 102 for final consideration with a view of completion of the regulatory scoping exercise at that session. In that view, a table containing information on Member States that had volunteered to lead or support the initial review of different instruments has been prepared.

***Interim guidelines for MASS trials***

MSC 99 invited interested Member States and international organizations to, inter alia, submit proposals to MSC 100 related to the development of interim guidelines for MASS trials, with the aim of establishing a harmonized international framework to test MASS operations.

MASS operations might be considered as a disruptive development, where technology precedes regulation. There is therefore a need to take a precautionary approach by, inter alia, developing guidelines for MASS trials.

Work is already in progress, and both Finland and Norway have established areas for the testing of MASS operations. In this context, Norway has taken an initiative to establish an informal correspondence group to draft interim guidelines for MASS trials.

Suggestion was made that IMO should provide similar guidance to allow tests of MASS in international voyages and to ensure that MASS is at least as safe as manned ships, with full consideration of the safety risks and human element.

MSC 100 agreed to the following provisional principles:

* the Guidelines should be developed as a single document addressing Administrations, the industry and other relevant stakeholders;
* the Guidelines should be not too technical or prescriptive;
* the Guidelines should be goal-based, describing functions and goals to be achieved;
* the Guidelines should include reporting to the relevant coastal State(s) on the trial(s) to be conducted, so as to enable the dissemination of information on the trials to all ships in the specified area;
* the Guidelines should provide that MASS trials are to be in line with mandatory instruments.

***Goal-based new ship construction standards (GBS)***

MSC 100 has noted the observations of the Audit Team and, in particular, concerns raised that the documentation package submitted by Türk Loydu was almost identical to that submitted by IACS members. The Audit Team was of the view that this "mirroring" might defeat the spirit of the GBS and the verification of the Tier II functional requirements and constituted a lack of incentive to improve ROs' rules after a successful initial verification audit.

Amendments to the draft Revised GBS Verification Guidelines to address cases where ship construction rules of ROs and Administrations incorporated publicly available third-party rules already approved by the Committee as GBS-conforming, have been drafted.

MSC 100 agreed to new text in paragraph 10.8 of the draft Revised guidelines, which required an RO or Administration, when using third-party rules, to ensure that procedures were in place as part of the internal quality management system for the regular review and continuous improvement of the submitted package. A Submitter who used third-party rules was ultimately responsible for its own rule content and the appropriateness of using the third-party rules and was therefore required to ensure that the submitted rules for GBS verification met the goals and functional requirements under the GBS.

G***BS maintenance of verification audit of the 12 IACS ROs***

MSC 96 had confirmed that the 12 IACS member ROs had demonstrated that their rules conformed to the Standards. MSC 98 had established that all non-conformities had been rectified. MSC 98 had subsequently confirmed that the whole process of the initial verification audit of the 12 IACS member ROs had been successfully completed.

In order to establish continued conformity with the Standards in accordance with the GBS Guidelines, maintenance of verification audits should be conducted on an annual basis. MSC 100 had for its consideration the final report of the GBS maintenance of verification audit of the 12 ROs that had requested an audit in order to establish conformity of their rule sets with the Standards, in accordance with the GBS Guidelines.

The Auditors had some difficulties in identifying what exactly constituted a rule change. Hence, a new definition of "rule change" was agreed to provide the necessary clarification:

*“Rule change means any text change to an existing rule or rule set already verified as conforming to the Standards”.*

***Draft amendments to the GBS Verification Guidelines***

MSC 99 approved, in principle, the draft MSC resolution on Revised guidelines for verification of conformity with goal-based ship construction standards for bulk carriers and oil tankers, with a view to subsequent adoption at MSC 100; and agreed that it should take effect one year after adoption.

MSC 100 has adopted Revised guidelines for verification of conformity with goal-based ship construction standards for bulk carriers and oil tankers.

Draft Interim guidelines for development and application of IMO goal-based standards safety level approach (GBS-SLA).

MSC 98 had made further progress on the development of the draft Interim guidelines by considering how to describe generically the process of developing IMO instruments using risk-based methods. MSC 99 had approved, in principle, the draft Interim guidelines for consideration at MSC 100 with a view to approval.

MSC 100 has approved MSC 1/Circ. Interim guidelines for development and application of IMO goal-based standards safety level approach (GBS-SLA).

***Experience gained in the application of the Generic guidelines for developing IMO goal-based standards***

MSC 100 has agreed to amend the Generic guidelines for developing IMO goal-based standards (MSC.1/Circ.1394/Rev.1).

MSC 97 agreed that SLA is an application of risk-based concepts in order to determine the safety level of regulations, with a view to developing or changing international regulations, within or outside the GBS approach and endorsed a work plan for the development of interim SLA guidelines.

MSC 100 has noted the difficulties encountered by the Organization when developing other goal-based instruments, such as the Polar Code, and agreed that when developing a goal-based regulation for new or novel subjects that mainly required high-level directions (e.g. MASS), the goal-based approach was easier to achieve than for highly technical existing regulations.

Work on goal-based rules should start by setting the goals first before identifying hazards and subsequent functional requirements, followed by the drafting of prescriptive regulations. A complete revision of the existing text should not be attempted and MSC 100 invited Member States and international organizations to submit proposals in this respect under the existing output "Verified goal-based new ship construction standards for tankers and bulk carriers"

***Safety measures for non-SOLAS ships operating in polar waters***

Canada and New Zealand have proposed amendments to SOLAS chapter XIV to mandate the Polar Code, part I-A, chapter 10, for all ships operating in polar waters to which SOLAS chapter IV applies, and chapters 9 and 11, for all ships operating in polar waters to which SOLAS chapter V applies, while maintaining the application of provisions of SOLAS regulation V/1.4 highlighting the following points:

* an important mitigating measure to avoid accidents at sea is to ensure that a vessel is equipped with sufficient and functioning navigational equipment and systems and that voyages are well planned; and
* well-functioning means of communication is also an important factor for safe navigation.

It was also suggested that an improvement in safety can be delivered by the application of the Polar Code, part I-A, chapters 9 (Safety of navigation), 10 (Communication) and 11 (Voyage planning), together with the required definitions, performance standards and operational assessment referred to in sections 1.2, 1.4 and 1.5 respectively of the Polar Code, part I-A, chapter 1 (General), as additional requirements to SOLAS chapters IV and V, as appropriate.

It was also suggested that certain methodologies for determining a ship's operational limitations in ice be made mandatory for non-SOLAS ships operating in polar waters; and that the carriage of the Polar Water Operational Manual (PWOM) (or equivalent) be made mandatory for such ships, together with the required definitions, performance standards and operational assessments.

MSC 100 had divergent views on widening the mandatory application of the Polar Code and some delegations expressed that any proposal on mandatory regulations would at this stage be premature.

***Methodologies for determining a ship's operational capabilities in ice and the mandatory carriage of a Polar Code's Polar Water Operational Manual (PWOM)***

Canada considers that ships should have on board specific procedures to be followed in normal operations and in the event that conditions are encountered which exceed the ship's specific capabilities and limitations.

A case can be made to make mandatory the carriage of a PWOM (or elements of it) and, therefore, the operational assessment required by section 1.5 for non-SOLAS ships, linking this requirement to proper voyage planning required by SOLAS regulation V/34.

MSC 100 has noted the importance of proper voyage planning, observing that it was mandatory to all ships pursuant to SOLAS regulation V/34.

It was also noted that though it was important that ships operating in polar waters had sufficient and relevant information to assess their capabilities and limitation in ice, smaller vessels were less likely to transit ice-infested waters. It was therefore agreed that more precise proposals justifying the need for a PWOM (or equivalent) and methodologies for determining a ship's operational capabilities in ice would be required in order to consider the issue further.

MSC 100 agreed, that as an interim measure, an appropriate resolution to urge Member States to take action, for example, to apply relevant provisions of the Polar Code, could be developed.

***Pollution prevention and response***

MSC 100 approved the draft amendments to the IBC the BCH Codes with a view to adoption at MSC 101.

The Committee acknowledged that urgent actions were required to address the safety implications associated with the use of low-Sulphur fuel oil, but also long-term solutions to enhance the safety of ships relating to the use of fuel oil.

MSC 100 has agreed to include in its biennial agenda an output on "Development of further measures to enhance the safety of ships relating to the use of fuel oil", with a target completion year of 2021 and an associated scope of work as follows:

"Based on the review of existing safety provisions for fuel oil and information concerning the safety implications associated with the use of fuel oil, develop further measures to enhance the safety of ships relating to the use of fuel oil."

***GISIS module for fuel oil safety matters***

MSC 101 supported the enhancement of GISIS to provide greater granularity in fuel safety reports and invited MEPC 74 to advise MSC 101 on improvements to GISIS in this regard, e.g. update of existing GISIS modules or creation of a new module.

GISIS should be improved to provide greater granularity in fuel quality and safety reports, which are uploaded onto the system by creating a new GISIS module for fuel oil safety matters.

***MSC circular on ensuring fuel suppliers deliver compliant fuels***

As the above proposals would take time to implement and would not achieve immediate safety, it was proposed that, in the interim, MSC adopts an MSC circular recommending that all Member States should take appropriate action to ensure that fuel suppliers under their jurisdiction deliver fuels that comply with the agreed specifications and applicable statutory requirements outlined in the Guidance on Best Practice for Fuel Oil Purchasers/Users for Assuring the Quality of Fuel Oil Used on Board Ships (MEPC.1/Circ.875).

Delegates broadly supported the development of a draft circular recommending that all Member States took appropriate action to ensure that fuel suppliers under their jurisdiction delivered compliant fuels.

PPR 6 has been instructed to develop a joint MSC-MEPC circular addressing the delivery of compliant fuels by suppliers, with a view to approval by MEPC 74 and MSC 101.

***Ship systems and equipment***

MSC 100 has approved the draft amendment to paragraph 6.1.1.3 of the LSA Code, with a view to adoption at MSC 101 and an entry into force in 1 January 2024.

Notwithstanding that a similar expression is found in SOLAS regulation III/11.8, IACS has identified a need to clarify what is acceptable in the context of the draft amended paragraph 6.1.1.3 of the LSA Code, with a view to facilitating its global and consistent application.

Japan and IACS also considered that the application of the aforementioned draft amendment should only apply to the equipment certified on or after the date the amendment will enter into force.

The corresponding amendments were not agreed and these topics were referred to SDC 6.

MSC 100 approved MSC.1/Circ.1430/Rev.1 on Revised guidelines for the design and approval of fixed water-based fire-fighting systems for ro-ro spaces and special category spaces.

MSC 100 agreed to amend the application date of the draft Revised guidelines to 1 January 2021.

***Scope of application of new requirements for onboard lifting appliances and anchor handling winches (OLAW)***

MSC 100 had for its consideration how the scope of application of the new requirements for onboard lifting appliances and anchor handling winches should be specified.

SSE 5 considered the scope of application of the new requirements for onboard lifting appliances and anchor handling winches (OLAW); in particular, the three options:

* a "list of inclusions";
* a "list of inclusions with some exclusions"; or
* a "list of exclusions".

SSE previously endorsed the view that the scope should not be limited to cargo-handling lifting appliances

Noting the opinion that a list of inclusions with some exclusions could provide a better coverage of the application, MSC 100 instructed SSE 6 to further consider which lifting appliances and winches should be indicated in the draft amendments.

It was agreed that the following principles should be applied when further developing the scope of application:

* the approach to establishing scope of application should be consistent with the approach in SOLAS regulation I/2 and I/3,
* the list of inclusions should be limited to the high risk appliances where the need for regulation has been demonstrated and should replace the current draft definition of lifting appliance; and
* any exclusions should be limited to sub-groups within the scope of application only.

The Plenary agreed that offshore construction ships should be excluded.

***Draft amendments to paragraph 2.2 of chapter 15 of the FSS Code***

MSC 100 approved draft amendments to paragraph 2.2 of chapter 15 of the FSS Code, aiming to provide a unified understanding of arrangements for inert gas lines and related indicators and alarms for monitoring the pressure of the inert gas mains, with a view to adoption at MSC 101.

These amendments, if adopted, should enter into force on 1 January 2024.

IACS proposed to develop a unified interpretation clarifying the term "forward of" as used in chapter 15 (Inert gas systems) of the FSS Code. It suggested that SSE considers the benefits of developing a longer term solution, which would be to prepare draft amendments to the Code to replace the term "forward of" with the unambiguous wording "downstream of" and "upstream of," as appropriate.

SSE 5 agreed that the words "forward of", which are used in paragraphs 2.2.3.2.1, 2.2.3.2.6 and 2.2.4.2.1 of chapter 15 of the FSS Code, should read "downstream of". This issue will be addressed by MSC 101.

MSC 100 has approved MSC.1/Circ.1582/Rev.1 on Revised unified interpretations of chapter 15 of the FSS Code as an interim solution prior to the entry into force of the draft amendments to paragraph 2.2 of chapter 15 of the FSS Code

***Unified Interpretation of paragraph 4.4.8.1 of the LSA Code***

MSC 100 approved Unified interpretation of paragraph 4.4.8.1 of the LSA Code.

It is aimed to exempt lifeboats with two independent propulsion systems from being equipped with sufficient buoyant oars and their related items (thole pins, crutches or equivalent arrangements) to make headway in calm seas.

The text of the Unified Interpretation is as follows:

*"For a lifeboat equipped with two independent propulsion systems, where the arrangement consists of two separate engines, shaft lines, fuel tanks, piping systems and any other associated ancillaries, paragraph 4.4.8.1 of the LSA Code need not be applied. For all other aspects, the lifeboat should be in full compliance with paragraph 4.4.8 of the LSA Code."*

***Proposed amendments to Records of Equipment (Forms C, E and P of the appendix to the SOLAS Convention)***

MSC 100 approved draft amendments to the Records of Equipment, Forms C, E and P, with a view to adoption at MSC 101.

An inconsistency in interpreting item 8.1 on "Rudder, propeller, thrust, pitch and operational mode indicator" in the Records of Equipment, Forms C, E and P was contained in the appendix to the SOLAS Convention.

***Human element, training and watchkeeping***

MSC 100 has adopted resolution MSC.(100) on Amendments to sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f and B-V/g of the STCW Code, which are consequential to the adoption of amendments to the 1978 STCW Convention, as amended, and the STCW Code by resolutions MSC.416(97) and MSC.417(97), respectively, relating to the Polar Code.

***Carriage of cargoes and containers***

MSC 100 approved the amendments to parts A and A-1 of the IGF Code, with a view to adoption at MSC 101.

MSC 99 had agreed to hold the approval of draft amendments to parts A and A-1 of the IGF Code in abeyance and instructed CCC 5, taking into account the proposal of the inclusion of an alternative solution to protect against leakage, to reconsider the draft amendments to regulation 9.5.6 and report the outcome to MSC 100.

MSC 100 concurred with the conclusion of CCC 5 that no further changes to regulation 9.5.6 regarding an alternative solution to protect against leakage were needed.

MSC 100 approved Interim guidelines on the application of high manganese austenitic steel for cryogenic service.

A footnote in the IGC and IGF Codes, respectively, containing a reference to the Interim guidelines, will be inserted.

While the application of the Interim guidelines was initially limited to steel plates for the construction of LNG fuel tanks under the provisions of the IGF Code, the scope had been expanded to include also LNG cargo tanks, subject to the IGC Code.

***Coming issues***

MSC 100 has agreed to the proposal to expand the applicability of the requirements of SOLAS regulation II-1/25 for cargo hold water level detectors by developing a new SOLAS regulation applying to cargo ships with multiple cargo holds.

MSC 100 agreed to revise ECDIS – Guidance for good practice (MSC.1/Circ.1503/Rev.1) with a view to improving the unified implementation of ECDIS type approval when approving ECDIS's software and relevant updates.

MSC 100 agreed to revise the Inspection programs for cargo transport units carrying dangerous goods (MSC.1/Circ.1442, as amended by MSC.1/Circ.1521), in order to broaden the inspection programs for cargo transport units (CTUs).

MSC 100 agreed to expand the output on "Suitability of high manganese austenitic steel for cryogenic service and development of any necessary amendments to the IGC and IGF Codes" to include related guidance for approving alternative metallic material for cryogenic service.

***Other issues***

It has been proposed to establish a fully independent, international quality assessment review body, namely, the International Quality Assessment Review Body (IQARB) for the QSCS, for an initial trial.

The various delegations which spoke welcomed the project favorably and were pleased that the IMO Secretariat is actively participating in this trial. The IMO will host the meetings, but this experiment should not cost the Organization anything. Finally, the MSC is to be kept informed of its results.

It has been proposed the Russian Federation is to initiate a study related to all issues of Fibre Reinforced Plastic (FRP) material usage in the maritime industry and to consolidate the available experience, as well as to consider a new output for the development of IMO requirements on design, construction and survey of seagoing vessels (including Maritime Autonomous Surface Ships (MASS)) with FRP hulls and/or FRP structures contributing to global strength.

The Plenary welcome this proposal and invited Russian federation to make a dedicated submission for a new output.