

MARITIME SAFETY COMMITTEE
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Agenda item 21

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**REPORT OF THE MARITIME SAFETY COMMITTEE ON
ITS NINETY-FOURTH SESSION**

Attached are annexes 1 to 21 and 23 to 29 to the report of the Maritime Safety Committee on its ninety-fourth session (MSC 94/21).

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ANNEX 1

**RESOLUTION MSC.380(94)
(adopted on 21 November 2014)**

**AMENDMENTS TO THE INTERNATIONAL CONVENTION
FOR THE SAFETY OF LIFE AT SEA (SOLAS), 1974, AS AMENDED**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO article VIII(b)(vi)(2) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"), concerning the amendment procedure applicable to the annex to the Convention, other than to the provisions of chapter I,

HAVING CONSIDERED, at its ninety-fourth session, amendments to the Convention, proposed and circulated in accordance with article VIII(b)(i) thereof,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 January 2016 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments, the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified to the Secretary-General of the Organization their objections to the amendments;

3 INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2016 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention; and

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE
SAFETY OF LIFE AT SEA (SOLAS), 1974, AS AMENDED**

**CHAPTER II-2
CONSTRUCTION – PROTECTION, FIRE DETECTION AND FIRE EXTINCTION**

**Part C
Suppression of fire**

Regulation 10 – Fire fighting

1 The title of existing paragraph 5.2 is replaced as follows:

"5.2 Machinery spaces of category A containing internal combustion machinery"

**CHAPTER VI
CARRIAGE OF CARGOES AND OIL FUELS**

**Part A
General Provisions**

Regulation 2 – Cargo information

2 The following new paragraphs 4 to 6 are added after existing paragraph 3:

"4 In the case of cargo carried in a container^{*}, except for containers carried on a chassis or a trailer when such containers are driven on or off a ro-ro ship engaged in short international voyages as defined in regulation III/3, the gross mass according to paragraph 2.1 of this regulation shall be verified by the shipper, either by:

- .1 weighing the packed container using calibrated and certified equipment; or
- .2 weighing all packages and cargo items, including the mass of pallets, dunnage and other securing material to be packed in the container and adding the tare mass of the container to the sum of the single masses, using a certified method approved by the competent authority of the State in which packing of the container was completed.

5 The shipper of a container shall ensure the verified gross mass^{**} is stated in the shipping document. The shipping document shall be:

- .1 signed by a person duly authorized by the shipper; and
- .2 submitted to the master or his representative and to the terminal representative sufficiently in advance, as required by the master or his representative, to be used in the preparation of the ship stowage plan^{***}.

6 If the shipping document, with regard to a packed container, does not provide the verified gross mass and the master or his representative and the terminal representative have not obtained the verified gross mass of the packed container, it shall not be loaded on to the ship.

* The term "container" should be considered as having the same meaning as defined and applied in the International Convention for Safe Containers (CSC), 1972, as amended, taking into account the *Guidelines for the approval of offshore containers handled in open seas* (MSC/Circ.860) and the *Revised recommendations on harmonized interpretation and implementation of the International Convention for Safe Containers, 1972, as amended* (CSC.1/Circ.138/Rev.1).

** Refer to the *Guidelines regarding the verified gross mass of a container carrying cargo* (MSC.1/Circ.1475).

*** This document may be presented by means of EDP or EDI transmission techniques. The signature may be an electronic signature or may be replaced by the name, in capitals, of the person authorized to sign."

CHAPTER XI-1 SPECIAL MEASURES TO ENHANCE MARITIME SAFETY

3 The following new regulation 7 is added after existing regulation 6:

"Regulation 7 – Atmosphere testing instrument for enclosed spaces

Every ship to which chapter I applies shall carry an appropriate portable atmosphere testing instrument or instruments*. As a minimum, these shall be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces**. Instruments carried under other requirements may satisfy this regulation. Suitable means shall be provided for the calibration of all such instruments.

* Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7* (MSC.1/Circ.1477).

** Refer to the *Revised recommendations for entering enclosed spaces aboard ships* (resolution A.1050(27))."

APPENDIX
CERTIFICATES

Record of Equipment for Cargo Ship Safety (Form C)
Record of Equipment for Cargo Ship Safety (Form E)

4 Section 2 of the Record of Equipment for Cargo Ship Safety (Form C) and the Record of Equipment for Cargo Ship Safety (Form E), is replaced with the following:

"2 **Details of life-saving appliances**

1	Total number of persons for which life-saving appliances are provided	Port Side	Starboard Side
2	Total number of davit launched lifeboats	.....	.....
2.1	Total number of persons accommodated by them	.....	.....
2.2	Number of self-righting partially enclosed lifeboats (regulation III/43 ¹)	.....	.....
2.3	Number of totally enclosed lifeboats (regulation III/31 and LSA Code, section 4.6)	.....	.....
2.4	Number of lifeboats with a self-contained air support system (regulation III/31 and LSA Code, section 4.8)	.....	.....
2.5	Number of fire-protected lifeboats (regulation III/31 and LSA Code, section 4.9)	.....	.....
2.6	Other lifeboats	.....	.....
2.6.1	Number	.....	.....
2.6.2	Type	.....	.....
3	Total number of free-fall lifeboats	.....	.....
3.1	Total number of persons accommodated by them	.....	.....
3.2	Number of totally enclosed lifeboats (regulation III/31 and LSA Code, section 4.7)	.....	.....
3.3	Number of lifeboats with a self-contained air support system (regulation III/31 and LSA Code, section 4.8)	.....	.....
3.4	Number of fire-protected lifeboats (regulation III/31 and LSA Code, section 4.9)	.....	.....
4	Number of motor lifeboats (included in the total lifeboats shown in 2 and 3 above)	.....	.....
4.1	Number of lifeboats fitted with searchlights	.....	.....
5	Number of rescue boats	.....	.....
5.1	Number of boats which are included in the total lifeboats shown in 2 and 3 above	.....	.....
6	Liferafts	.....	.....
6.1	Those for which approved launching appliances are required	.....	.....
6.1.1	Number of liferafts	.....	.....

1 Refer to the 1983 amendments to SOLAS (MSC.6(48)), applicable to ships constructed on or after 1 July 1986, but before 1 July 1998.

2 **Details of life-saving appliances** (continued)

6.1.2	Number of persons accommodated by them	.....
6.2	Those for which approved launching appliances are not required	
6.2.1	Number of liferafts	.....
6.2.2	Number of persons accommodated by them	.....
6.3	Number of liferafts required by regulation III/31.1.4	.....
7	Number of lifebuoys	.....
8	Number of lifejackets	.....
9	Immersion suits	
9.1	Total number	.....
9.2	Number of suits complying with the requirements for lifejackets	.....
10	Number of anti-exposure suits	.....
11	Radio installations used in life-saving appliances	
11.1	Number of search and rescue locating devices	
11.1.1	Radar search and rescue transponders (SART)	.....
11.1.2	AIS search and rescue transmitters (AIS-SART)	.....
11.2	Number of two-way VHF radiotelephone apparatus	.....

ANNEX 2

**RESOLUTION MSC.381(94)
(adopted on 21 November 2014)**

**AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME
OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS
AND OIL TANKERS, 2011 (2011 ESP CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution A.1049(27), by which the Assembly adopted the International Code on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers, 2011 ("the 2011 ESP Code"), will become effective upon entry into force of the associated amendments to chapter XI-1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

HAVING CONSIDERED, at its ninety-fourth session, amendments to the 2011 ESP Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the 2011 ESP Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2016 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified to the Secretary-General of the Organization their objections to the amendments;

3 INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2016 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME
OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS
AND OIL TANKERS, 2011 (2011 ESP CODE)**

ANNEX A

**CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF
BULK CARRIERS**

Part A

**CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF
BULK CARRIERS HAVING SINGLE-SIDE SKIN CONSTRUCTION**

- 1 The text in paragraph 5.3.2.3 is replaced by the following:

"3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"
- 2 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment
If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."
- 3 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.
- 4 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.
- 5 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.
- 6 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:

"6.1.3 For bulk carriers subject to SOLAS regulation II-1/3-10, the owner should arrange the updating of the Ship Construction File (SCF) throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF should be included within the Safety Management System."
- 7 The existing text under paragraph 6.3 is numbered as paragraph 6.3.1 and the following new paragraph 6.3.2 is added at the end of paragraph 6.3:

"6.3.2 For bulk carriers subject to SOLAS regulation II-1/3-10, the Ship Construction File (SCF), limited to the items to be retained on board, should be available on board."

- 8 The existing text under paragraph 6.4 is numbered as paragraph 6.4.1 and the following new paragraphs 6.4.2 and 6.4.3 are added at the end of paragraph 6.4:

"6.4.2 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify that the update of the Ship Construction File (SCF) has been done whenever a modification of the documentation included in the SCF has taken place.

6.4.3 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials."

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING DOUBLE-SIDE SKIN CONSTRUCTION

- 9 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

- 10 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

- 11 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

- 12 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

- 13 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

- 14 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:

"6.1.3 For bulk carriers subject to SOLAS regulation II-1/3-10, the Owner should arrange the updating of the Ship Construction File (SCF) throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF should be included within the Safety Management System."

- 15 The existing text under paragraph 6.3 is numbered as paragraph 6.3.1 and the following new paragraph 6.3.2 is added at the end of paragraph 6.3:

"6.3.2 For bulk carriers subject to SOLAS regulation II-1/3-10, the Ship Construction File (SCF), limited to the items to be retained on board, should be available on board."

16 The existing text under paragraph 6.4 is numbered as paragraph 6.4.1 and the following new paragraphs 6.4.2 and 6.4.3 are added at the end of paragraph 6.4:

"6.4.2 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify that the update of the Ship Construction File (SCF) has been done whenever a modification of the documentation included in the SCF has taken place.

6.4.3 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials."

ANNEX B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF DOUBLE-HULL OIL TANKERS

17 The text in paragraph 2.6.1 is replaced by the following new text:

"2.6.1 The minimum requirements for ballast tank pressure testing at the renewal survey are given in 2.6.3 and in annex 3.

The minimum requirements for cargo tank testing at the renewal survey are given in 2.6.4 and annex 3.

Cargo tank testing carried out by the vessel's crew under the direction of the master may be accepted by the surveyor provided the following conditions are complied with:

- .1 the tank testing procedure has been submitted by the owner and reviewed by the Administration or recognized organization prior to the testing being carried out;
- .2 there is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;
- .3 the tank testing has been satisfactorily carried out within special survey window not more than 3 months prior to the date of the survey on which the overall or close up survey is completed;
- .4 the satisfactory results of the testing is recorded in the vessel's logbook; and
- .5 the internal and external condition of the tanks and associated structure are found satisfactory by the surveyor at the time of the overall and close up survey."

- 18 The text in paragraph 5.3.2.3 is replaced by the following:
- "3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"
- 19 The following new paragraph 5.5 is added after the existing paragraph 5.4:
- "5.5 Rescue and emergency response equipment
- If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."
- 20 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.
- 21 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.
- 22 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.
- 23 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:
- "6.1.3 For oil tankers subject to SOLAS regulation II-1/3-10, the Owner should arrange the updating of the Ship Construction File (SCF) throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF should be included within the Safety Management System."
- 24 The existing text under paragraph 6.3 is numbered as paragraph 6.3.1 and the following new paragraph 6.3.2 is added at the end of paragraph 6.3:
- "6.3.2 For oil tankers subject to SOLAS regulation II-1/3-10, the Ship Construction File (SCF), limited to the items to be retained on board, should be available on board."
- 25 The existing text under paragraph 6.4 is numbered as paragraph 6.4.1 and the following new paragraphs 6.4.2 and 6.4.3 are added at the end of paragraph 6.4:
- "6.4.2 For oil tankers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify that the update of the Ship Construction File (SCF) has been done whenever a modification of the documentation included in the SCF has taken place.
- 6.4.3 For oil tankers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials."

Part B

**CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS
DURING SURVEYS OF OIL TANKERS OTHER THAN
DOUBLE-HULL OIL TANKERS**

26 The text in paragraph 2.6.1 is replaced by the following new text:

"2.6.1 The minimum requirements for ballast tank pressure testing at the renewal survey are given in 2.6.3 and in annex 3.

The minimum requirements for cargo tank testing at the renewal survey are given in 2.6.4 and annex 3.

Cargo tank testing carried out by the vessel's crew under the direction of the master may be accepted by the surveyor provided the following conditions are complied with:

- .1 the tank testing procedure has been submitted by the owner and reviewed by the Administration or recognized organization prior to the testing being carried out;
- .2 there is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;
- .3 the tank testing has been satisfactorily carried out within special survey window not more than 3 months prior to the date of the survey on which the overall or close up survey is completed;
- .4 the satisfactory results of the testing is recorded in the vessel's logbook; and
- .5 the internal and external condition of the tanks and associated structure are found satisfactory by the surveyor at the time of the overall and close up survey."

27 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

28 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

29 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

30 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

31 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

ANNEX 3

**RESOLUTION MSC.382(94)
(adopted on 21 November 2014)**

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF
MOBILE OFFSHORE DRILLING UNITS (MODU CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO that the Assembly, when adopting resolution A.414(XI) on the *Code for the Construction and Equipment of Mobile Offshore Drilling Units* (MODU Code), authorized the Committee to amend the Code as necessary after due consultation with relevant organizations as the Committee deems necessary,

RECOGNIZING the need for introduction into this Code of provisions for enclosed space entry and rescue drills,

HAVING CONSIDERED, at its ninety-fourth session, the recommendations made by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its eighteenth session,

- 1 ADOPTS amendments to the MODU Code, set out in the annex to the present resolution;
- 2 INVITES all Governments concerned to take appropriate steps to give effect to the annexed amendments to the Code by 1 July 2016.

ANNEX

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF
MOBILE OFFSHORE DRILLING UNITS (MODU CODE)**

- 1 After chapter 14 "Operation requirements", insert new chapter 15 as follows:

"CHAPTER 15

SPECIAL MEASURES TO ENHANCE SAFETY

15.1 Atmosphere testing instrument for enclosed spaces

15.1.1 Each unit should carry an appropriate portable atmosphere testing instrument or instruments*. As a minimum, these should be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces**. Instruments carried under other requirements may satisfy this regulation. Suitable means should be provided for the calibration of all such instruments.

15.1.2 Such instruments should be in addition to those provided with the unit's firemen's outfits.

* Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7 (MSC.1/Circ.1477)*.

** Refer to the *Revised recommendations for entering enclosed spaces aboard ships (resolution A.1050(27))*."

ANNEX 4

**RESOLUTION MSC.383(94)
(adopted on 21 November 2014)**

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF
MOBILE OFFSHORE DRILLING UNITS, 1989 (1989 MODU CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO that the Assembly, when adopting resolution A.649(16) on the *Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1989* (1989 MODU Code), authorized the Committee to amend the Code, when appropriate, taking into consideration the developing design and safety features after due consultation with appropriate organizations,

RECOGNIZING the need for introduction into this Code of provisions for enclosed space entry and rescue drills,

HAVING CONSIDERED, at its ninety-fourth session, the recommendations made by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its eighteenth session,

1 ADOPTS amendments to the 1989 MODU Code, set out in the annex to the present resolution;

2 INVITES all Governments concerned to take appropriate steps to give effect to the annexed amendments to the 1989 MODU Code by 1 July 2016.

ANNEX

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF
MOBILE OFFSHORE DRILLING UNITS, 1989 (1989 MODU CODE)**

- 1 After chapter 14 "Operating requirements", insert new chapter 15 as follows:

"CHAPTER 15

SPECIAL MEASURES TO ENHANCE SAFETY

15.1 Atmosphere testing instrument for enclosed spaces

15.1.1 Each unit should carry an appropriate portable atmosphere testing instrument or instruments*. As a minimum, these should be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces**. Instruments carried under other requirements may satisfy this regulation. Suitable means should be provided for the calibration of all such instruments.

15.1.2 Such instruments should be in addition to those provided with the unit's firemen's outfits.

* Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7* (MSC.1/Circ.1477).

** Refer to the *Revised recommendations for entering enclosed spaces aboard ships* (resolution A.1050(27))."

ANNEX 5

**RESOLUTION MSC.384(94)
(adopted on 21 November 2014)**

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF
MOBILE OFFSHORE DRILLING UNITS, 2009 (2009 MODU CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO that the Assembly, when adopting resolution A.1023(26) on the *Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code)*, authorized the Committee to amend the Code as appropriate, taking into consideration development in the design and technologies, in consultation with appropriate organizations,

RECOGNIZING the need for introduction into this Code of provisions for enclosed space entry and rescue drills,

HAVING CONSIDERED, at its ninety-fourth session, the recommendations made by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its eighteenth session,

1 ADOPTS amendments to the 2009 MODU Code, set out in the annex to the present resolution;

2 INVITES all Governments concerned to take appropriate steps to give effect to the annexed amendments to the 2009 MODU Code by 1 July 2016.

ANNEX

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF
MOBILE OFFSHORE DRILLING UNITS, 2009 (2009 MODU CODE)**

- 1 After chapter 14 "Operating requirements", insert new chapter 15 as follows:

"CHAPTER 15

SPECIAL MEASURES TO ENHANCE SAFETY

15.1 Atmosphere testing instrument for enclosed spaces

15.1.1 Each unit should carry an appropriate portable atmosphere testing instrument or instruments*. As a minimum, these should be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces**. Instruments carried under other requirements may satisfy this regulation. Suitable means should be provided for the calibration of all such instruments.

15.1.2 Such instruments should be in addition to those provided with the unit's firefighter's outfits.

* Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7* (MSC.1/Circ.1477).

** Refer to the *Revised recommendations for entering enclosed spaces aboard ships* (resolution A.1050(27))."

ANNEX 6

**RESOLUTION MSC.385(94)
(adopted on 21 November 2014)**

INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS (POLAR CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING article 28(b) of the Convention on the International Maritime Organization concerning the function of the Committee,

RECOGNIZING the need to provide a mandatory framework for ships operating in polar waters due to the additional demands on ships, their systems and operation, which go beyond the existing requirements of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended ("the Convention"), and other relevant binding IMO instruments,

NOTING resolution MSC.386(94), by which it adopted, inter alia, the new chapter XIV of the Convention,

NOTING ALSO that the Marine Environment Protection Committee, at its sixty-seventh session, approved with a view to adoption, at its sixty-eighth session, the Introduction, as it relates to environmental protection, and parts II-A and II-B of the International Code for Ships Operating in Polar Waters (Polar Code), and also considered for adoption relevant amendments to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol,

HAVING CONSIDERED, at its ninety-fourth session, the draft International Code for Ships Operating in Polar Waters,

1 ADOPTS the safety-related provisions of the Introduction, and the whole of parts I-A and I-B of the Polar Code, the text of which is set out in the annex to the present resolution;

2 AGREES that amendments to the Introduction of the Polar Code that address both safety and environmental protection shall be adopted in consultation with the Marine Environment Protection Committee;

3 INVITES Contracting Governments to the Convention to note that the Polar Code will take effect on 1 January 2017 upon entry into force of the new chapter XIV of the Convention;

4 INVITES ALSO Contracting Governments to consider the voluntary application of the Polar Code, as far as practicable, also to ships not covered by the Polar Code and operating in polar waters.

5 REQUESTS the Secretary-General of the Organization, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the Polar Code, contained in the annex, to all Contracting Governments to the Convention;

6 REQUESTS ALSO the Secretary-General of the Organization to transmit copies of the present resolution and the text of the Code contained in the annex to all Members of the Organization which are not Contracting Governments to the SOLAS Convention;

7 REQUESTS FURTHER the Secretary-General to prepare a consolidated text of the Polar Code upon adoption of the environmental protection related provisions by the Marine Environment Protection Committee.

INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS (POLAR CODE)

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PREAMBLE

1 The International Code for Ships Operating in Polar Waters has been developed to supplement existing IMO instruments in order to increase the safety of ships' operation and mitigate the impact on the people and environment in the remote, vulnerable and potentially harsh polar waters.

2 The Code acknowledges that polar water operation may impose additional demands on ships, their systems and operation beyond the existing requirements of the International Convention for the Safety of Life at Sea (SOLAS), 1974, the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol relating thereto (MARPOL), as amended, and other relevant binding IMO instruments.

3 The Code acknowledges that the polar waters impose additional navigational demands beyond those normally encountered. In many areas, the chart coverage may not currently be adequate for coastal navigation. It is recognized even existing charts may be subject to unsurveyed and uncharted shoals.

4 The Code also acknowledges that coastal communities in the Arctic could be, and that polar ecosystems are, vulnerable to human activities, such as ship operation.

5 The relationship between the additional safety measures and the protection of the environment is acknowledged as any safety measure taken to reduce the probability of an accident, will largely benefit the environment.

6 While Arctic and Antarctic waters have similarities, there are also significant differences. Hence, although the Code is intended to apply as a whole to both Arctic and Antarctic, the legal and geographical differences between the two areas have been taken into account.

7 The key principles for developing the Polar Code have been to use a risk-based approach in determining scope and to adopt a holistic approach in reducing identified risks.

INTRODUCTION

1 Goal

The goal of this Code is to provide for safe ship operation and the protection of the polar environment by addressing risks present in polar waters and not adequately mitigated by other instruments of the Organization.

2 Definitions

For the purpose of this Code, the terms used have the meanings defined in the following paragraphs. Terms used in part I-A, but not defined in this section shall have the same meaning as defined in SOLAS. Terms used in part II-A, but not defined in this section shall have the same meaning as defined in article 2 of MARPOL and the relevant MARPOL Annexes.

2.1 *Category A ship* means a ship designed for operation in polar waters in at least medium first-year ice, which may include old ice inclusions.

2.2 *Category B ship* means a ship not included in category A, designed for operation in polar waters in at least thin first-year ice, which may include old ice inclusions.

2.3 *Category C ship* means a ship designed to operate in open water or in ice conditions less severe than those included in categories A and B.

2.4 *First-year ice* means sea ice of not more than one winter growth developing from young ice with thickness from 0.3 m to 2.0 m¹.

2.5 *Ice free waters* means no ice present. If ice of any kind is present this term shall not be used¹.

2.6 *Ice of land origin* means ice formed on land or in an ice shelf, found floating in water¹.

2.7 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol relating thereto (MARPOL), as amended.

2.8 *Medium first-year ice* means first-year ice of 70 cm to 120 cm thickness.¹

2.9 *Old ice* means sea ice which has survived at least one summer's melt; typical thickness up to 3 m or more. It is subdivided into residual first-year ice, second-year ice and multi-year ice¹.

2.10 *Open water* means a large area of freely navigable water in which sea ice is present in concentrations less than 1/10. No ice of land origin is present¹.

2.11 *Organization* means the International Maritime Organization.

2.12 *Sea ice* means any form of ice found at sea which has originated from the freezing of sea water¹.

¹ Refer to the WMO Sea Ice Nomenclature.

2.13 SOLAS means the International Convention for the Safety of Life at Sea, 1974, as amended.

2.14 STCW Convention means the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended.

2.15 Thin first-year ice means first-year ice 30 cm to 70 cm thick.

3 Sources of hazards

3.1 The Polar Code considers hazards which may lead to elevated levels of risk due to increased probability of occurrence, more severe consequences, or both:

- .1 Ice, as it may affect hull structure, stability characteristics, machinery systems, navigation, the outdoor working environment, maintenance and emergency preparedness tasks and malfunction of safety equipment and systems;
- .2 experiencing topside icing, with potential reduction of stability and equipment functionality;
- .3 low temperature, as it affects the working environment and human performance, maintenance and emergency preparedness tasks, material properties and equipment efficiency, survival time and performance of safety equipment and systems;
- .4 extended periods of darkness or daylight as it may affect navigation and human performance;
- .5 high latitude, as it affects navigation systems, communication systems and the quality of ice imagery information;
- .6 remoteness and possible lack of accurate and complete hydrographic data and information, reduced availability of navigational aids and seamarks with increased potential for groundings compounded by remoteness, limited readily deployable SAR facilities, delays in emergency response and limited communications capability, with the potential to affect incident response;
- .7 potential lack of ship crew experience in polar operations, with potential for human error;
- .8 potential lack of suitable emergency response equipment, with the potential for limiting the effectiveness of mitigation measures;
- .9 rapidly changing and severe weather conditions, with the potential for escalation of incidents; and
- .10 the environment with respect to sensitivity to harmful substances and other environmental impacts and its need for longer restoration.

3.2 The risk level within polar waters may differ depending on the geographical location, time of the year with respect to daylight, ice-coverage, etc. Thus, the mitigating measures required to address the above specific hazards may vary within polar waters and may be different in Arctic and Antarctic waters.

4 Structure of the Code

This Code consists of Introduction, parts I and II. The Introduction contains mandatory provisions applicable to both parts I and II. Part I is subdivided into part I-A, which contains mandatory provisions on safety measures, and part I-B containing recommendations on safety. Part II is subdivided into part II-A, which contains mandatory provisions on pollution prevention, and part II-B containing recommendations on pollution prevention.

- 5 **Figures illustrating the Antarctic area and Arctic waters, as defined in SOLAS regulations XIV/1.2 and XIV/1.3, respectively, and MARPOL Annex I, regulations 11.46.2; Annex II, regulations 10.21.2; Annex IV, regulation 7.17.3; and Annex V, regulation 3.13.2**

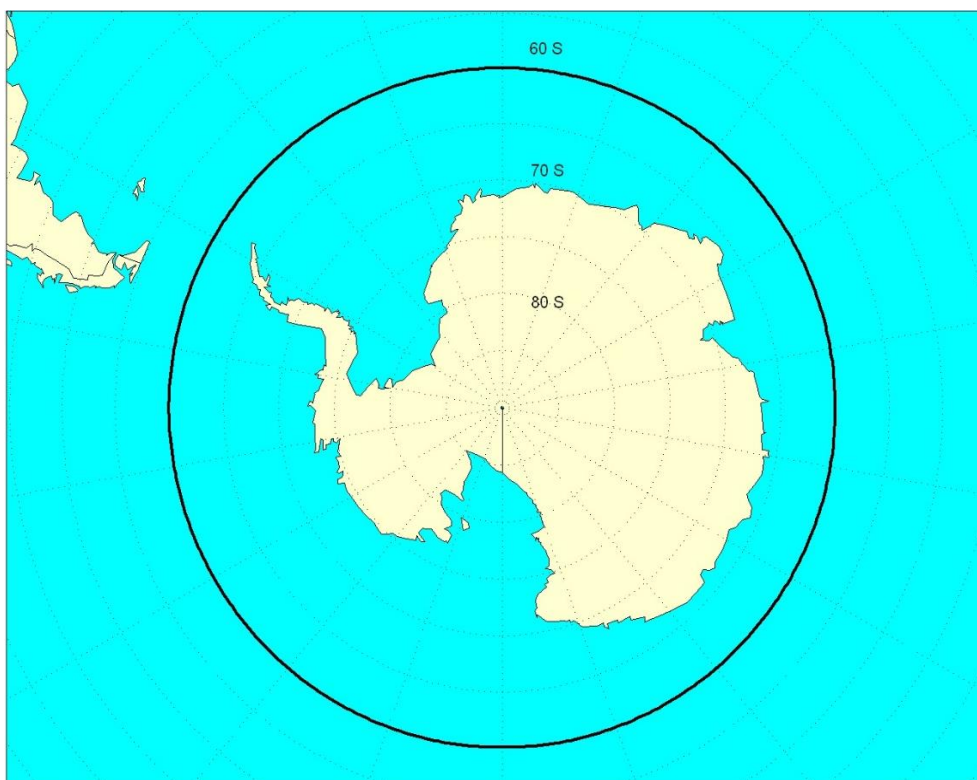


Figure 1 – Maximum extent of Antarctic area application²

² It should be noted that this figure is for illustrative purposes only.



Figure 2 – Maximum extent of Arctic waters application³

³ It should be noted that this figure is for illustrative purposes only.

PART I-A

SAFETY MEASURES

CHAPTER 1 – GENERAL

1.1 Structure of this part

Each chapter in this part consists of the overall goal of the chapter, functional requirements to fulfil the goal, and regulations. A ship shall be considered to meet a functional requirement set out in this part when either:

- .1 the ship's design and arrangements comply with all the regulations associated with that functional requirement; or
- .2 part(s) or all of the ship's relevant design and arrangements have been reviewed and approved in accordance with regulation 4 of SOLAS chapter XIV, and any remaining parts of the ship comply with the relevant regulations.

1.2 Definitions

In addition to the definitions included in the relevant SOLAS chapters and the introduction of this Code, the following definitions are applicable to this part.

1.2.1 *Bergy waters* mean an area of freely navigable water in which ice of land origin is present in concentrations less than 1/10. There may be *sea ice* present, although the total concentration of all ice shall not exceed 1/10.

1.2.2 *Escort* means any ship with superior ice capability in transit with another ship.

1.2.3 *Escorted operation* means any operation in which a ship's movement is facilitated through the intervention of an escort.

1.2.4 *Habitable environment* means a ventilated environment that will protect against hypothermia.

1.2.5 *Icebreaker* means any ship whose operational profile may include escort or ice management functions, whose powering and dimensions allow it to undertake aggressive operations in ice-covered waters.

1.2.6 *Ice Class* means the notation assigned to the ship by the Administration or by an organization recognized by the Administration showing that the ship has been designed for navigation in sea-ice conditions.

1.2.7 *Maximum expected time of rescue* means the time adopted for the design of equipment and system that provide survival support. It shall never be less than 5 days.

1.2.8 *Machinery Installations* means equipment and machinery and its associated piping and cabling, which is necessary for the safe operation of the ship.

1.2.9 *Mean Daily Low Temperature (MDLT)* means the mean value of the daily low temperature for each day of the year over a minimum 10 year period. A data set acceptable to the Administration may be used if 10 years of data is not available⁴.

1.2.10 *Polar Class (PC)* means the ice class assigned to the ship by the Administration or by an organization recognized by the Administration based upon IACS Unified Requirements.

1.2.11 *Polar Service Temperature (PST)* means a temperature specified for a ship which is intended to operate in low air temperature, which shall be set at least 10°C below the lowest MDLT for the intended area and season of operation in polar waters.

1.2.12 *Ship intended to operate in low air temperature* means a ship which is intended to undertake voyages to or through areas where the lowest Mean Daily Low Temperature (MDLT) is below -10°C.

1.2.13 *Tankers* mean oil tankers as defined in SOLAS regulation II-1/2.22, chemical tankers as defined in SOLAS regulation II-1/3.19 and gas carriers as defined in SOLAS regulation VII/11.2.

1.2.14 *Upper ice waterline* means the waterline defined by the maximum draughts forward and aft for operation in ice.

1.3 Certificate and survey

1.3.1 Every ship to which this Code applies shall have on board a valid Polar Ship Certificate.

1.3.2 Except as provided for in paragraph 1.3.3, the Polar Ship Certificate shall be issued after an initial or renewal survey to a ship which complies with the relevant requirements of this Code.

1.3.3 For category C cargo ships, if the result of the assessment in paragraph 1.5 is that no additional equipment or structural modification is required to comply with the Polar Code, the Polar Ship Certificate may be issued based upon documented verification that the ship complies with all relevant requirements of the Polar Code. In this case, for continued validity of the certificate, an on board survey should be undertaken at the next scheduled survey.

1.3.4 The certificate referred to in this regulation shall be issued either by the Administration or by any person or organization recognized by it in accordance with SOLAS regulation XI-1/1. In every case, that Administration assumes full responsibility for the certificate.

1.3.5 The Polar Ship Certificate shall be drawn up in the form corresponding to the model given in appendix 1 to this Code. If the language used is neither English, nor French nor Spanish, the text shall include a translation into one of these languages.

1.3.6 Polar Ship Certificate validity, survey dates and endorsements shall be harmonized with the relevant SOLAS certificates in accordance with the provisions of regulation I/14 of the SOLAS Convention. The certificate shall include a supplement recording equipment required by the Code.

⁴ Refer also to additional guidance in part I-B.

1.3.7 Where applicable, the certificate shall reference a methodology to assess operational capabilities and limitations in ice to the satisfaction of the Administration, taking into account the guidelines developed by the Organization⁵.

1.4 Performance standards

1.4.1 Unless expressly provided otherwise, ship systems and equipment addressed in this Code shall satisfy at least the same performance standards referred to in SOLAS.

1.4.2 For ships operating in low air temperature, a polar service temperature (PST) shall be specified and shall be at least 10°C below the lowest MDLT for the intended area and season of operation in polar waters. Systems and equipment required by this Code shall be fully functional at the polar service temperature.

1.4.3 For ships operating in low air temperature, survival systems and equipment shall be fully operational at the polar service temperature during the maximum expected rescue time.

1.5 Operational assessment

In order to establish procedures or operational limitations, an assessment of the ship and its equipment shall be carried out, taking into consideration the following:

- .1 the anticipated range of operating and environmental conditions, such as:
 - .1 operation in low air temperature;
 - .2 operation in ice;
 - .3 operation in high latitude; and
 - .4 potential for abandonment onto ice or land;
- .2 hazards, as listed in section 3 of the Introduction, as applicable; and
- .3 additional hazards, if identified.

CHAPTER 2 – POLAR WATER OPERATIONAL MANUAL (PWOM)

2.1 Goal

The goal of this chapter is to provide the owner, operator, master and crew with sufficient information regarding the ship's operational capabilities and limitations in order to support their decision-making process.

2.2 Functional requirements

2.2.1 In order to achieve the goal set out in paragraph 2.1 above, the following functional requirements are embodied in the regulations of this chapter.

2.2.2 The Manual shall include information on the ship-specific capabilities and limitations in relation to the assessment required under paragraph 1.5.

2.2.3 The Manual shall include or refer to specific procedures to be followed in normal operations and in order to avoid encountering conditions that exceed the ship's capabilities.

⁵ Refer to guidance to be developed by the Organization.

2.2.4 The Manual shall include or refer to specific procedures to be followed in the event of incidents in polar waters.

2.2.5 The Manual shall include or refer to specific procedures to be followed in the event that conditions are encountered which exceed the ship's specific capabilities and limitations in paragraph 2.2.2.

2.2.6 The Manual shall include or refer to procedures to be followed when using icebreaker assistance, as applicable.

2.3 Regulations

2.3.1 In order to comply with the functional requirements of paragraphs 2.2.1 to 2.2.6, the Manual shall be carried on board.

2.3.2 In order to comply with the functional requirements of paragraph 2.2.2, the Manual shall contain, where applicable, the methodology used to determine capabilities and limitations in ice.

2.3.3 In order to comply with the functional requirements of paragraph 2.2.3, the Manual shall include risk-based procedures for the following:

- .1 voyage planning to avoid ice and/or temperatures that exceed the ship's design capabilities or limitations;
- .2 arrangements for receiving forecasts of the environmental conditions;
- .3 means of addressing any limitations of the hydrographic, meteorological and navigational information available;
- .4 operation of equipment required under other chapters of this Code; and
- .5 implementation of special measures to maintain equipment and system functionality under low temperatures, topside icing and the presence of sea ice, as applicable.

2.3.4 In order to comply with the functional requirements of paragraph 2.2.4, the Manual shall include risk-based procedures to be followed for:

- .1 contacting emergency response providers for salvage, search and rescue (SAR), spill response, etc., as applicable; and
- .2 in the case of ships ice strengthened in accordance with chapter 3, procedures for maintaining life support and ship integrity in the event of prolonged entrapment by ice.

2.3.5 In order to comply with the functional requirements of paragraph 2.2.5, the Manual shall include risk-based procedures to be followed for measures to be taken in the event of encountering ice and/or temperatures which exceed the ship's design capabilities or limitations.

2.3.6 In order to comply with the functional requirements of paragraph 2.2.6, the Manual shall include risk-based procedures for monitoring and maintaining safety during operations in ice, as applicable, including any requirements for escort operations or icebreaker assistance. Different operational limitations may apply depending on whether the ship is operating independently or with icebreaker escort. Where appropriate, the PWOM should specify both options.

CHAPTER 3 – SHIP STRUCTURE

3.1 Goal

The goal of this chapter is to provide that the material and scantlings of the structure retain their structural integrity based on global and local response due to environmental loads and conditions.

3.2 Functional requirements

In order to achieve the goal set out in paragraph 3.1 above, the following functional requirements are embodied in the regulations of this chapter:

- .1 for ships intended to operate in low air temperature, materials used shall be suitable for operation at the ships polar service temperature; and
- .2 in ice strengthened ships, the structure of the ship shall be designed to resist both global and local structural loads anticipated under the foreseen ice conditions.

3.3 Regulations

3.3.1 In order to comply with the functional requirements of paragraph 3.2.1 above, materials of exposed structures in ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization⁶ or other standards offering an equivalent level of safety based on the polar service temperature.

3.3.2 In order to comply with the functional requirements of paragraph 3.2.2 above, the following apply:

- .1 scantlings of category A ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization⁷ or other standards offering an equivalent level of safety;
- .2 scantlings of category B ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization⁸ or other standards offering an equivalent level of safety;
- .3 scantlings of ice strengthened category C ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account acceptable standards adequate for the ice types and concentrations encountered in the area of operation; and
- .4 a category C ship need not be ice strengthened if, in the opinion of the Administration, the ship's structure is adequate for its intended operation.

⁶ Refer to IACS UR S6 Use of Steel Grades for Various Hull Members – Ships of 90 m in Length and Above (latest version) or IACS URI Requirements concerning Polar Class (latest version), as applicable.

⁷ Refer to Polar Class 1-5 of IACS URI Requirements concerning Polar Class (latest version).

⁸ Refer to Polar Class 6-7 of IACS URI Requirements concerning Polar Class (latest version).

CHAPTER 4 –SUBDIVISION AND STABILITY

4.1 Goal

The goal of this chapter is to ensure adequate subdivision and stability in both intact and damaged conditions.

4.2 Functional requirements

In order to achieve the goal set out in paragraph 4.1 above, the following functional requirements are embodied in the regulations of this chapter:

- .1 ships shall have sufficient stability in intact conditions when subject to ice accretion; and
- .2 ships of category A and B, constructed on or after 1 January 2017, shall have sufficient residual stability to sustain ice-related damages.

4.3 Regulations

4.3.1 Stability in intact conditions

4.3.1.1 In order to comply with the functional requirement of paragraph 4.2.1, for ships operating in areas and during periods where ice accretion is likely to occur, the following icing allowance shall be made in the stability calculations:

- .1 30 kg/m² on exposed weather decks and gangways;
- .2 7.5 kg/m² for the projected lateral area of each side of the ship above the water plane; and
- .3 the projected lateral area of discontinuous surfaces of rail, sundry booms, spars (except masts) and rigging of ships having no sails and the projected lateral area of other small objects shall be computed by increasing the total projected area of continuous surfaces by 5% and the static moments of this area by 10%.

4.3.1.2 Ships operating in areas and during periods where ice accretion is likely to occur shall be:

- .1 designed to minimize the accretion of ice; and
- .2 equipped with such means for removing ice as the Administration may require; for example, electrical and pneumatic devices, and/or special tools such as axes or wooden clubs for removing ice from bulwarks, rails and erections.

4.3.1.3 Information on the icing allowance included in the stability calculations shall be given in the PWOM.

4.3.1.4 Ice accretion shall be monitored and appropriate measures taken to ensure that the ice accretion does not exceed the values given in the PWOM.

4.3.2 Stability in damaged conditions

4.3.2.1 In order to comply with the functional requirements of paragraph 4.2.2, ships of categories A and B, constructed on or after 1 January 2017, shall be able to withstand flooding resulting from hull penetration due to ice impact. The residual stability following ice damage shall be such that the factor s_i , as defined in SOLAS regulations II-1/7-2.2 and II-1/7-2.3, is equal to one for all loading conditions used to calculate the attained subdivision index in SOLAS regulation II-1/7. However, for cargo ships that comply with subdivision and damage stability regulations in another instrument developed by the Organization, as provided by SOLAS regulation II-1/4.1, the residual stability criteria of that instrument shall be met for each loading condition.

4.3.2.2 The ice damage extents to be assumed when demonstrating compliance with paragraph 4.3.2.1 shall be such that:

- .1 the longitudinal extent is 4.5% of the upper ice waterline length if centred forward of the maximum breadth on the upper ice waterline, and 1.5% of upper ice waterline length otherwise, and shall be assumed at any longitudinal position along the ship's length;
- .2 the transverse penetration extent is 760 mm, measured normal to the shell over the full extent of the damage; and
- .3 the vertical extent is the lesser of 20% of the upper ice waterline draught or the longitudinal extent, and shall be assumed at any vertical position between the keel and 120% of the upper ice waterline draught.

CHAPTER 5 – WATERTIGHT AND WEATHERTIGHT INTEGRITY

5.1 Goal

The goal of this chapter is to provide measures to maintain watertight and weathertight integrity.

5.2 Functional requirements

In order to achieve the goal set out in paragraph 5.1 above, all closing appliances and doors relevant to watertight and weathertight integrity of the ship shall be operable.

5.3 Regulations

In order to comply with the functional requirements of paragraph 5.2 above, the following apply:

- .1 for ships operating in areas and during periods where ice accretion is likely to occur, means shall be provided to remove or prevent ice and snow accretion around hatches and doors; and
- .2 in addition, for ships intended to operate in low air temperature the following apply:
 - .1 if the hatches or doors are hydraulically operated, means shall be provided to prevent freezing or excessive viscosity of liquids; and

- .2 watertight and weathertight doors, hatches and closing devices which are not within an habitable environment and require access while at sea shall be designed to be operated by personnel wearing heavy winter clothing including thick mittens.

CHAPTER 6 – MACHINERY INSTALLATIONS

6.1 Goal

The goal of this chapter is to ensure that, machinery installations are capable of delivering the required functionality necessary for safe operation of ships.

6.2 Functional requirements

6.2.1 In order to achieve the goal set out in paragraph 6.1 above, the following functional requirements are embodied in the regulations of this chapter.

6.2.1.1 Machinery installations shall provide functionality under the anticipated environmental conditions, taking into account:

- .1 ice accretion and/or snow accumulation;
- .2 ice ingestion from seawater;
- .3 freezing and increased viscosity of liquids;
- .4 seawater intake temperature; and
- .5 snow ingestion.

6.2.1.2 In addition, for ships intended to operate in low air temperatures:

- .1 machinery installations shall provide functionality under the anticipated environmental conditions, also taking into account:
 - .1 cold and dense inlet air; and
 - .2 loss of performance of battery or other stored energy device; and
- .2 materials used shall be suitable for operation at the ships polar service temperature.

6.2.1.3 In addition, for ships ice strengthened in accordance with chapter 3, machinery installations shall provide functionality under the anticipated environmental conditions, taking into account loads imposed directly by ice interaction.

6.3 Regulations

6.3.1 In order to comply with the functional requirement of paragraph 6.2.1.1 above, taking into account the anticipated environmental conditions, the following apply:

- .1 machinery installations and associated equipment shall be protected against the effect of ice accretion and/or snow accumulation, ice ingestion from sea water, freezing and increased viscosity of liquids, seawater intake temperature and snow ingestion;

- .2 working liquids shall be maintained in a viscosity range that ensures operation of the machinery; and
- .3 seawater supplies for machinery systems shall be designed to prevent ingestion of ice,⁹ or otherwise arranged to ensure functionality.

6.3.2 In addition, for ships intended to operate in low air temperatures, the following apply:

- .1 in order to comply with the functional requirement of paragraph 6.2.1.2 above, exposed machinery and electrical installation and appliances shall function at the polar service temperature;
- .2 in order to comply with the functional requirement of paragraph 6.2.1.2.1 above, means shall be provided to ensure that combustion air for internal combustion engines driving essential machinery is maintained at a temperature in compliance with the criteria provided by the engine manufacturer; and
- .3 in order to comply with the functional requirements of paragraph 6.2.1.2.2 above, materials of exposed machinery and foundations shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization^{10,11} or other standards offering an equivalent level of safety based on the polar service temperature.

6.3.3 In addition, for ships ice strengthened in accordance with chapter 3, in order to comply with the functional requirements of paragraph 6.2.1.3 above, the following apply:

- .1 scantlings of propeller blades, propulsion line, steering equipment and other appendages of category A ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization¹⁰ or other standards offering an equivalent level of safety;
- .2 scantlings of propeller blades, propulsion line, steering equipment and other appendages of category B ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization¹¹ or other standards offering an equivalent level of safety; and
- .3 scantlings of propeller blades, propulsion line, steering equipment and other appendages of ice-strengthened category C ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account acceptable standards adequate with the ice types and concentration encountered in the area of operation.

⁹ Refer to MSC/Circ.504, *Guidance on design and construction of sea inlets under slush ice conditions*.

¹⁰ Refer to Polar Class 1–5 of IACS URI Requirements concerning Polar Class (2011).

¹¹ Refer to Polar Class 6–7 of IACS URI Requirements concerning Polar Class (2011).

CHAPTER 7 – FIRE SAFETY/PROTECTION

7.1 Goal

The goal of this chapter is to ensure that fire safety systems and appliances are effective and operable, and that means of escape remain available so that persons on board can safely and swiftly escape to the lifeboat and liferaft embarkation deck under the expected environmental conditions.

7.2 Functional requirements

7.2.1 In order to achieve the goal set out in paragraph 7.1 above, the following functional requirements are embodied in the regulations of this chapter:

- .1 all components of fire safety systems and appliances if installed in exposed positions shall be protected from ice accretion and snow accumulation;
- .2 local equipment and machinery controls shall be arranged so as to avoid freezing, snow accumulation and ice accretion and their location to remain accessible at all time;
- .3 the design of fire safety systems and appliances shall take into consideration the need for persons to wear bulky and cumbersome cold weather gear, where appropriate;
- .4 means shall be provided to remove or prevent ice and snow accretion from accesses; and
- .5 extinguishing media shall be suitable for intended operation.

7.2.2 In addition, for ships intended to operate in low air temperature, the following apply:

- .1 all components of fire safety systems and appliances shall be designed to ensure availability and effectiveness under the polar service temperature; and
- .2 materials used in exposed fire safety systems shall be suitable for operation at the polar service temperature.

7.3 Regulations

7.3.1 In order to comply with the requirement of paragraph 7.2.1.1, the following apply:

- .1 isolating and pressure/vacuum valves in exposed locations are to be protected from ice accretion and remain accessible at all time; and
- .2 all two-way portable radio communication equipment shall be operable at the polar service temperature.

7.3.2 In order to comply with the requirement of paragraph 7.2.1.2, the following apply:

- .1 fire pumps including emergency fire pumps, water mist and water spray pumps shall be located in compartments maintained above freezing;

- .2 the fire main is to be arranged so that exposed sections can be isolated and means of draining of exposed sections shall be provided. Fire hoses and nozzles need not be connected to the fire main at all times, and may be stored in protected locations near the hydrants;
- .3 firefighter's outfits shall be stored in warm locations on the ship; and
- .4 where fixed water-based firefighting systems are located in a space separate from the main fire pumps and use their own independent sea suction, this sea suction is to be also capable of being cleared of ice accumulation.

7.3.3 In addition, for ships intended to operate in low air temperature, the following apply:

- .1 In order to comply with the requirement of paragraph 7.2.2.1, portable and semi-portable extinguishers shall be located in positions protected from freezing temperatures, as far as practical. Locations subject to freezing are to be provided with extinguishers capable of operation under the polar service temperature.
- .2 In order to comply with the functional requirements of paragraph 7.2.2.2 above, materials of exposed fire safety systems shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization¹² or other standards offering an equivalent level of safety based on the polar service temperature.

CHAPTER 8 – LIFE-SAVING APPLIANCES AND ARRANGEMENTS

8.1 Goal

The goal of this chapter is to provide for safe escape, evacuation and survival.

8.2 Functional requirements

In order to achieve the goal set out in paragraph 8.1 above, the following functional requirements are embodied in the regulations of this chapter:

8.2.1 *Escape*

8.2.1.1 Exposed escape routes shall remain accessible and safe, taking into consideration the potential icing of structures and snow accumulation.

8.2.1.2 Survival craft and muster and embarkation arrangements shall provide safe abandonment of ship, taking into consideration the possible adverse environmental conditions during an emergency.

8.2.2 *Evacuation*

All life-saving appliances and associated equipment shall provide safe evacuation and be functional under the possible adverse environmental conditions during the maximum expected time of rescue.

¹² Refer to IACS UR S6 Use of Steel Grades for Various Hull Members – Ships of 90 m in Length and Above (2013) or IACS URI Requirements concerning Polar Class (2011).

8.2.3 Survival

8.2.3.1 Adequate thermal protection shall be provided for all persons on board, taking into account the intended voyage, the anticipated weather conditions (cold and wind), and the potential for immersion in polar water, where applicable.

8.2.3.2 Life-saving appliances and associated equipment shall take account of the potential of operation in long periods of darkness, taking into consideration the intended voyage.

8.2.3.3 Taking into account the presence of any hazards, as identified in the assessment in chapter 1, resources shall be provided to support survival following abandoning ship, whether to the water, to ice or to land, for the maximum expected time of rescue. These resources shall provide:

- .1 a habitable environment;
- .2 protection of persons from the effects of cold, wind and sun;
- .3 space to accommodate persons equipped with thermal protection adequate for the environment;
- .4 means to provide sustenance;
- .5 safe access and exit points; and
- .6 means to communicate with rescue assets.

8.3 Regulations

8.3.1 Escape

In order to comply with the functional requirements of paragraphs 8.2.1.1 and 8.2.1.2 above, the following apply:

- .1 for ships exposed to ice accretion, means shall be provided to remove or prevent ice and snow accretion from escape routes, muster stations, embarkation areas, survival craft, its launching appliances and access to survival craft;
- .2 in addition, for ships constructed on or after 1 January 2017, exposed escape routes shall be arranged so as not to hinder passage by persons wearing suitable polar clothing; and
- .3 in addition, for ships intended to operate in low air temperatures, adequacy of embarkation arrangements shall be assessed, having full regard to any effect of persons wearing additional polar clothing.

8.3.2 Evacuation

In order to comply with the functional requirement of paragraph 8.2.2 above, the following apply:

- .1 ships shall have means to ensure safe evacuation of persons, including safe deployment of survival equipment, when operating in ice-covered waters, or directly onto the ice, as applicable; and

- .2 where the regulations of this chapter are achieved by means of adding devices requiring a source of power, this source shall be able to operate independently of the ship's main source of power.

8.3.3 Survival

8.3.3.1 In order to comply with the functional requirement of paragraph 8.2.3.1 above, the following apply:

- .1 for passenger ships, a proper sized immersion suit or a thermal protective aid shall be provided for each person on board; and
- .2 where immersion suits are required, they shall be of the insulated type.

8.3.3.2 In addition, for ships intended to operate in extended periods of darkness, in order to comply with the functional requirements of paragraph 8.2.3.2 above, searchlights suitable for continuous use to facilitate identification of ice shall be provided for each lifeboat.

8.3.3.3 In order to comply with the functional requirement of paragraph 8.2.3.3 above, the following apply:

- .1 no lifeboat shall be of any type other than partially or totally enclosed type;
- .2 taking into account the assessment referred to in chapter 1, appropriate survival resources, which address both individual (personal survival equipment) and shared (group survival equipment) needs, shall be provided, as follows:
 - .1 life-saving appliances and group survival equipment that provide effective protection against direct wind chill for all persons on board;
 - .2 personal survival equipment in combination with life-saving appliances or group survival equipment that provide sufficient thermal insulation to maintain the core temperature of persons; and
 - .3 personal survival equipment that provide sufficient protection to prevent frostbite of all extremities; and
- .3 in addition, whenever the assessment required under paragraph 1.5 identifies a potential of abandonment onto ice or land, the following apply:
 - .1 group survival equipment shall be carried, unless an equivalent level of functionality for survival is provided by the ship's normal life-saving appliances;
 - .2 when required, personal and group survival equipment sufficient for 110% of the persons on board shall be stowed in easily accessible locations, as close as practical to the muster or embarkation stations;
 - .3 containers for group survival equipment shall be designed to be easily movable over the ice and be floatable;

- .4 whenever the assessment identifies the need to carry personal and group survival equipment, means shall be identified of ensuring that this equipment is accessible following abandonment;
- .5 if carried in addition to persons, in the survival craft, the survival craft and launching appliances shall have sufficient capacity to accommodate the additional equipment;
- .6 passengers shall be instructed in the use of the personal survival equipment and the action to take in an emergency; and
- .7 the crew shall be trained in the use of the personal survival equipment and group survival equipment.

8.3.3.4 In order to comply with the functional requirement of paragraph 8.2.3.3.4 above, adequate emergency rations shall be provided, for the maximum expected time of rescue.

CHAPTER 9 – SAFETY OF NAVIGATION

9.1 Goal

The goal of this chapter is to provide for safe navigation.

9.2 Functional requirements

In order to achieve the goal set out in paragraph 9.1 above, the following functional requirements are embodied in the regulations of this chapter.

9.2.1 *Nautical information*

Ships shall have the ability to receive up-to-date information including ice information for safe navigation.

9.2.2 *Navigational equipment functionality*

9.2.2.1 The navigational equipment and systems shall be designed, constructed, and installed to retain their functionality under the expected environmental conditions in the area of operation.

9.2.2.2 Systems for providing reference headings and position fixing shall be suitable for the intended areas.

9.2.3 *Additional navigational equipment*

9.2.3.1 Ships shall have the ability to visually detect ice when operating in darkness.

9.2.3.2 Ships involved in operations with an icebreaker escort shall have suitable means to indicate when the ship is stopped.

9.3 Regulations

9.3.1 *Nautical information*

In order to comply with the functional requirement of paragraph 9.2.1 above, ships shall have means of receiving and displaying current information on ice conditions in the area of operation.

9.3.2 Navigational equipment functionality

9.3.2.1 In order to comply with the functional requirement of paragraph 9.2.2.1 above, the following apply:

- .1 ships constructed on or after 1 January 2017, ice strengthened in accordance with chapter 3, shall have either two independent echo-sounding devices or one echo-sounding device with two separate independent transducers;
- .2 ships shall comply with SOLAS regulation V/22.1.9.4, irrespective of the date of construction and the size and, depending on the bridge configuration, a clear view astern;
- .3 for ships operating in areas, and during periods, where ice accretion is likely to occur, means to prevent the accumulation of ice on antennas required for navigation and communication shall be provided; and
- .4 in addition, for ships ice strengthened in accordance with chapter 3, the following apply:
 - .1 where equipment required by SOLAS chapter V or this chapter have sensors that project below the hull, such sensors shall be protected against ice; and
 - .2 in category A and B ships constructed on or after 1 January 2017, the bridge wings shall be enclosed or designed to protect navigational equipment and operating personnel.

9.3.2.2 In order to comply with the functional requirement of paragraph 9.2.2.2 above, the following apply:

- .1 ships shall have two non-magnetic means to determine and display their heading. Both means shall be independent and shall be connected to the ship's main and emergency source of power; and
- .2 ships proceeding to latitudes over 80 degrees shall be fitted with at least one GNSS compass or equivalent, which shall be connected to the ship's main and emergency source of power.

9.3.3 Additional navigational equipment

9.3.3.1 In order to comply with the functional requirement of paragraph 9.2.3.1 ships, with the exception of those solely operating in areas with 24 hours daylight, shall be equipped with two remotely rotatable, narrow-beam search lights controllable from the bridge to provide lighting over an arc of 360 degrees, or other means to visually detect ice.

9.3.3.2 In order to comply with the functional requirement of paragraph 9.2.3.2, ships involved in operations with an icebreaker escort shall be equipped with a manually initiated flashing red light visible from astern to indicate when the ship is stopped. This light shall have a range of visibility of at least two nautical miles, and the horizontal and vertical arcs of visibility shall conform to the stern light specifications required by the International Regulations for Preventing Collisions at Sea.

CHAPTER 10 – COMMUNICATION

10.1 Goal

The goal of this chapter is to provide for effective communication for ships and survival craft during normal operation and in emergency situations.

10.2 Functional requirements

In order to achieve the goal set out in paragraph 10.1 above, the following functional requirements are embodied in the regulations of this chapter.

10.2.1 *Ship communication*

10.2.1.1 Two-way voice and/or data communications ship-to-ship and ship-to-shore shall be available at all points along the intended operating routes.

10.2.1.2 Suitable means of communications shall be provided where escort and convoy operations are expected.

10.2.1.3 Means for two-way on-scene and SAR coordination communications for search and rescue purposes including aeronautical frequencies shall be provided.

10.2.1.4 Appropriate communication equipment to enable telemedical assistance in polar areas shall be provided.

10.2.2 *Survival craft and rescue boat communications capabilities*

10.2.2.1 For ships intended to operate in low air temperature, all rescue boats and lifeboats, whenever released for evacuation, shall maintain capability for distress alerting, locating and on-scene communications.

10.2.2.2 For ships intended to operate in low air temperature, all other survival craft, whenever released, shall maintain capability for transmitting signals for location and for communication.

10.2.2.3 Mandatory communication equipment for use in survival craft, including liferafts, and rescue boats shall be capable of operation during the maximum expected time of rescue.

10.3 Regulations

10.3.1 *Ship communication*

10.3.1.1 In order to comply with the functional requirements of paragraph 10.2.1.1 above, communication equipment on board shall have the capabilities for ship-to-ship and ship-to-shore communication, taking into account the limitations of communications systems in high latitudes and the anticipated low temperature.

10.3.1.2 In order to comply with the functional requirements of paragraph 10.2.1.2 above, ships intended to provide icebreaking escort shall be equipped with a sound signaling system mounted to face astern to indicate escort and emergency manoeuvres to following ships as described in the International Code of Signals.

10.3.1.3 In order to comply with the functional requirements of paragraph 10.2.1.3 above, two-way on-scene and SAR coordination communication capability in ships shall include:

- .1 voice and/or data communications with relevant rescue coordination centres; and
- .2 equipment for voice communications with aircraft on 121.5 and 123.1 MHz.

10.3.1.4 In order to comply with the functional requirements of paragraph 10.2.1.4 above, the communication equipment shall provide for two-way voice and data communication with a Telemedical Assistance Service (TMAS).

10.3.2 *Survival craft and rescue boat communications capabilities*

10.3.2.1 For ships intended to operate in low air temperature, in order to comply with the functional requirements of paragraph 10.2.2.1 above, all rescue boats and lifeboats, whenever released for evacuation, shall:

- .1 for distress alerting, carry one device for transmitting ship to shore alerts;
- .2 in order to be located, carry one device for transmitting signals for location; and
- .3 for on-scene communications, carry one device for transmitting and receiving on-scene communications.

10.3.2.2 For ships intended to operate in low air temperature, in order to comply with the functional requirements of paragraph 10.2.2.2 above, all other survival craft shall:

- .1 in order to be located, carry one device for transmitting signals for location; and
- .2 for on-scene communications, carry one device for transmitting and receiving on-scene communications.

10.3.2.3 In order to comply with the functional requirements of paragraph 10.2.2.3 above, recognizing the limitations arising from battery life, procedures shall be developed and implemented such that mandatory communication equipment for use in survival craft, including liferafts, and rescue boats are available for operation during the maximum expected time of rescue.

CHAPTER 11 – VOYAGE PLANNING

11.1 Goal

The goal of this chapter is to ensure that the Company, master and crew are provided with sufficient information to enable operations to be conducted with due consideration to safety of ship and persons on board and, as appropriate, environmental protection.

11.2 Functional requirement

In order to achieve the goal set out in paragraph 11.1 above, the voyage plan shall take into account the potential hazards of the intended voyage.

11.3 Requirements

In order to comply with the functional requirement of paragraph 11.2 above, the master shall consider a route through polar waters, taking into account the following:

- .1 the procedures required by the PWOM;
- .2 any limitations of the hydrographic information and aids to navigation available;
- .3 current information on the extent and type of ice and icebergs in the vicinity of the intended route;
- .4 statistical information on ice and temperatures from former years;
- .5 places of refuge;
- .6 current information and measures to be taken when marine mammals are encountered relating to known areas with densities of marine mammals, including seasonal migration areas;¹³
- .7 current information on relevant ships' routing systems, speed recommendations and vessel traffic services relating to known areas with densities of marine mammals, including seasonal migration areas;¹⁴
- .8 national and international designated protected areas along the route; and
- .9 operation in areas remote from search and rescue (SAR) capabilities.¹⁵

CHAPTER 12 – MANNING AND TRAINING

12.1 Goal

The goal of this chapter is to ensure that ships operating in polar waters are appropriately manned by adequately qualified, trained and experienced personnel.

12.2 Functional requirements

In order to achieve the goal set out in paragraph 12.1 above, companies shall ensure that masters, chief mates and officers in charge of a navigational watch on board ships operating in polar waters shall have completed training to attain the abilities that are appropriate to the capacity to be filled and duties and responsibilities to be taken up, taking into account the provisions of the STCW Convention and the STCW Code, as amended.

¹³ Refer to MEPC/Circ.674 on *Guidance document for minimizing the risk of ship strikes with cetaceans*.

¹⁴ Refer to MEPC/Circ.674 on *Guidance document for minimizing the risk of ship strikes with cetaceans*.

¹⁵ Refer to MSC.1/Circ.1184 on *Enhanced contingency planning guidance for passenger ships operating in areas remote from SAR facilities* and A.999(25) on *Guidelines on voyage planning for passenger ships operating in remote areas*.

12.3 Regulations

12.3.1 In order to meet the functional requirement of paragraph 12.2 above while operating in polar waters, masters, chief mates and officers in charge of a navigational watch shall be qualified in accordance with chapter V of the STCW Convention and the STCW Code, as amended, as follows:

Ice conditions	Tankers	Passenger ships	Other
Ice Free	Not applicable	Not applicable	Not applicable
Open waters	Basic training for master, chief mate and officers in charge of a navigational watch	Basic training for master, chief mate and officers in charge of a navigational watch	Not applicable
Other waters	Advanced training for master and chief mate. Basic training for officers in charge of a navigational watch	Advanced training for master and chief mate. Basic training for officers in charge of a navigational watch	Advanced training for master and chief mate. Basic training for officers in charge of a navigational watch.

12.3.2 The Administration may allow the use of a person(s) other than the master, chief mate or officers of the navigational watch to satisfy the requirements for training, as required by paragraph 12.3.1, provided that:

- .1 this person(s) shall be qualified and certified in accordance with regulation II/2 of the STCW Convention and section A-II/2 of the STCW Code, and meets the advance training requirements noted in the above table;
- .2 while operating in polar waters the ship has sufficient number of persons meeting the appropriate training requirements for polar waters to cover all watches;
- .3 this person(s) is subject to the Administration's minimum hours of rest requirements at all times;
- .4 when operating in waters other than open waters or bergy waters, the master, chief mate and officers in charge of a navigational watch on passenger ships and tankers shall meet the applicable basic training requirements noted in the above table; and
- .5 when operating in waters with ice concentration of more than 2/10, the master, chief mate and officers in charge of a navigational watch on cargo ships other than tankers shall meet the applicable basic training requirements noted in the above table.

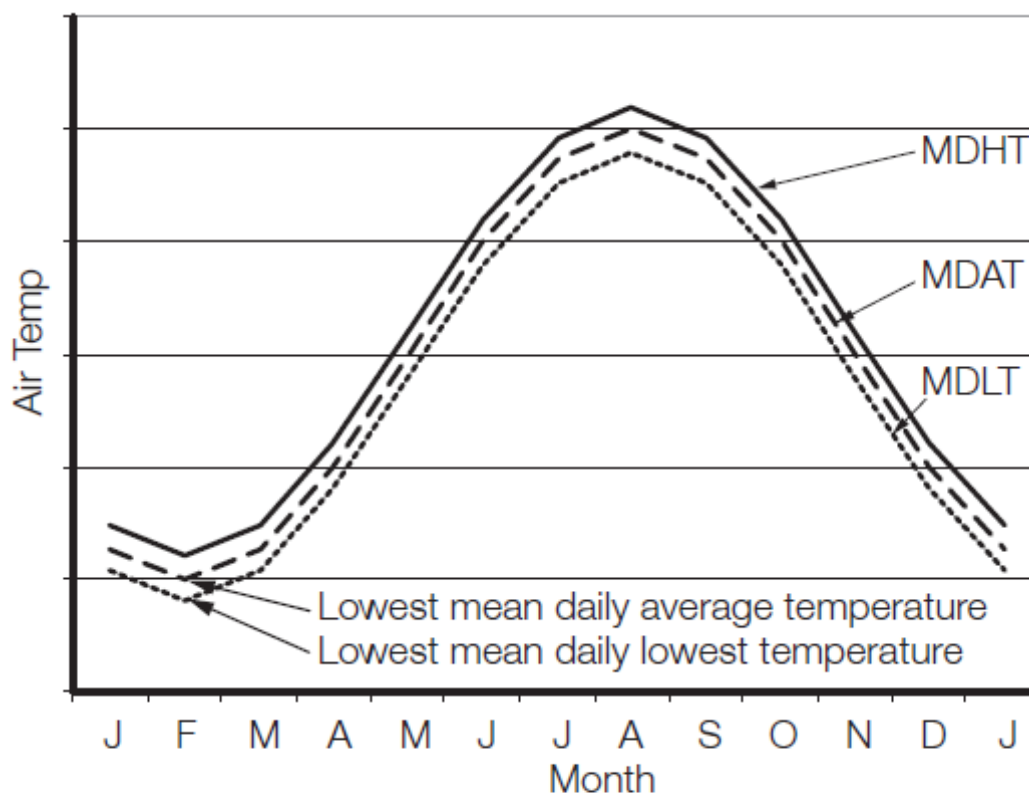
12.3.3 The use of a person other than the officer of the navigational watch to satisfy the requirements for training does not relieve the master or officer of the navigational watch from their duties and obligations for the safety of the ship.

12.3.4 Every crew member shall be made familiar with the procedures and equipment contained or referenced in the PWOM relevant to their assigned duties.

PART I-B

**ADDITIONAL GUIDANCE REGARDING THE PROVISIONS
OF THE INTRODUCTION AND PART I-A**

1 ADDITIONAL GUIDANCE TO SECTION 2 (DEFINITIONS) OF THE INTRODUCTION



Definitions used in the figure above

MDHT – Mean Daily High Temperature

MDAT – Mean Daily Average Temperature

MDLT – Mean Daily Low Temperature

Guidance instructions for determining MDLT:

- 1 Determine the daily low temperature for each day for a 10 year period.
- 2 Determine the average of the values over the 10 year period for each day.
- 3 Plot the daily averages over the year.
- 4 Take the lowest of the averages for the season of operation.

2 ADDITIONAL GUIDANCE TO CHAPTER 1 (GENERAL)

1 Limitations for operating in ice

1.1 Limitations for operation in ice can be determined using systems, tools or analysis that evaluate the risks posed by the anticipated ice conditions to the ship, taking into account factors such as its ice class, seasonal changing of ice strength, icebreaker support, ice type, thickness and concentration. The ship's structural capacity to resist ice load and the ship's planned operations should be considered. The limitations should be incorporated into an ice operational decision support system.

1.2 Limitations for operating in ice should be determined using an appropriate methodology, such methodologies exist, have been in use for a number of years and have been validated with service experience. Existing methodologies and other systems may be acceptable to the Administration.

1.3 Operation in ice should take into account any operational limitations of the ship; extended information on the ice operational methodology contained in the PWOM; the condition of the ship and ship's systems, historical weather/ice data and weather/ice forecasts for the intended area of operation, current conditions including visual ice observations, sea state, visibility and the judgment of qualified personnel.

2 Operational assessment

2.1 This guidance is intended to support shipowners carrying out, and Administrations reviewing, the assessment required in part I-A, section 1.5, for operational limitations and procedures for the Polar Ship Certificate.

2.2 Steps for an operational assessment:

- .1 identify relevant hazards from section 3 of the Introduction and other hazards based on a review of the intended operations;
- .2 develop a model¹⁶ to analyse risks considering:
 - .1 development of accident scenarios;
 - .2 probability of events in each accident scenario; and
 - .3 consequence of end states in each scenario;
- .3 assess risks and determine acceptability:
 - .1 estimate risk levels in accordance with the selected modelling approach; and
 - .2 assess whether risk levels are acceptable; and

¹⁶ Reference is made to the techniques in appendix 3 of the *Revised guidelines for Formal Safety Assessment (FSA) for use in the IMO Rule-Making Process* (MSC-MEPC.2/Circ.12) and standard IEC/ISO 31010 "Risk management – Risk assessment techniques"

- .4 in the event that risk levels determined in steps 1 to 3 are considered to be too high, identify current or develop new risk control options that aim to achieve one or more of the following:
 - .1 reduce the frequency of failures through better design, procedures, training, etc.;
 - .2 mitigate the effect of failures in order to prevent accidents;
 - .3 limit the circumstances in which failures may occur; or
 - .4 mitigate consequences of accidents; and
 - .5 incorporate risk control options for design, procedures, training and limitations, as applicable.

3 Performance standards

A system previously accepted based on manufacturer certifications, classification society certifications and/or satisfactory service of existing systems may be acceptable for installation on new and existing ships if no performance or testing standards are accepted by the Organization.

3 ADDITIONAL GUIDANCE TO CHAPTER 2 (POLAR WATER OPERATIONAL MANUAL (PWOM))

3.1 Recommendation on the content of the Polar Water Operational Manual

The Polar Water Operational Manual (PWOM) is intended to address all aspects of operations addressed by chapter 2 of part I-A. When appropriate information, procedures or plans exist elsewhere in a ship's documentation, the PWOM itself does not need to replicate this material, but may instead cross-reference the relevant reference document.

A model Table of Contents is found in appendix 2.

The model follows the general structure of chapter 2. Not every section outlined below will be applicable to every polar ship. Many category C ships that undertake occasional or limit polar voyages will not need to have procedures for situations with a very low probability of occurrence. However, it may still be advisable to retain a common structure for the PWOM as a reminder that if assumptions change then the contents of the manual may also need to be updated. Noting an aspect as "not applicable" also indicates to the Administration that this aspect has been considered and not merely omitted.

3.2 Guidance on navigation with icebreaker assistance

With respect to navigation with icebreaker assistance, the following should be considered:

- .1 while approaching the starting point of the ice convoy to follow an icebreaker/icebreakers or in the case of escorting by icebreaker of one ship to the point of meeting with the icebreaker, ships should establish radio communication on the VHF channel 16 and act in compliance with the icebreaker's instructions;
- .2 the icebreaker rendering the icebreaker assistance of ship ice convoy should command ships in the ice convoy;

- .3 position of a ship in the ice convoy should be determined by the icebreaker rendering the assistance;
- .4 ship within the ice convoy, in accordance with the instructions of the icebreaker rendering the assistance, should establish communication with the icebreaker by VHF channel indicated by the icebreaker;
- .5 the ship, while navigating in the ice convoy, should ensure compliance with the instructions of the icebreaker;
- .6 position in the ice convoy, speed and distance to a ship ahead should be as instructed by the icebreaker;
- .7 the ship should immediately notify the icebreaker of any difficulties to maintain the position within the ice convoy, speed and/or distance to any other ship in the ice convoy; and
- .8 the ship should immediately report to the icebreaker of any damage.

3.3 Guidance on the development of contingency plans

In developing the ship's contingency plans ships should consider damage control measures arrangements for emergency transfer of liquids and access to tanks and spaces during salvage operations.

See also additional guidance to chapter 9.

4 ADDITIONAL GUIDANCE TO CHAPTER 3 (SHIP STRUCTURE)

Method for determining equivalent ice class

1 The guidance presented below is intended to assist in determining equivalency with standards acceptable to the Organization, as referenced in chapters 3 and 6 of the Code. The methodology is consistent with guidance developed by the Organization¹⁷ while allowing for the use of a simplified approach.

2 The basic approach for considering equivalency for categories A and B ships can be the same for both new and existing ships. It involves comparing other ice classes to the IACS Polar Classes. For ice classes under category C, additional information on comparisons of strengthening levels is available for the guidance of owners and Administrations.¹⁸ The responsibility for generating the equivalency request and supporting information required should rest with the owner/operator. Review/approval of any equivalency request should be undertaken by the flag State Administration, or by a recognized organization acting on its behalf under the provisions of the Code for Recognized Organizations (RO Code). Several classification societies have developed easy-to-use tools for determination of compliance with the IACS Polar Class structural requirements, as have some Administrations and other third parties.

3 The scope of a simplified equivalency assessment (referring to paragraphs 6.1 to 6.3 below) is expected to be limited to materials selection, structural strength of the hull and propulsion machinery.

¹⁷ Refer to the *Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments* (MSC.1/Circ.1455).

¹⁸ Refer to the annex to HELCOM Recommendation 25/7, Safety of Winter Navigation in the Baltic Sea Area, available at www.helcom.fi

4 If there is not full and direct compliance, then an equivalent level of risk can be accepted in accordance with guidance provided by the Organization. An increase in the probability of an event can be balanced by a reduction in its consequences. Alternatively, a reduction in probability could potentially allow acceptance of more serious consequences. Using a hull area example, a local shortfall in strength level or material grade could be accepted if the internal compartment is a void space, for which local damage will not put the overall safety of the ship at risk or lead to any release of pollutants.

5 For existing ships, service experience can assist in risk assessment. As an example, for an existing ship with a record of polar ice operations a shortfall in the extent of the ice belt (hull areas) may be acceptable if there is no record of damage to the deficient area; i.e. a ship that would generally meet PC 5 requirements but in limited areas is only PC 7 could still be considered as a category A, PC 5 ship. In all such cases, the ship's documentation should make clear the nature and scope of any deficiencies.

6 The process includes the following stages of assessment:

- .1 select the target Polar Class for equivalency;
- .2 compare materials used in the design with minimum requirements under the IACS Polar Class URs; identify any shortfalls; and
- .3 compare strength levels of hull and machinery components design with requirements under the IACS Polar Class URs; quantify levels of compliance.

7 Where gaps in compliance are identified in steps 1 to 3, additional steps should be necessary to demonstrate equivalency, as outlined below:

- .4 identify any risk mitigation measures incorporated in the design of the ship (over and above the requirements of the Code and IACS URs);
- .5 where applicable, provide documentation of service experience of existing ships, in conditions relevant to the target ice class for equivalency; and
- .6 undertake an assessment, taking into account information from steps 1 to 5, as applicable, and on the principles outlined in paragraphs 2 to 6 above.

8 Documentation provided with an application for equivalency should identify each stage that has been undertaken, and sufficient supporting information to validate assessments.

9 Where a ship in categories A or B is provided with an equivalency for ice class by its flag State, this should be noted in its Polar Ship Certificate.

5 ADDITIONAL GUIDANCE TO CHAPTER 4 (SUBDIVISION AND STABILITY)

No additional guidance

6 ADDITIONAL GUIDANCE TO CHAPTER 5 (WATERTIGHT AND WEATHERTIGHT INTEGRITY)

No additional guidance.

7 ADDITIONAL GUIDANCE TO CHAPTER 6 (MACHINERY INSTALLATIONS)

Refer to additional guidance to chapter 3.

8 ADDITIONAL GUIDANCE TO CHAPTER 7 (FIRE SAFETY/PROTECTION)

No additional guidance.

9 ADDITIONAL GUIDANCE TO CHAPTER 8 (LIFE-SAVING APPLIANCES AND ARRANGEMENTS)

9.1 Sample personal survival equipment

When considering resources to be included with the personal survival equipment, the following should be taken into account:

Suggested Equipment
Protective clothing (hat, gloves, socks, face and neck protection, etc.)
Skin protection cream
Thermal protective aid
Sunglasses
Whistle
Drinking mug
Penknife
Polar survival guidance
Emergency food
Carrying bag

9.2 Sample group survival equipment

When considering resources to be included in the group survival equipment, the following should be taken into account:

Suggested Equipment
Shelter – tents or storm shelters or equivalent – sufficient for maximum number of persons
Thermal protective aids or similar – sufficient for maximum number of persons
Sleeping bags – sufficient for at least one between two persons
Foam sleeping mats or similar – sufficient for at least one between two persons
Shovels – at least 2
Sanitation (e.g. toilet paper)
Stove and fuel – sufficient for maximum number of persons ashore and maximum anticipated time of rescue
Emergency food – sufficient for maximum number of persons ashore and maximum anticipated time of rescue

Suggested Equipment
Flashlights – one per shelter
Waterproof and windproof matches – two boxes per shelter
Whistle
Signal mirror
Water containers & water purification tablets
Spare set of personal survival equipment
Group survival equipment container (waterproof and floatable)

10 ADDITIONAL GUIDANCE TO CHAPTER 9 (SAFETY OF NAVIGATION)

10.1 Radars equipped with enhanced ice detection capability should be promoted used, in particular, in shallow waters.

10.2 As the chart coverage of polar waters in many areas may not currently be adequate for coastal navigation, navigational officers should:

- .1 exercise care to plan and monitor their voyage accordingly, taking due account of the information and guidance in the appropriate nautical publications;
- .2 be familiar with the status of hydrographic surveys and the availability and quality of chart information for the areas in which they intend to operate;
- .3 be aware of potential chart datum discrepancies with GNSS positioning; and
- .4 aim to plan their route through charted areas and well clear of known shoal depths, following established routes whenever possible.

10.3 Any deviations from the planned route should be undertaken with particular caution. For example, and when operating on the continental shelf:

- .1 the echo-sounder should be working and monitored to detect any sign of unexpected depth variation, especially when the chart is not based on a full search of the sea floor; and
- .2 independent cross-checking of positioning information (e.g. visual and radar fixing and GNSS) should be undertaken at every opportunity. Mariners should ensure to report to the relevant charting authority (Hydrographic Office) any information that might contribute to improving the nautical charts and publications.

10.4 Ships should be fitted with:

- .1 a suitable means to de-ice sufficient conning position windows to provide unimpaired forward and astern vision from conning positions; and

- .2 an efficient means of clearing melted ice, freezing rain, snow, mist and spray from outside and accumulated condensation from inside. A mechanical means to clear moisture from the outside face of a window should have operating mechanisms protected from freezing or the accumulation of ice that would impair effective operation.

11 ADDITIONAL GUIDANCE TO CHAPTER 10 (COMMUNICATION)

11.1 Limitations of communication systems in high latitude

11.1.1 Current maritime digital communication systems were not designed to cover polar waters.

11.1.2 VHF is still largely used for communication at sea, but only over short distances (line of sight) and normally only for voice communication. HF and MF are also used for emergency situations. Digital VHF, mobile phone systems and other types of wireless technology offer enough digital capacity for many maritime applications, but only to ships within sight of shore-based stations, and are, therefore, not generally available in polar waters. AIS could also be used for low data-rate communication, but there are very few base stations, and the satellite-based AIS system is designed for data reception only.

11.1.3 The theoretical limit of coverage for GEO systems is 81.3° north or south, but instability and signal dropouts can occur at latitudes as low as 70° north or south under certain conditions. Many factors influence the quality of service offered by GEO systems, and they have different effects depending on the system design.

11.1.4 Non-GMDSS systems may be available and may be effective for communication in polar waters.

11.2 Advice for the operation of multiple alerting and communication devices in the event of an incident

A procedure should be developed to ensure that when survival craft are in close proximity, not more than two alerting or locating devices are activated (as required by regulation 10.3.2) at the same time. This is to:

- .1 preserve battery life;
- .2 enable extended periods of time for the transmission of alerting or locating signals; and
- .3 avoid potential interference.

11.3 For satellite distress beacons, although multiple beacon transmissions can be detected successfully by the satellite system, it is not recommended to activate multiple beacons, unless the survival craft operating the beacons are widely dispersed, as this can cause interference on direction-finding equipment.

11.4 Advice on location and communication equipment to be carried by rescue boats and survival craft

In determining the equipment to be carried for transmitting signals for location, the capabilities of the search and rescue resources likely to respond should be borne in mind. Responding ships and aircraft may not be able to home to 406/121.5 MHz, in which case other locating devices (e.g. AIS-SART) should be considered.

12 ADDITIONAL GUIDANCE TO CHAPTER 11 (VOYAGE PLANNING)

In developing and executing a voyage plan ships should consider the following:

- .1 in the event that marine mammals are encountered, any existing best practices should be considered to minimize unnecessary disturbance; and
- .2 planning to minimize the impact of the ship's voyage where ships are trafficking near areas of cultural heritage and cultural significance.

See also additional guidance to chapter 9.

13 ADDITIONAL GUIDANCE TO CHAPTER 12 (MANNING AND TRAINING)

No additional guidance

**[PART II-A*
POLLUTION PREVENTION MEASURES**

**CHAPTER 1
PREVENTION OF POLLUTION BY OIL**

1.1 Operational requirements

1.1.1 In Arctic waters any discharge into the sea of oil or oily mixtures from any ship shall be prohibited.

1.1.2 The provisions of paragraph 1.1.1 shall not apply to the discharge of clean or segregated ballast.

1.1.3 Subject to the approval of the Administration, a category A ship constructed before [date of entry into force] that cannot comply with paragraph 1.1.1 for oil or oily mixtures from machinery spaces and is operating continuously in Arctic waters for more than 30 days shall comply with paragraph 1.1.1 not later than the first intermediate or renewal survey, whichever comes first, one year after [the date of entry into force]. Until such date these ships shall comply with the discharge requirements of MARPOL Annex I, regulation 15.3.

1.1.4 Operation in polar waters shall be taken into account, as appropriate, in the Oil Record Books, manuals and the shipboard oil pollution emergency plan or the shipboard marine pollution emergency plan as required by MARPOL Annex I.

1.2 Structural requirements

1.2.1 For category A and B ships constructed on or after [date of entry into force] with an aggregate oil fuel capacity of less than 600 m³, all oil fuel tanks shall be separated from the outer shell by a distance of not less than 0.76 m. This provision does not apply to small oil fuel tanks with a maximum individual capacity not greater than 30 m³.

1.2.2 For category A and B ships constructed on or after [date of entry into force] of less than 600 tonnes deadweight, all cargo tanks constructed and utilized to carry oil shall be separated from the outer shell by a distance of not less than 0.76 m.

1.2.3 For category A and B ships constructed on or after [date of entry into force] all oil residue (sludge) tanks and oily bilge water holding tanks shall be separated from the outer shell by a distance of not less than 0.76 m. This provision does not apply to small tanks with a maximum individual capacity not greater than 30 m³.

**CHAPTER 2
CONTROL OF POLLUTION BY NOXIOUS LIQUID SUBSTANCES IN BULK**

2.1 Operational requirements

2.1.1 In Arctic waters any discharge into the sea of noxious liquid substances, or mixtures containing such substances, shall be prohibited.

* It should be noted that parts II-A and II-B are expected to be adopted by MEPC 68 (11 to 15 May 2015).

2.1.2 Operation in polar waters shall be taken into account, as appropriate, in the Cargo Record Book, the Manual and the shipboard marine pollution emergency plan for noxious liquid substances or the shipboard marine pollution emergency plan as required by MARPOL Annex II.

2.1.3 For category A and B ships constructed on or after [date of entry into force] the carriage of noxious liquid substances (NLS) identified in chapter 17, column e, as ship type 3 or identified as NLS in chapter 18 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk in cargo tanks of type 3 ships shall be subject to the approval of the Administration. The results shall be reflected on the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk or Certificate of Fitness identifying the operation in polar waters.

CHAPTER 3 PREVENTION OF POLLUTION BY HARMFUL SUBSTANCES CARRIED BY SEA IN PACKAGED FORM

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CHAPTER 4 PREVENTION OF POLLUTION BY SEWAGE FROM SHIPS

4.1 Definitions

4.1.1 *Constructed* means a ship the keel of which is laid or which is at a similar stage of construction.

4.1.2 *Ice-shelf* means a floating ice sheet of considerable thickness showing 2 to 50 m or more above sea-level, attached to the coast.¹⁹

4.1.3 *Fast ice* means sea ice which forms and remains fast along the coast, where it is attached to the shore, to an ice wall, to an ice front, between shoals or grounded icebergs.⁴

4.2 Operational requirements

4.2.1 Discharges of sewage within polar waters are prohibited except when performed in accordance with MARPOL Annex IV and the following requirements:

- .1 the ship is discharging comminuted and disinfected sewage in accordance with regulation 11.1.1 of MARPOL Annex IV at a distance of more than 3 nautical miles from any ice-shelf or fast ice and shall be as far as practicable from areas of ice concentration exceeding 1/10; or
- .2 the ship is discharging sewage that is not comminuted or disinfected in accordance with regulation 11.1.1 of MARPOL Annex IV and at a distance of more than 12 nautical miles from any ice-shelf or fast ice and shall be as far as practicable from areas of ice concentration exceeding 1/10; or

¹⁹ Refer to the WMO Sea-Ice Nomenclature.

- .3 the ship has in operation an approved sewage treatment plant²⁰ certified by the Administration to meet the operational requirements in either regulation 9.1.1 or 9.2.1 of MARPOL Annex IV, and discharges sewage in accordance with regulation 11.1.2 of Annex IV and shall be as far as practicable from the nearest land, any ice-shelf, fast ice or areas of ice concentration exceeding 1/10.

4.2.2 Discharge of sewage into the sea is prohibited from category A and B ships constructed on or after [date of entry into force], and all passenger ships constructed on or after [date of entry into force], except when such discharges are in compliance with paragraph 4.2.1.3 of this chapter.

4.2.3 Notwithstanding the requirements of paragraph 4.2.1, category A and B ships that operate in areas of ice concentrations exceeding 1/10 for extended periods of time, may only discharge sewage using an approved sewage treatment plant certified by the Administration to meet the operational requirements in either regulation 9.1.1 or 9.2.1 of MARPOL Annex IV. Such discharges shall be subject to the approval by the Administration.

CHAPTER 5 PREVENTION OF POLLUTION BY GARBAGE FROM SHIPS

5.1 Definitions

5.1.1 *Ice-shelf* means a floating ice sheet of considerable thickness showing 2 to 50 m or more above sea-level, attached to the coast²¹.

5.1.2 *Fast ice* means sea ice which forms and remains fast along the coast, where it is attached to the shore, to an ice wall, to an ice front, between shoals or grounded icebergs⁶.

5.2 Operational requirements

5.2.1 In Arctic waters, discharge of garbage into the sea permitted in accordance with regulation 4 of MARPOL Annex V, shall meet the following additional requirements:

- .1 discharge into the sea of food wastes is only permitted when the ship is as far as practicable from areas of ice concentration exceeding 1/10, but in any case not less than 12 nautical miles from the nearest land, nearest ice-shelf, or nearest fast ice;
- .2 food wastes shall be comminuted or ground and shall be capable of passing through a screen with openings no greater than 25 mm. Food wastes shall not be contaminated by any other garbage type;
- .3 food wastes shall not be discharged onto the ice;
- .4 discharge of animal carcasses is prohibited; and

²⁰ Refer to resolution MEPC.2(VI), resolution MEPC.159(55) or resolution MEPC.227(64) as applicable.

²¹ Refer to the WMO Sea-Ice Nomenclature.

- .5 discharge of cargo residues that cannot be recovered using commonly available methods for unloading shall only be permitted while the ship is en route and where all the following conditions are satisfied:
 - .1 cargo residues, cleaning agents or additives, contained in hold washing water do not include any substances classified as harmful to the marine environment, taking into account guidelines developed by the Organization;
 - .2 both the port of departure and the next port of destination are within Arctic waters and the ship will not transit outside Arctic waters between those ports;
 - .3 no adequate reception facilities are available at those ports taking into account guidelines developed by the Organization; and
 - .4 where the conditions of subparagraphs 5.2.1.5.1, 5.2.1.5.2 and 5.2.1.5.3 of this paragraph have been fulfilled, discharge of cargo hold washing water containing residues shall be made as far as practicable from areas of ice concentration exceeding 1/10, but in any case not less than 12 nautical miles from the nearest land, nearest ice shelf, or nearest fast ice.

5.2.2 In the Antarctic area, discharge of garbage into the sea permitted in accordance with regulation 6 of MARPOL Annex V, shall meet the following additional requirements:

- .1 discharges under regulation 6.1 of MARPOL Annex V shall be as far as practicable from areas of ice concentration exceeding 1/10, but in any case not less than 12 nautical miles from the nearest fast ice; and
- .2 food waste shall not be discharged onto ice.

5.2.3 Operation in polar waters shall be taken into account, as appropriate, in the Garbage Record Book, Garbage Management Plan and the placards as required by MARPOL Annex V.]

[PART II-B

ADDITIONAL GUIDANCE REGARDING THE PROVISIONS OF THE INTRODUCTION AND PART II-A

1 Additional guidance to chapter 1

.1 Ships are encouraged to apply regulation 43 of MARPOL Annex I when operating in Arctic waters.

1.2 Non-toxic biodegradable lubricants or water-based systems should be considered in lubricated components located outside the underwater hull with direct seawater interfaces, like shaft seals and slewing seals.

2 Additional guidance to chapter 2

Category A and B ships, constructed on or after [date of entry into force] and certified to carry noxious liquid substances (NLS), are encouraged to carry NLS identified in chapter 17, column e, as ship type 3 or identified as NLS in chapter 18 of the *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk*, in tanks separated from the outer shell by a distance of not less than 760 mm.

3 Additional guidance to chapter 5

In order to minimize the risks associated with animal cargo mortalities, consideration should be given to how animal carcasses will be managed, treated, and stored on board when ships carrying such cargo are operating in polar waters. Reference is made in particular to the *2012 Guidelines for the implementation of MARPOL Annex V* (resolution MEPC.219(63)) and the *2012 Guidelines for the development of garbage management plans* (resolution MEPC.220(63)).

4 Additional guidance under other environmental Conventions and guidelines

4.1 Until the *International Convention for the Control and Management of Ships' Ballast Water and Sediments* enters into force, the ballast water management provisions of the ballast water exchange standard, set out in regulation D-1, or the ballast water performance standard, set out in regulation D-2 of the Convention should be considered as appropriate. The provisions of the *Guidelines for ballast water exchange in the Antarctic treaty area* (resolution MEPC.163(56)) should be taken into consideration along with other relevant guidelines developed by the Organization.

4.2 In selecting the ballast water management system, attention should be paid to limiting conditions specified in the appendix of the Type Approval Certificate and the temperature under which the system has been tested, in order to ensure its suitability and effectiveness in polar waters.

4.3 In order to minimize the risk of invasive aquatic species transfers via biofouling, measures should be considered to minimize the risk of more rapid degradation of anti-fouling coatings associated with polar ice operations. Reference is made in particular to the *2011 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species* (resolution MEPC.207(62)).

Table: Example of matters related to anti-fouling systems taken into consideration by some ice-going ships (This table is used by some operators of ice-going ships.)

	Hull	Sea chest
Year round operation in ice-covered polar waters	Abrasion resistant low friction ice coating. No anti-fouling system.	Abrasion resistant coating. Compliant with the AFS Convention. Thickness of anti-fouling system to be decided by shipowner.
Intermittent operation in ice-covered polar waters	Abrasion resistant low friction ice coating. In sides, above bilge keel, max thickness of anti-fouling system 75 µm, to protect hull between application of anti-fouling system and next anticipated voyage to ice-covered waters. In bottom area thickness to be decided by shipowner. Composition of anti-fouling system should also be decided by the shipowner.	Compliant with the AFS Convention. Thickness of anti-fouling system to be decided by shipowner.
Category B and C vessels	Compliant with the AFS Convention. Thickness of anti-fouling system to be decided by shipowner.	Compliant with the AFS Convention. Thickness of anti-fouling system to be decided by shipowner.

APPENDIX 1

Form of Certificate for Ships operating in Polar Waters

POLAR SHIP CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for the
Polar Ship Certificate

(Official seal)

(State)

Issued under the provisions of the

International Convention for the Safety of Life at Sea, 1974, as amended

under the authority of the Government of

(name of the State)

by _____
(person or organization authorized)

Particulars of ship¹

Name of ship.....
Distinctive number or letters.....
Port of registry.....
Gross tonnage.....
IMO Number².....

¹ Alternatively, the particulars of the ship may be placed horizontally in boxes.

² In accordance with *IMO ship identification number scheme* adopted by the Organization by resolution A.1078(28).

THIS IS TO CERTIFY:

- 1 That the ship has been surveyed in accordance with the applicable safety-related provisions of the International Code for Ships Operating in Polar Waters.
- 2 That the survey³ showed that the structure, equipment, fittings, radio station arrangements, and materials of the ship and the condition thereof are in all respects satisfactory and that the ship complies with the relevant provisions of the Code.

Category A/B/C⁴ ship as follows:

Ice Class and Ice Strengthened Draft Range

Ice class	Maximum draft		Minimum draft	
	Aft	Fwd	Aft	Fwd

- 2.1 Ship type: tanker/passenger ship/other⁴
- 2.2 Ship restricted to operate in ice free waters/open waters/other ice conditions⁴
- 2.3 Ship intended to operate in low air temperature: Yes/No⁴
- 2.3.1 Polar Service Temperature:°C/Not Applicable⁴
- 2.4 Maximum expected time of rescuedays
- 3 The ship was/was not⁴ subjected to an alternative design and arrangements in pursuance of regulation(s) XIV/4 of the International Convention for the Safety of Life at Sea, 1974, as amended.
- 4 A Document of approval of alternative design and arrangements for structure, machinery and electrical installations/fire protection/life-saving appliances and arrangements⁴ is/is not⁴ appended to this Certificate.

5 Operational limitations

The ship has been assigned the following limitations for operation in polar waters:

- 5.1 Ice conditions:
-
- 5.2 Temperature:
- 5.3 High latitudes:

³ Subject to regulation 1.3 of the International Code for Ships Operating in Polar Waters.

⁴ Delete as appropriate.

This certificate is valid until subject to
the annual/periodical/intermediate surveys in accordance with section 1.3 of the Code⁵

Completion date of the survey on which this certificate is based:.....
(dd/mm/yyyy)

Issued at
(Place of issue of certificate)

.....
(Date of issue)

.....
(Signature of authorized official
issuing the certificate)

(Seal or stamp of the issuing authority, as appropriate)

⁵ Delete as applicable

Endorsement for annual, periodical and intermediate surveys⁶

THIS IS TO CERTIFY that, at a survey required by regulation 1.3 of the Code, the ship was found to comply with the relevant requirements of the Code.

Annual survey: Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

Annual/Periodical/Intermediate⁶ survey: Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

Annual/Periodical/Intermediate⁶ survey: Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

Annual survey: Signed:
(Signature of authorized official)

Place:

Date:

(Seal or stamp of the authority, as appropriate)

⁶ Delete as appropriate.

Endorsement to extend the certificate if valid for less than 5 years where regulation I/14(c) of the Convention applies⁷

The ship complies with the relevant requirements of the Convention, and this certificate shall, in accordance with regulation I/14(c) of the Convention, be accepted as valid until.....

Signed:
(Signature of authorized official)

Place:

Date:
(Seal or stamp of the authority, as appropriate)

Endorsement where the renewal survey has been completed and regulation I/14(d) of the Convention applies⁷

The ship complies with the relevant requirements of the Convention, and this certificate shall, in accordance with regulation I/14(d) of the Convention, be accepted as valid until.....

Signed:
(Signature of authorized official)

Place:

Date:
(Seal or stamp of the authority, as appropriate)

Endorsement to extend the validity of the certificate until reaching the port of survey or for a period of grace where regulation I/14(e) or I/14(f) of the Convention applies⁷

This certificate shall, in accordance with regulation I/14(e)/I/14(f)⁷ of the Convention, be accepted as valid until.....

Signed:
(Signature of authorized official)

Place:

Date:
(Seal or stamp of the authority, as appropriate)

⁷ Delete as appropriate.

Endorsement for advancement of anniversary date where regulation I/14(h) of the Convention applies⁷

In accordance with regulation I/14(h) of the Convention, the new anniversary date is

Signed:
(Signature of authorized official)

Place:

Date:
(Seal or stamp of the authority, as appropriate)

In accordance with regulation I/14(h) of the Convention, the new anniversary date is

Signed:
(Signature of authorized official)

Place:

Date:
(Seal or stamp of the authority, as appropriate)

⁷ Delete as appropriate.

Record of Equipment for the Polar Ship Certificate

This record shall be permanently attached to the
Polar Ships Certificate

RECORD OF EQUIPMENT FOR COMPLIANCE WITH THE INTERNATIONAL CODE
FOR SHIPS OPERATING IN POLAR WATERS

1 Particulars of ship:

Name of ship:.....
Distinctive number or letters:.....

2 Record of equipment

2.1 Life-saving appliances

1	Total number of immersion suits with insulation:	.....
1.1	for crew	.....
1.2	for passengers	.....
2	Total number of thermal protective aids	.....
3	Personal and Group Survival Equipment	.....
3.1	Personal survival equipment – for number of persons	.....
3.2	Group survival equipment – for number persons	.....
3.3	Total capacity of liferafts in compliance with chapter 8 of the Polar Code	.....
3.4	Total capacity of lifeboats in compliance with chapter 8 of the Polar Code	.....

2.2 Navigation equipment

1	Two independent echo-sounding devices or a device with two separate independent transducers	.....
2	Remotely rotatable, narrow-beam search lights controllable from the bridge or other means to visually detect ice	.....
3	Manually initiated flashing red light visible from astern (for ships involved in icebreaking operations)	.....
4	Two or more non-magnetic independent means to determine and display heading	.....
5	GNSS compass or equivalent (for ships proceeding to latitudes over 80 degrees)	.....

2.3 Communication equipment

1	Sound signaling system mounted to face astern to indicate escort and emergency manoeuvres to following ships as described in the International Code of Signals (for ships intended to provide ice breaking escort).	.....
2	Voice and/or data communications with relevant rescue coordination centres.	.....
3	Equipment for voice communications with aircraft on 121.5 and 123.1 MHz.	.....
4	Two-way voice and data communication with a Telemedical Assistance Service (TMAS).	.....
5	All rescue boats and lifeboats, whenever released for evacuation, have a device (for ships certified to operate in low air temperature):	
5.1	for transmitting vessel to shore alerts;	.....
5.2	for transmitting signals for location;	.....
5.3	for transmitting and receiving on-scene communications.	.....
6	All other survival craft have a device:	
6.1	for transmitting signals for location; and	.....
6.2	for transmitting and receiving on-scene communications.	.....

THIS IS TO CERTIFY that this Record is correct in all respects

Issued at.....
(Place of issue of the Record)

.....
(Date of issue) (Signature of duly authorized official issuing the Record)

(Seal or stamp of the issuing authority, as appropriate)

APPENDIX 2

Model Table of Contents for the Polar Water Operational Manual (PWOM)

SAFETY MEASURES

1 – Operational capabilities and limitations

Chapter 1 Operation in ice

1.1 Operator guidance for safe operation

Guidance: The PWOM should establish the means by which decisions as to whether ice conditions exceed the ship's design limits should be made, taking into account the operational limitations on the Polar Ship Certificate. An appropriate decision support system, such as the Canada's Arctic Ice Regime Shipping System, and/or the Russian Ice Certificate as described in the Rules of Navigation on the water area of the Northern Sea Route, can be used... Bridge personnel should be trained in the proper use of the system to be utilized. For ships that will operate only in ice-free waters, procedures to ensure that will keep the ship from encountering ice should be established.

1.2 Icebreaking capabilities

Guidance: The PWOM should provide information on the ice conditions in which the ship can be expected to make continuous progress. This may be drawn, for example from numerical analysis, model test or from ice trials. Information on the influence of ice strength for new or decayed ice and of snow cover may be included.

1.3 Manoeuvring in ice

1.4 Special features

Guidance: Where applicable, the PWOM should include the results of any equivalency analyses made to determine Polar Ship category/ice class. The manual should also provide information on the use of any specialized systems fitted to assist in ice operations.

Chapter 2 Operation in low air temperatures

2.1 System design

Guidance: The PWOM should list all ship systems susceptible to damage or loss of functionality by exposure to low temperatures, and the measures to be adopted to avoid malfunction.

Chapter 3 Communication and navigation capabilities in high latitudes

Guidance: The PWOM should identify any restrictions to operational effectiveness of communications and navigational equipment that may result from operating in high latitudes.

Chapter 4 Voyage duration

Guidance: The PWOM should provide information on any limitations on ship endurance such as fuel tankage, fresh water capacity, provision stores, etc. This will normally only be a significant consideration for smaller ships, or for ships planning to spend extended periods in ice.

Division 2 – Ship operations

Chapter 1 Strategic planning

Assumptions used in conducting the analyses referred to below should be included in the Manual.

1.1 Avoidance of hazardous ice

Guidance: For ships operating frequently in polar waters, the PWOM should provide information with respect to periods during which the ship should be able to operate for intended areas of operation. Areas that pose particular problems, e.g. chokepoints, ridging, as well as worst recorded ice conditions should be noted. Where the available information is limited or of uncertain quality, this should be recognized and noted as a risk for voyage planning.

1.2 Avoidance of hazardous temperatures

Guidance: For ships operating frequently in polar waters, the PWOM should provide information with respect to, the daily mean daily low temperature as well as the minimum recorded temperature for each of the days during the intended operating period. Where the available information is limited or of uncertain quality, this should be recognized as a risk for voyage planning.

1.3 Voyage duration and endurance

Guidance: Procedures to establish requirements for supplies should be established, and appropriate safety levels for safety margins determined taking into account various scenarios, e.g. slower than expected steaming, course alterations, adverse ice conditions, places of refuge and access to provisions. Sources for and availability of fuel types should be established, taking into account long lead times required for deliveries.

1.4 Human resources management

Guidance: The PWOM should provide guidance for the human resources management, taking into account the anticipated ice conditions and requirements for ice navigation, increased levels of watch keeping, hours of rest, fatigue and a process that ensures that these requirements will be met.

Chapter 2 Arrangements for receiving forecasts of environmental conditions

Guidance: The PWOM should set out the means and frequency for provision of ice and weather information. Where a ship is intended to operate in or in the presence of ice, the manual should set out when weather and ice information is required and the format for the information.

When available, the information should include both global and localized forecasts that will identify weather and ice patterns/regimes that could expose the ship to adverse conditions.

The frequency of updates should provide enough advance notice that the ship can take refuge or use other methods of avoiding the hazard if the conditions are forecast to exceed its capabilities.

The PWOM may include use of a land-based support information provider an effective method of sorting through available information, thereby providing the ship only with information that is relevant, reducing demands on the ship's communications systems. The manual may also indicate instances in which additional images should be obtained and analysed, as well as where such additional information may be obtained.

2.1 Ice information

Guidance: The PWOM should include or refer to guidance on how radar should be used to identify ice floes, how to tune the radar to be most effective, instructions on how to interpret radar images, etc. If other technologies are to be used to provide ice information, their use should also be described.

2.2 Meteorological information

Chapter 3 Verification of hydrographic, meteorological and navigational information

Guidance: The PWOM should provide guidance on the use of hydrographic information as further described in the additional guidance to chapter 10.

Chapter 4 Operation of Special Equipment

4.1 Navigation systems

4.2 Communications systems

Chapter 5 Procedures to maintain equipment and system functionality

5.1 Icing prevention and de-icing

Guidance: The PWOM should provide guidance on how to prevent or mitigate icing by operational means, how to monitor and assess ice accretion, how to conduct de-icing using equipment available on the ship, and how to maintain the safety of the ship and its crew during all of these aspects of the operation.

5.2 Operation of seawater systems

Guidance: The PWOM should provide guidance on how to monitor, prevent or mitigate ice ingestion by seawater systems when operating in ice or in low water temperatures. This may include recirculation, use of low rather than high suction, etc.

5.3 Procedures for low temperature operations

Guidance: The PWOM should provide guidance on maintaining and monitoring any systems and equipment that are required to be kept active in order to ensure functionality; e.g. by trace heating or continuous working fluid circulation.

Division 3 – Risk management

Chapter 1 Risk mitigation in limiting environmental condition

1.1 Measures to be considered in adverse ice conditions

Guidance: The PWOM should contain guidance for the use of low speeds in the presence of hazardous ice. Procedures should also be set for enhanced watchkeeping and lookout manning in situations with high risks from ice, e.g. in proximity to icebergs, operation at night, and other situations of low visibility. When possibilities for contact with hazardous ice exist, procedures should address regular monitoring, e.g. soundings/inspections of compartments and tanks below the waterline.

1.2 Measures to be considered in adverse temperature conditions

Guidance: The PWOM should contain guidance on operational restrictions in the event that temperatures below the ships polar service temperature are encountered or forecast. These may include delaying the ship, postponing the conduct of certain types of operation, using temporary heating, and other risk mitigation measures.

Chapter 2 Emergency response

Guidance: In general, where the possibility of encountering low air temperatures, sea ice, and other hazards is present, the PWOM should provide guidance on procedures that will increase the effectiveness of emergency response measures.

2.1 Damage control

Guidance: the PWOM should consider damage control measures arrangements for emergency transfer of liquids and access to tanks and spaces during salvage operations.

2.2 Firefighting

2.4 Escape and evacuation

Guidance: Where supplementary or specialized lifesaving equipment is carried to address the possibilities of prolonged durations prior to rescue, abandonment onto ice or adjacent land, or other aspects specific to polar operations, the PWOM should contain guidance on the use of the equipment and provision for appropriate training and drills.

Chapter 3 Coordination with emergency response services

3.1 Ship emergency response

Guidance: The PWOM should include procedures to be followed in preparing for a voyage and in the event of an incident arising.

3.2 Salvage

Guidance: The PWOM should include procedures to be followed in preparing for a voyage and in the event of an incident arising.

3.3 Search and rescue

Guidance: The PWOM should contain information on identifying relevant Rescue Coordination Centres for any intended routes, and should require that contact information and procedures be verified and updated as required as part of any voyage plan.

Chapter 4 Procedures for maintaining life support and ship integrity in the event of prolonged entrapment by ice.

Guidance: Where any ship incorporates special features to mitigate safety or environmental risks due to prolonged entrapment by ice, the PWOM should provide information on how these are to be set up and operated. This may include, for example, adding additional equipment to be run from emergency switchboards, draining systems at risk of damage through freezing, isolating parts of HVAC systems, etc.

4.1 System configuration

4.2 System operation

Division 4 – Joint operations

Chapter 1 Escorted operations

Guidance: The PWOM should contain or reference information on the rules and procedures set out by coastal States who require or offer icebreaking escort services. The manual should also emphasize the need for the master to take account of the ship's limitations in agreeing on the conduct of escort operations.

Chapter 2 Convoy operations

ANNEX 7

**RESOLUTION MSC.386(94)
(adopted on 21 November 2014)**

**AMENDMENTS TO THE INTERNATIONAL CONVENTION
FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"), concerning the amendment procedure applicable to the annex to the Convention, other than to the provisions of chapter I,

RECOGNIZING the need to provide a mandatory framework for ships operating in polar waters due to the additional demands on ships, their systems and operation, which go beyond the existing requirements of the Convention, and other relevant binding IMO instruments,

NOTING resolution MSC.385(94), by which the Committee adopted the International Code for Ships Operating in Polar Waters (Polar Code) with respect to its provisions for safety,

NOTING ALSO that the Marine Environment Protection Committee, at its sixty-seventh session, approved with a view to adoption, at its sixty-eighth session, amendments to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978, and that it will also consider for adoption the environmental protection provisions of the Polar Code,

NOTING FURTHER the proposed amendments to the Convention to make use of the safety provisions of the Polar Code mandatory,

HAVING CONSIDERED, at its ninety-fourth session, amendments to the Convention, proposed and circulated in accordance with article VIII(b)(i) thereof,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2016, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified to the Secretary-General of the Organization their objections to the amendments;

3 INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2017 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE
SAFETY OF LIFE AT SEA, 1974, AS AMENDED**

A new chapter XIV is added after chapter XIII, as follows:

**"CHAPTER XIV
SAFETY MEASURES FOR SHIPS OPERATING IN POLAR WATERS**

Regulation 1 – Definitions

For the purpose of this chapter:

1 *Polar Code* means the International Code for Ships Operating in Polar Waters, consisting of an introduction and parts I-A and II-A and parts I-B and II-B, as adopted by resolutions MSC.385(94) and of the Marine Environment Protection Committee*, as may be amended, provided that:

- .1 amendments to the safety-related provisions of the introduction and part I-A of the Polar Code are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I; and
- .2 amendments to part I-B of the Polar Code are adopted by the Maritime Safety Committee in accordance with its Rules of Procedure.

* Refer to the resolution of adoption of the International Code for Ships Operating in Polar Waters, by the Marine Environment Protection Committee.

2 *Antarctic area* means the sea area south of latitude 60° S.

3 *Arctic waters* means those waters which are located north of a line from the latitude 58°00'.0 N and longitude 042°00'.0 W to latitude 64°37'.0 N, longitude 035°27'.0 W and thence by a rhumb line to latitude 67°03'.9 N, longitude 026°33'.4 W and thence by a rhumb line to the latitude 70°49'.56 N and longitude 008°59'.61 W (Sørkapp, Jan Mayen) and by the southern shore of Jan Mayen to 73°31'.6 N and 019°01'.0 E by the Island of Bjørnøya, and thence by a great circle line to the latitude 68°38'.29 N and longitude 043°23'.08 E (Cap Kanin Nos) and hence by the northern shore of the Asian Continent eastward to the Bering Strait and thence from the Bering Strait westward to latitude 60° N as far as Il'pyrskiy and following the 60th North parallel eastward as far as and including Etolin Strait and thence by the northern shore of the North American continent as far south as latitude 60° N and thence eastward along parallel of latitude 60° N, to longitude 056°37'.1 W and thence to the latitude 58°00'.0 N, longitude 042°00'.0 W.

4 *Polar waters* means Arctic waters and/or the Antarctic area.

5 *Ship constructed* means a ship the keel of which is laid or which is at a similar stage of construction.

- 6 *At a similar stage of construction* means the stage at which:
- .1 construction identifiable with a specific ship begins; and
 - .2 assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is less.

Regulation 2 – Application

1 Unless expressly provided otherwise, this chapter applies to ships operating in polar waters, certified in accordance with chapter I.

2 Ships constructed before 1 January 2017 shall meet the relevant requirements of the Polar Code by the first intermediate or renewal survey, whichever occurs first, after 1 January 2018.

3 In applying part I-A of the Polar Code, consideration should be given to the additional guidance in part I-B of the Polar Code.

4 This chapter shall not apply to ships owned or operated by a Contracting Government and used, for the time being, only in Government non-commercial service. However, ships owned or operated by a Contracting Government and used, for the time being, only in Government non-commercial service are encouraged to act in a manner consistent, so far as reasonable and practicable, with this chapter.

5 Nothing in this chapter shall prejudice the rights or obligations of States under international law.

Regulation 3 – Requirements for ships to which this chapter applies

1 Ships to which this chapter applies shall comply with the requirements of the safety-related provision of the introduction and with part I-A of the Polar Code and shall, in addition to the requirements of regulations I/7, I/8, I/9, and I/10, as applicable, be surveyed and certified, as provided for in that Code.

2 Ships to which this chapter applies holding a certificate issued pursuant to the provisions of paragraph 1 shall be subject to the control established in regulations I/19 and XI-1/4. For this purpose, such certificates shall be treated as a certificate issued under regulation I/12 or I/13.

Regulation 4 – Alternative design and arrangement

1 The goal of this regulation is to provide a methodology for alternative design and arrangements for structure, machinery, and electrical installations, fire safety and life-saving appliances and arrangements.

2 Structural arrangements, machinery and electrical installation, fire safety design and arrangement measures and as well as life-saving appliances and arrangements may deviate from the prescriptive requirements set out in chapters 3, 6, 7 and 8 of the Polar Code, provided that the alternative design and arrangements meet the intent of the goal and functional requirements concerned and provide an equivalent level of safety to the requirements in those chapters.

3 When alternative designs or arrangements deviate from the prescriptive requirements of chapters 3, 6, 7 and 8 of the Polar Code, an engineering analysis, evaluation and approval of the design and arrangements shall be carried out based on the guidelines approved by the Organization¹.

4 Any alternative designs or arrangement deviating from the prescriptive requirements shall be recorded in the Polar Ship Certificate and the ship's Polar Water Operational Manual, as required by the Polar Code, also defining the technical and operational measures and conditions for the allowed deviation.

¹ Refer to the *Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments (MSC.1/Circ.1455)*, the *Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212)* and the *Guidelines on alternative design and arrangements for fire safety (MSC/Circ.1002)*, as applicable."

ANNEX 8

DRAFT MSC RESOLUTION

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

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article XII of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, concerning the procedures for amending the Convention,

HAVING CONSIDERED, at its [ninety-fifth] session, amendments to the Convention proposed and circulated in accordance with article XII(1)(a)(i) of the STCW Convention,

1 ADOPTS, in accordance with article XII(1)(a)(iv) of the STCW Convention, amendments to the STCW Convention, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article XII(1)(a)(vii)(2) of the STCW Convention, that the amendments to the STCW Convention shall be deemed to have been accepted on [1 July 2016], unless, prior to that date more than one third of Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross register tons or more, have notified to the Secretary-General of the Organization their objections to the amendments;

3 INVITES Parties to note that, in accordance with article XII(1)(a)(viii) of the STCW Convention, that the amendments to the STCW Convention, shall enter into force on [1 January 2017] upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article XII(1)(a)(v) to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to the STCW Convention;

5 FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization, which are not Parties to the Convention.

ANNEX

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

**CHAPTER V – SPECIAL TRAINING REQUIREMENTS FOR PERSONNEL ON CERTAIN
TYPES OF SHIP**

The following new regulation V/3 is added after existing regulation V/2:

"Regulation V/3

**Mandatory minimum requirements for the training and qualifications of
masters, officers, ratings and other personnel on ships subject to the
IGF Code**

1 This regulation applies to masters, officers and ratings and other personnel serving on board ships subject to the IGF Code.

2 Prior to being assigned shipboard duties on board ships subject to the IGF Code, seafarers shall have completed the training required by paragraphs 4 to 7 below in accordance with their capacity, duties and responsibilities.

3 Seafarers who are required to be trained in accordance with paragraph 6 below shall, at intervals not exceeding five years, undertake appropriate refresher training or be required to provide evidence of having achieved the required standard of competence within the previous five years.

4 All seafarers serving on board ships subject to the IGF Code shall, prior to being assigned shipboard duties, receive appropriate ship and equipment specific familiarization as specified in regulation I/14.5.

5 Seafarers responsible for designated safety duties associated with the care, use or in emergency response to the fuel on board ships subject to the IGF Code shall hold a certificate in basic training for service on ships subject to the IGF Code. Every candidate for a certificate in basic training for service on ships subject to the IGF Code shall have completed basic training in accordance with provisions of section A-V/3, paragraph 1 of the STCW Code.

6 Seafarers responsible for designated safety duties associated with the care, use or in emergency response to the fuel on board ships subject to the IGF Code who have been qualified and certified according to regulation V/1-2, paragraphs 2 and 5, or regulation V/1-2, paragraphs 4 and 5 on liquefied gas tankers, are to be considered as having met the requirements specified in section A-V/3, paragraph 1 for basic training for service on ships subject to the IGF Code.

7 Masters, engineer officers and all personnel with immediate responsibility for the care and use of fuels and fuel systems on ships subject to the IGF Code shall hold a certificate in advanced training for service on ships subject to the IGF Code. Every candidate for a certificate in advanced training for service on ships subject to

the IGF Code shall, while holding the Certificate of Proficiency described in paragraph 5, have;

- .1 completed approved advanced training for service on ships subject to the IGF Code and meet the standard of competence as specified in section A-V/3, paragraph 2 of the STCW Code; and
- .2 completed at least one month of approved seagoing service that includes a minimum of three bunkering operations on board ships subject to the IGF Code. Two of the three bunkering operations may be replaced by approved simulator training on bunkering operations as part of the training in paragraph 1 above.

8 Masters, engineer officers and any person with immediate responsibility for the care and use of fuels on ships subject to the IGF Code who have been qualified and certified according to the standards of competence specified in section A-V/1-2, paragraph 2 for service on liquefied gas tankers are to be considered as having met the requirements specified in section A-V/3-2 for gas-fuelled ships, provided they have also met the requirements of paragraph 4, the bunkering requirements of paragraph 7.2 or have three cargo transfers, and have completed seagoing service of three months in the previous five years on board tanker carrying as cargo fuels addressed by the IGF Code.

9 Administrations shall ensure that a Certificate of Proficiency is issued to seafarers, who are qualified in accordance with paragraphs 5 or 7 as appropriate, or that an existing Certificate of Competency or Certificate of Proficiency is duly endorsed."

ANNEX 9

DRAFT MSC RESOLUTION

**AMENDMENTS TO PART A OF THE SEAFARERS' TRAINING,
CERTIFICATION AND WATCHKEEPING (STCW) CODE**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER Article XII and regulation I/1.2.3 of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, hereinafter referred to as "the Convention", concerning the procedures for amending part A of the Seafarers' Training, Certification and Watchkeeping (STCW) Code,

HAVING CONSIDERED, at its [ninety-fifth] session, amendments to part A of the STCW Code, proposed and circulated in accordance with article XII(1)(a)(i) of the Convention,

1 ADOPTS, in accordance with article XII(1)(a)(iv) of the Convention, amendments to the STCW Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article XII(1)(a)(vii)(2) of the Convention, that the said amendments to the STCW Code shall be deemed to have been accepted on [1 July 2016], unless, prior to that date, more than one third of Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross tonnage or more, have notified to the Secretary-General of the Organization their objections to the amendments;

3 INVITES Parties to the Convention to note that, in accordance with article XII(1)(a)(ix) of the Convention, the annexed amendments to the STCW Code shall enter into force on [1 January 2017] upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article XII(1)(a)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to the Convention;

5 FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization, which are not Parties to the Convention.

ANNEX

**AMENDMENTS TO PART A OF THE SEAFARERS' TRAINING,
CERTIFICATION AND WATCHKEEPING (STCW) CODE**

**CHAPTER V – SPECIAL TRAINING REQUIREMENTS FOR PERSONNEL ON CERTAIN
TYPES OF SHIP**

1 The following new section A-V/3 is added after existing section A-V/2:

"Section A-V/3

Mandatory minimum requirements for the training and qualification of masters, officers, ratings and other personnel on ships subject to the IGF Code

Basic training for ships subject to the IGF Code

1 Every candidate for certification in basic training for service on ships subject to the IGF Code shall:

- .1 have successfully completed the approved basic training required by regulation V/3, paragraph 5, in accordance with their capacity, duties and responsibilities as set out in table A-V/3-1; and
- .2 be required to provide evidence that the required standard of competence has been achieved in accordance with the methods and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-V/3-1.

Advanced training for ships subject to the IGF Code

2 Every candidate for certification in advanced training for service on ships subject to the IGF Code shall:

- .1.1 have successfully completed the approved advanced training required by regulation V/3, paragraph 7 in accordance with their capacity, duties and responsibilities as set out in table A-V/3-2; and
- .1.2 provide evidence that the required standard of competence has been achieved in accordance with the methods and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-V/3-2; or
- .2 have received appropriate training and certification according to the requirements for service on liquefied gas tankers as set out in regulation V/3, paragraph 8.

[Exemptions

3 The Administration may, in respect of ships of less than 500 gross tonnage, except for passenger ships, if it considers that a ship's size and the length or character of its voyage are such as to render the application of the full requirements of this section unreasonable or impracticable, exempt the seafarers on such a ship or class of ships from some of the requirements, bearing in mind the safety of people on board, the ship and property and the protection of the marine environment.]

Table A-V/3-1

Specification of minimum standard of competence in the basic training for ships subject to the IGF Code

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the safe operation of a ship subject to the IGF Code	<p>Design and operational characteristics of ships subject to the IGF Code</p> <p>Basic knowledge of ships subject to the IGF Code, their fuel systems and fuel storage systems:</p> <p>.1 fuels addressed by the IGF Code</p> <p>.2 types of fuel systems subject to the IGF Code</p> <p>.3 atmospheric, cryogenic or compressed storage of fuels on board ships subject to the IGF Code</p> <p>.4 general arrangement of fuel storage systems on board ships subject to the IGF Code</p> <p>.5 hazard zones and areas</p> <p>.6 typical fire safety plan</p> <p>.7 monitoring, control and safety systems aboard ships subject to the IGF Code</p> <p>Basic knowledge of fuels and fuel storage systems' operations on board ships subject to the IGF Code:</p> <p>.1 piping systems and valves</p> <p>.2 atmospheric, compressed or cryogenic storage</p> <p>.3 relief systems and protection screens</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>Communications within the area of responsibility are clear and effective</p> <p>Operations related to ship subject to the IGF Code are carried out in accordance with accepted principles and procedures to ensure safety of operations</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.4 basic bunkering operations and bunkering systems</p> <p>.5 protection against cryogenic accidents</p> <p>.6 fuel leak monitoring and detection</p> <p>Basic knowledge of the physical properties of fuels on board ship subject to the IGF Code, including:</p> <p>.1 properties and characteristics</p> <p>.2 pressure and temperature, including vapour pressure/temperature relationship</p> <p>Knowledge and understanding of safety requirements and safety management on board ships subject to the IGF Code</p>		
<p>Take precautions to prevent hazards on a ship subject to the IGF Code</p>	<p>Basic knowledge of the hazards associated with operations on ships subject to the IGF Code, including:</p> <p>.1 health hazards</p> <p>.2 environmental hazards</p> <p>.3 reactivity hazards</p> <p>.4 corrosion hazards</p> <p>.5 ignition, explosion and flammability hazards</p> <p>.6 sources of ignition</p> <p>.7 electrostatic hazards</p> <p>.8 toxicity hazards</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>Correctly identifies, on a SDS, relevant hazards to the ship and to personnel, and takes the appropriate actions in accordance with established procedures</p> <p>Identification and actions on becoming aware of a hazardous situation conform to established procedures in line with best practice</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.9 vapour leaks and clouds</p> <p>.10 extremely low temperatures</p> <p>.11 pressure hazards</p> <p>.12 fuel batch differences</p> <p>Basics knowledge of hazard controls:</p> <p>.1 emptying, inerting, drying and monitoring techniques</p> <p>.2 anti-static measures</p> <p>.3 ventilation</p> <p>.4 segregation</p> <p>.5 inhibition</p> <p>.6 measures to prevent ignition, fire and explosion</p> <p>.7 atmospheric control</p> <p>.8 gas testing</p> <p>.9 protection against cryogenic damages (LNG)</p> <p>Understanding of fuel characteristics on ships subject to the IGF Code as found on a Safety Data Sheet (SDS)</p>		

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
<p>Apply occupational health and safety precautions and measures</p>	<p>Awareness of function of gas-measuring instruments and similar equipment:</p> <ul style="list-style-type: none"> .1 gas testing <p>Proper use of specialized safety equipment and protective devices, including:</p> <ul style="list-style-type: none"> .1 breathing apparatus .2 protective clothing .3 resuscitators and equipment <p>Basic knowledge of safe working practices and procedures in accordance with legislation and industry guidelines and personal shipboard safety relevant to ships subject to the IGF Code, including:</p> <ul style="list-style-type: none"> .1 precautions to be taken before entering hazardous spaces and Ex zones .2 precautions to be taken before and during repair and maintenance work .3 safety measures for hot and cold work <p>Basic knowledge of first aid with reference to a Safety Data Sheet (SDS)</p>	<p>Examination or assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme 	<p>Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times</p> <p>Appropriate safety and protective equipment is correctly used</p> <p>First aid dos and don'ts</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
<p>Carry out firefighting operations on a ship subject to the IGF Code</p>	<p>Fire organization and action to be taken on ships subject to the IGF Code</p> <p>Special hazards associated with fuel systems and fuel handling on ships subject to the IGF Code</p> <p>Firefighting agents and methods used to control and extinguish fires in conjunction with the different fuels found on board ships subject to the IGF Code</p> <p>Firefighting system operations</p>	<p>Practical exercises and instruction conducted under approved and truly realistic training conditions (e.g. Simulated shipboard conditions) and, whenever possible and practicable, in darkness</p>	<p>Initial actions and follow-up actions on becoming aware of an emergency conform with established practices and procedures</p> <p>Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures</p> <p>Clothing and equipment are appropriate to the nature of the firefighting operations</p> <p>The timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions</p> <p>Extinguishment of fire is achieved using appropriate procedures techniques and firefighting agents</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Respond to emergencies	Basic knowledge of emergency procedures, including emergency shutdown	Examination and assessment of evidence obtained from one or more of the following: <ul style="list-style-type: none"> .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme 	The type and impact of the emergency is promptly identified and the response actions conform to the emergency procedures and contingency plans
Take precautions to prevent pollution of the environment from the release of fuels found on ships subject to the IGF Code	Basic knowledge of measures to be taken in the event of leakage/spillage/venting of fuels from ships subject to the IGF Code, including the need to: <ul style="list-style-type: none"> .1 report relevant information to the responsible persons .2 awareness of shipboard spill/leakage/venting response procedures .3 awareness of appropriate personal protection when responding to a spill/leakage of fuels addressed by the IGF Code 	Examination or assessment of evidence obtained from one or more of the following: <ul style="list-style-type: none"> .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme 	Procedures designed to safeguard the environment are observed at all times

Table A-V/3-2

Specification of minimum standard of competence of advanced training for ships subject to the IGF Code

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Familiarity with physical and chemical properties of fuels aboard ships subject to the IGF Code	<p>Basic knowledge and understanding of simple chemistry and physics and the relevant definitions related to the safe bunkering and use fuels used on board ships subject to the IGF Code, including:</p> <p>.1 the chemical structure of different fuels used on board ships subject to the IGF Code</p> <p>.2 the properties and characteristics of fuels used on board ships subject to the IGF Code, including:</p> <p>.2.1 simple physical laws</p> <p>.2.2 states of matter</p> <p>.2.3 liquid and vapour densities</p> <p>.2.4 boil off and weathering of cryogenic fuels</p> <p>.2.5 compression and expansion of gases</p> <p>.2.6 critical pressure and temperature of gases</p> <p>.2.7 flashpoint, upper and lower flammable limits, auto-ignition temperature</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>Effective use is made of information resources for identification of properties and characteristics of fuels addressed by the IGF Code and their impact on safety, environmental protection and ship operation</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.2.8 saturated vapour pressure/ reference temperature</p> <p>.2.9 dewpoint and bubble point</p> <p>.2.10 hydrate formation</p> <p>.2.11 combustion properties: heating values</p> <p>.2.12 methane number/ knocking</p> <p>.2.13 pollutant characteristics of fuels addressed by the IGF Code</p> <p>.3 the properties of single liquids</p> <p>.4 the nature and properties of solutions</p> <p>.5 thermodynamic units</p> <p>.6 basic thermodynamic laws and diagrams</p> <p>.7 properties of materials</p> <p>.8 effect of low temperature, including brittle fracture, for liquid cryogenic fuels</p> <p>Understanding the information contained in a Safety Data Sheet (SDS) about fuels addressed by the IGF Code</p>		

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate controls of fuel related to propulsion plant and engineering systems and services and safety devices on ships subject to the IGF Code	Operating principles of marine power plants Ships' auxiliary machinery Knowledge of marine engineering terms	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Plant, auxiliary machinery and equipment is operated in accordance with technical specifications and within safe operating limits at all times
Ability to safely perform and monitor all operations related to the fuels used on board ships subject to the IGF Code	Design and characteristics of ships subject to the IGF Code Knowledge of ship design, systems, and equipment found on ships subject to the IGF Code, including: .1 fuel systems for different propulsion engines .2 general arrangement and construction .3 fuel storage systems on board ships subject to the IGF Code, including materials of construction and insulation .4 fuel-handling equipment and instrumentations on board ships: .4.1 fuel pumps and pumping arrangements .4.2 fuel pipelines	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Communications are clear and understood Successful vessel operations using fuels addressed by the IGF Code are carried out in a safe manner, taking into account ship designs, systems and equipment Pumping operations are carried out in accordance with accepted principles and procedures and are relevant to the type of fuel Operations are planned, risk is managed and carried out in accordance with accepted principles and procedures to ensure safety of operations and avoid pollution of the marine environment

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.4.3 expansion devices</p> <p>.4.4 flame screens</p> <p>.4.5 temperature monitoring systems</p> <p>.4.6 fuel tank level- gauging systems</p> <p>.4.7 tank pressure monitoring and control systems</p> <p>.5 cryogenic fuel tanks temperature and pressure maintenance</p> <p>.6 fuel system atmosphere control systems (inert gas, nitrogen), including storage, generation and distribution</p> <p>.7 toxic and flammable gas-detecting systems</p> <p>.8 fuel Emergency Shut Down system (ESD)</p> <p>Knowledge of fuel system theory and characteristics, including types of fuel system pumps and their safe operation on board ships subject to the IGF Code</p> <p>.1 low pressure pumps</p> <p>.2 high pressure pumps</p> <p>.3 vaporizers</p> <p>.4 heaters</p> <p>.5 pressure build-up units</p>		

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Knowledge of safe procedures and checklists for taking fuel tanks in and out of service, including:</p> <ul style="list-style-type: none"> .1 inerting .2 cooling down .3 initial loading .4 pressure control .5 heating of fuel .6 emptying systems 		
<p>Plan and monitor safe bunkering, stowage and securing of the fuel on board ships subject to the IGF Code</p>	<p>General knowledge of ships subject to the IGF Code</p> <p>Ability to use all data available on board related to bunkering, storage and securing of fuels addressed by the IGF Code</p> <p>Ability to establish clear and concise communications and between the ship and the terminal, truck or the bunker- supply ship</p> <p>Knowledge of safety and emergency procedures for operation of machinery, fuel- and control systems for ships subject to the IGF Code</p> <p>Proficiency in the operation of bunkering systems on board ships subject to the IGF Code including:</p> <ul style="list-style-type: none"> .1 bunkering procedures 	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> .1 approved in-service experience .2 approved simulator training .3 approved training programme .4 approved laboratory equipment training or witnessing bunker operation 	<p>Fuel quality and quantity is determined taking into account the current conditions and necessary corrective safe measures are taken</p> <p>Procedures for monitoring safety systems to ensure that all alarms are detected promptly and acted upon in accordance with established procedures</p> <p>Operations are planned and carried out in accordance with fuel transfer manuals and procedures to ensure safety of operations and avoid spill damages and pollution of the environment</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.2 emergency procedures;</p> <p>.3 ship-shore/ship-ship interface</p> <p>.4 prevention of rollover</p> <p>Proficiency to perform fuel-system measurements and calculations, including:</p> <p>.1 maximum fill quantity</p> <p>.2 On Board Quantity (OBQ)</p> <p>.3 Minimum Remain On Board (ROB)</p> <p>.4 fuel consumption calculations</p> <p>Ability to ensure the safe management of bunkering and other IGF Code fuel related operations concurrent with other onboard operations, both in port and at sea</p>		<p>Personnel are allocated duties and informed of procedures and standards of work to be followed, in a manner appropriate to the individuals concerned and in accordance with safe working procedures</p>
<p>Take precautions to prevent pollution of the environment from the release of fuels from ships subject to the IGF Code</p>	<p>Knowledge of the effects of pollution on human and environment</p> <p>Knowledge of measures to be taken in the event of spillage/leakage/venting</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>Procedures designed to safeguard the environment are observed at all times</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Monitor and control compliance with legislative requirements	<p>Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL) and other relevant IMO instruments, industry guidelines and port regulations as commonly applied</p> <p>Proficiency in the use of the IGF Code and related documents</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training 	<p>The handling of fuels on board ships subject to the IGF Code complies with relevant IMO instruments and established industrial standards and codes of safe working practices</p> <p>Operations are planned and performed in conformity with approved procedures and legislative requirements</p>
Take precautions to prevent hazards	<p>Knowledge and understanding of the hazards and control measures associated with fuel system operations on board ships subject to the IGF Code, including:</p> <ul style="list-style-type: none"> .1 flammability .2 explosion .3 toxicity .4 reactivity .5 corrosivity .6 health hazards .7 inert gas composition .8 electrostatic hazards .9 pressurized gases .10 low temperature 	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> .1 approved in-service .2 approved training ship experience .3 approved simulator training .4 approved training programme 	<p>Relevant hazards to the ship and to personnel associated with operations on board ships subject to the IGF Code are correctly identified and proper control measures are taken</p> <p>Use of flammable and toxic gas-detection devices are in accordance with manuals and good practice</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Proficiency to calibrate and use monitoring and fuel detection systems, instruments and equipment on board ships subject to the IGF Code</p> <p>Knowledge and understanding of dangers of non-compliance with relevant rules/regulations</p> <p>Knowledge and understanding of risks assessment method analysis on board ships subject to the IGF Code</p> <p>Ability to elaborate and develop risks analysis related to risks on board ships subject to the IGF Code</p> <p>Ability to elaborate and develop safety plan and safety instructions for ships subject to the IGF Code</p> <p>Knowledge of hot work, enclosed spaces and tank entry including permitting procedures</p>		
<p>Apply occupational health and safety precautions and measures on board a ship subject to the IGF Code</p>	<p>Proper use of safety equipment and protective devices, including:</p> <ul style="list-style-type: none"> .1 breathing apparatus and evacuating equipment .2 protective clothing and equipment .3 resuscitators .4 rescue and escape equipment 	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> .1 approved in-service experience .2 approved training ship experience .3 approved simulator training 	<p>Appropriate safety and protective equipment is correctly used</p> <p>Procedures designed to safeguard personnel and the ship are observed at all times</p> <p>Working practices are in accordance</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Knowledge of safe working practices and procedures in accordance with legislation and industry guidelines and personal shipboard safety including:</p> <p>.1 precautions to be taken before, during and after repair and maintenance work on fuel systems addressed in the IGF Code</p> <p>.2 electrical safety (ref to IEC 600079-17)</p> <p>.3 ship/shore safety checklist</p> <p>Basic knowledge of first aid with reference to a Safety Data Sheets (SDS) for fuels addressed by the IGF Code</p>	<p>.4 approved training programme</p>	<p>with legislative requirements, codes of practice, permits to work and environmental concerns</p> <p>First aid dos and don'ts</p>
<p>Knowledge of the prevention, control and firefighting and extinguishing systems on board ships subject to the IGF Code</p>	<p>Knowledge of the methods and firefighting appliances to detect, control and extinguish fires of fuels addressed by the IGF Code</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>The type and scale of the problem is promptly identified, and initial actions conform with the emergency procedures for fuels addressed by the IGF Code</p> <p>Evacuation, emergency shutdown and isolation procedures are appropriate to the fuels addressed by the IGF Code</p>

ANNEX 10

DRAFT STCW.6 CIRCULAR

STCW.6/Circ.[...]

AMENDMENTS TO PART B OF THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE

1 The Maritime Safety Committee, at its [ninety-fifth session (3 to 12 June 2015)], adopted the following amendments to part B of the STCW Code.

2 In section B-V, the following new section is added after the existing section B-V/2:

"Section B-V/3

Guidance regarding the training and qualifications of masters, officers, ratings and other personnel on ships subject to the IGF Code

PERSON WITH IMMEDIATE RESPONSIBILITY

1 The term "person with immediate responsibility" as used in paragraphs 6 and 7 of regulation V/3 means a person being in a decision-making capacity with respect handling of fuel addressed by the IGF Code or other fuel-related operations.

PROOF OF QUALIFICATION

2 The master of every ship subject to the IGF Code should ensure that the officer or the person with immediate responsibility for the fuel on board possesses the appropriate certificate, issued or endorsed or validated as required by regulation V/3, and has had adequate recent practical experience on board an appropriate type of ship to permit that officer or person to safely perform the duties assigned.

GUIDANCE REGARDING SEAGOING SERVICE

3 The purpose of qualifying shipboard service is to provide training and knowledge for the safe use of fuels addressed by the IGF Code.

4 To satisfy the experience appropriate to their duties on the ship on which they serve as referred to in regulation V/3, onboard training should:

- .1 emphasize practical "hands on experience" and be related to the employment of the seafarer, i.e. the training of deck and engineering departments may be different;
- .2 be under the supervision of personnel qualified and experienced in the handling, characteristics and safety procedures of the fuels being used by the ship; and

.3 be on board a ship carrying fuels relative to the Certificate of Proficiency/Endorsement being sought and should be such that the specialized equipment is brought into operation for the use of the fuels addressed by the IGF Code.

5 The onboard training programme must in no way affect the safe running or the seaworthiness of the ship."

[3 The amendments will enter into force on 1 January 2017].

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

ANNEX 11

DRAFT AMENDMENTS TO SOLAS CHAPTER II-2

Regulation 4 – Probability of ignition

- 1 At the end of existing paragraph 5.3.2.2, the following sentence is added:

"For tankers constructed on or after [*date of entry into force*], any isolation shall also continue to permit the passage of large volumes of vapour, air or inert gas mixtures during cargo loading and ballasting, or during discharging in accordance with regulation 11.6.1.2."

Regulation 11 – Structural integrity

- 2 At the end of existing paragraph 6.2, the following sentence is added:

"For tankers constructed on or after [*date of entry into force*], the openings shall be arranged in accordance with regulation 4.5.3.4.1."

- 3 In paragraph 6.3.2, the following text is added between the first and the second sentences:

"In addition, for tankers constructed on or after [*date of entry into force*], the secondary means shall be capable of preventing over-pressure or under-pressure in the event of damage to, or inadvertent closing of, the means of isolation required in regulation 4.5.3.2.2."

Regulation 20 – Protection of vehicle, special category and ro-ro spaces

- 4 The existing paragraph 3.1.2 is amended to read:

3.1.2 Performance of ventilation systems

3.1.2.1 In passenger ships, the power ventilation system ~~required in paragraph 3.1.1~~ shall be separate from other ventilation systems and shall be ~~in operation~~ operated to give at least the number of air changes required in paragraph 3.1.1 at all times when vehicles are in such spaces, except where an air quality control system in accordance with paragraph 3.1.2.4 is provided. Ventilation ducts serving such cargo spaces capable of being effectively sealed shall be separated for each such space. The system shall be capable of being controlled from a position outside such spaces.

3.1.2.2 In cargo ships, the ventilation fans shall normally be run continuously and give at least the number of air changes required in paragraph 3.1.1 whenever vehicles are on board, except where an air quality control system in accordance with paragraph 3.1.2.4 is provided. Where this is impracticable, they shall be operated for a limited period daily as weather permits and in any case for a reasonable period prior to discharge, after which period the ro-ro or vehicle space shall be proved gas-free. One or more portable combustible gas detecting instruments shall be carried for this purpose. The system shall be entirely separate from other ventilating systems. Ventilation ducts serving ro-ro or vehicle spaces shall be capable of being

effectively sealed for each cargo space. The system shall be capable of being controlled from a position outside such spaces.

3.1.2.3 The ventilation system shall be such as to prevent air stratification and the formation of air pockets.

3.1.2.4 For all ships, where an air quality control system is provided based on the guidelines developed by the Organization,* the ventilation system may be operated at a decreased number of air changes and/or a decreased amount of ventilation. This relaxation does not apply to spaces subject to regulation 20-1.

* Refer to the *Design guidelines and operational recommendations for ventilation systems in ro-ro cargo spaces* (MSC/Circ.729), as amended."

ANNEX 12

**RESOLUTION MSC.387(94)
(adopted on 18 November 2014)**

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT
OF MOBILE OFFSHORE DRILLING UNITS, 2009 (2009 MODU CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO that the Assembly, when adopting resolution A.1023(26) on the *Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code)*, authorized the Committee to amend the 2009 MODU Code as appropriate, taking into consideration developments in design and technology, in consultation with appropriate organizations,

NOTING that the 2009 MODU Code contains the requirements regarding the type, quantity, operation and maintenance of life-saving appliances for mobile offshore units for drilling, production and service in offshore oil and gas fields as well as the corresponding provisions for crew training,

RECOGNIZING that these requirements and provisions are very similar to the SOLAS requirements and that some of them, being applied to mobile offshore units, may lead to potentially hazardous situations, due to the fact that they have been developed on the basis of typical operations for conventional ships,

HAVING CONSIDERED, at its ninety-fourth session, the recommendation made by the Sub-Committee on Ship Systems and Equipment at its first session, upon review the 2009 MODU Code,

1 ADOPTS, the amendments to the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code), as set out in the annex to the present resolution, for mobile offshore drilling units, the keels of which are laid or which are at a similar stage of construction on or after 18 November 2014;

2 INVITES Governments to implement the amendments attached to the present resolution and to bring them to the attention of all parties concerned.

ANNEX

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT
OF MOBILE OFFSHORE DRILLING UNITS, 2009 (2009 MODU CODE)**

CHAPTER 14

OPERATIONS

14.12 Practice musters and drills

In paragraph 14.12.4 a new subparagraph ".3" is added with the following:

- ".3 alternatively, the provisions regarding launching and manoeuvring may be considered as having been met for those units that have, (a) implemented the Guidelines developed by the Organization* and they are included in the unit's operating procedures or, (b) by other equivalent means acceptable to the Administration."

and the following corresponding footnote is added:

* Refer to the *Guidelines on alternative methods for lifeboat drills on MODUs*, developed by the Organization and included in MSC.1/Circ.1485."

ANNEX 13

**RESOLUTION MSC.388(94)
(adopted on 18 November 2014)**

**AMENDMENT TO THE RECOMMENDATION ON CONDITIONS FOR THE APPROVAL OF
SERVICING STATIONS FOR INFLATABLE LIFERAFTS (RESOLUTION A.761(18))**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO that the Assembly, when adopting resolution A.761(18) *Recommendation on conditions for the approval of servicing stations for inflatable liferafts*, authorized the Committee to keep this resolution under review and to adopt, when appropriate, amendments thereto,

HAVING CONSIDERED, at its ninety-fourth session, the recommendation made by the Sub-Committee on Ship Systems and Equipment at its first session, upon review the Recommendation,

1 ADOPTS the amendment to the *Recommendation on conditions for the approval of servicing stations for inflatable liferafts* (annex to resolution A.761(18)), as set out in the annex to the present resolution;

2 INVITES Governments to inspect servicing stations for inflatable liferafts within their authority in accordance with the recommendation as amended by the present resolution.

ANNEX

**AMENDMENT TO THE RECOMMENDATION ON CONDITIONS FOR THE APPROVAL OF
SERVICING STATIONS FOR INFLATABLE LIFERAFTS (RESOLUTION A.761(18))**

ANNEX

The existing subparagraph 5.11 is replaced by the following:

- ".11 all items of equipment should be checked to ensure that they are in good condition and that dated items are replaced at the time of servicing in cases where the expiry date falls before the next service date of the liferaft;"

ANNEX 14

AMENDED TRAFFIC SEPARATION SCHEMES

AMENDMENTS TO THE EXISTING TRAFFIC SEPARATION SCHEME "IN THE STRAIT OF GIBRALTAR"

(Reference chart No.445 issued by the Hydrographic Institute of the Spanish Navy, Datum WGS 84, 4th edition, June 2007).

Description of the amended traffic separation scheme

(a) A separation zone, half a mile wide, is centred upon the following geographical positions:

(1) 35° 59' .01 N 005° 25' .68 W (2) 35° 58' .36 N 005° 28' .19 W

(b) A separation zone, half a mile wide, is centred upon the following geographical positions:

(3) 35° 56' .70 N 005° 34' .71 W (5) 35° 56' .21 N 005° 44' .98 W
(4) 35° 56' .21 N 005° 36' .48 W

(c) A traffic lane for westbound traffic is established between the separation zone described in paragraph (a) and a line connecting the following geographical positions:

(7) 36° 01' .21 N 005° 25' .68 W (8) 36° 00' .35 N 005° 28' .98 W

(d) A traffic lane for westbound traffic is established between the separation zone described in paragraph (b) and a line connecting the following geographical positions:

(9) 35° 58' .68 N 005° 35' .44 W (11) 35° 58' .41 N 005° 44' .98 W
(10) 35° 58' .41 N 005° 36' .48 W

(e) A traffic lane for eastbound traffic is established between the separation zone described in paragraph (b) and a line connecting the following geographical positions:

(12) 35° 52' .51 N 005° 44' .98 W (14) 35° 54' .55 N 005° 33' .90 W
(13) 35° 53' .81 N 005° 36' .48 W

(f) A traffic lane for eastbound traffic is established between the separation zone described in paragraph (a) and a line connecting the following geographical positions:

(15) 35° 56' .35 N 005° 27' .40 W (16) 35° 56' .84 N 005° 25' .68 W

- (g) A precautionary area is established on the eastern side of the TSS "In the Strait of Gibraltar" by the lines connecting the following geographical positions:

(6) 36° 02' .80 N 005° 19' .68 W (16) 35° 56' .84 N 005° 25' .68 W
(7) 36° 01' .21 N 005° 25' .68 W (17) 35° 58' .78 N 005° 18' .55 W

- (h) A precautionary area with recommended directions of traffic flow is established off the Moroccan port of Tanger-Med in the TSS "In the Strait of Gibraltar" formed by the lines connecting the following geographical positions:

(8) 36° 00' .35 N 005° 28' .98 W (14) 35° 54' .55 N 005° 33' .90 W
(9) 35° 58' .68 N 005° 35' .44 W (15) 35° 56' .35 N 005° 27' .40 W

Inshore traffic zones

Description of the northern inshore traffic zone

- (a) The area between the northern boundary of the scheme formed by the continuing line that links points 7, 8, 9, 10 and 11 and the Spanish coast, and lying between the following limits is designated as an inshore traffic zone:

- (1) Eastern limit: That part of the meridian 005° 25'.68 W (27) between the northern boundary of the westbound traffic lane (latitude 36° 01' .21 N, corresponding to point (7) on the attached chartlet) and the Spanish coast.
- (2) Western limit: That part of meridian 005° 44'.98 W (26) between the northern boundary of the westbound traffic lane (latitude 35°58'.41 N, corresponding to point (11) on the attached chartlet) and the Spanish coast.

Description of the south-eastern and south-western inshore traffic zones

- (b) The two southern inshore traffic zones, located between the southern limit of the TSS and the coast of Morocco, are separated by a free navigational area between them; these are defined as below. A Tanger-Med ports anchorage area is established within the limits of the free navigational area.

- (1) South-eastern inshore traffic zone: a zone between the southern limit of the eastern portion of the eastbound traffic lane and the coast of Morocco and limited by the following geographical positions:

(18) 35° 54' .45 N 005° 25' .68 W
(16) 35° 56' .84 N 005° 25' .68 W
and
(15) 35° 56' .35 N 005° 27' .40 W
(19) 35° 54' .88 N 005° 27' .40 W

- (2) South-western inshore traffic zone: a zone formed by the coast of Morocco, the external limit of the traffic lane for the traffic heading towards the eastern area of the current scheme and the lines connecting the following geographical positions:

(24) 35° 51' .20 N 005° 32' .40 W
(23) 35° 52' .18 N 005° 34' .00 W

(22)	35° 51'	.10 N	005° 36'	.20 W
(21)	35° 52'	.06 N	005° 36'	.30 W
(20)	35° 52'	.87 N	005° 36'	.70 W
(14)	35° 54'	.55 N	005° 33'	.90 W
and				
(12)	35° 52'	.51 N	005° 44'	.98 W
(25)	35° 49'	.09 N	005° 44'	.98 W

Notes:

- 1 An anchorage area, named "Alpha", for the port of Tanger-Med is established within the south-western inshore traffic zone configured as a circle centred in geographical position 35°51' .05 N, 005°40' .34 W and having a radius of 0.4 miles.
- 2 Ships heading for the anchorage "Alpha" can enter the south-western inshore traffic zone:
 - by its western limit if coming from the Atlantic Ocean; and
 - by its eastern limit if coming from the port of Tanger-Med or the Mediterranean Sea, subject to the provisions of requirements to use appropriate TSS and follow the recommended directions of traffic flow within the precautionary area (h) above, in accordance with rule 10 (d) of the 1972 COLREGs.
- 3 Given the absence of ports or any type of facility in the south-eastern inshore traffic zone, ships entering or leaving the port of Tanger-Med coming from or heading for the Mediterranean Sea must sail along the corresponding traffic lanes, in accordance with rule 10 of the 1972 COLREGs.
- 4 Ships sailing from the Atlantic Ocean or the Mediterranean Sea towards the port of Tanger-Med, or departing from it for the Atlantic Ocean or the Mediterranean Sea must sail along the corresponding traffic lanes, in accordance with rule 10 of the 1972 COLREGs.

AMENDMENTS TO THE EXISTING TRAFFIC SEPARATION SCHEME "IN THE WATERS OFF THE CHENGSHAN JIAO PROMONTORY"

Note: See mandatory ship reporting system "Off the Chengshan Jiao Promontory".

(Reference charts: Chinese charts 1305 and 35001.

Note: These charts are based on WGS 84 Datum.)

The ship's routing system in the waters off the Chengshan Jiao promontory consists of several elements comprising:

- .1 The inner traffic separation scheme, the inner precautionary area and inshore traffic zone;
- .2 The outer traffic separation schemes and outer precautionary area.

Part I (Inner TSS):

Description of the Chengshan Jiao inner traffic separation scheme, the inner precautionary area and inshore traffic zone;

(a) A separation zone, 2 miles wide, is centered upon the line connecting the following geographical positions:

(1)	37°31'.18 N	122°45'.40 E	(3)	37°11'.60 N	122°49'.68 E
(2)	37°25'.29 N	122°49'.68 E			

(b) A separation zone is bounded by part of the inner precautionary area (g) and by lines connecting the following geographical positions:

(13)	37°38'.20N	122°47'.31E	(27)	37°11'.60N	122°56'.60E
(14)	37°38'.82N	122°47'.76E	(9)	37°11'.60N	122°53'.46E
(15)	37°37'.30N	122°51'.00E	(8)	37°26'.09N	122°53'.46E
(26)	37°31'.08N	122°56'.62E	(7)	37°32'.69N	122°48'.68E

(c) The inner limit of the traffic separation scheme is the line connecting the following geographical positions:

(4)	37°29'.69 N	122°42'.13E	(6)	37°11'.60 N	122°45'.91E
(5)	37°24'.49 N	122°45'.91E			

(d) The outer limit of the traffic separation scheme is the part of separation zone (b) connecting the following geographical positions:

(7)	37°32'.69N	122°48'.68E	(9)	37°11'.60N	122°53'.46E
(8)	37°26'.09N	122°53'.46E			

(e) The traffic lane for southbound traffic, 2 miles wide, is established between the separation zone (a) and the inner limit of the traffic separation scheme (c). The main traffic directions are 150° (T) and 180° (T).

(f) The traffic lane for northbound traffic, 2 miles wide, is established between the separation zone (a) and part of the separation zone (d). The main traffic directions are 000° (T) and 330° (T).

Inner precautionary area

(g) The inner precautionary area is established to the north by an arc of a circle of radius 5 miles centering upon geographical position:

(10) 37°34'.65N 122°42'.88E

and connecting with the following geographical positions:

(4)	37°29'.69 N	122°42'.13E	(7)	37°32'.69N	122°48'.68E
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Inshore traffic zone

(h) The inshore traffic zone is the waters between the inner limit of the traffic separation scheme described in (c) and the adjacent coast.

Part II (Outer TSSs):

Description of the Chengshan Jiao outer traffic separation schemes and outer precautionary area

North traffic separation scheme

(i) A separation zone, 2 miles wide, is centered upon the following geographical positions:

(11) 37°41'.41N 122°49'.65E (12) 37°39'.89N 122°52'.89E

(j) A separation line connects the following geographical positions:

(16) 37°44'.00N 122°51'.56E (17) 37°42'.49N 122°54'.76E

(k) A 2 mile wide traffic lane for southeast bound traffic between the separation zone described in (i) and that portion of separation zone described in (b) above connecting the following geographical positions:

(14) 37°38'.82N 122°47'.76E (15) 37°37'.30N 122°51'.00E

The main traffic direction is 120° (T)

(l) A 2 mile wide traffic lane for northwest bound traffic is established between the separation zone described in (i) above and a separation line described in (j). The main traffic direction is 300° (T).

East traffic separation scheme

(m) A separation zone, 2 miles wide, is centered upon the following geographical positions:

(18) 37°33'.72N 123°06'.07E (19) 37°32'.15N 123°09'.44E

(n) A separation line connects the following geographical positions:

(20) 37°31'.14N 123°04'.16E (21) 37°29'.56N 123°07'.53E

(o) A separation line connects the following geographical positions:

(22) 37°36'.33N 123°07'.94E (23) 37°34'.76N 123°11'.30E

(p) A traffic lane for south-eastbound traffic between the separation zone described in (m) and separation line described in (n) above. 2 miles wide, the main traffic direction is 120° (T)

(q) A traffic lane for north-westbound traffic between the separation zone described in (m) above and a separation line described in (o). 2 miles wide, the main traffic direction is 300° (T).

South traffic separation scheme

(r) A separation zone, 2 miles wide, is centered upon the following geographical positions:

(24) 37°31'.08N 123°00'.37E (25) 37°11'.60N 123°00'.37E

(s) A separation line connects the following geographical positions:

(20) 37°31'.14N 123°04'.16E (28) 37°11'.60N 123°04'.14E

(t) A traffic lane for southbound traffic between the separation zone described in (r) above and that portion of separation zone described in (b) above connecting the following geographical positions:

(26) 37°31'.08N 122°56'.62E (27) 37°11'.60N 122°56'.60E

2 miles wide, the main traffic direction is 180° (T).

(u) A traffic lane for northbound traffic between the separation zone described in (r) above and the separation line described in (s) above connecting the following geographical positions:

(20) 37°31'.14N 123°04'.16E (28) 37°11'.60N 123°04'.14E

The main traffic direction is 000° (T).

Outer precautionary area

(v) The outer precautionary area is established by a line connecting the following geographical positions:

(17) 37°42'.49N 122°54'.76E

(22) 37°36'.33N 123°07'.94E

(20) 37°31'.14N 123°04'.16E

(26) 37°31'.08N 122°56'.62E

(15) 37°37'.30N 122°51'.00E

Notes: All oil tankers 150 gross tonnage and above, all vessels carrying dangerous, hazardous cargo, vessels of LOA more than 200 meters, or mean draft more than 12 meters, and high speed vessels which are transiting the area of Chengshan Jiao Promontory are recommended to sail in the traffic lanes of the Outer Traffic Separation Schemes.

AMENDMENTS TO THE EXISTING TRAFFIC SEPARATION SCHEME "OFF FRIESLAND"

Reference charts, Netherlands 1632 (INT 1420), 2011 edition, 1633 (INT 1417), 2010 edition and 1037 (INT 1045), 2011 edition.

Note: These charts are based on World Geodetic System 1984 datum (WGS 84)

(EXISTING GEOGRAPHICAL POSITIONS IN ED50 COINCIDING WITH THE PROPOSED NEW SYSTEM HAVE BEEN CONVERTED TO WGS 84.)

West Friesland scheme

- (a) The eastern boundary of the separation zone is amended from existing position (19) north-eastward and newly bounded by the following geographical positions as follows:

(100) 53° 55'.36 N 004° 33'.85 E (21) 53° 59'.18 N 004° 35'.92 E

- (b) A new separation zone is established bounded by a line connecting the following geographical positions:

(85) 53° 59'.46 N 004° 39'.60 E (86) 53° 59'.68 N 004° 42'.44 E
(87) 53° 57'.17 N 004° 38'.40 E

- (c) A traffic lane for northbound traffic branching off from the main north-eastbound traffic lane is established between the separation zones in paragraphs (a) and (b).

North Friesland scheme

- (d) A separation zone is established bounded by a line connecting the following geographical positions:

(79) 54° 04'.30 N 004° 59'.98 E (80) 54° 04'.78 N 005° 05'.94 E
(81) 54° 02'.76 N 005° 04'.73 E (82) 54° 02'.28 N 004° 58'.76 E

- (e) A separation zone is established bounded by a line connecting the following geographical positions:

(75) 54° 02'.84 N 004° 41'.41 E (76) 54° 03'.99 N 004° 56'.11 E
(77) 54° 01'.98 N 004° 54'.89 E (78) 54° 00'.83 N 004° 40'.34 E

- (f) A separation zone is established bounded by a line connecting the following geographical positions:

(71) 54° 01'.52 N 004° 24'.62 E (72) 54° 02'.55 N 004° 37'.69 E
(73) 54° 00'.54 N 004° 36'.62 E (74) 53° 59'.21 N 004° 19'.05 E

- (g) A separation zone is established bounded by a line connecting the following geographical positions:

(67) 54° 00'.37N 004° 09'.21 E (68) 54° 01'.10 N 004° 18'.89 E
(69) 53° 58'.91 N 004° 13'.93 E (70) 53° 58'.66 N 004° 09'.60 E

- (h) A traffic lane for eastbound traffic is established between the separation zone in paragraph (g) and the following existing geographical positions:

(26) 53° 57'.16 N 004° 09'.94 E (22) 53° 57'.56 N 004° 15'.09 E

- (i) A traffic lane for eastbound traffic is established between the separation zone in paragraph (f) and the amended separation zone of the traffic separation scheme "West Friesland".

- (j) A traffic lane for eastbound traffic is established between the separation zones in paragraph (b) and (e).

- (k) A traffic lane for eastbound traffic is established between the separation zone in paragraph (e) and the following geographical positions:
(25) 53° 59'.96 N 004° 45'.92 E (96) 54° 00'.60 N 004° 54'.06 E
- (l) A traffic lane for eastbound traffic is established between the separation zone in paragraph (d) and the following geographical positions:
(97) 54° 00'.91 N 004° 57'.94 E (98) 54° 01'.38 N 005° 03'.90 E
- (m) A traffic lane for westbound traffic is established between the separation zone in paragraph (d) and the following geographical positions:
(94) 54° 06'.14 N 005° 06'.77 E (93) 54° 05'.67 N 005° 00'.81 E
- (n) A traffic lane for westbound traffic is established between the separation zone in paragraph (e) and the following geographical positions:
(92) 54° 05'.37 N 004° 56'.94 E (91) 54° 04'.20 N 004° 42'.14 E
- (o) A traffic lane for westbound traffic is established between the separation zone in paragraph (f) and the following geographical positions:
(90) 54° 03'.91 N 004° 38'.43 E (89) 54° 03'.13 N 004° 28'.46 E
- (p) A traffic lane for westbound traffic is established between the separation zone in paragraph (g) and the following geographical positions:
(88) 54° 02'.65 N 004° 22'.44 E (31) 54° 01'.87 N 004° 08'.88 E
- (q) A traffic lane for south-westbound traffic is established between, on the west side, a line connecting the following geographical positions:
(68) 54° 01'.10 N 004° 18'.89 E (69) 53° 58'.91 N 004° 13'.93 E
and, on the east side, a line connecting the following geographical positions:
(71) 54° 01'.52 N 004° 24'.62 E (74) 53° 59'.21 N 004° 19'.05 E
- (r) A traffic lane for northbound traffic is established between, on the west side, a line connecting the following geographical positions:
(72) 54° 02'.55 N 004° 37'.69 E (73) 54° 00'.54 N 004° 36'.62 E
and, on the east side, a line connecting the following geographical positions:
(75) 54° 02'.84 N 004° 41'.41 E (78) 54° 00'.83 N 004° 40'.34 E
- (s) A traffic lane for southbound traffic is established between, on the west side, a line connecting the following geographical positions:
(76) 54° 03'.99 N 004° 56'.11 E (77) 54° 01'.98 N 004° 54'.89 E
and, on the east side, a line connecting the following geographical positions:
(79) 54° 04'.30 N 004° 59'.98 E (82) 54° 02'.28 N 004° 58'.76 E

- (t) A traffic lane for northbound traffic is established between, on the west side, a line connecting the following geographical positions:

(80) 54° 04'.78 N 005° 05'.94 E (81) 54° 02.76 N 005° 04'.73 E

and, on the east side, a line connecting the following geographical positions:

(83) 54° 04'.84 N 005° 09'.60 E (84) 54° 03'.26 N 005° 08'.65 E

East Friesland scheme

- (u) The western boundary of the separation zone is amended as follows:

Existing position 32 is shifted east to new position (84) 54° 03'.26 N 005° 08'. 65 E

Existing position 37 is shifted east to new position (83) 54° 04'.84 N 005° 09'.60 E

- (v) The traffic lane for eastbound traffic is amended as follows:

Existing position (28) I shifted east to new position (99) 54° 01'.69 N 005° 07'.70 E

- (w) The traffic lane for westbound traffic is amended as follows:

Existing position (29) I shifted east to new position (95) 54° 06'.44 N 005° 10'.57 E

ANNEX 15

ROUTEING MEASURES OTHER THAN TRAFFIC SEPARATION SCHEMES

1 AMENDMENTS TO THE EXISTING RECOMMENDED DIRECTIONS OF TRAFFIC FLOW WITHIN THE PRECAUTIONARY AREA OFF TANGER-MED IN THE STRAIT OF GIBRALTAR

(Reference chart No.445, issued by the Hydrographic Institute of the Spanish Navy, Datum WGS 84, 4th edition, June 2007).

Description of the amended precautionary area off Tanger-Med

A precautionary area with recommended directions of traffic flow is established off the Moroccan port of Tanger-Med in the Gibraltar TSS, formed by the lines connecting the following geographical positions:

(08)	36° 00'.35 N	005° 28'.98 W
(09)	35° 58'.68 N	005° 35'.44 W
(14)	35° 54'.55 N	005° 33'.90 W
(15)	35° 56'.35 N	005° 27'.40 W

2 NEW AREAS TO BE AVOIDED "OFF FRIESLAND"

Reference charts, Netherlands 1632 (INT 1420), edition 2011, 1633 (INT 1417), edition 2010 and 1307 (1045) editions 2011.

Note: These charts are based on World Geodetic System 1984 datum (WGS 84)

(a) An area to be avoided is established and bounded by a line connecting the following geographical positions:

(101)	54° 01.27 N	004° 24.79 E	(102)	54° 02.23 N	004° 37.05 E
(103)	54° 00.78 N	004° 36.28 E	(104)	53° 59.61 N	004° 20.79 E

(b) An area to be avoided is established and bounded by a line connecting the following geographical positions:

(105)	54° 02.70 N	004° 43.12 E	(106)	54° 03.57 N	004° 54.19 E
(107)	54° 02.13 N	004° 53.32 E	(108)	54° 01.26 N	004° 42.33 E

3 DEEP-WATER ROUTES FORMING PARTS OF ROUTEING SYSTEM "OFF FRIESLAND"

Reference charts Netherlands 1632 (INT 1420), edition 2011, 1633 (INT 1417), edition 2010 and 1307 (1045) editions 2011.

Note: These charts are based on World Geodetic System 1984 datum (WGS 84)

(EXISTING GEOGRAPHICAL POSITIONS IN ED50 COINCIDING WITH THE PROPOSED NEW SYSTEM HAVE BEEN CONVERTED TO WGS 84.)

1 The part "**Friesland Junction**" **precautionary area** (paragraphs e) and f)) is deleted.

2 The text: **Deep-water route from the traffic separation scheme "Off Botney Ground" to the precautionary area "Friesland Junction"** is replaced by:

Deep-water route from the traffic separation scheme "Off Botney Ground" to the traffic separation scheme "North Friesland"

3 After existing paragraph (h), a new paragraph is added reading:

(i) Geographical positions (26) and (31) form part of the traffic separation scheme "North Friesland".

and renumber existing paragraph (i) to (j).

4 Replace the words "Friesland Junction" in note 2 by "TSS North Friesland".

4 AMENDMENTS TO THE MANDATORY ROUTE FOR TANKERS FROM NORTH HINDER TO THE GERMAN BIGHT

Reference charts, Netherlands 1632 (INT 1420), edition 2011, 1633 (INT 1417), edition 2010 and 1307 (1045) editions 2011.

Note: These charts are based on World Geodetic System 1984 datum (WGS 84)

1 The "**Friesland junction**" **precautionary area** is replaced by:

Traffic separation scheme "North Friesland"

(a) A separation zone is established bounded by a line connecting the following geographical positions:

(79)	54° 04'.30 N	004° 59'.98 E	(80)	54° 04'.78 N	005° 05'.94 E
(81)	54° 02'.76 N	005° 04'.73 E	(82)	54° 02'.28 N	004° 58'.76 E

(b) A separation zone is established bounded by a line connecting the following geographical positions:

(75)	54° 02'.84 N	004° 41'.41 E	(76)	54° 03'.99 N	004° 56'.11 E
(77)	54° 01'.98 N	004° 54'.89 E	(78)	54° 00'.83 N	004° 40'.34 E

(c) A separation zone is established bounded by a line connecting the following geographical positions:

(71)	54° 01'.52 N	004° 24'.62 E	(72)	54° 02'.55 N	004° 37'.69 E
(73)	54° 00'.54 N	004° 36'.62 E	(74)	53° 59'.21 N	004° 19'.05 E

(d) A separation zone is established bounded by a line connecting the following geographical positions:

(67)	54° 00'.37 N	004° 09'.21 E	(68)	54° 01'.10 N	004° 18'.89 E
(69)	53° 58'.91 N	004° 13'.93 E	(70)	53° 58'.66 N	004° 09'.60 E

- (e) A traffic lane for eastbound traffic is established between the separation zone in paragraph (d) and the following existing geographical positions:
- (26) 53° 57'16 N 004° 09'.94 E (22) 53° 57'.56 N 004° 15'.09 E
- (f) A traffic lane for eastbound traffic is established between the separation zone in paragraph (c) and the amended separation zone of the traffic separation scheme "West Friesland".
- (g) A traffic lane for eastbound traffic is established between the separation zones in paragraph (b) and the new separation zone of the amended traffic separation scheme "West Friesland".
- (h) A traffic lane for eastbound traffic is established between the separation zone in paragraph (b) and the following geographical positions:
- (25) 54° 59'.96 N 004° 45'.92 E (96) 54° 00'.60 N 004° 54'.06 E
- (i) A traffic lane for eastbound traffic is established between the separation zone in paragraph (a) and the following geographical positions:
- (97) 54° 00'.91 N 004° 57'.94 E (98) 54° 01'.38 N 005° 03'.90 E
- (j) A traffic lane for westbound traffic is established between the separation zone in paragraph (a) and the following geographical positions:
- (94) 54° 06'.14 N 005° 06'.77 E (93) 54° 05'.67 N 005° 00'.81 E
- (k) A traffic lane for westbound traffic is established between the separation zone in paragraph (b) and the following geographical positions:
- (92) 54° 05'.37 N 004° 56'.94 E (91) 54° 04'.20 N 004° 42'.14 E
- (l) A traffic lane for westbound traffic is established between the separation zone in paragraph (c) and the following geographical positions:
- (90) 54° 03'.91 N 004° 38'.43 E (89) 54° 03'.13 N 004° 28'.46 E
- (m) A traffic lane for westbound traffic is established between the separation zone in paragraph (d) and the following geographical positions:
- (88) 54° 02'.65 N 004° 22'.44 E (31) 54° 01'.87 N 004° 08'.88 E
- (n) A traffic lane for south-westbound traffic is established between, on the west side, a line connecting the following geographical positions:
- (68) 54° 01'.10 N 004° 18'.89 E (64) 53° 58'.91 N 004° 13'.93 E
- and, on the east side, a line connecting the following geographical positions:
- (71) 54° 01'.52 N 004° 24'.62 E (74) 53° 59'.21 N 004° 19'.05 E

- (o) A traffic lane for northbound traffic is established between, on the west side, a line connecting the following geographical positions:

(72) 54° 02'.55 N 004° 37'.69 E (73) 54° 00'.54 N 004° 36'.62 E

and, on the east side, a line connecting the following geographical positions:

(75) 54° 02'.84 N 004° 41'.41 E (78) 54° 00'.83 N 004° 40'.34 E

2 The traffic separation scheme "East Friesland" is amended as follows:

- (p) The western boundary of the separation zone is amended as follows:

Existing position 32 is shifted east to new position (84) 54° 03'.26 N, 005° 08'.65 E

Existing position 37 is shifted east to new position (83) 54° 04'.84 N, 005° 09'.60 E

- (q) The traffic lane for eastbound traffic is amended as follows:

Existing position (28) is shifted east to new position (99) 54° 01'.69 N, 005° 07'.70 E

- (r) The traffic lane for westbound traffic is amended as follows:

Existing position (29) is shifted east to new position (95) 54° 06'.44 N, 005° 10'.57 E

3 The traffic separation scheme "West Friesland" is amended as follows

- (s) The eastern boundary of the separation zone is amended from existing position (19) north-eastward and newly bounded by the following geographical positions as follows:

(100) 53° 55'.36 N 004° 33'.85 E (21) 53° 59'.18 N 004° 35'.92 E

- (t) A new separation zone is established bounded by a line connecting the following geographical positions:

(85) 53° 59'.46 N 004° 39'.60 E (86) 53° 59'.68 N 004° 42'.44 E
(87) 53° 57'.17 N 004° 38'.40 E

- (u) A traffic lane for northbound traffic branching off from the main north-eastbound traffic lane is established between the separation zones in paragraphs (s) and (t).

5 TWO-WAY ROUTE IN THE GREAT NORTH-EAST CHANNEL, TORRES STRAIT

Reference charts:

Electronic Navigation Charts (ENC): AU410143 (edition 9), AU411142 (edition 4), AU411143 (edition 8)

Paper charts: Aus292 (2005 June edition), Aus293 (2011 November edition), Aus837 (2012 February edition), Aus839 (2012 January edition), Aus840 (2012 July edition)

Description of the area

- (a) The northern limits are bound by the line joining the following geographical positions:

(1)	10° 29'.51 S	142° 22'.29 E
(2)	10° 28'.81 S	142° 25'.61 E
(3)	10° 28'.54 S	142° 26'.93 E
(4)	10° 27'.80 S	142° 28'.45 E
(5)	10° 26'.40 S	142° 31'.30 E
(6)	10° 21'.90 S	142° 41'.50 E
(7)	10° 19'.37 S	142° 47'.97 E
(8)	10° 18'.14 S	142° 50'.82 E
(9)	10° 13'.38 S	142° 54'.96 E
(10)	10° 00'.50 S	143° 03'.42 E
(11)	09° 47'.73 S	143° 10'.40 E
(12)	09° 25'.80 S	143° 31'.07 E
(13)	09° 12'.47 S	143° 51'.34 E

- (b) The southern limits are bound by the line joining the following geographical positions:

(14)	10° 30'.45 S	142° 24'.02 E
(15)	10° 28'.38 S	142° 28'.66 E
(16)	10° 27'.38 S	142° 31'.85 E
(17)	10° 22'.85 S	142° 41'.95 E
(18)	10° 19'.80 S	142° 48'.23 E
(19)	10° 17'.63 S	142° 53'.29 E
(20)	10° 09'.78 S	143° 05'.55 E
(21)	09° 53'.97 S	143° 15'.61 E
(22)	09° 46'.02 S	143° 18'.48 E
(23)	09° 37'.96 S	143° 21'.97 E
(24)	09° 27'.60 S	143° 32'.15 E
(25)	09° 13'.95 S	143° 52'.62 E

- (c) The centre polygon is defined by the following geographical positions:

(26)	10° 16'.10 S	142° 53'.82 E
(27)	10° 13'.79 S	142° 55'.85 E
(28)	10° 01'.05 S	143° 04'.20 E
(29)	09° 48'.10 S	143° 11'.30 E
(30)	09° 41'.04 S	143° 18'.87 E
(31)	09° 45'.72 S	143° 17'.51 E
(32)	09° 53'.84 S	143° 14'.50 E
(33)	10° 09'.15 S	143° 04'.70 E

6 TWO-WAY ROUTES AND PRECAUTIONARY AREA AT JOMARD ENTRANCE

(Reference Charts:

Electronic Navigation charts (ENC): AU412152 (edition 2, 2014), (edition 3, planned 2014/15, will include an inset at a scale of 1:45,000 covering Jomard Entrance as part of the depiction of the Two-way route.), AU220150 (edition 3, 2013).

Paper charts: Aus62x (Planned for 2014/15), Aus510 (edition 1, 2007), Aus4621(INT 621) (edition 4, 2011).

Note: All charts above and geographical positions are based on WGS 84.

Description of the Two-Way Routes and Precautionary Area

The ships' routing system consists of four recommendatory Two-way routes and a precautionary area through Jomard Entrance, aligned with and centred upon the existing charted preferred route. At the shoalest point within the proposed route, depths are in excess of 200 metres. In the area immediately south of Jomard Entrance, three existing Coral Sea shipping routes converge (and diverge) at Jomard Entrance. A precautionary area will assist with improving the safety of navigational interaction in the region.

A list of geographical coordinates of the four recommendatory two-way routes and precautionary area are provided below.

Two-way route at Jomard Entrance (aligned 005°-185°)

(1)	11° 10'.00S	152° 06'.42E	(16)	11° 20'.00S	152° 07'.14E
(2)	11° 18'.00S	152° 05'.72E	(17)	11° 18'.00S	152° 06'.76'E
(3)	11° 20'.00S	152° 04'.97E	(18)	11° 10'.00S	152° 07'.46E

Precautionary Area

(3)	11° 20'.00S	152° 04'.97E	(15)	11° 22'.50S	152° 07'.59E
(4)	11° 22'.50S	152° 02'.88E	(16)	11° 20'.00S	152° 07'.14E

South-western Two-way route (aligned 040°-220°)

(4)	11° 22'.50S	152° 02'.88E	(6)	11° 26'.00S	152° 01'.18E
(5)	11° 26'.00S	151° 59'.90E	(7)	11° 22'.50S	152° 04'.14E

Southern Two-Way route (aligned 005°-185°)

(8)	11° 22'.50S	152° 05'.33E
(9)	11° 26'.00S	152° 05'.00E
(10)	11° 26'.00S	152° 06'.05E
(11)	11° 22'.50S	152° 06'.35E

South-eastern Two-way route (aligned 350°-170°)

(12)	11° 22'.50S	152° 06'.56E
(13)	11° 26'.00S	152° 07'.22E
(14)	11° 26'.00S	152° 08'.24E
(15)	11° 22'.50S	152° 07'.59E

ANNEX 16

**RESOLUTION MSC 389(94)
(Adopted on 21 November 2014)**

**AMENDMENTS TO THE EXISTING MANDATORY SHIP REPORTING SYSTEM
"OFF CHENGSHAN JIAO PROMONTORY"**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO regulation V/11 of the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention), in relation to the adoption of mandatory ship reporting systems by the Organization,

RECALLING FURTHER resolution A.858(20) resolving that the function of adopting ship reporting systems shall be performed by the Committee on behalf of the Organization,

TAKING INTO ACCOUNT the guidelines and criteria for ship reporting systems adopted by resolution MSC.43(64), as amended by resolutions MSC.111(73) and MSC.189(79),

HAVING CONSIDERED the recommendations of the Sub-Committee on Navigation, Communication and Search and Rescue at its first regular session,

- 1 ADOPTS in accordance with SOLAS regulation V/11, the amended mandatory ship reporting system "Off Chengshan Jiao Promontory", as set out in the annex;
- 2 DECIDES that the above-mentioned amended mandatory ship reporting system will enter into force at 0000 hours UTC on 1 June 2015;
- 3 REQUESTS the Secretary-General to bring this resolution and its annex to the attention of Contracting Governments to the SOLAS Convention and to members of the Organization.

ANNEX

MANDATORY SHIP REPORTING SYSTEM "OFF CHENGSHAN JIAO PROMONTORY"

1 Categories of ships required to participate in the system

1.1 The following ships are required to participate in the system:

- .1 *passenger ships;*
- .2 *all oil tankers 150 gross tonnage and above, all ships carrying hazardous cargo;*
- .3 *ships of LOA more than 200 m or draft more than 12 m;*
- .4 *ships engaged in towing or pushing another ship, regardless of gross tonnage; and*
- .5 *ships are compulsory to report to VTS in circumstances where they:*
 - .1 are "not under command" or at anchor in the TSSs,
 - .2 are "restricted in their ability to manoeuvre"; or
 - .3 have defective navigational equipment.

1.2 The meaning of hazardous cargoes is as follows:

- .1 goods classified in the International Maritime Dangerous Goods (IMDG Code);
- .2 substances classified in chapter 17 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) and chapter 19 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code);
- .3 oils as defined in MARPOL Annex I;
- .4 noxious liquid substances as defined in MARPOL Annex II;
- .5 harmful substances as defined in MARPOL Annex III; and
- .6 radioactive materials specified in the Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-level Radioactive Wastes in Flasks on Board Ships (INF Code).

2 Geographical coverage of the system and the numbers and editions of the reference charts used for the delineation of the system

2.1 The waters covered by the Ship Reporting System is the water area with the VTS Centre (geographical position is 37°23'.65N, 122°42'.12E) as the centre and 24 miles as the radius.

2.2 The relevant charts are Chinese charts Nos. 1305, 35001. Chart datum is World Geodetic System 1984 (WGS 84) Datum.

3 Format, reporting time and geographical positions for submitting reports, authority to whom the reports should be sent, available services

3.1 Format

The format for reporting is as set forth in paragraph 2 of the appendix to Assembly resolution A.851(20)

A	Name of ship, call sign, and IMO number (if applicable)
C or D	Position (latitude and longitude or in relation to a landmark)
E	Course
F	Speed
G	Port of departure
I	Port of destination (optional)
Q	Defects and limitation (ships towing are to report length of tow and name of object in tow)
U	Overall length and gross tonnage

3.2 Content and geographical position for submitting reports

3.2.1 Participating ships are to report the information in paragraph 3.1 when entering the ship reporting system area. Reports are not required when a participating ship leaves the area.

3.2.2 When a participating ship leaves a port that is located within the reporting area, it shall report its name, position, departure time and port of destination.

3.2.3 When a participating ship arrives at a port or anchorage within the reporting area, it shall report, on arrival at its berth, its name, position and arrival time.

3.2.4 When a traffic incident or a pollution incident occurs within the reporting area, the ship(s) shall immediately report the type, time, and location of the incident, extent of damage or pollution, and whether assistance is needed. The ship(s) shall provide any additional information related to the incident, as required by the shore-based authority.

3.3 Authority

The competent authority is *Weihai* Maritime Safety Administration, China. The voice call sign is "Chengshan Jiao VTS Centre".

4 Information to be provided to ships and procedures to be followed

4.1 The Chengshan Jiao VTS Centre, where appropriate, will provide participating ships with information such as conflicting ship traffic, abnormal weather conditions, and maritime safety information.

4.2 Participating ships shall maintain a listening watch on the designated VTS *working channel*.

5 Radio communications required for the system, frequencies on which reports should be transmitted and the information to be reported.

5.1 The working channels of the Chengshan Jiao VTS Centre are:

Primary-Channel 08
Secondary-Channel 09 or 65

5.2 The language used for reports in the system will be Chinese or English. Marine communication phrases in a prescribed format will be used in all direct-printing telegraphy and radiotelephony communications.

6 Rules and regulations in force in the area of the system

China has taken appropriate action to implement international conventions to which it is a party including, where appropriate, adopting domestic legislation and promulgating regulations through domestic law. Relevant laws in force include domestic legislation and regulations to implement the Convention on the International Regulations for Preventing Collisions at Sea, 1972, the International Convention for the Safety of Life at Sea, 1974, and the International Convention for the Prevention of Pollution from Ships, 1973/1978.

7 Shore-based facilities to support operation of the system

7.1 Chengshan Jiao VTS Centre is comprised of radar, VHF communications, information processing and display, information transmission, recording, replay, and hydro-meteorological sensors. Its functions are data collection and evaluation, provision of information, navigation assistance, and support to allied services.

7.2 Chengshan Jiao VTS Centre maintains a continuous 24 hour watch.

8 Alternative communications if the communication facility of the shore-based authority fails

Chengshan Jiao VTS Centre has built in redundancies with multiple receivers on each channel. Alternative means of ship to shore communication are by HF (SSB), telex (facsimile), email, or cellular telephone.

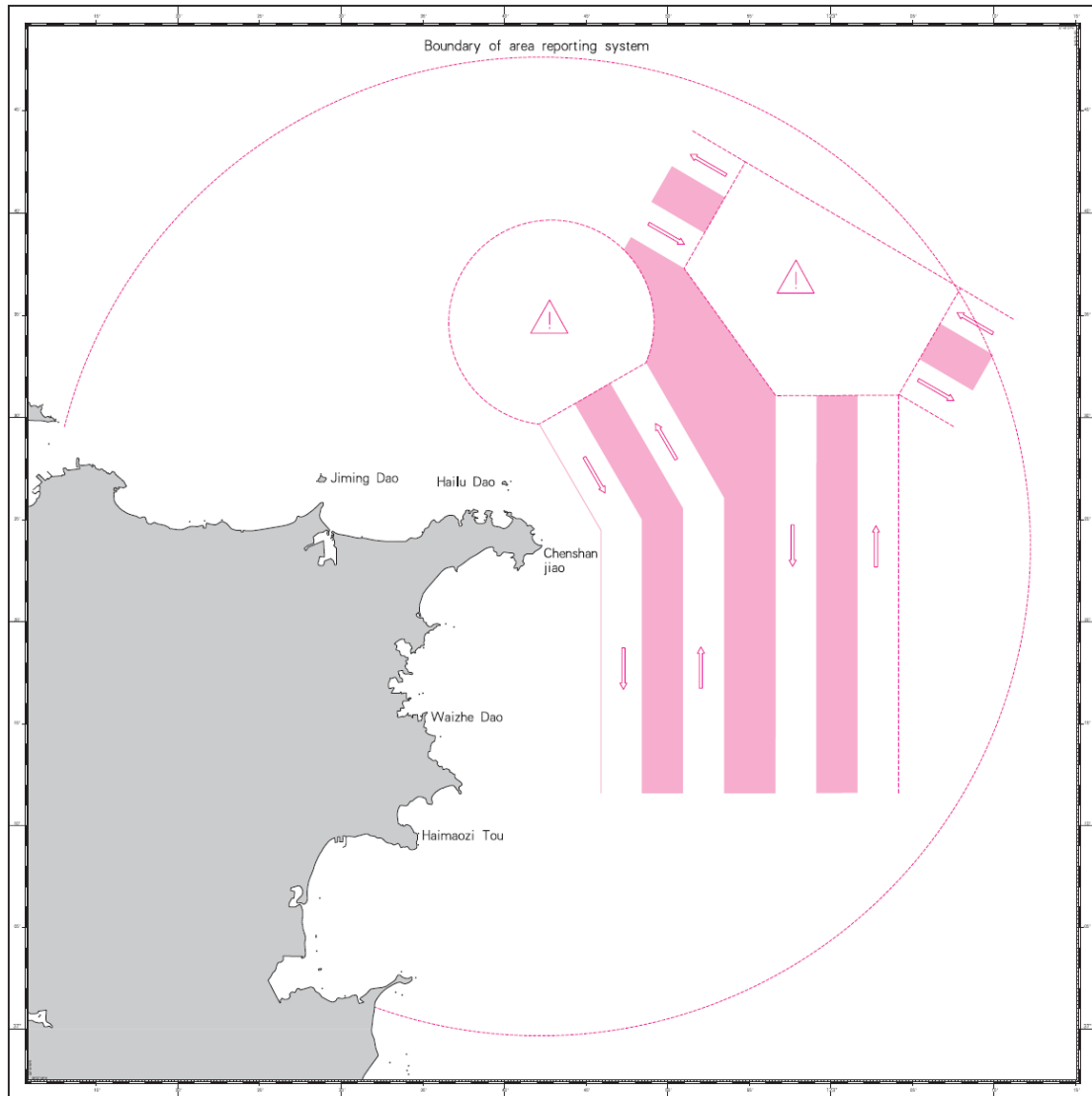
Fax: +86-631-5232467
Email: whvts@whmsa.gov.cn
Mobile phone: +86-631-5203320 +86-631-5190330

9 Measures to be taken if a ship fails to comply

9.1 Appropriate measures will be taken to enforce compliance with the system, consistent with international law.

APPENDIX 1

CHARTLET



**BOUNDARY OF MANDATORY SHIP REPORTING SYSTEM
"OFF CHENGSHAN JIAO PROMONTORY"**

ANNEX 17

DRAFT ASSEMBLY RESOLUTION

REVISED GUIDELINES FOR THE ONBOARD OPERATIONAL USE OF SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEMS (AIS)

THE ASSEMBLY,

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

RECALLING ALSO the provisions of regulation V/19 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, requiring all ships of 300 gross tonnage and upwards engaged on international voyages, cargo ships of 500 gross tonnage and upwards not engaged on international voyages and passenger ships irrespective of size to be fitted with an automatic identification system (AIS), as specified in SOLAS regulation V/19, paragraph 2.4, taking into account the recommendations adopted by the Organization,

RECALLING FURTHER resolution A.917(22) as amended by resolution A.956(23) by which it adopted *Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)*,

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee at its ninety-fourth session and by the Sub-Committee on Navigation, Communications and Search and Rescue, at its first session,

1 ADOPTS the revised *Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)*, set out in the annex to the present resolution;

2 INVITES Governments concerned to take into account the annexed amendments to the Guidelines when implementing SOLAS regulations V/11, 12 and 19;

3 ALSO INVITES Governments which are considering setting, or have set regional frequencies or otherwise make use of AIS channel management, including changing to narrow-band operation, for whatever reason, to take into account the possible impact on the use of AIS at sea, and that it should only be used for urgent temporary situations. In such cases, Governments should notify the Organization of such areas and designated frequencies, for urgent circulation of that information to all Member Governments.

4 REQUESTS the Maritime Safety Committee to keep the Guidelines, as revised, under review and amend them as appropriate.

5 REVOKES resolution A.917(22), as amended by resolution A.956(23).

ANNEX

REVISED GUIDELINES FOR THE ONBOARD OPERATIONAL USE OF SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEMS (AIS)

PURPOSE

1 These Guidelines have been developed to promote the safe and effective use of shipborne Automatic Identification Systems (AIS), in particular to inform the mariner about the operational use, limits and potential uses of AIS. Consequently, AIS should be operated taking into account these Guidelines.

2 Before using shipborne AIS, the user should fully understand the principle of the current Guidelines and become familiar with the operation of the equipment, including the correct interpretation of the displayed data. A description of the AIS system, particularly with respect to shipborne AIS (including its components and connections), is contained in annex 1.

CAUTION

Not all ships carry AIS.

The officer of the watch (OOW) should always be aware that other ships, in particular leisure craft, fishing boats and warships, and some coastal shore stations including Vessel Traffic Service (VTS) centres, might not be fitted with AIS.

The OOW should always be aware that AIS fitted on other ships as a mandatory carriage requirement might, under certain circumstances, be switched off on the master's professional judgement.

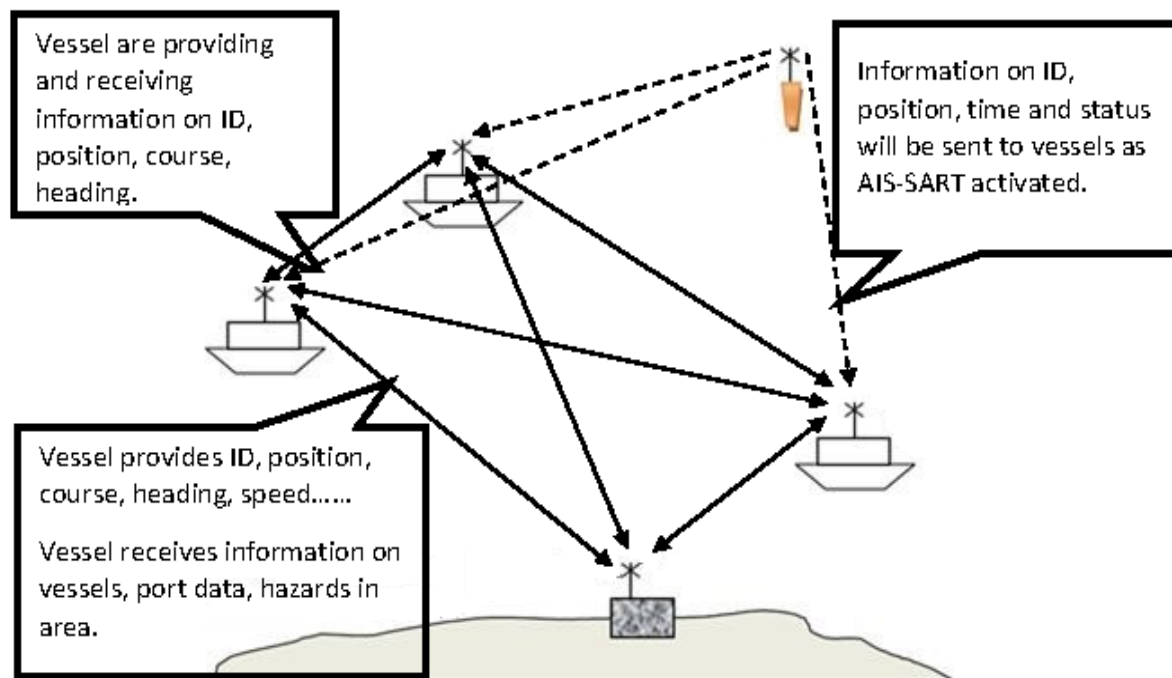
3 The internationally-adopted shipborne carriage requirements for AIS are contained in SOLAS regulation V/19. The SOLAS Convention requires AIS to be fitted on certain ships through a phased implementation period spanning from 1st July 2002 to 1st July 2008. In addition, specific vessel types (e.g. warships, naval auxiliaries and ships owned/operated by Governments) are not required to be fitted with AIS. Also, small vessels (e.g. leisure craft, fishing boats) and certain other ships are exempt from carrying AIS. Moreover, ships fitted with AIS might have the equipment switched off. Users are therefore cautioned always to bear in mind that information provided by AIS may not be giving a complete or correct "picture" of shipping traffic in their vicinity. The guidance in this document on the inherent limitations of AIS and their use in collision avoidance situations (see paragraphs 39 to 43) should therefore be observed.

Objectives of AIS

4 AIS is intended to enhance: safety of life at sea; the safety and efficiency of navigation; and the protection of the marine environment. SOLAS regulation V/19 requires that AIS exchange data ship-to-ship and with shore-based facilities. Therefore, the purpose of AIS is to help identify vessels, assist in target tracking, *assist in search and rescue operation*, simplify information exchange (e.g. reduce verbal mandatory ship reporting) and provide additional information to assist situation awareness. In general, data received via AIS will improve the quality of the information available to the OOW, whether at a shore surveillance station or on board a ship. AIS is a useful source of supplementary information to that derived from navigational systems (including radar) and therefore an important 'tool' in enhancing situation awareness of traffic confronting users.

DESCRIPTION OF AIS

Figure 1 – AIS system overview



5 Class A shipborne equipment complies with relevant IMO AIS carriage requirement. Class B shipborne equipment provides functionalities not in full accordance with IMO AIS carriage requirement. Class B devices may be carried on vessels which are not subject to the IMO SOLAS carriage requirements.

6 Shipborne AIS (see figure 1):

- transmits ship's own data to other vessels and VTS stations; and
- receives and makes available data of other vessels and VTS stations and other AIS stations, such as AIS-SARTs, AIS-ATON, etc.

7 When used with the appropriate display, shipborne AIS enables provision of fast, automatic information by calculating Closest Point of Approach (CPA) and Time to Closest Point of Approach (TCPA) from the position information transmitted by the target vessels.

8 AIS operates primarily on two dedicated VHF channels. Where these channels are not available regionally, the AIS is capable of being automatically switched to designated alternate channels by means of a message from a shore facility. Where no shore-based AIS or GMDSS sea Area A1 station is in place, the AIS should be switched manually. However, this capability should only be considered for use in urgent, temporary situations, noting the possible adverse effects on AIS at sea.

9 The capacity of the system allows for a great number of ships to be accommodated at the same time. Priority in the system is given to Class A devices. Class B devices operate at a reduced reporting rate or when free time slots are available.

10 The AIS is able to detect ships within VHF/FM range around bends and behind islands, if the landmasses are not too high. A typical value to be expected at sea is 20 to 30 nautical miles depending on antenna height. With the help of repeater stations, the coverage for both ship and VTS stations can be improved.

11 Information from a shipborne AIS is transmitted continuously and automatically without any intervention or knowledge of the OOW. An AIS shore station might require updated information from a specific ship by "polling" that ship, or alternatively, might wish to "poll" all ships within a defined sea area. However, the shore station can only increase the ships' reporting rate, not decrease it.

AIS INFORMATION SENT BY SHIPS

Ship's data content

12 The AIS information transmitted by a ship is of three different types:

- static information, which is entered into the AIS on installation and need only be changed if the ship changes its name, MMSI, location of the electronic position fixing system (EPFS) antenna, or undergoes a major conversion from one ship type to another;
- dynamic information, which, apart from "Navigational status" information, is automatically updated from the ship sensors connected to AIS; and
- voyage-related information, which might need to be manually entered and updated during the voyage.

13 Details of the information referred to above are given in table 1 below:

<i>Information item</i>	Information generation, type and quality of information
Static	
MMSI (Maritime Mobile Service Identity)	Set on installation Note that this might need amending if the ship changes ownership
Call sign and name	Set on installation Note that this might need amending if the ship changes ownership
IMO Number	Set on installation
Length and beam	Set on installation or if changed
Type of ship	Select from pre-installed list
Location of electronic position fixing system (EPFS) antenna	Set on installation or may be changed for bi-directional vessels or those fitted with multiple antennae
Dynamic	
Ship's position with accuracy indication and integrity status	Automatically updated from the position sensor connected to AIS The accuracy indication is approximately 10 m.

Position Time stamp in UTC	Automatically updated from ship's main position sensor connected to AIS
Course over ground (COG)	Automatically updated from ship's main position sensor connected to AIS, if that sensor calculates COG This information might not be available
Speed over ground (SOG)	Automatically updated from the position sensor connected to AIS This information might not be available
Heading	Automatically updated from the ship's heading sensor connected to AIS
Navigational status	Navigational status information has to be manually entered by the OOW and changed as necessary, for example: <ul style="list-style-type: none"> - underway by engines - at anchor - not under command (NUC) - restricted in ability to manoeuvre (RIATM) - moored - constrained by draught - aground - engaged in fishing - underway by sail <p>In practice, since all these relate to the COLREGs, any change that is needed could be undertaken at the same time that the lights or shapes were changed</p>
Rate of turn (ROT)	Automatically updated from the ship's ROT sensor or derived from the gyro This information might not be available

Voyage-related	
Ship's draught	To be manually entered at the start of the voyage using the maximum draft for the voyage and amended as required (e.g. – result of de-ballasting prior to port entry)
Hazardous cargo (type)	To be manually entered at the start of the voyage confirming whether or not hazardous cargo is being carried, namely: <ul style="list-style-type: none"> - DG (Dangerous goods) - HS (Harmful substances) - MP (Marine pollutants) <p>Indications of quantities are not required</p>
Destination and ETA	To be manually entered at the start of the voyage and kept up to date as necessary
Route plan (waypoints)	To be manually entered at the start of the voyage, at the discretion of the master, and updated when required

Short safety-related messages	
	Free format short text messages would be manually entered, addressed either a specific addressee or broadcast to all ships and shore stations

Table 1 – Data sent by ship

**Due to the amendment of MARPOL categorization of hazardous cargo by resolution MEPC.118(52), cargo type may be categorized as A, B, C or D, rather than X, Y, Z or OS on older AIS equipment, as described in SN.1/Circ.227/Corr.1.*

The table below indicates the equivalence of the old and new category indications:

Current MARPOL category	Equivalent category on older AIS units
X	A
Y	B
Z	C
OS	D

14 The data is autonomously sent at different update rates:

- dynamic information dependent on speed and course alteration (see table 2 and table 3);
- static and voyage-related data every 6 minutes or on request (AIS responds automatically without user action); and
- safety-related text message: as required.

Type of ship	General reporting interval
Ship at anchor or moored and not moving faster than 3 knots	3 min
Ship at anchor or moored and moving faster than 3 knots	10 s
Ship 0-14 knots	10 s
Ship 0-14 knots and changing course	4 3 1/3 s
Ship 14-23 knots	6 s
Ship 14-23 knots and changing course	2 s
Ship >23 knots	3 2 s
Ship >23 knots and changing course	2 s

Table 2 – Class A shipborne equipment reporting intervals

Crafts not subject to SOLAS	Nominal reporting interval
Class B "SO" shipborne equipment not moving faster than 2 knots	3 min
Class B "SO" shipborne equipment moving 2-14 knots	30 s
Class B "SO" shipborne equipment moving 14-23 knots	15 s
Class B "SO" shipborne equipment moving > 23 knots	5 s
Class B "CS" shipborne equipment not moving faster than 2 knots	3 min
Class B "CS" shipborne equipment moving faster than 2 knots	30 s

Table 3 – Class B shipborne equipment reporting intervals

Short safety-related messages

15 Short safety-related messages are fixed or free format text messages addressed either to a specified destination (MMSI) or all ships in the area. Their content should be relevant to the safety of navigation, e.g. an iceberg sighted or a buoy not on station. Messages should be kept as short as possible. The system allows up to 158 characters per message but the shorter the message the more easily it will find free space for transmission. At present these messages are not further regulated, to keep all possibilities open.

16 Operator acknowledgement may be requested by a text message.

The operator should be aware that there are special safety-related messages and special user identities from devices such as the AIS-SART. Details are given in SN.1/Circ.322, as amended. There is no need for acknowledgement by a text message.

17 Short safety-related messages are only an additional means of broadcasting maritime safety information. Whilst their importance should not be underestimated, use of such messages does not remove any of the requirements of the Global Maritime Distress and Safety System (GMDSS).

18 The operator should ensure that he displays and considers incoming safety-related messages and should send safety-related messages as required.

19 According to SOLAS regulation V/31 (Danger messages)

"The master of every ship which meets with dangerous ice, a dangerous derelict, or any other direct danger to navigation, or ...is bound to communicate the information by all the means at his disposal to ships at his vicinity, and also to the competent authorities..."

20 Normally this is done via VHF voice communication, but "by all the means" now implies the additional use of the AIS short messages application, which has the advantage of reducing difficulties in understanding, especially when noting down the correct position.

Confidentiality

21 When entering any data manually, consideration should be given to the confidentiality of this information, especially when international agreements, rules or standards provide for the protection of navigational information.

OPERATION OF AIS ON BOARD

OPERATION OF THE TRANSCEIVER UNIT

Activation

22 AIS should always be in operation when ships are underway or at anchor. If the master believes that the continual operation of AIS might compromise the safety or security of his/her ship or where security incidents are imminent, the AIS may be switched off. Unless it would further compromise the safety or security, if the ship is operating in a mandatory ship reporting system, the master should report this action and the reason for doing so to the competent authority. Actions of this nature should always be recorded in the

ship's logbook together with the reason for doing so. The master should however restart the AIS as soon as the source of danger has disappeared. If the AIS is shut down, static data and voyage-related information remains stored. Restart is done by switching on the power to the AIS unit. Ship's own data will be transmitted after a two minute initialization period. In ports AIS operation should be in accordance with port requirements.

Manual input of data

23 The OOW should manually input the following data at the start of the voyage and whenever changes occur, using an input device such as a keyboard:

- ship's draught;
- hazardous cargo;
- departure, destination and ETA;
- route plan (way points);
- the correct navigational status; and
- short safety-related text messages.

It is recommended to use the United Nations Code for Trade and Transport Locations (UN/LOCODE) for the entry of the port of destination. In addition, it is recommended that the existing destination field be used for entering both the port of departure and the next port of call (space for 20 characters of 6 bit ASCII is available) using the UN/LOCODE.¹

Check of information

24 To ensure that own ship's static information is correct and up-to-date, the OOW should check the data whenever there is a reason for it. As a minimum, this should be done once per voyage or once per month, whichever is shorter. The data may be changed only on the authority of the master.

25 The OOW should also periodically check the following dynamic information:

- positions given according to WGS 84;
- speed over ground; and
- sensor information.

26 After activation, an automatic built-in integrity test (BIIT) is performed. In the case of any AIS malfunction an alarm is provided and the unit should stop transmitting.

27 The quality or accuracy of the ship sensor data input into AIS would not however be checked by the BIIT circuitry before being broadcast to other ships and shore stations. The ship should therefore carry out regular routine checks during a voyage to validate the accuracy of the information being transmitted. The frequency of those checks would need to be increased in coastal waters.

¹ SN/Circ.244.

DISPLAY OF AIS DATA

28 The AIS provides data that can be presented on the minimum display or on any suitable display device as described in annex 1.

Minimum display

29 The minimum mandated display provides not less than three lines of data consisting of bearing, range and name of a selected ship. Other data of the ship can be displayed by horizontal scrolling of data, but scrolling of bearing and range is not possible. Vertical scrolling will show all the other ships known to the AIS.

Graphical display

30 Where AIS information is used with a graphical display, the following target types may be displayed:

Sleeping target A sleeping target indicates only the presence of a vessel equipped with AIS in a certain location. No additional information is presented until activated, thus avoiding information overload.

Activated target If the user wants to know more about a vessel's motion, he has simply to activate the target (sleeping), so that the display shows immediately:

- a vector (speed and course over ground);
- the heading; and
- ROT indication (if available) to display actually initiated course changes.

Selected target If the user wants detailed information on a target (activated or sleeping), he may select it. Then the data received, as well as the calculated CPA and TCPA values, will be shown in an alpha-numeric window.

The special navigation status will also be indicated in the alpha numeric data field and not together with the target directly.

Dangerous target If an AIS target (activated or not) is calculated to pass preset CPA and TCPA limits, it will be classified and displayed as a dangerous target and an alarm will be given.

Lost target If a signal of any AIS target at a distance of less than a preset value is not received, a lost target symbol will appear at the latest position and an alarm will be given.

Other targets Other targets such as AIS-SART, AIS-AToN, may be displayed with special symbols (see SN.1/Circ.243/Rev.1 *Guidelines for the presentation of navigational-related symbols, terms and abbreviations*).

Symbols

31 The user should be familiar with the symbology used in the graphical display provided.

INHERENT LIMITATIONS OF AIS

32 The officer of the watch (OOW) should always be aware that other ships, in particular leisure craft, fishing boats and warships, and some coastal shore stations including Vessel Traffic Service (VTS) centres, might not be fitted with AIS.

33 The OOW should always be aware that other ships fitted with AIS as a mandatory carriage requirement might switch off AIS under certain circumstances by professional judgement of the master.

34 In other words, the information given by the AIS may not be a complete picture of the situation around the ship.

35 The users must be aware that transmission of erroneous information implies a risk to other ships as well as their own. The users remain responsible for all information entered into the system and the information added by the sensors.

36 The accuracy of AIS information received is only as good as the accuracy of the AIS information transmitted.

37 The OOW should be aware that poorly configured or calibrated ship sensors (position, speed and heading sensors) might lead to incorrect information being transmitted. Incorrect information about one ship displayed on the bridge of another could be dangerously confusing.

38 If no sensor is installed or if the sensor (e.g. the gyro) fails to provide data, the AIS automatically transmits the "not available" data value. However, the built-in integrity check cannot validate the contents of the data processed by the AIS.

39 It would not be prudent for the OOW to assume that the information received from other ships is of a comparable quality and accuracy to that which might be available on own ship.

USE OF AIS IN COLLISION AVOIDANCE SITUATIONS

40 The potential of AIS as an assistance for anti-collision device is recognized and AIS may be recommended as such a device in due time.

41 Nevertheless, AIS information may merely be used to assist in collision avoidance decision-making. When using the AIS in the ship-to-ship mode for anti-collision purposes, the following cautionary points should be borne in mind:

- .1 AIS is an additional source of navigational information. It does not replace, but supports, navigational systems such as radar target-tracking and VTS; and
- .2 the use of AIS does not negate the responsibility of the OOW to comply at all times with the Collision Regulations, particularly rule 7 when determining whether risk of collisions exists.

42 The user should not rely on AIS as the sole information system, but should make use of all safety-relevant information available.

43 The use of AIS on board ship is not intended to have any special impact on the composition of the navigational watch, which should continue to be determined in accordance with the STCW Convention.

44 Once a ship has been detected, AIS can assist in tracking it as a target. By monitoring the information broadcast by that target, its actions can also be monitored. Many of the problems common to tracking targets by radar, namely clutter, target swap as ships pass close by and target loss following a fast manoeuvre, do not affect AIS. AIS can also assist in the identification of targets, by name or call sign and by ship type and navigational status.

ADDITIONAL AND POSSIBLE FUTURE APPLICATIONS

AIS IN VTS OPERATIONS

Pseudo Targets broadcast by VTS

45 VTS centres may send information about vessels which are not carrying AIS and which are tracked only by VTS radar via the AIS to vessels equipped with AIS. Any VTS/generated/synthetic target broadcast by VTS should be clearly identified as such. Particular care should always be taken when using information which has been relayed by a third party. Accuracy of these targets may not be as complete as actual directly-received targets, and the information content may not be as extensive.

Text messages

46 VTS centres may also send short messages either to one ship, all ships, or ships within a certain range or in a special area, e.g.:

- (local) navigational warnings;
- traffic management information; and
- port management information.

47 A VTS operator may request, by a text message, an acknowledgement from the ship's operator.

Note: The VTS should continue to communicate via voice VHF. The importance of verbal communication should not be underestimated. This is important to enable the VTS operator to:

- assess vessels' communicative ability; and
- establish a direct communication link which would be needed in critical situations.

(D)GNSS corrections

48 (D)GNSS corrections may be sent by VTS centres via AIS.

MANDATORY SHIP REPORTING SYSTEMS

49 AIS is expected to play a major role in ship reporting systems. The information required by coastal authorities in such systems is typically included in the static voyage-related and dynamic data automatically provided by the AIS system. The use of the AIS long-range feature, where information is exchanged via communications satellite, may be implemented to satisfy the requirements of some ship reporting systems.

AIS IN SAR OPERATIONS

50 AIS may be used in search and rescue operations. By receiving messages from AIS-SART, operators get more accurate information, especially on the position of survival craft. In combined aerial and surface searches AIS may allow the direct presentation of the position on other displays such as radar or ECS/ECDIS, which facilitates the task of SAR craft. For ships in distress without AIS, the On Scene Coordinator (OSC) could create an AIS target.

AIDS TO NAVIGATION

51 AIS, when fitted to selected fixed and floating aids to navigation can provide information to the mariner such as:

- position;
- status;
- tidal and current data; and
- weather and visibility conditions.

AIS IN AN OVERALL INFORMATION SYSTEM

52 AIS will play a role in an overall international maritime information system, supporting voyage planning and monitoring. This will help Administrations to monitor all the vessels in their areas of concern and to track dangerous cargo.

REFERENCE DOCUMENTS

- IMO Recommendation on performance standards for a universal shipborne Automatic Identification System (AIS), (MSC.74(69), annex 3)
- IMO SOLAS Convention, chapter V
- Performance Standards for survival craft AIS search and rescue transmitters (AIS-SART) for use in search and rescue operations (resolution MSC.246(83))
- Guidance on the use of the UN/LOCODE in the destination field in AIS messages (SN/Circ.244).
- ITU Radio Regulations, appendix 18, table of transmitting frequencies in the VHF maritime mobile band
- Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile frequency band (Recommendation ITU-R M.1371-5)
- IEC Standard 61993 Part 2: Class A shipborne equipment of the Universal Shipborne Automatic Identification System (AIS) Operational and Performance Requirements, Methods of Testing and required Test Results.

Annex 1

DESCRIPTION OF AIS

COMPONENTS

- 1 In general, an onboard AIS (see figure 1) consists of:
 - antennas;
 - one VHF transmitter;
 - two multi-channel VHF receivers;
 - one channel 70 VHF receiver for channel management;
 - a central processing unit (CPU);
 - an electronic position-fixing system, Global Navigation Satellite System (GNSS) receiver for timing purposes and position redundancy;
 - interfaces to heading and speed devices and to other shipborne sensors;
 - interfaces to radar/Automatic Radar Plotting Aids (ARPA), Electronic Chart System/Electronic Chart Display and Information System (ECS/ECDIS) and Integrated Navigation Systems (INS);
 - BIIT (built-in integrity test); and
 - minimum display and keyboard to input and retrieve data.

With the integral minimum display and keyboard unit, the AIS would be able to operate as a stand-alone system. A stand-alone graphical display or the integration of the AIS data display into other devices such as INS, ECS/ECDIS or a radar/ARPA display would significantly increase the effectiveness of AIS, when achievable.

- 2 All onboard sensors must comply with the relevant IMO standards concerning availability, accuracy, discrimination, integrity, update rates, failure alarms, interfacing and type-testing.

- 3 AIS provides:
 - a built in integrity test (BIIT) running continuously or at appropriate intervals;
 - monitoring of the availability of data;
 - an error detection mechanism of the transmitted data; and
 - an error check on the received data.

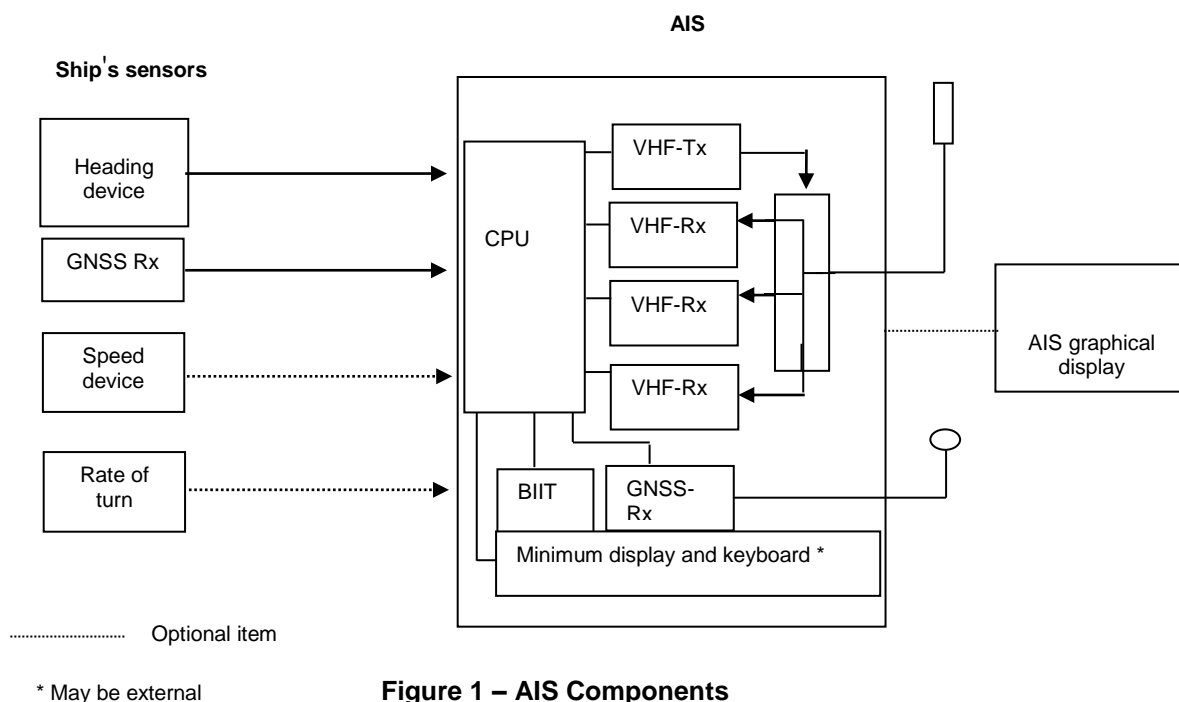


Figure 1 – AIS Components

CONNECTIONS

The connection of AIS to external navigational display systems

4 The AIS can be connected either to an additional dedicated AIS display unit, possibly one with a large graphic display, or as an input to existing navigational system devices such as a radar display, an Electronic Chart System (ECS), Electronic Chart Display and Information System (ECDIS), or an Integrated Navigation System (INS). Such system interconnection and data integration is recommended."

The connection of AIS to external portable navigational equipment

5 It is becoming common practice for pilots to possess their own portable navigational equipment, which they carry on board. Such devices can be connected to shipborne AIS equipment and display the targets they receive. Some administrations require this connection to be provided at the bridge front.

Annex 2

TECHNICAL DESCRIPTION

1 AIS operates primarily on two dedicated VHF channels (AIS1 – 161,975 MHz and AIS2 – 162,025 MHz). Where these channels are not available regionally, the AIS is capable of automatically switching to alternate designated channels. However, this capability should only be considered for use in urgent, temporary situations, noting the possible adverse effects on AIS at sea.

2 The required ship reporting capacity according to the IMO performance standard amounts to a minimum of 2000 time slots per minute (see figure 2). The ITU Technical Standard for the Universal AIS provides 4500 time slots per minute. The broadcast mode is based on a principle called (S)TDMA (Self-organized Time Division Multiple Access) that allows the system to be overloaded by 400 to 500% and still provide nearly 100% throughput for ships closer than 8 to 10 NM to each other in a ship-to-ship mode. In the event of system overload, only targets far away will be subject to drop-out in order to give preference to targets close by that are a primary concern for ship-to-ship operation of AIS. In practice, the capacity of the system allows for a great number of ships to be accommodated at the same time.

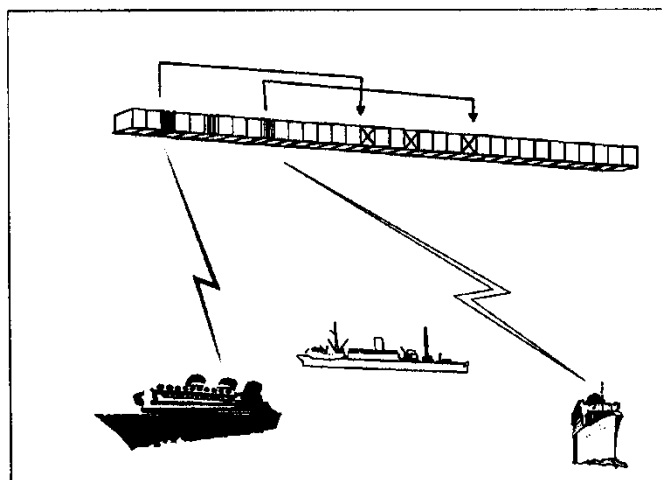


Figure 2 – Principles of TDMA

ANNEX 18

**RESOLUTION MSC.390(94)
(adopted on 18 November 2014)**

**AMENDMENTS TO THE CODE OF THE INTERNATIONAL STANDARDS AND
RECOMMENDED PRACTICES FOR A SAFETY INVESTIGATION
INTO A MARINE CASUALTY OR MARINE INCIDENT
(CASUALTY INVESTIGATION CODE)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the function of the Committee,

RECALLING ALSO resolution MSC.255(84) by which it adopted the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code), parts I and II of which have become mandatory under chapter XI-1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"),

CONSIDERING that the Casualty Investigation Code (MSC resolution 255(84)), in its part III, Recommended Practices, refers to resolutions A.884(21) and A.996(25),

NOTING that the twenty-eighth session of the Assembly adopted the IMO Instruments Implementation Code (III Code) through resolution A.1070(28) which revokes resolution A.1054(27) after the latter had revoked resolution A.996(25),

NOTING ALSO that the twenty-eighth session of the Assembly adopted the Guidelines to assist investigators in the implementation of the Casualty Investigation Code (resolution MSC.255(84)) through resolution A.1075(28) which revokes resolutions A.849(20) and A.884(21),

HAVING CONSIDERED, at its ninety-fourth session, the text of the proposed amendments to the Casualty Investigation Code,

1 ADOPTS the amendments to the Casualty Investigation Code, set out in the annex to the present resolution.

ANNEX

**AMENDMENTS TO THE CODE OF THE INTERNATIONAL STANDARDS AND
RECOMMENDED PRACTICES FOR A SAFETY INVESTIGATION
INTO A MARINE CASUALTY OR MARINE INCIDENT
(CASUALTY INVESTIGATION CODE)**

PART III

RECOMMENDED PRACTICES

Chapter 15

ADMINISTRATIVE RESPONSIBILITIES

1 In paragraph 15.2, the words "resolution A.996(25)" are replaced by "resolution A.1070(28)".

Chapter 21

CO-ORDINATING AN INVESTIGATION

2 In paragraph 21.2.4, the words "resolution A.884(21)" are replaced by "resolution A.1075(28)".

ANNEX 19

DRAFT AMENDMENTS TO SOLAS CHAPTERS II-1 AND II-2 AND APPENDIX

CHAPTER II-1 CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

PART A General

Regulation 2 – Definitions

1 The following new paragraphs 29 and 30 containing definitions are added after the existing paragraph 28:

"29 *IGF Code* means the International Code of safety for ships using gases or other low-flashpoint fuels as adopted by the Maritime Safety Committee of the Organization by resolution MSC.... (...), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I.

30 *Low-flashpoint fuel* means gaseous or liquid fuel having a flashpoint lower than otherwise permitted under paragraph 2.1.1 of regulation II-2/4."

PART F Alternative design and arrangements

Regulation 55 – Alternative design and arrangements

2 The existing paragraphs 1 to 3 are amended to read as follows:

"1 Purpose

The purpose of this regulation is to provide a methodology for alternative design and arrangements for machinery, ~~and~~ electrical installations and low-flashpoint fuel storage and distribution systems.

2 General

2.1 Machinery, ~~and~~ electrical installation and low-flashpoint fuel storage and distribution systems design and arrangements may deviate from the requirements set out in parts C, D, ~~and~~ E or G, provided that the alternative design and arrangements meet the intent of the requirements concerned and provide an equivalent level of safety to this chapter.

2.2 When alternative design or arrangements deviate from the prescriptive requirements of parts C, D, ~~and~~ E or G, an engineering analysis, evaluation and approval of the design and arrangements shall be carried out in accordance with this regulation.

3 Engineering analysis

The engineering analysis shall be prepared and submitted to the Administration, based on the guidelines developed by the Organization¹ and shall include, as a minimum, the following elements:

- .1 determination of the ship type, machinery, electrical and low-flashpoint fuel storage and distribution installations and space(s) concerned;
- .2 identification of the prescriptive requirement(s) with which the machinery, ~~and~~ electrical and low-flashpoint fuel storage and distribution installations will not comply;
- .3 identification of the reason the proposed design will not meet the prescriptive requirements supported by compliance with other recognized engineering or industry standards;
- .4 determination of the performance criteria for the ship, machinery, electrical and low-flashpoint fuel storage and distribution installation or the space(s) concerned addressed by the relevant prescriptive requirement(s):
 - .1 performance criteria shall provide a level of safety not inferior to the relevant prescriptive requirements contained in parts C, D, ~~and~~ E or G; and
 - .2 performance criteria shall be quantifiable and measurable;
- .5 detailed description of the alternative design and arrangements, including a list of the assumptions used in the design and any proposed operational restrictions or conditions;
- .6 technical justification demonstrating that the alternative design and arrangements meet the safety performance criteria; and
- .7 risk assessment based on identification of the potential faults and hazards associated with the proposal.

¹ Refer to the *Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III* (MSC.1/Circ.1212) and the *Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments* (MSC.1/Circ.1455)."

3 The new part G is added after the existing part F as follows:

"PART G Ships using low-flashpoint fuels

Regulation 56 – Application

1 Except as provided for in 4 and 5, this part shall apply to ships using low-flashpoint fuels:

- .1 for which the building contract is placed on or after [*date of entry into force*];

- .2 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 [6 months after date of entry into force]; or
- .3 the delivery of which is on or after [48 months after date of entry into force].

Such ships using low-flashpoint fuels shall comply with the requirements of this part in addition to any other applicable requirements of the present regulations.

2 Except as provided for in 4 and 5, a ship, irrespective of the date of construction, including one constructed before 1 January 2009, which converts to using low-flashpoint fuels on or after [date of entry into force] shall be treated as a ship using low-flashpoint fuels on the date on which such conversion commenced.

3 Except as provided for in 4 and 5, a ship using low-flashpoint fuels, irrespective of the date of construction, including one constructed before 1 January 2009, which, on or after [date of entry into force], undertakes to use low-flashpoint fuels different from those which it was originally approved to use before [date of entry into force] shall be treated as a ship using low-flashpoint fuels on the date on which such undertaking commenced.

4 This part need not apply to gas carriers using their cargoes as fuel and complying with the requirements of chapter 16 of the IGC Code, as defined in chapter VII.

5 This part shall not apply to ships owned or operated by a Contracting Government and used, for the time being, only in Government non-commercial service. However, ships owned or operated by a Contracting Government and used, for the time being, only in Government non-commercial service are encouraged to act in a manner consistent, so far as reasonable and practicable, with this part.

Regulation 57 – Requirements for ships using low-flashpoint fuels

Ships using low-flashpoint fuels shall comply with the requirements of the IGF Code."

CHAPTER II-2

CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

PART B Prevention of fire and explosion

Regulation 4 – Probability of ignition

4 The title of existing paragraph 2 is amended to read as follows:

"2 Arrangements for oil fuel, lubricating oil and other flammable oils and fuels"

5 The title and chapeau of the existing paragraph 2.1 are amended to read as follows:

"2.1 Limitations in the use of ~~oils as fuel~~

The following limitations shall apply to the use of ~~oil as fuel~~:"

6 In paragraph 2.1, the existing subparagraph .4 is amended to read as follows:

"~~.4 in cargo ships the use of fuel having a lower flashpoint than otherwise specified in paragraph 2.1.1, for example crude oil, may be is permitted provided that such fuel is not stored in any machinery space and subject to the approval by the Administration of the complete installation the ship complies with part G of chapter II-1.~~"

APPENDIX

CERTIFICATES

FORM OF SAFETY CERTIFICATE FOR PASSENGER SHIPS

PASSENGER SHIP SAFETY CERTIFICATE

7 The following new paragraph 2.2 is added after the existing paragraph 2.1:

"2.2 the ship complied with part G of the Convention using as fuel/N.A.¹"

8 The existing paragraphs 2.2 to 2.11 are renumbered accordingly.

FORM OF SAFETY CONSTRUCTION CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

9 The existing paragraph 2 is amended to read as follows:

"2. That the survey showed that-:

.1 the condition of the structure, machinery and equipment as defined in the above regulation was satisfactory and the ship complied with the relevant requirements of chapters II-1 and II-2 of the Convention (other than those relating to fire safety systems and appliances and fire control plans)-; and

.2 the ship complied with part G of the Convention using as fuel/N.A.⁴."

ANNEX 20

**DRAFT AMENDMENTS TO THE PROTOCOL OF 1978 RELATING TO THE
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974**

ANNEX

**MODIFICATIONS AND ADDITIONS TO THE ANNEX TO THE INTERNATIONAL
CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974**

APPENDIX

FORM OF SAFETY CONSTRUCTION CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

The existing paragraph 2 is amended to read as follows:

- "2 That the survey showed that-:
- .1 the condition of the structure, machinery and equipment as defined in the above regulation was satisfactory and the ship complied with the relevant requirements of chapters II-1 and II-2 of the Convention (other than those relating to fire safety systems and appliances and fire control plans)-; and
 - .2 the ship complied with part G of the Convention using as fuel/N.A.⁴"

ANNEX 21

**DRAFT AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974**

ANNEX

**MODIFICATIONS AND ADDITIONS TO THE ANNEX TO THE INTERNATIONAL
CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974**

APPENDIX

**MODIFICATIONS AND ADDITIONS TO THE APPENDIX TO THE ANNEX TO THE
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974**

FORM OF SAFETY CERTIFICATE FOR PASSENGER SHIPS

PASSENGER SHIP SAFETY CERTIFICATE

- 1 The following new paragraph 2.2 is added after the existing paragraph 2.1:
"2.2 the ship complied with part G of the Convention using as fuel/N.A.¹"
- 2 The existing paragraphs 2.2 to 2.11 are renumbered accordingly.

FORM OF SAFETY CONSTRUCTION CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

- 3 The existing paragraph 2. is amended to read as follows:
"2. That the survey showed that:-
.1 the condition of the structure, machinery and equipment as defined in the above regulation was satisfactory and the ship complied with the relevant requirements of chapters II-1 and II-2 of the Convention (other than those relating to fire safety systems and appliances and fire control plans); and
.2 the ship complied with part G of the Convention using ____ as fuel/N.A.⁴"

FORM OF SAFETY CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY CERTIFICATE

- 4 The following new paragraph 2.2 is added after the existing paragraph 2.1:
"2.2 the ship complied with part G of the Convention using as fuel/N.A.⁴"
- 5 The existing paragraphs 2.2 to 2.12 are renumbered accordingly.

ANNEX 23

DRAFT AMENDMENTS TO MSC-MEPC.1/CIRC.4/REV.3 ON REVISED GUIDELINES ON THE ORGANIZATION AND METHOD OF WORK OF THE MARITIME SAFETY COMMITTEE AND THE MARINE ENVIRONMENT PROTECTION COMMITTEE AND THEIR SUBSIDIARY BODIES

4 WORK PLANNING AND DELIVERY PROCESS

1 The following new paragraph 4.7 is added after existing paragraph 4.6:

"4.7 The Committees may receive the results from an FSA study carried out in accordance with the FSA Guidelines. The criteria in paragraphs 4.6.1 through 4.6.4 also apply to the outcomes of the FSA study that may be regarded by the Committee as proposals for unplanned outputs."

2 Existing paragraphs 4.7 to 4.14 are renumbered accordingly.

3 The following new paragraph 4.16 is added after renumbered paragraph 4.15:

"4.16 Paragraph 4.14 above is also applicable to the outcomes of an FSA study. Annex 6 provides guidance for considering and reviewing the outcomes of FSA studies."

4 Existing paragraphs 4.15 to 4.39 are renumbered accordingly.

ANNEXES

5 The following new annex 6 is added after existing annex 5:

"ANNEX 6

DRAFT GUIDELINES FOR CONSIDERING AND REVIEWING THE OUTCOMES OF FSA STUDIES

Purpose

1 The purpose of these guidelines is to assist the Committee in considering and reviewing the outcomes (i.e. RCOs or other recommendations) of FSA studies. These guidelines provide a bridge between the FSA Guidelines (MSC-MEPC.2/Circ.12[/Rev.1]) and the Committees' Guidelines (MSC-MEPC.1/Circ.4/Rev.[4]).

Background

2 The FSA Guidelines (MSC-MEPC.2/Circ.12) adequately covers the procedures to manage outcomes of an FSA study from initial submission to the Committee through the report of the FSA Experts Group to the Committee.

3 The Committees' Guidelines (MSC-MEPC.1/Circ.4/Rev.3) contain guidance on how the Committees may consider placing new planned and unplanned outputs on the biennial agenda of the different bodies.

Guidance for Committees

4 Upon receipt of the outcomes of an FSA study the Committees should conduct a preliminary assessment, and the Committees may decide to:

- .1 reject an outcome without any further action; or
- .2 review the information submitted with an outcome in order to determine equivalence to the requirements for submitting proposals for new unplanned outputs.

5 Based on paragraph 4.2 above, the Committees may decide to:

- .1 accept the information submitted with the outcome as equivalent to a proposal for a new unplanned output, place the item on the biennial agenda or post-biennial agenda, and forward the outcome to the cognizant Sub-Committee or other bodies concerned for technical review and advice, and possible implementation actions; or
- .2 request submission of a proposal for a new unplanned output.

6 To enable the Committees to carry out proper use of recommendations contained in FSA studies, the decision flowchart (see figure 1) should be used to guide consistent management of outcomes.

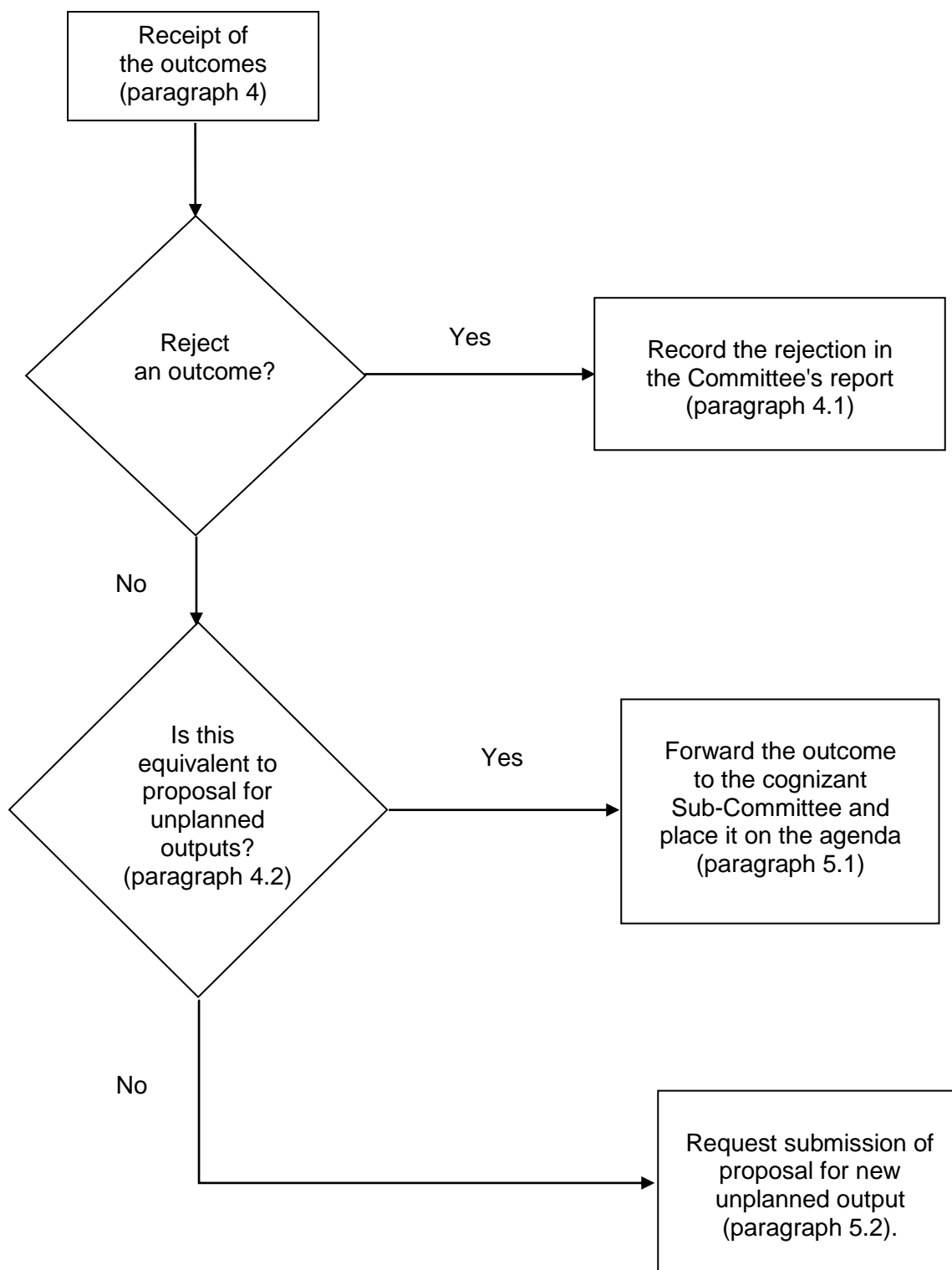


Fig.1 – Flowchart for Committees management of outcomes (i.e. RCOs or other recommendations from an FSA study)"

ANNEX 24

DRAFT AMENDMENT TO MSC-MEPC.2/CIRC.12 ON REVISED GUIDELINES FOR FORMAL SAFETY ASSESSMENT (FSA) FOR USE IN THE IMO RULE-MAKING PROCESS

In section 9 (FSA step 5 – Recommendation for decision-making) the text of existing paragraph 9.3.3 is amended to read:

- "3 recommended RCO(s) submitted in SMART (specific, measurable, achievable, realistic, time-bound) terms and accompanied with the application of the RCO(s), e.g. application of ship type(s) and construction date and/or systems to be fitted on board."

ANNEX 25

BIENNIAL STATUS REPORTS OF THE SUB-COMMITTEES

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment related Conventions	Continuous	MSC MEPC		III / PPR / CCC / SDC / SSE / NCSR	Ongoing		MSC 78/26, paragraph 22.12; CCC 1/13, section 7
5.2.1.2	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2016	MSC	CCC	HTW	In progress		CCC 1/13, section 4; MSC 94/21, paragraph 18.6
5.2.1.34 (UO)	Safety requirements for carriage of liquefied hydrogen in bulk	2016	MSC	CCC				MSC 94/21, paragraph 18.3
5.2.3.1	Amendments to CSC 1972 and associated circulars	2015	MSC	CCC		In progress		CCC 1/13, section 3
5.2.3.3	Amendments to the IMSBC Code and supplements	Continuous	MSC MEPC	CCC		Ongoing		CCC 1/13, section 5
5.2.3.4	Amendments to the IMDG Code and supplements	Continuous	MSC	CCC		Ongoing		CCC 1/13, section 6
5.2.3.5	Revised guidelines for packing of cargo transport units	2015	MSC	CCC		In progress		CCC 1/13, section 9;
12.3.1.1	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC MEPC	CCC	III	Ongoing		CCC 1/13, section 8

SUB-COMMITTEE ON HUMAN ELEMENT, TRAINING AND WATCHKEEPING (HTW)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
2.0.1.1	Provisions to ensure the integrity and uniform implementation of the 1969 TM Convention	2014	MSC	SDC	HTW	Completed		MSC 89/25, paragraph 22.34
5.1.1.6	Amendments to SOLAS chapter II-1 and associated guidelines on damage control drills for passenger ships	2015	MSC	SDC	HTW			MSC 93/22, paragraph 20.22.3
5.1.2.3 (UO)	Revision of requirements for escape route signs and equipment location markings in SOLAS and related instruments (2016)	2015	MSC	SSE	HTW			MSC 94/21, paragraph 18.24

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.2	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2016	MSC	CCC	HTW	In progress		MSC 78/26, paragraph 24.11; BLG 17/18, section 8; CCC 1/13, section 4; HTW 1/21, section 17; MSC 94/21, paragraph 18.6
5.2.1.3	Review of general cargo ship safety	2015	MSC		SDC / NCSR / III / HTW	In progress		MSC 90/28, paragraph 25.10; MSC 93/22, paragraph 15.7
5.2.1.15	Mandatory Code for ships operating in polar waters	2015	MSC / MEPC	SDC	HTW / PPR / SSE / NCSR	Completed		MSC 86/26, paragraph 23.32 MSC 93/22, paragraph 10.44 HTW 1/21, section 11
5.2.1.16	Non-mandatory instrument on regulations for non-convention ships	2015	MSC	III	PPR / SDC / SSE / NCSR / HTW	In progress		MSC 92/26, section 12

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.20	Follow-up action to the STCW-F Conference resolutions 6 and 7	2015	MSC		HTW			HTW 1/21, section 6
5.2.1.23	Guidelines for wing-in-ground craft	2015	MSC	SDC	SSE / NCSR / HTW			MSC 88/26, paragraph 23.30 HTW 1/21, section 7
5.2.1.32	Review MODU Code, LSA Code and MSC.1/Circ.1206/Rev.1	2015	MSC	SSE	HTW			MSC 93/22, paragraph 20.17
5.2.2.1	Guidance for the implementation of the 2010 Manila Amendments (2017)	2014	MSC	HTW		Postponed		MSC 93/22, paragraph 11.4
5.2.2.2	Review of STCW passenger ship-specific safety training (2017)	2015	MSC	HTW		In progress		HTW 1/21, section 13
5.2.2.3	Validated model training courses	Continuous	MSC	HTW		Ongoing		HTW 1/21, section 3
5.2.2.4	Reports on unlawful practices associated with certificates of competency	Annual	MSC	HTW		Completed		HTW 1/21, section 4

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.2.6	Revised guidelines for model course development, updating and validation processes	2015	MSC	HTW		In progress		HTW 1/21, section 10
5.2.2.7	Training in hot-work procedures on crude oil tankers	2015	MSC	HTW	SSE	In progress		HTW 1/21, section 8
5.2.2.8	Guidance for personnel involved with tug-barge operations	2014	MSC	HTW	SDC	Completed		MSC 90/28, paragraph 25.42 HTW 1/21, paragraph 9.5
5.2.2.9	Guidelines for shipowners and seafarers for implementation of relevant IMO instruments in relation to the carriage of dangerous goods in packaged form by sea	2015	MSC	HTW		In progress		HTW 1/21, section 15
5.2.2.10	A globally consistent format for the certificate of training and education issued under the STCW Convention	2015	MSC	HTW		Completed		HTW 1/21, paragraph 16.4, HTW 1/21, section 16

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.3.2	Measures to prevent loss of containers	2014	MSC	CCC	SDC / HTW	In progress		MSC 94/21, paragraphs 3.51 and 3.52;
Notes: DSC 18 completed work on this output. Amendments to SOLAS Chapter VI were approved by MSC 93 and adopted by MSC 94								
5.2.5.2	First outline of the detailed review of the Global Maritime Distress and Safety System (GMDSS)	2015	MSC	NCSR	HTW	In progress		MSC 90/28, paragraph 25.18 HTW 1/21, section 12
Notes: Taking into account that the Detailed Review is in a very early stage and cannot be finalized by NCSR 2, MSC 94 has agreed to extend this planned output, for an additional year (to 2018) and approved the revised Plan of work								
5.2.6.1	E-navigation strategy implementation plan	2015	MSC	NCSR	HTW	In progress		HTW 1/21, section 20
12.1.2.1	Analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations	Annual	MSC / MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR	No work requested of organ by parent		MSC 92/26, paragraph 22.29 HTW 1/21, paragraph 20.16

SUB-COMMITTEE ON IMPLEMENTATION OF IMO INSTRUMENTS (III)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment related Conventions	Continuous	MSC / MEPC		III / PPR / CCC / SDC / SSE / NCSR	Ongoing		MSC 78/26, paragraph 22.12;
2.0.1.2	Guidelines for port State control under the 2004 BWM Convention, including guidance on ballast water sampling and analysis	2015	MEPC	PPR	III	Completed		
Notes: This output will not be split into two outputs as proposed by PPR 1 (MEPC 66/21, paragraph 18.22)								
2.0.2.1	Analysis of consolidated audit summary reports	2015	Assembly	Council	MSC / MEPC / LEG / III	In progress		MEPC 61/24, paragraph 11.14.1, MSC 88/26, paragraph 10.8
5.1.2.2	Measures to protect the safety of persons rescued at sea	2014	MSC / FAL	NCSR	III	Postponed		MSC 84/24, paragraph 22.25
5.2.1.3	Review of general cargo ship safety	2015	MSC		SDC / NCSR / III / HTW	In progress		MSC 90/28, paragraph 25.10; MSC 93/22, paragraph 15.7
5.2.1.16	Non-mandatory instrument on regulations for non-convention ships	2015	MSC	III	PPR / SDC / SSE / NCSR / HTW	In progress		MSC 92/26, section 12

SUB-COMMITTEE ON IMPLEMENTATION OF IMO INSTRUMENTS (III)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.17	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC / MEPC	III		Completed		FSI 12/22, paragraph 9.4, MSC 79/23, paragraph 9.19
5.2.1.29	Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)	Annual	MSC / MEPC	III		Completed		MEPC 64/23, paragraph 11.49 and MSC 91/22, paragraph 10.30; MEPC 52/24, paragraph 10.15
5.3.1.1	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	III		Ongoing		MEPC 66/21, paragraph 18.8 MSC 94/21, paragraph 18.2.1
7.1.3.1	Consideration and analysis of reports on alleged inadequacy of port reception facilities	Annual	MEPC	III		Completed		
8.0.3.1	Requirements for access to, or electronic versions of, certificates and documents, including record books required to be carried on ships	2015	FAL		MSC / LEG / III / MEPC	In progress		

SUB-COMMITTEE ON IMPLEMENTATION OF IMO INSTRUMENTS (III)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
12.1.2.1	Analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations	Annual	MSC / MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR	Completed		MSC 92/26, paragraph 22.29
12.3.1.1	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC / MEPC	CCC	III	No work requested of organ by parent		

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
1.1.2.2	Response to matters related to the Radiocommunication ITU-R Study Group and ITU World Radiocommunication Conference	Annual	MSC	NCSR		Completed		NCSR 1/28, sections 16 and 17, and annexes 13, 14 and 15
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment related Conventions	Continuous	MSC / MEPC		III / PPR / CCC / SDC / SSE / NCSR	Ongoing		MSC 78/26, paragraph 22.12; NCSR 1/28, section 24, and annexes 21 and 22
1.3.4.1	Amendments to the IAMSAR Manual	Continuous	MSC	NCSR		Ongoing		NCSR 1/28, section 21
2.0.3.1	Further development of the Global SAR Plan for the provision of maritime SAR services (2017)	2015	MSC	NCSR		In progress		NCSR 1/28, section 20
2.0.3.2	Annual list of IMO documents and publications to be held by MRCCs	Annual	MSC	NCSR		Completed		
Notes: This work is always carried out as regular work under planned output 2.0.3.3 and hence can be deleted.								

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
2.0.3.3	Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters (2017)	2014	MSC	NCSR		Postponed		NCSR 1/28, paragraph 19.13
Notes: Extension (to 2015) for this output has been approved as work related to this planned output has been tasked to the ICAO/IMO Joint Working Group by NCSR 1.								
2.0.3.4	Procedures for routing distress information in the GMDSS (2017)	2015	MSC	NCSR		In progress		NCSR 1/28, section 20

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.1.2.2	Measures to protect the safety of persons rescued at sea	2014	MSC / FAL	NCSR	III	Postponed		MSC 84/24, paragraph 22.25; NCSR 1/28, section 22
5.2.1.3	Review of general cargo ship safety	2015	MSC		SDC / NCSR / III/ HTW	No work requested of organ by parent		MSC 90/28, paragraph 25.10; MSC 93/22, paragraph 15.7
5.2.1.15	Mandatory Code for ships operating in polar waters	2015	MSC / MEPC	SDC	HTW / PPR / SSE / NCSR	In progress		MSC 86/26, paragraph 23.32 MSC 93/22, paragraph 10.44 NCSR 1/28, section 23, and annexes 18, 19 and 20
5.2.1.16	Non-mandatory instrument on regulations for non-convention ships	2015	MSC	III	PPR / SDC / SSE / NCSR / HTW	No work requested of organ by parent		MSC 92/26, section 12

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.23	Guidelines for wing-in-ground craft	2015	MSC	SDC	SSE / NCSR / HTW	No work requested of organ by parent		MSC 88/26, paragraph 23.30
5.2.2.11	Recognition of Galileo as a component of the WWRNS	2015	MSC	NCSR				MSC 93/22, paragraph 20.22.1
5.2.4.1	Routeing measures and mandatory ship reporting systems	Continuous	MSC	NCSR		Ongoing		NCSR 1/28 section 3
5.2.4.2	Updates to the LRIT system	Continuous	MSC	NCSR		Ongoing		NCSR 1/28 section 8 and annexes 5 and 6
5.2.4.4	Revised guidelines for the on board operational use of shipborne automatic identification systems (AIS)	2014	MSC	NCSR		Completed		NCSR 1/28, section 11 and annex 9
5.2.4.5	Consolidation of ECDIS-related IMO circulars	2014	MSC	NCSR		Completed		NCSR 1/28, section 5
5.2.4.6	Explanatory footnotes to SOLAS regulations V/15, V/18, V/19 and V/27	2014	MSC	NCSR		Completed		MSC 90/28, paragraph 25.27 NCSR 1/28, section 7

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.4.7	Approved satellite navigation system "BeiDou" in the maritime field	2014	MSC	NCSR		Completed		MSC 91/22, paragraph 19.20 NCSR 1/28, section 6 and annex 4
5.2.4.8	Guidelines on the carriage of ECDIS	2014	MSC	NCSR		Completed		NCSR 1/28, section 4
5.2.4.9	Performance standards for multi-system shipborne navigation systems	2015	MSC	NCSR		In progress		NCSR 1/28, section 10
5.2.5.1	Guidelines on MSI (maritime safety information) provisions	Continuous	MSC	NCSR		Ongoing		NCSR 1/28, section 15 and annex 12
5.2.5.2	First outline of the detailed review of the Global Maritime Distress and Safety System (GMDSS)	2015	MSC	NCSR	HTW	In progress		MSC 90/28, paragraph 25.18 NCSR 1/28, section 13 and annexes 10 and 11; MSC 94/21, paragraph 9.26
Notes: Taking into account that the Detailed Review is in a very early stage and cannot be finalized by NCSR 2, MSC 94 has agreed to extend this planned output, for an additional year (to 2018) and approved the revised Plan of work								

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE (NCSR)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.5.3	Analysis of developments in maritime radiocommunication systems and technology	2014	MSC	NCSR		In progress		NCSR 1/28, section 12
Notes: Recognizing that it was very important to consider developments in maritime radiocommunication systems and technology and that further proposals might be submitted, MSC 94 agreed to extend the target completion year for this planned output to 2015								
5.2.5.4	Analysis of information on developments in Inmarsat and Cospas-Sarsat	Continuous	MSC	NCSR		Ongoing		NCSR 1/28, section 18 and annex 16
5.2.6.1	E-navigation strategy implementation plan	2015	MSC	NCSR	HTW	In progress		NCSR 1/28, section 9 and annexes 7 and 8
7.1.2.2	Designated Special Areas and PSSAs and their associated protective measures	Continuous	MEPC	NCSR		No work requested of organ by parent		
12.1.2.1	Analysis of casualty and PSC data to identify trends and develop knowledge and risk based recommendations	Annual	MSC / MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR	No work requested of organ by parent		MSC 92/26, paragraph 22.29

SUB-COMMITTEE ON SHIP DESIGN AND CONSTRUCTION (SDC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment related Conventions	Continuous	MSC MEPC		III / PPR / CCC / SDC / SSE / NCSR	Ongoing		MSC 78/26, paragraph 22.12; SDC1/26, section 21
2.0.1.1	Provisions to ensure the integrity and uniform implementation of the 1969 TM Convention	2015	MSC	SDC	HTW	In progress		MSC 89/25, paragraph 22.34; SDC 1/26, paragraph 4.20
2.0.1.7	Amendments to the ESP Code	Continuous	MSC	SDC		Ongoing		SDC 1/26, section 10
5.1.1.1	Guidelines on safe return to port for passenger ships	2015	MSC	SDC		In progress		MSC 81/25, paragraph 23.54; SDC 1/26, section 8
5.1.1.3	Amendments to SOLAS and FSS Code to make evacuation analysis mandatory for new passenger ships and review of the Recommendation on evacuation analysis for new and existing passenger ships	2016	MSC	SDC		In progress		MSC 83/28, paragraph 25.25; MSC 93/22, paragraph 20.11; SDC 1/26, section 13

SUB-COMMITTEE ON SHIP DESIGN AND CONSTRUCTION (SDC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.1.1.5	Review of conditions under which passenger ship watertight doors may be opened during navigation and prepare amendments to SOLAS regulation II-1/22 and MSC.1/Circ.1380	2015	MSC	SDC		In progress		MSC 92/26, paragraph 23.17; SDC 1/26, section 25
5.1.1.6	Amendments to SOLAS chapter II-1 and associated guidelines on damage control drills for passenger ships	2016	MSC	SDC	HTW			MSC 93/22, paragraph 20.22.3
5.2.1.1	Amendments to the criterion for maximum angle of heel in turns of the 2008 IS Code	2015	MSC	SDC	SDC	In progress		SDC 1/26, paragraph 14.4
5.2.1.3	Review of general cargo ship safety	2015	MSC		SDC / NCSR / III / HTW	In progress		MSC 90/28, paragraph 25.10; MSC 93/22, paragraph 15.7
5.2.1.4	Guidelines addressing the carriage of more than 12 industrial personnel on board vessels engaged on international voyages	2015	MSC	SDC		In progress		MSC 92/26, paragraph 23.19; SDC 1/26, section 19

SUB-COMMITTEE ON SHIP DESIGN AND CONSTRUCTION (SDC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.12	Second generation intact stability criteria	2015	MSC	SDC		In progress		SDC 1/26, section 5
5.2.1.13	Amendments to SOLAS chapter II-1 subdivision and damage stability regulations	2015	MSC	SDC		In progress		MSC 85/26, paragraph 23.35; SDC 1/26, section 7
5.2.1.18	Interpretation of SOLAS regulation II-1/13.6 on means of escape from ro-ro cargo spaces	2015	MSC	SDC		In progress		MSC 90/28, paragraph 25.13; SDC 1/26, section 17
5.2.1.19	Classification of offshore industry vessels and a review of the need for a non-mandatory code for offshore construction support vessels	2015	MSC	SDC		In progress		MSC 85/26, paragraph 23.27; SDC 1/26, section 18
5.2.1.21	Guidelines for use of Fibre Reinforced Plastics (FRP) within ship structures.	2015	MSC	SDC		In progress		MSC 93/22, paragraph 10.10; SDC 1/26, section 11
5.2.1.23	Guidelines for wing-in-ground craft	2015	MSC	SDC	SSE / NCSR / HTW	In progress		MSC 88/26, paragraph 23.30; SDC 1/26, section 20
5.2.1.24	Amendments to Part B of the 2008 IS Code on towing, lifting and anchor handling operations	2015	MSC	SDC		In progress		MSC 88/26, paragraph 23.36; SDC 1/26, section 15

SUB-COMMITTEE ON SHIP DESIGN AND CONSTRUCTION (SDC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.26	Amendments to SOLAS regulation II-1/11 and development of associated Guidelines to ensure the adequacy of testing arrangements for watertight compartments	2015	MSC	SDC		In progress		MSC 86/26, paragraph 23.36; SDC 1/26, section 9
5.2.1.27	Amendments to SOLAS chapter II-2, the FTP Code and MSC/Circ.1120 to clarify the requirements for plastic pipes on ships	2015	MSC	SDC		In progress		MSC 88/26, paragraph 23.12; SDC 1/26, section 12
12.1.2.1	Analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations	Annual	MSC MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR			MSC 92/26, paragraph 22.29; SDC 1/26, paragraph 24.6

SUB-COMMITTEE ON SHIP SYSTEMS AND EQUIPMENT (SSE)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment related Conventions	Continuous	MSC MEPC		III / PPR / CCC / SDC / SSE / NCSR	Ongoing		MSC 78/26, paragraph 22.12; SSE 1/21, section 17
5.1.1.4	Development of life safety performance criteria for alternative design and arrangements for fire safety (MSC/Circ.1002)	2015	MSC	SSE		In progress		MSC 90/28, paragraph 25.12; SSE 1/21, section 7
5.1.2.1	New framework of requirements for life-saving appliances	2015	MSC	SSE		In progress		MSC 82/24, paragraph 21.49; SSE 1, section 8
5.1.2.3 (UO)	Revision of requirements for escape route signs and equipment location markings in SOLAS and related instruments	2016	MSC	SSE	HTW			MSC 94/21, paragraph 18.24
5.2.1.7	Considerations related to the double sheathed low-pressure fuel pipes for fuel injection systems in engines on crude oil tankers	2015	MSC	SSE		In progress		MSC 91/22, paragraph 19.13; SSE 1/21, section 14

SUB-COMMITTEE ON SHIP SYSTEMS AND EQUIPMENT (SSE)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.8	Smoke control and ventilation	2015	MSC	SSE		In progress		FP 46/16, section 4; SSE 1/21, section 5
5.2.1.10	Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	2015	MSC	SSE		In progress		MSC 84/24, paragraph 3.92; SSE 1/21, section 8
5.2.1.14	Amendments to SOLAS regulation II-2/20 and associated guidance on air quality management for ventilation of closed vehicle spaces, closed ro-ro and special category spaces	2015	MSC	SSE		In progress		MSC 88/26, paragraph 23.11; SSE 1/21, section 6
5.2.1.22	Requirements for onboard lifting appliances and winches	2015	MSC	SSE		In progress		MSC 89/25, paragraph 22.26; SSE 1/21, section 13
5.2.1.28	Amendments to the requirements for foam-type fire extinguishers in SOLAS regulation II 2/10.5	2015	MSC	SSE		In progress		MSC 89/25, paragraph 22.9; SSE 1/21, paragraph 16.4

SUB-COMMITTEE ON SHIP SYSTEMS AND EQUIPMENT (SSE)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.32	Review MODU Code, LSA Code and MSC.1/Circ.1206/Rev.1	2016	MSC	SSE	HTW			MSC 93/22, paragraph 20.17
5.2.1.33	Amendments to the Guidelines for vessels with dynamic positioning (DP) systems (MSC/Circ.645)	2016	MSC	SSE				MSC 90/28, paragraph 25.34; SSE 1/21, annex 16
5.2.1.35 (UO)	Review of flashpoint requirements for oil fuel in SOLAS chapter II-2	2016	MSC	SSE				MSC 94/21, paragraph 18.23
5.2.1.36 (UO)	Revision of requirements for automatic sprinkler systems	2015	MSC	SSE				MSC 94/21, paragraphs 8.25 and 18.25
12.1.2.1	Analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations	Annual	MSC MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR			MSC 92/26, paragraph 22.29; SSE 1/21, paragraph 20.10

ANNEX 26

PROVISIONAL AGENDAS FOR THE SUB-COMMITTEES

Provisional agenda for CCC 2

- Opening of the session
- 1 Adoption of the agenda
- 2 Decisions of other IMO bodies
- 3 Amendments to the IGF Code and development of guidelines for low-flashpoint fuels (5.2.1.2)
- 4 Safety requirements for carriage of liquefied hydrogen in bulk (5.2.1.34)
- 5 Amendments to the IMSBC Code and supplements (5.2.3.3)
- 6 Amendments to the IMDG Code and supplements (5.2.3.4)
- 7 Amendments to CSC 1972 and associated circulars (5.2.3.1)
- 8 Revised Guidelines for packing of cargo transport units (5.2.3.5)
- 9 Unified interpretation to provisions of IMO safety, security and environment related Conventions (1.1.2.3)
- 10 Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas (12.3.1.1)
- 11 Biennial agenda and provisional agenda for CCC 3
- 12 Election of Chairman and Vice-Chairman for 2016
- 13 Any other business
- 14 Report to the Committees

Provisional agenda for HTW 2

- 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 Revised guidelines for model course development, updating and validation processes (5.2.2.6)
 - 6 Guidance for the implementation of the 2010 Manila Amendments (5.2.2.1)
 - 7 Follow-up action to the STCW-F Conference resolutions 6 and 7 (5.2.1.20)
 - 8 Role of the human element
 - 9 Mandatory Code for ships operating in polar waters (5.2.1.15)
 - 10 Review of STCW passenger ship specific safety training (5.2.2.2)
 - 11 Training in hot-work procedures on crude oil tankers (5.2.2.7)
 - 12 First outline of the detailed review of the Global Maritime Distress and Safety System (GMDSS) (5.2.5.2)
 - 13 E-navigation strategy implementation plan (5.2.6.1)
 - 14 Guidelines for shipowners and seafarers for implementation of relevant IMO instruments in relation to the carriage of dangerous goods in packaged form by sea (5.2.2.9)
 - 15 Non-mandatory instrument on regulations for non-convention ships (5.2.1.16)
 - 16 Biennial agenda and provisional agenda for HTW 3
 - 17 Election of Chairman and Vice-Chairman for 2016
 - 18 Any other business
 - 19 Report to the Maritime Safety Committee

Provisional agenda for III 2

- Opening of the session and election of Chairman and Vice-Chairman for 2014
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Non-mandatory instrument on regulations for non-convention ships (5.2.1.16)
 - 4 Requirements for access to, or electronic versions of, certificates and documents, including record books required to be carried on ships (8.0.3.1)
 - 5 Consideration and analysis of reports on alleged inadequacy of port reception facilities (7.1.3.1)
 - 6 Analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations (12.1.2.1)
 - 7 Measures to harmonize port State control (PSC) activities and procedures worldwide (5.3.1.1)
 - 8 Analysis of consolidated audit summary reports (2.0.2.1)
 - 9 Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC) (5.2.1.17)
 - 10 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code) (5.2.1.29)
 - 11 Unified interpretation of provisions of IMO safety, security, and environment related Conventions (1.1.2.3)
 - 12 Review of general cargo ship safety (5.2.1.3)
 - 13 Biennial status report and provisional agenda for III 3
 - 14 Election of Chairman and Vice-Chairman for 2016
 - 15 Any other business
 - 16 Report to the Committees

Provisional agenda for NCSR 2

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Routeing measures and mandatory ship reporting systems (5.2.4.1)
 - 4 Recognition of Galileo as a component of the WWRNS (5.2.2.11)
 - 5 Updates to the LRIT system (5.2.4.2)
 - 6 E-navigation strategy implementation plan (5.2.6.1)
 - 7 Performance standards for multi-system shipborne navigation systems (5.2.4.9)
 - 8 Analysis of developments in maritime radiocommunication systems and technology (5.2.5.3)
 - 9 First outline of the Detailed Review of the Global Maritime Distress and Safety System (GMDSS) (5.2.5.2)
 - 10 Further development of the GMDSS master plan on shore-based facilities (n/a)
 - 11 Guidelines on MSI (maritime safety information) provisions (5.2.5.1)
 - 12 Response to matters related to the Radiocommunication ITU R Study Group (1.1.2.2)
 - 13 Response to matters related to ITU World Radiocommunication Conference (1.1.2.2)
 - 14 Analysis of information on developments in Inmarsat and Cospas-Sarsat (5.2.5.4)
 - 15 Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters (2.0.3.3)
 - 16 Further development of the Global SAR Plan for the provision of maritime SAR services (2.0.3.1)
 - 17 Procedures for routeing distress information in the GMDSS (2.0.3.4)
 - 18 Amendments to the IAMSAR Manual (1.3.4.1)
 - 19 Unified interpretation of provisions of IMO safety, security, and environment related Conventions (1.1.2.3)
 - 20 Biennial status report and provisional agenda for NCSR 3
 - 21 Election of Chairman and Vice-Chairman for 2016
 - 22 Any other business
 - 23 Report to the Maritime Safety Committee

Provisional agenda for SDC 2

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Amendments to SOLAS chapter II-1 subdivision and damage stability regulations (5.2.1.13)
 - 4 Guidelines on safe return to port for passenger ships (5.1.1.1)
 - 5 Second-generation intact stability criteria (5.2.1.12)
 - 6 Amendments to the criterion for maximum angle of heel in turns of the 2008 IS Code (5.2.1.1)
 - 7 Amendments to part B of the 2008 IS Code on towing, lifting and anchor handling operations (5.2.1.24)
 - 8 Guidelines addressing the carriage of more than 12 industrial personnel on board vessels engaged on international voyages (5.2.1.4)
 - 9 Classification of offshore industry vessels and a review of the need for a non-mandatory code for offshore construction support vessels (5.2.1.19)
 - 10 Amendments to SOLAS regulation II-1/11 and development of associated Guidelines to ensure the adequacy of testing arrangements for watertight compartments (5.2.1.26)
 - 11 Provisions to ensure the integrity and uniform implementation of the 1969 TM Convention (2.0.1.1)
 - 12 Guidelines for use of Fibre Reinforced Plastic (FRP) within ship structures (5.2.1.21)
 - 13 Amendments to SOLAS chapter II-2, the FTP Code and MSC/Circ.1120 to clarify the requirements for plastic pipes on ships (5.2.1.27)
 - 14 Amendments to SOLAS and FSS Code to make evacuation analysis mandatory for new passenger ships and review of the Recommendation on evacuation analysis for new and existing passenger ships (5.1.1.3)
 - 15 Interpretation of SOLAS regulation II-2/13.6 on means of escape from ro-ro cargo spaces (5.2.1.18)
 - 16 Review of conditions under which passenger ship watertight doors may be opened during navigation and development of amendments to SOLAS regulation II-1/22 and MSC.1/Circ.1380 (5.1.1.5)
 - 17 Amendments to SOLAS chapter II-1 and associated guidelines on damage control drills for passenger ships (5.1.1.6)

- 18 Guidelines for wing-in-ground craft (5.2.1.23)
- 19 Review of general cargo ship safety (5.2.1.3)
- 20 Amendments to the 2011 ESP Code (2.0.1.7)
- 21 Unified interpretation to provisions of IMO safety, security, and environment-related Conventions (1.1.2.3)
- 22 Biennial agenda and provisional agenda for SDC 3
- 23 Election of Chairman and Vice-Chairman for 2016
- 24 Any other business
- 25 Report to the Maritime Safety Committee

Provisional agenda for SSE 2

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Smoke control and ventilation (5.2.1.8)
 - 4 Amendments to SOLAS regulation II-2/20 and associated guidance on air quality management for ventilation of closed vehicle spaces, closed ro-ro and special category spaces (5.2.1.14)
 - 5 Development of life safety performance criteria for alternative design and arrangements for fire safety (MSC/Circ.1002) (5.1.1.4)
 - 6 New framework of requirements for life-saving appliances (5.1.2.1)
 - 7 Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (5.2.1.10)
 - 8 Measures for onboard lifting appliances and winches (5.2.1.22)
 - 9 Considerations related to the double sheathed low-pressure fuel pipes for fuel injection systems in engines on crude oil tankers (5.2.1.7)
 - 10 Amendments to the requirements for foam-type fire extinguishers in SOLAS regulation II-2/10.5 (5.2.1.28)
 - 11 Unified interpretation of provisions of IMO safety, security, and environment related conventions (1.1.2.3)
 - 12 Review the MODU Code, LSA Code and MSC.1/Circ.1206/Rev.1 (5.2.1.32)
 - 13 Amendments to the Guidelines for vessels with dynamic positioning (DP) systems (MSC/Circ.645) (5.2.1.33)
 - 14 Review of flashpoint requirements for oil fuel in SOLAS chapter II-2 (5.2.1.35)
 - 15 Revision of requirements for automatic sprinkler systems (5.2.1.36)
 - 16 Revision of requirements for escape route signs and equipment location markings in SOLAS and related instruments (5.1.2.3)
 - 17 Biennial agenda and provisional agenda for SSE 3
 - 18 Election of Chairman and Vice-Chairman for 2016
 - 19 Any other business
 - 20 Report to the Maritime Safety Committee

ANNEX 27

REPORT ON THE STATUS OF PLANNED OUTPUTS FOR THE 2014-2015 BIENNIUM

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
1.1.1.1	Cooperate with the United Nations on matters of mutual interest, as well as provide relevant input/guidance	Annual	Assembly	Council	MSC / MEPC / FAL / LEG / TCC			
1.1.2.1	Cooperate with other international bodies on matters of mutual interest, as well as provide relevant input/guidance	Annual	Assembly	Council	MSC / MEPC / FAL / LEG / TCC			
1.1.2.2	Response to matters related to the Radiocommunication ITU-R Study Group and ITU World Radiocommunication Conference	Annual	MSC	NCSR				
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment related Conventions	Continuous	MSC / MEPC		III / PPR / CCC / SDC / SSE / NCSR	Ongoing		MSC 78/26, paragraph 22.12;
1.3.4.1	Amendments to the IAMSAR Manual	Continuous	MSC	NCSR				

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
2.0.1.1	Provisions to ensure the integrity and uniform implementation of the 1969 TM Convention	2015	MSC	SDC	HTW	In progress		MSC 89/25, paragraph 22.34; SDC 1/26, paragraph 4.20; MSC 93/22, paragraph 20.16
2.0.1.6	Amendments to SOLAS regulation II-1/40.2 concerning general requirements on electrical installations	2014	MSC	SSE		Completed		MSC 86/26, paragraph 23.26; SSE 1/21, section 4
2.0.1.7	Amendments to the ESP Code	Continuous	MSC	SDC		Ongoing		MSC 91/22, paragraph 19.24
2.0.2.1	Analysis of consolidated audit summary reports	2015	Assembly	Council	MSC / MEPC / LEG / III	In progress		
2.0.2.3	Amendments making the IMO Instruments Implementation Code (III Code) and auditing mandatory	2015	MSC / MEPC			In progress		Resolutions: MEPC.246 (66) and MEPC.247 (66)
2.0.3.1	Further development of the Global SAR Plan for the provision of maritime SAR services (2017)	2015	MSC	NCSR				

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
2.0.3.2	Annual list of IMO documents and publications to be held by MRCCs	Annual	MSC	NCSR				
Notes: This work is always carried out as regular work under planned output 2.0.3.3 and hence can be deleted.								
2.0.3.3	Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters (2017)	2014	MSC	NCSR		Postponed		
Notes: Extension (to 2015) for this output has been approved as work related to this planned output has been tasked to the ICAO/IMO Joint Working Group by NCSR 1.								
2.0.3.4	Procedures for routing distress information in the GMDSS (2017)	2015	MSC	NCSR				
3.4.1.1	Input on identifying emerging needs of developing countries, in particular SIDS and LDCs to be included in the ITCP	Continuous	TCC		MSC / MEPC / FAL / LEG			
3.5.1.1	Identify thematic priorities within the area of maritime safety and security, marine environmental protection, facilitation of maritime traffic and maritime legislation	Annual	TCC		MSC / MEPC / FAL / LEG			

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
3.5.1.2	Input to the ITCP on emerging issues relating to sustainable development and achievement of the MDGs	2015	TCC		MSC / MEPC / FAL / LEG			
4.0.1.3	Endorsed proposals for unplanned outputs for the 2014-2015 biennium as accepted by the Committees	Annual	Council		MSC / MEPC / FAL / LEG / TCC			C112/D, paragraphs 8.1 and 8.2(i)
4.0.2.1	Endorsed proposals for the development, maintenance and enhancement of information systems and related guidance (GISIS, websites, etc.)	Continuous	Council		MSC / MEPC / FAL / LEG / TCC			C 112/D, paragraphs 8.3 (vii) and 8.3(ix) MSC 87/26, paragraph 21.5 and FSI 21/18, paragraphs 3.23, 5.10 and 6.15; also MEPC 66/21, paragraph 18.29
4.0.5.1	Revised guidelines on the Application of the Strategic Plan and the High-level Action Plan of the Organization ("GAP") and guidelines on organization and method of work of the committees, as appropriate	2015	Assembly	Council	MSC / MEPC / FAL / LEG / TCC			MSC 93/22, paragraph 19.6

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.1.1.1	Guidelines on safe return to port for passenger ships	2015	MSC	SDC		In progress		MSC 81/25, paragraph 23.54; SDC 1/26, section 8
5.1.1.2	A review of damage stability regulations for ro-ro passenger ships	2014	MSC	SDC		Completed		MSC 84/24, paragraph 22.59; SDC 1/26, section 6
5.1.1.3	Amendments to SOLAS and FSS Code to make evacuation analysis mandatory for new passenger ships and review of the Recommendation on evacuation analysis for new and existing passenger ships	2016	MSC	SDC		In progress		MSC 83/28, paragraph 25.25 MSC 93/22, paragraph 20.11
5.1.1.4	Development of life safety performance criteria for alternative design and arrangements for fire safety (MSC/Circ.1002)	2015	MSC	SSE		In progress		MSC 90/28, paragraph 25.12; SSE 1/21, section 7

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.1.1.5	Review of conditions under which passenger ship watertight doors may be opened during navigation and prepare amendments to SOLAS regulation II-1/22 and MSC.1/Circ.1380	2015	MSC	SDC		In progress		MSC 92/26, paragraph 23.17
5.1.1.6	Amendments to SOLAS chapter II-1 and associated guidelines on damage control drills for passenger ships	2016	MSC	SDC	HTW			MSC 93/22, paragraph 20.22.3
5.1.2.1	New framework of requirements for life-saving appliances	2015	MSC	SSE		In progress		MSC 82/24, paragraph 21.49; SSE 1/21, section 8
5.1.2.2	Measures to protect the safety of persons rescued at sea	2014	MSC / FAL	NCSR	III	Postponed		MSC 84/24, paragraph 22.25
5.1.2.3 (UO)	Revision of requirements for escape route signs and equipment location markings in SOLAS and related instruments	2016	MSC	SSE	HTW			MSC 94/21, paragraph 18.24

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.1	Amendments to the criterion for maximum angle of heel in turns of the 2008 IS Code	2015	MSC	SDC	SDC	In progress		SDC 1/26, paragraph 14.4; MSC 93/22, paragraph 20.16
5.2.1.2	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2016	MSC	CCC	HTW	In progress		CCC 1/13, section 4; MSC 94/21, paragraphs 18.5 and 18.6;
5.2.1.3	Review of general cargo ship safety	2015	MSC		SDC / NCSR / III / HTW	In progress		MSC 90/28, paragraph 25.10 MSC 93/22, paragraph 15.7
5.2.1.4	Guidelines addressing the carriage of more than 12 industrial personnel on board vessels engaged on international voyages	2015	MSC	SDC		In progress		MSC 92/26, paragraph 23.19
5.2.1.5	Amendments to the provisions of SOLAS chapter II-2 relating to secondary means of venting cargo tanks	2015	MSC	SSE	CCC	In progress		MSC 90/28, paragraph 25.5; SSE 1/21, paragraph 15.5; MSC 94/21, paragraph 8.7

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.6	Amendments to the 2009 MODU Code concerning lifeboat drills	2015	MSC	SSE		Completed		MSC 89/25, paragraph 22.24; SSE 1, paragraph 11.7; MSC 94/21, paragraph 8.4
5.2.1.7	Considerations related to the double sheathed low-pressure fuel pipes for fuel injection systems in engines on crude oil tankers	2015	MSC	SSE		In progress		MSC 91/22, paragraph 19.13 SSE 1/21, section 14
5.2.1.8	Smoke control and ventilation	2015	MSC	SSE		In progress		FP 46/16, section 4; SSE 1/21, section 5
5.2.1.9	Requirements for ships carrying hydrogen and compressed natural gas vehicles	2014	MSC	SSE		Completed		MSC 83/28, paragraph 25.23; SSE 1/21, paragraph 3.11; MSC 93/22, paragraph 3.92.2
5.2.1.10	Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	2015	MSC	SSE		In progress		MSC 84/24, paragraph 3.92

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.11	Amendments to the LSA Code for thermal performance of immersion suits	2014	MSC	SSE		Postponed		MSC 84/24, paragraph 22.48; SSE 1/21, section 9
5.2.1.12	Second generation intact stability criteria	2015	MSC	SDC		In progress		MSC 85/26, paragraph 12.7
5.2.1.13	Amendments to SOLAS chapter II 1 subdivision and damage stability regulations	2015	MSC	SDC		In progress		MSC 85/26, paragraph 23.35; SDC 1/26, section 7
5.2.1.14	Amendments to SOLAS regulation II-2/20 and associated guidance on air quality management for ventilation of closed vehicle spaces, closed ro-ro and special category spaces	2015	MSC	SSE		In progress		MSC 88/26, paragraph 23.11; SSE 1/21, section 6
5.2.1.15	Mandatory Code for ships operating in polar waters	2015	MSC / MEPC	SDC	HTW / PPR / SSE / NCSR	In progress		MSC 86/26, paragraph 23.32; MSC 93/22, paragraph 10.44; MSC 94/21, paragraph 3.61

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.16	Non-mandatory instrument on regulations for non-convention ships	2015	MSC	III	PPR / SDC / SSE / NCSR / HTW	In progress		MSC 92/26, section 12
5.2.1.17	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC / MEPC	III				
5.2.1.18	Interpretation of SOLAS regulation II-1/13.6 on means of escape from ro-ro cargo spaces	2015	MSC	SDC		In progress		MSC 90/28, paragraph 25.13; SDC 1/26, section 17
5.2.1.19	Classification of offshore industry vessels and a review of the need for a non-mandatory code for offshore construction support vessels	2015	MSC	SDC		In progress		MSC 85/26, paragraph 23.27
5.2.1.20	Follow-up action to the STCW-F Conference resolutions 6 and 7	2015	MSC	HTW				
5.2.1.21	Guidelines for use of Fibre Reinforced Plastics (FRP) within ship structures	2015	MSC	SDC		In progress		MSC 93/22, paragraph 10.10

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.22	Requirements for onboard lifting appliances and winches	2015	MSC	SSE		In progress		MSC 89/25, paragraph 22.26; SSE 1/21, section 13
5.2.1.23	Guidelines for wing-in-ground craft	2015	MSC	SDC	SSE / NCSR / HTW	In progress		MSC 88/26, paragraph 23.30
5.2.1.24	Amendments to Part B of the 2008 IS Code on towing, lifting and anchor handling operations	2015	MSC	SDC		In progress		MSC 88/26, paragraph 23.36; SDC 1/26, section 15
5.2.1.25	Revised recommendation on conditions for the approval of servicing stations for inflatable liferafts (resolution A.761(18))	2014	MSC	SSE		Completed		MSC 87/26, paragraph 24.30; SSE 1/21, section 12; MSC 94/21, paragraph 8.6
5.2.1.26	Amendments to SOLAS regulation II-1/11 and development of associated Guidelines to ensure the adequacy of testing arrangements for watertight compartments	2015	MSC	SDC		In progress		MSC 86/26, paragraph 23.36

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.27	Amendments to SOLAS chapter II-2, the FTP Code and MSC/Circ.1120 to clarify the requirements for plastic pipes on ships	2015	MSC	SDC		In progress		MSC 88/26, paragraph 23.12; SDC 1/26, section 12
5.2.1.28	Amendments to the requirements for foam-type fire extinguishers in SOLAS regulation II 2/10.5	2014	MSC	SSE		Postponed		MSC 89/25, paragraph 22.9
5.2.1.29	Non exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)	Annual	MSC / MEPC	III				
5.2.1.30	Adoption of the revised IGC Code	2014	MSC			Completed		MSC 93/22, paragraph 3.82
5.2.1.32	Review MODU Code, LSA Code and MSC.1/Circ.1206/Rev.1	2015	MSC	SSE	HTW			MSC 93/22, paragraph 20.17

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.33	Amendments to the Guidelines for vessels with dynamic positioning (DP) systems (MSC/Circ.645)	2016	MSC	SSE				MSC 90/28, paragraph 25.34
5.2.1.34 (UO)	Safety requirements for carriage of liquefied hydrogen in bulk	2016	MSC	CCC				MSC 94/21, paragraph 18.3
5.2.1.35 (UO)	Review of flashpoint requirements for oil fuel in SOLAS chapter II-2 (2016)	2015	MSC	SSE				MSC 94/21, paragraph 18.23
5.2.1.36 (UO)	Revision of requirements for automatic sprinkler systems	2015	MSC	SSE				MSC 94/21, paragraphs 8.25 and 18.25
5.2.2.1	Guidance for the implementation of the 2010 Manila Amendments (2017)	2014	MSC	HTW		Postponed		MSC 93/22, paragraph 11.4
5.2.2.2	Review of STCW passenger ship-specific safety training (2017)	2015	MSC	HTW		In progress		
5.2.2.3	Validated model training courses	Continuous	MSC	HTW		Ongoing		
5.2.2.4	Reports on unlawful practices associated with certificates of competency	Annual	MSC	HTW				

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.2.5	Reports to the MSC on information communicated by STCW Parties	Annual	MSC					
5.2.2.6	Revised guidelines for model course development, updating and validation processes	2015	MSC	HTW		In progress		
5.2.2.7	Training in hot-work procedures on crude oil tankers	2015	MSC	HTW	SSE	In progress		
5.2.2.8	Guidance for personnel involved with tug-barge operations	2014	MSC	HTW	SDC	Completed		MSC 90/28, paragraph 25.42; MSC 93/22, paragraph 11.5
5.2.2.9	Guidelines for shipowners and seafarers for implementation of relevant IMO instruments in relation to the carriage of dangerous goods in packaged form by sea	2015	MSC	HTW		In progress		
5.2.2.10	A globally consistent format for the certificate of training and education issued under the STCW Convention	2015	MSC	HTW		Completed		HTW 1/21, paragraph 16.4

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.2.11	Recognition of Galileo as a component of the WWRNS	2015	MSC	NCSR				MSC 93/22, paragraph 20.22.1
5.2.3.1	Amendments to CSC 1972 and associated circulars	2015	MSC	CCC				MSC 94/21, paragraph 18.3;
5.2.3.2	Measures to prevent loss of containers	2014	MSC	CCC	SDC / HTW	Completed		MSC 94/21, paragraphs 3.51 and 3.52
5.2.3.3	Amendments to the IMSBC Code and supplements	Continuous	MSC / MEPC	CCC				
5.2.3.4	Amendments to the IMDG Code and supplements	Continuous	MSC	CCC				
5.2.3.5	Revised guidelines for packing of cargo transport units	2015	MSC	CCC		In progress		CCC 1/13, section 9
5.2.3.7	Adoption of amendments to SOLAS and the relevant codes concerning mandatory carriage of appropriate atmosphere testing instruments on board ships	2014	MSC			Completed		MSC 93/22, paragraphs 9.21 to 9.27

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.4.1	Routeing measures and mandatory ship reporting systems	Continuous	MSC	NCSR				
5.2.4.2	Updates to the LRIT system	Continuous	MSC	NCSR				
5.2.4.4	Revised guidelines for the on board operational use of shipborne automatic identification systems (AIS)	2014	MSC	NCSR				
5.2.4.5	Consolidation of ECDIS-related IMO circulars	2014	MSC	NCSR				
5.2.4.6	Explanatory footnotes to SOLAS regulations V/15, V/18, V/19 and V/27	2014	MSC	NCSR				MSC 90/28, paragraph 25.27
5.2.4.7	Approved satellite navigation system "BeiDou" in the maritime field	2014	MSC	NCSR				MSC 91/22, paragraph 19.20
5.2.4.8	Guidelines on the carriage of ECDIS	2014	MSC	NCSR				
5.2.4.9	Performance standards for multi-system shipborne navigation systems	2015	MSC	NCSR				
5.2.4.10 (UO)	Performance review and audit of LRIT Data Centres (2016)	2015	MSC					MSC 94/21, paragraph 9.13

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.5.1	Guidelines on MSI (maritime safety information) provisions	Continuous	MSC	NCSR				
5.2.5.2	First outline of the detailed review of the Global Maritime Distress and Safety System (GMDSS)	2015	MSC	NCSR	HTW			MSC 90/28, paragraph 25.18
Notes: Taking into account that the Detailed Review is in a very early stage and cannot be finalized by NCSR 2, MSC 94 has agreed to extend this planned output, for an additional year (to 2018) and approved the revised Plan of work								
5.2.5.3	Analysis of developments in maritime radiocommunication systems and technology	2014	MSC	NCSR				
Notes: Recognizing that it was very important to consider developments in maritime radiocommunication systems and technology and that further proposals might be submitted, MSC 94 agreed to extend the target completion year for this planned output to 2015								
5.2.5.4	Analysis of information on developments in Inmarsat and Cospas-Sarsat	Continuous	MSC	NCSR				
5.2.6.1	E-navigation strategy implementation plan	2015	MSC	NCSR	HTW			

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.3.1.1	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	III				MEPC 66/21, paragraph 18.8 MSC 94/21, paragraph 18.2.1
6.1.1.1	Guidelines and guidance on the implementation and interpretation of SOLAS chapter XI-2 and the ISPS Code	Annual	MSC					
6.2.1.1	Consideration and analysis of monthly and annual reports on piracy	Annual	MSC					
6.2.1.2	Revised guidance relating to the prevention of piracy and armed robbery to reflect emerging trends and behaviour patterns	Annual	MSC		LEG			
7.1.2.13	Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels (2017)	2015	MSC / MEPC	PPR	SDC / SSE			

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
8.0.2.1	Consideration and analysis of reports and information on illegal migrants and stowaways	Annual	MSC / FAL					
8.0.3.1	Requirements for access to, or electronic versions of, certificates and documents, including record books required to be carried on ships	2015	FAL		MSC / LEG / III / MEPC			
10.0.1.1	Verified goal-based new ship construction standards for tankers and bulk carriers	Continuous	MSC			Ongoing		MSC 94/21, paragraph 18.2.2
10.0.1.2	Consideration of development of goal-based ship construction standards for all ship types	2015	MSC / MEPC					MEPC 66/21, paragraph 18.8 MSC 94/21, paragraph 18.2.3
12.1.1.1	Review of FSA studies by the FSA Experts' Group	Continuous	MSC					
12.1.2.1	Analysis of casualty and PSC data to identify trends and develop knowledge and risk-based recommendations	Annual	MSC / MEPC	III	HTW / PPR / CCC / SDC / SSE / NCSR			MSC 92/26, paragraph 22.29

MARITIME SAFETY COMMITTEE (MSC)								
Planned output number	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
12.3.1.1	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC / MEPC	CCC	III			

ANNEX 28

POST-BIENNIAL AGENDA OF THE MARITIME SAFETY COMMITTEE

MARITIME SAFETY COMMITTEE (MSC)								
ACCEPTED POST-BIENNIAL OUTPUTS								
Number	Biennium*	Reference to High-level Actions	Description	Parent organ(s)	Coordinating organs(s)	Associated organ(s)	Timescale (sessions)	References
7	2012-2013	2.0.1	Mandatory application of the Performance standard for protective coatings for void spaces on bulk carriers and oil tankers	MSC		SDC	2	MSC 76/23, paragraphs 20.41.2 and 20.48; DE 50/27, section 4
8	2012-2013	2.0.1	Performance standard for protective coatings for void spaces on all types of ships	MSC		SDC	2	MSC 76/23, paragraphs 20.41.2 and 20.48
9	2012-2013	2.0.1	Revision of the provisions for helicopter facilities in SOLAS and the MODU Code	MSC		SDC	2	MSC 86/26, paragraph 23.39
32	2012-2013	5.2.4	Recommendations related to navigational sonar on crude oil tankers	MSC		SDC	1	MSC 91/22, paragraph 19.23
38	2012-2013	5.2.5	Approval of the modernization plan of the Global Maritime Distress and Safety System (GMDSS)	MSC	NCSR	HTW	2	MSC 90/28, paragraph 25.18

MARITIME SAFETY COMMITTEE (MSC)								
ACCEPTED POST-BIENNIAL OUTPUTS								
Number	Biennium*	Reference to High-level Actions	Description	Parent organ(s)	Coordinating organs(s)	Associated organ(s)	Timescale (sessions)	References
42	2012-2013	5.2.1	Review of the 2009 Code on Alerts and Indicators	MSC	SDC	NCSR	2	MSC 89/25, paragraph 22.25
45	2012-2013	5.2.1	Development of a requirement for hoist winches to be tested following any maintenance, repair or modification (MSC.1/Circ.1331)	MSC		SDC	1	MSC 90/28, paragraph 25.31, MSC.1/Circ.1331
58	2012-2013	5.2.1	Finalization of second generation intact stability criteria	MSC		SDC	4	SLF 55/17, paragraph 3.13
62	2012-2013	5.1.1	Passenger ship safety.	MSC			2	New output for 2014-2015 HLAP
63	2012-2013	5.2.1	Finalization of a non-mandatory instrument on regulations for non-convention ships.	MSC		III	2	Interim output 5.2.1.18 in the 2012-2013 HLAP.
65	2012-2013	5.2.1	Application of amendments to SOLAS and related codes and guidelines.	MSC			2	MSC 91/22, paragraphs 3.16 to 3.35

MARITIME SAFETY COMMITTEE (MSC)								
ACCEPTED POST-BIENNIAL OUTPUTS								
Number	Biennium *	Reference to High-level Actions	Description	Parent organ(s)	Coordinating organs(s)	Associated organ(s)	Timescale (sessions)	References
68	2012-2013	5.2.4	Interconnection of NAVTEX and Inmarsat SafetyNET receivers and their display on Integrated Navigation Display Systems	MSC		NCSR	1	MSC 92/WP.1, paragraph 23.13
73	2014-2015	5.2.1	Revision of section 3 of the Guidelines for damage control plans and information to the master (MSC.1/Circ.1245) for passenger ships	MSC		SDC	3	MSC 93/22, paragraph 6.28.4
74	2014-2015	5.2.2	Recognition of Galileo as a component of the WWRNS	MSC		NCSR	1	Output 5.2.2.11
75	2014-2015	5.1.1	Amendments to SOLAS chapter II 1, part B-4, Stability Management, and associated guidelines, to include requirements on damage control drills for passenger ships	MSC	SDC	NCSR	1	Output 5.1.1.6
76	2014-2015	5.2.1	Application of the Mandatory Code to non-SOLAS ships operating in polar waters	MSC			3	Output 5.2.1.15

MARITIME SAFETY COMMITTEE (MSC)								
ACCEPTED POST-BIENNIAL OUTPUTS								
Number	Biennium*	Reference to High-level Actions	Description	Parent organ(s)	Coordinating organs(s)	Associated organ(s)	Timescale (sessions)	References
77	2014-2015	5.2.1	Review MODU Code, LSA Code and MSC.1/Circ.1206/Rev.1	MSC	SSE	HTW	1	Output 5.2.1.32
78	2014-2015	5.2.1	Amendments to the Guidelines for vessels with dynamic positioning (DP) systems (MSC/Circ.645)	MSC			1	Output 5.2.1.33
83	2014-2015	7.1.2	Code for the transport and handling of limited amounts of hazardous and noxious substances in bulk on offshore support vessels (2017)	MSC / MEPC	PPR	SDC / SSE	3	
86	2014-2015	5.1.2	Measures to protect the safety of persons rescued at sea (2017)	MSC / FAL	NCSR	III	2	
87	2014-2015	2.0.3	Further development of the Global SAR Plan for the provision of maritime SAR services (2017)	MSC		NCSR	2	
88	2014-2015	2.0.3	Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters (2017)	MSC		NCSR	2	

MARITIME SAFETY COMMITTEE (MSC)								
ACCEPTED POST-BIENNIAL OUTPUTS								
Number	Biennium*	Reference to High-level Actions	Description	Parent organ(s)	Coordinating organs(s)	Associated organ(s)	Timescale (sessions)	References
89	2014-2015	2.0.3	Procedures for routeing distress information in the GMDSS (2017)	MSC		NCSR	2	
90	2014-2015	5.2.1	Amendments to the LSA Code for thermal performance of immersion suits	MSC		SSE	2	
91	2014-2015	5.2.2	Guidance for the implementation of the 2010 Manila Amendments (2017)	MSC		HTW	2	
92	2014-2015	5.2.2	Review of STCW passenger ship-specific safety training (207)	MSC		HTW	2	

MARITIME SAFETY COMMITTEE (MSC)								
ACCEPTED POST-BIENNIAL OUTPUTS								
Number	Biennium*	Reference to High-level Actions	Description	Parent organ(s)	Coordinating organs(s)	Associated organ(s)	Timescale (sessions)	References
93	2014-2015	5.1.1	Amendments to SOLAS and FSS Code to make evacuation analysis mandatory for new passenger ships and review of the Recommendation on evacuation analysis for new and existing passenger ships (2016)	MSC	SDC		2	
98	2014-2015	5.1.1	Computerized stability support for the master in case of flooding for existing passenger ships	MSC	SDC		2	MSC 94/21, paragraphs 6.8 and 18.20
100	2014-2015	5.4.1	Revision of the Guidelines on Fatigue (2017)	MSC	HTW		3	MSC 94/21, paragraph 18.8

Notes:

* Biennium when the output was placed on the post-biennial agenda

ANNEX 29

STATEMENTS BY DELEGATIONS AND OBSERVERS¹

INTRODUCTION – ADOPTION OF THE AGENDA

Statement by the delegation of Ukraine

"Ukrainian delegation would like to draw the attention of the members of the Committee to the ongoing brutal neglect of norms and principles of the law of the sea by the Russian Federation. Such breach of rights and duties by the Russian Federation indubitably has direct impact on the safety of navigation in and around the Black Sea region.

Ukrainian delegation would like to remind that the Russian Federation during its ongoing military aggression against Ukraine has occupied the Autonomous Republic of Crimea and city of Sevastopol – the sovereign territory of Ukraine. The occupied Crimean peninsula provides for the establishment of the baselines for measuring territorial waters of Ukraine and vast exclusive economic zone of Ukraine in the Black sea. It should be noted that back in 1992, Ukraine acting under Article 16 of the UNCLOS deposited a list of geographical coordinates of points defining the baselines for measuring the breadth of its territorial sea, exclusive economic zone and its continental shelf in the Black Sea, including those along the coast of the Crimean peninsula.

Apart from the sovereign rights of Ukraine as the coastal State, Ukraine has taken upon itself a number of obligations under the UNCLOS to provide for the safety of navigation and the regulation of maritime traffic.

In this regard Ukrainian delegation stresses that the Russian Federation as the occupying state impedes the fulfillment of a number of Ukraine's international obligations under the respective treaties and conventional instruments on the part of the sovereign territory of Ukraine. Relevant information was circulated to the International Maritime Organization by the Embassy of Ukraine in the United Kingdom by notes verbal No.6124/35-327/2-534, 6124/35-327/2-535 on May 05, 2014 and No. 6124/35-327/2-950 on July 21, 2014.

Ukrainian delegation once again stresses that the "taking over" by the Russian Federation of the responsibility for the international shipping issues, including the safety of navigation, protection of marine environment from ship pollution, search and rescue, ship registration, certification of crew members of seagoing vessels in maritime areas adjacent to the Autonomous Republic of Crimea and the City of Sevastopol as an integral part of the territory of Ukraine constitutes an internationally wrongful act which entails the international responsibility of the Russian Federation.

In addition, Russia's actions in relation to the opening of ports to foreign vessels in the occupied cities of Ukraine: Yevpatoria, Feodosia, Yalta, Kerch and Sevastopol, are illegal and should be regarded as a breach of an international obligation by the Russian Federation since these acts are not in conformity with its international obligations.

Ukrainian delegation assumes that all flag States, shipowners and Captains are familiar with the fact of the closure of seaports in the Autonomous Republic of Crimea and the city of Sevastopol and with the risks of the entrance of these Ukrainian ports associated with it.

¹ Statements have been included in this annex in the order in which they were given, sorted by agenda items, and in the language of submission (including translation into any other language if such translation was provided).

As Ukraine has already informed, the entry of vessels under foreign flags to the closed sea ports in the Autonomous Republic of Crimea and the City of Sevastopol shall be considered as a violation of international law, as acts, that undermine the sovereignty of Ukraine, as well as violations of the national law of Ukraine, which entails the responsibility of the shipowners, operators and masters of ships, including the criminal one.

In view of the fact that Article 94 of the UNCLOS established that every State shall effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag, Ukraine expects that the competent authorities of the States will ensure the compliance by shipowners, operators and ship masters with the international law and the national law of Ukraine, including the status of the closed ports, located on the temporarily occupied territory of the Autonomous Republic of Crimea and the City of Sevastopol.

It should also be emphasized that the Russian Federation, as the occupying power, continues to violate the sovereign rights of Ukraine in other areas of international maritime law, in particular, its right over natural resources by actual seizure and illegal use of Ukrainian gas and oil fields located in the Black Sea which are the part of continental shelf and exclusive economic zone of Ukraine.

Such actions constitute acts of aggression by the Russian Federation and grave breaches of the UNCLOS Articles 56, 60 and 77, as well as Articles 10 and 11 of the Law of Ukraine "On the exclusive (maritime) economic zone" in the context of illegal activity on the continental shelf and in the exclusive economic zone of Ukraine without the consent of Ukraine.

In particular, according to the Article 56 of the Convention, in the exclusive economic zone, the coastal State (Ukraine) has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone and jurisdiction with regard to, inter alia, the establishment and use of artificial islands, installations and structures.

Thus, in accordance with the UNCLOS Article 60, in the exclusive economic zone, the coastal State shall have the exclusive right to construct and to authorize and regulate the construction, operation and use of artificial islands, installations and structures for the purposes provided for in Article 56 and other economic purposes and have exclusive jurisdiction over them with regard to customs, fiscal, health, safety and immigration laws and regulations as well as laws and regulations regarding safety.

In addition, in accordance with Article 77 of the Convention, the coastal State exercises sovereign rights over the continental shelf for the purpose of exploring it and exploiting its natural resources. The rights referred to in the paragraph above are exclusive in the sense that if the coastal State does not explore the continental shelf or exploit its natural resources, no one may undertake these activities without the express consent of the coastal State.

Finally, we would like to draw the attention of the Committee to the United Nations General Assembly resolution 68/262 "The territorial integrity of Ukraine", adopted on 27 March, 2014, that calls upon all States, international organizations and specialized agencies (including IMO) not to recognize any alteration of the status of the Autonomous Republic of Crimea and the City of Sevastopol on the basis of the referendum "having no validity" and to refrain from any action or dealing that might be interpreted as recognizing any such altered status.

Ukraine deeply condemns malicious and internationally wrongful conduct of the Russian Federation and invokes the international responsibility of the Russian Federation for the internationally wrongful conduct. Such internationally wrongful activity of Russia constitutes a gross and systematic failure of Russia to fulfill its international obligations. In the face of breaches

of international law not only states, but also international organizations and/or its organs can demand cessation of conduct in breach of an international obligation. With this in mind, Ukraine urges IMO to demand cessation of Russia's internationally wrongful acts to safeguard the continuing validity and effectiveness of the UNCLOS rules and to uphold international rule of law.

Those are the bitter realities of today and Ukraine calls upon all Member States to condemn Russia's aggression which puts a world-wide peace and security in jeopardy.

Ukraine urges to reaffirm its rights over natural resources in the exclusive economic zone of Ukraine in the Black sea and calls upon the Russian Federation, the occupying Power, not to exploit, to cause loss or depletion of or to endanger the natural resources in the exclusive economic zone of Ukraine; recognize the right of Ukraine to claim any appropriate form of reparation for the damage caused as a result of any exploitation, loss or depletion of, or danger to, its natural resources."

Statement by the delegation of the Russian Federation

"We are convinced that the International Maritime Organization as a whole and MSC in particular do not provide the proper forum to discuss political matters of this kind. The UNCLOS Convention does not fall within IMO activities. The MSC, as we understand its mandate, operates exclusively within the sphere of maritime safety. I would not like to dwell on matters of jurisdiction and sovereignty, I would only like to mention that the United Nations General Assembly resolution referred to by our Ukrainian counterparts is not binding. It is a mere declaration which, I would also like to remind you, did not attract an overwhelming majority of States. Without wishing to mention the fact that it was those people living in Crimea who took the decision on Crimea's status, I would like to focus my intervention solely on the matters of maritime safety that fall within the competence of this Committee.

Recognizing the role of international shipping in the global economy, respecting the work of seafarers, the Russian Federation in the current situation has taken on the responsibility of ensuring compliance with the measures for providing continuous existence of international shipping in the Black Sea, in sea areas adjacent to the Crimea coast and in the sea ports of the Crimean peninsula, including measures to ensure maritime safety and protection of the marine environment against pollution.

Availing itself of the opportunity, and because the issue has been raised, the Russian Federation would like to point out that Ukraine does not actually carry out activities in the region as provided for in the international treaties on international shipping – this is fact, whether one likes it or not. The Russian Federation would like to take this opportunity to assure IMO and MSC in particular that it conscientiously complies with its obligations emanating from the international treaties on maritime safety and security adopted under IMO auspices to which it is a Party. As a flag and port State the Russian Federation ensures due compliance with the international legal obligations in shipping all over its territory, including Crimea; as well as protecting the marine environment against pollution and respecting the rights of seafarers as people doing a unique and complicated job.

In accordance with its international legal obligations, there exists in the Russian Federation a complex network aimed at ensuring maritime safety and protecting the marine environment against pollution. It comprises, among other things: vessel traffic services (VTS), port State control of ships, the Global Maritime Distress and Safety System (GMDSS), ship reporting systems, ships' routing, pilotage, shore-based automatic identification systems, long-range identification and tracking of ships (LRIT), navigational and hydrographic services, search and rescue, etc.

Navigation and weather information for sea ports and their approaches – let me particularly stress this – in all the Russian Federation sea ports including the Crimean peninsula, is transmitted to seafarers as provided for in the relevant international instruments.

I would like to draw the Committee's attention to the fact that maritime safety measures on the Crimean coast have recently been significantly enhanced as compared to the recent past, only emphasizing the fact that the Russian Federation is a Party to all the existing international treaties on maritime safety and marine environment protection. The technical facilities in Crimea used to ensure maritime safety, which had been neglected in recent years, are now fully operational and meeting all seafarers' needs. Taking the opportunity I wish to inform, that the Russian sea ports of Yevpatoriya, Kerch, Feodosia, Yalta and Sevastopol are opened for all ships for calling at and there are no any administrative restrictions for that. We believe, that the statement of Ukraine regarding the Crimea peninsula does not refer to IMO and shall not be taken into consideration by the members of the Organization in their day-to-day activity.

Referring to the starting point of my intervention I would like to reiterate my conviction that statements, interventions or discussions going beyond this Committee's mandate should not be aired at this forum; if this should happen, they must not be included in our documents. However, if our Ukrainian counterparts insist upon including their statement in the Committee's documents, we, Mr. Chairman, would also like our statement to be included in the report."

Statement by the delegation of Oman

شكراً رئيس الاجتماع ،
سيداتي وسادتي ، صباح الخير ،

إن وفد سلطنة عمان يتقدم بالشكر الجزيل الى المنظمة البحرية وجميع الدول والمنظمات والهيئات الغير الحكومية والتي تقدمت بأوراق عمل لهذا الاجتماع الهام .

إن وفد عمان يتطلع لهذا الاجتماع والمناقشات التي بدأت بالأمس والأيام القادمة بأهمية بالغه والتي تنصب إلى مزيد من التطوير في الجوانب الأمن البحري وسلامة البحارة والمحافظة على البيئة البحرية . وإن القرصنة البحرية في السواحل الصومالية والجهود المبذولة لهو مثال على أهمية التنسيق بين الدول وقد أدى الى تقليص نشاطها بشكل ملحوظ كما ذكر سعادة الأمين العام في كلمته الافتتاحية عن عدم حدوث اي اختطاف لأي سفينه في هذه المنطقة منذ منتصف مايو عام 2012 . وعليه فإننا نؤكد بان إبقاء بحر عُمان وبحر العرب ضمن المنطقة شديدة الخطورة ليس بالمنصف لبلادي وكذلك دول المنطقة ، وذلك لما له من جوانب سلبية كبيره والتأثير المباشر لموانئنا . لذا نامل ونطالب بان يتم إنهاء مسمى المنطقة شديدة الخطورة من بحر عُمان وبحر العرب .

وشكراً .

Statement by the delegation of Angola

"First and foremost, please allow me to applaud the Secretary General's opening remarks from yesterday, which Angola believes were very positive, and had a very clear vision of the Organization's goals and objectives.

I would have preferred to make this intervention within the appropriate agenda item; however, due to unforeseen circumstances I will be unable to attend this Committee meeting from tomorrow onwards, when agenda item 14 is scheduled to take place.

Angola takes this opportunity to reaffirm to IMO and the Secretariat, our most sincere appreciation for all efforts undertaken so far to prevent and suppress piracy, armed robbery against ships and other illicit maritime activities in the Gulf of Guinea.

We also wish to applaud all efforts undertaken by countries of that region, to ensure that the Gulf of Guinea has an adequate response against the current threats to maritime security, including the inauguration of the Inter-Regional Coordination Centre as alluded to yesterday by the Secretary-General.

Furthermore, Angola wants to thank all those countries from around the globe that have so far contributed generously to the IMO West and Central Africa Maritime Security Trust Fund, such as China, Nigeria, Japan, the United Kingdom and Norway, for their continuing support to maritime security related activities in west and central Africa. Not forgetting other countries in the likes of Brazil that makes very valuable in-kind contributions in the region.

On the issue of piracy and other illicit maritime activities in the Gulf of Guinea, Angola wants to make it very clear that the region is fully engaged and keen to identify a satisfactory long-term resolution to this problem.

On a national level, Angola has this year created a national Multi-sector Maritime Security Committee, as envisaged in the objectives of the Organization to strengthen maritime security in west and central Africa.

Also at national level, Angola undertook just last month (October/2014), IMO's table-top exercise, which we believe was very productive and I am sure Angola's maritime security will have been enhanced by that two-day exercise.

Furthermore, as far as the regional level is concerned, we wish to inform the Committee that through document TC/64/13, considered by TCC 64 in June this year, Angola along with a number of countries from the Gulf of Guinea region and the Continent; proposed that a regional Workshop be convened by the Organization in the last quarter of 2014, in order for the region to hold objective technical discussions regarding the implementation of the Yaoundé Code of Conduct.

This proposal was widely supported at TC 64, bearing in mind that through resolution A 1069(28), IMO reaffirmed, among other things, its commitment and support for the region in tackling this issue.

An agreement had been reached with the Secretariat to hold the inter-regional Workshop in question, in Luanda (Angola), with the date set for December this year. However, given the unfortunate bout of Ebola Virus Disease that plagued some of countries of West Africa in particular, it has been agreed that the meeting should be postponed to preferably the month of March, 2015, from Angola's perspective – so that all countries and relevant regional bodies of the region, with no exceptions, are appropriately represented at the Workshop. We reiterate that participation of all countries and relevant regional bodies of the Gulf of Guinea is crucial to ensure that all that is decided at that regional Workshop has the ownership of the entire region.

Angola is very much looking forward to working with IMO's Maritime Security Division, on finalizing all outstanding details regarding the Workshop in question, so that it may take place within the specified timeframe mentioned previously, if possible.

To conclude, in order to reinforce our commitment to safeguarding Maritime Security at national level and regionally (in the Gulf of Guinea), the Republic of Angola, through this Permanent Representation, can announce today that we will make a humble contribution of \$100,000 to the West and Central Africa Maritime Security Trust Fund."

Statement by the delegation of Nigeria

"Nigeria delegation will like to thank the distinguished delegation of Angola for his statement highlighting the enormous work being done by the various Governments in the west and central African sub-region in addressing maritime security.

It is important to also mention some extra efforts of the Nigerian Government in combating piracy in the west and central African sub-region, some of which are:

- .1 The Maritime Administration has established a satellite-based surveillance control centre in Lagos which monitors all vessels in Nigerian waters.
- .2 There are four Coastal Radar stations being established in four locations along Nigeria coast, of which 75% is completed.
- .3 There is now an MoU between the Maritime Administration and the Nigerian Air Force; making use of the ATR planes to interdict pirate attacks.
- .4 The Maritime Administration has established four Patrol Groups in conjunction with the Nigerian Navy in Lagos, Port Harcourt, Warri and Brass.

We are sure in the few weeks, pirates will have no place to hide within the region."

Statement by the observer from IACS

"The observer from IACS noted that the text of regulation 2 of the new SOLAS chapter XIV that was now before the Committee for adoption still did not provide the necessary clarity in terms of the application provisions. In the opinion of IACS this application statement needs to be clear in the text of the regulation, in order to facilitate the global and consistent implementation of these new mandatory provisions.

The observer from IACS noted that it was only during the discussions in the working group at this session that the proposal had been made for annual and intermediate surveys to be undertaken. In the opinion of IACS the reflection of this policy decision in the text of the Code, in particular paragraph 1.3.6, and the Polar Ship Certificate; and the survey provisions relating to these surveys; have, to date, not been considered in detail."

AGENDA ITEM 5

Statement by the observer from CESA

"This statement is a brief progress report on the status of the development of the Ship Constructions File Industry Standards, which will facilitate the implementation of the SCF requirements once they have entered into force from July 2016.

We would like to draw the attention of this Committee to the fact that since MSC 87, a draft SCF industry standard is under development with the aim of adequately addressing and balancing the SCF principles design transparency and protection of intellectual property rights. The Cross Industry Working Group comprises the national shipbuilding associations from China, Korea, Japan and the United States as well as international industry associations representing shipowners and classification societies.

Recently, after a long and very extensive process shipowners and shipbuilder have agreed in general on the principles of the SCF Industry Standards. While there is no certainty as yet to reach full agreement in all details, the parties are carrying on with their efforts to accomplish the task. We are now in the stage of seeking final comments and subsequent approval from our members in order to ensure that the SCF Industry Standards and associated guidance for implementation are fit for purpose, practically workable and therefore ready as an industry contribution for the smooth implementation of GBS and SCF.

It is anticipated that the implementation of the archive centre-based SCF concept as contained in the standard will harmonize well with the given timescale of the overall GBS introduction. We will submit more detailed information in writing to MSC 95."

Statement by the delegation of Germany

"We would like to take the opportunity to thank this working group and in particular the chairman Mr Jaideep Sirkar for their work and the results achieved in this short working period.

Our intervention focuses on the first part of the working group report.

This working group started the development of draft interim guidelines for the application of the GBS Safety Level Approach in IMO rules making.

Germany welcomes this work because it provides the possibility of developing guidance focusing on the safety level approach. However, we would like to raise the attention of this Committee to the results already achieved with respect to several elements of the safety level approach. Some of these elements found their way into the Generic guidelines on GBS (MSC.1/Circ.1394) others can be found in the reports of working groups of this Committee.

We fully support the view of the group that all elements relevant for GBS-SLA should be integrated into one document Guidelines for GBS-SLA. In this context it is also worth to mention the work on the SLA Exercise. At MSC 90 this Committee agreed to carry out an SLA Exercise in order to develop a detailed model for GBS-SLA and by doing this closing the gaps in the model developed so far.

There may be the risk that a discussion was not adequately supported by detailed models to the extent that will leave room for extensive interpretation which subsequently would slow down the process of developing GBS-SLA or even hamper the result.

We therefore ask this Committee to invite Member Governments to continue their work on the SLA Exercise and submit their results to MSC 95 in order to support the further development of GBS-SLA."

AGENDA ITEM 9

Statement by the delegation of the United States

"This delegation of the United States is pleased to support the inclusion of Beidou as a component of the Worldwide Radionavigation System. We thank China for the cooperation and collaboration they have demonstrated in presenting the Beidou constellation to the Organization for our technical consideration. And, noting that the Beidou system is in the early stages of deployment, we look forward to continued cooperation, collaboration and transparency to ensure that existing transportation and safety of life services are not impacted.

Furthermore, we trust that future iterations of Beidou and its associated augmentations will ensure that other services can function alongside in a reciprocal, interoperable and mutually beneficial manner in support of all seafarers that rely on the Worldwide Radionavigation System."

Statement by the delegation of France

"MSC Point 9 de l'ordre du jour déclaration de la France à joindre en annexe du rapport du comité.

La France insiste sur un point signalé lors du NCSR et identifié comme un sujet fondamental lié à la reconnaissance de tout nouvel opérateur.

Il s'agit de l'impact pour tous les Etats côtiers de l'arrivée d'un second opérateur, et ultérieurement d'autres opérateurs, sous les aspects administratifs, techniques et opérationnels, pour les activités SAR et pour les activités de diffusion des renseignements de sécurité maritime (avertissements de navigation et prévisions météorologiques)...

La France est coordinatrice d'une zone NAVAREA et d'une zone METAREA ; elle paie chaque année un budget appréciable pour la diffusion des renseignements de sécurité maritime. Pour nous, il est hors de question de multiplier cette contribution par autant d'opérateurs.

La France demande que le MSC demande aux opérateurs de communications satellitaires qu'ils s'organisent et fassent des propositions au NCSR 2 pour que les frais de transmission des Etats pour la diffusion des renseignements de sécurité maritime ou les opérations SAR ne soient pas augmentés."

Statement by the delegation of Spain

"España presenta las siguientes observaciones relativas al documento MSC 94/9/3 (en cursiva texto literal del documento).

En el párrafo:

Acuerdo sobre la prestación de servicios públicos de la IMSO y provisión de servicios del SMSSM

La cuestión de si Iridium podría cumplir el periodo de notificación prescrito de cinco años exigido por el Acuerdo sobre la prestación de servicios públicos, debido a las obligaciones relacionadas con la operación de los satélites en órbita, no es pertinente. En el acuerdo entre el Gobierno de los Estados Unidos e Iridium existe una disposición de que si más de cuatro satélites no poseen combustible suficiente ni la funcionalidad para realizar una desorbitación adecuada, el Gobierno de los Estados Unidos puede ejercer la autoridad de ordenar que los satélites de la red que hayan estado en funcionamiento durante más de siete años sean retirados de órbita. El Gobierno de los Estados Unidos recibe informes de rutina sobre el buen funcionamiento de los satélites y la red. El Gobierno de los Estados Unidos no tiene ningún plan para ordenar a Iridium que proceda a la desorbitación de los satélites en funcionamiento ni perjudicar su capacidad de prestar servicios relacionados con el SMSSM. Los términos de ese acuerdo sólo se aplican a la red actual de Iridium y no se aplican a la próxima red de Iridium, cuyo lanzamiento comenzará en 2015. Es común que los gobiernos de países con capacidad espacial tengan acuerdos similares con operadores de satélites. El Gobierno de los Estados Unidos puede dar fe de que Iridium podrá demostrar claramente que puede cumplir de manera satisfactoria el periodo de notificación de cinco años.

Nos parece preocupante la autoridad que puede ejercer los EEUU en relación con la red de satélites de Iridium y cómo afectaría a la prestación del servicio. (Ver subrayado y negrita)

En cuanto al siguiente párrafo relativo a

Problemas adicionales

En la resolución A.1001(25) no se recoge ninguna prescripción que estipule que el proveedor de servicios móviles por satélite del SMSSM deba integrar sus terminales o redes marítimos móviles con los de otros proveedores de servicios por satélite. Si se desea hacerlo, la Organización debe elaborar nuevas prescripciones, protocolos e interfaces compatibles con todos los proveedores y equipos de servicios móviles por satélite a fin de permitir la integración entre los sistemas.

Es absolutamente necesario garantizar la compatibilidad de los proveedores SMSSM de forma que los buques y estaciones de tierra puedan enviar y recibir a y desde equipos independientemente de cuál sea el proveedor de servicios, de otra forma, los buques y estaciones podrían llegar a necesitar instalaciones de ambos proveedores.

Al final del 3er párrafo en ese mismo apartado dice "y no se prevé que Iridium tenga que respaldar protocolos o procesos implementados por otros proveedores de servicios." Que está absolutamente en línea con la preocupación manifestada.

En esa misma línea, el párrafo correspondiente a Incompatibilidad de los sistemas satelitales y las prescripciones sobre equipos en virtud del capítulo IV del Convenio SOLAS que responde a las cuestiones planteadas en el NCSR 1 se indica a mitad de párrafo Muchos de los elementos son incompatibles entre sí en el sentido de que son incapaces de tener una interoperabilidad directa, pero al aplicar los procedimientos del SMSSM u otras disposiciones, pueden ser interoperables de manera indirecta.

Por último, creemos necesario que se estudie detalladamente la cuestión de equipos adicionales para autoridades SAR y RCC's."

AGENDA ITEM 10

Statement by the delegation of the Russian Federation

"With your permission, I would like to go back to sub-item .8. Even bearing in mind that this Committee is only invited to note, I, nevertheless, would like to draw the Committee's attention to paragraph 6.31 of the report of III 1.

Mr. Chairman, in our understanding, PSC is a State's right granted by the Convention; the Convention does not restrict a port State, which is a Party to this Convention, in its rights to inspect ships at its ports. Mr. Chairman, it is the conventions that stipulate the requirements subject to compliance verification and, in our opinion, circulars STCW.7/Circ.21 and STCW.7/Circ.22 are beyond the mandate of the HTW Sub-Committee. They have been approved, however, and have been considered by the Sub-Committee. III 1 went even further and is going beyond its mandate, as we understand it, when recommending all port State to implement the above circulars. Mr. Chairman, we understand that the above circulars are purely recommendatory and it is for the particular port State to decide whether to use them or not; thus, our national legislation does not allow us to use them as the requirements can be found in the relevant conventions of highest legal status, while the above circulars are nothing more than mere proposals for our State not to apply, in certain circumstances, some of the Convention requirements. And this is not possible within the national legislation.

There is another matter, Mr. Chairman that I would like to raise. The III Sub-Committee gives instructions to PSC regimes, while they are bodies of a totally different nature and are mere observers within IMO. I cannot recall any existing practice of this Organization when we would be giving any instructions to external organizations to carry out actions. So, Mr. Chairman, I would like to draw everyone's attention to the fact that paragraph 6.31 of the report of III 1 is unacceptable on the above two matters, and I would like this statement to be included in the Committee report. We will not be able to comply with the above-mentioned paragraph."

Statement by the observer from ILO

"These comments are with respect to paragraph 27.2 of document MSC 94/10/1.

The frequent link between IUU fishing and substandard living and working conditions on fishing vessels was raised by the ILO at the first meeting of the Joint Working Group, back in 2000, and again at the second session of the Group in 2007.

Since that time, we have seen more evidence of very poor conditions on work on many vessels. Through ILO's own studies, and the studies of others, such as the United Nations Office on Drugs and Crime (or UNODC) report on "Transnational Organized Crime in the Fishing Sector", as well as through reports in the media, such as the recent Guardian exposé on conditions in some fisheries, attention has been drawn to deplorable conditions on all-too-many fishing vessels, and to the trafficking and forced labour of fishermen. Much of this is related to IUU fishing. Indeed, fishermen forced into work, unable to seek help and perhaps even afraid for their lives, are not in much of a position to oppose illegal fishing operations. It is not difficult to imagine that criminal behaviour with respect to people is found alongside criminal behaviour with respect to fishing operations.

Last year, at the ILO's Global Dialogue Forum for the Promotion of the Work in Fishing Convention, 2007 (No.188), government, employer and worker delegates agreed that:

"Illegal, unreported and unregulated (IUU) fishing evades regulations, undermines fisheries management and conservation, and endangers the world food supply. It exacerbates exploitative labour practices, which may have a negative impact on wages and working and living conditions of all fishers. IUU fishing may also involve forced labour and human trafficking, and child labour."

They also agreed that:

"Convention No.188 will put in place a system of flag and port State control inspection of working and living conditions on fishing vessels. This is an essential element of establishing decent working and living conditions for fishers, including migrant fishers, and will also contribute to addressing other issues such as IUU fishing, forced labour and human trafficking, and child labour."

The Forum then, among other things, requested the ILO to work with INTERPOL and UNODC to promote and implement Convention No.188 and to work together to address forced labour and trafficking in the sector.

Indeed, just last week ILO participated in the 3rd INTERPOL Global Trafficking in Human Beings Conference segment on Human Trafficking in the Fishing Sector, which discussed how not only Convention No.188 but also to the newly-adopted Protocol of 2014 to the Forced Labour Convention, 1930, can be used to address conditions of work of fishermen and to fight against forced labour and trafficking of fishermen.

As noted in MSC 94/10/1, ILO has adopted port State control guidelines with respect to Convention No.188. Next year, the ILO will hold a Meeting of Experts to Adopt **Flag State** Guidelines for the Implementation of the Convention. All ILO Member States will be invited to participate in the meeting, and an invitation will be extended to FAO, IMO and other International Organizations, and we look forward to that participation.

As concerns the Joint Working Group, we would like to make some suggestions with respect to its proposed agenda:

- For the agenda item that currently only refers to Convention No.188 port State control guidelines (as seen in paragraph 6, point 6) perhaps could be written with a slightly broader scope, so that it reads "The ILO Work in Fishing Convention, 2007 (No.188), including related port State and flag State control guidelines, as well as other ILO instruments". This would place all relevant ILO matters under a single agenda item.
- We further suggest that there should also be an agenda item that invites contributions by other International Organizations, as foreseen in paragraph 7.2.5, however we believe this should reflect, in the examples, relevant work of UNODC and INTERPOL, as these organizations could significantly contribute to the debate, leading to a coherent and coordinated international approach to addressing IUU fishing.

Finally, Mr. Chairman, ILO looks forward to building upon the excellent cooperation of FAO, ILO and IMO on such matters as safety of fishing vessels and fishermen, in the fight against IUU fishing, in its widest sense."

Statement by the observer from FAO

"Let me start by voicing our support for the proposal by ILO.

Document MSC 94/10/2 by WWF proposes that the joint FAO/IMO Working Group should consider an expansion of the IMO Ship Identification Number Scheme to fishing vessels of less than 100 gross tonnage.

I would like inform you that the use of the unique vessel identification number for identification of fishing vessels has already been identified as an item for the 3rd joint FAO/IMO Working Group in the context of the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels.

In this regard, I would also like to inform you that the FAO Committee on Fisheries, which met from 9 to 13 June 2014, appreciated the collaboration with IMO in extending the IMO Ship Identification Number Scheme, through resolution A.1078(28), to fishing vessels and agreed that the IMO number should be used as the unique vessel identifier for Phase 1 of the Global Record.

The Global Record Programme is currently focusing on Phase 1 and will in due time consider expanding to Phases 2 and 3, i.e. to cover vessels of less than 100 gross tonnage. This will be done by carrying out a targeted feasibility study where the experience gained from the implementation of Phase 1 would be taken into account.

As stated in document MSC 94/10/2 from WWF, there is a need to apply IMO numbers to fishing vessels, which are being operated in the convention areas of some Regional Fisheries Management Organizations, also to vessels of less than 100 gross tonnage. This delegation hopes that the joint Working Group is able to provide some guidance on this particular issue."

AGENDA ITEM 11

Statement by the observer from ISO

"In document MSC 94/11/2, it should be noted that reference to ISO 18683 should note that ISO 18683 is for a technical specification and not a standard as is stated specifically in the ISO document.

My comments are simple – to remind everyone why IMO only refer to published ISO standards. I will refresh memories on the agreement with former IMO Secretary-General Mr. O'Neil and myself for ISO back in 1995 and nothing has changed. It is all positive. I will remind about ISO/TR/PAS and other ISO documents and why only IMO reference to published ISO standards is acceptable. It is truly in IMO's best interest. At this time there are no published ISO standards on LNG vessels.

If IMO refers to ISO's/TS/TR/PAS in your published IMO Codes and other documents it is vital to note these are not standards and may well change or in fact may not be in existence when your Code enters into force. They have a period of about three year's existence.

We agreed that during published standards periodic reviews that IMO will participate in those of interest to insure that the requirements of IMO remain in place and any proposed change is agreed by IMO."

It is a suggestion to follow the same successful path of ISPS Code where the ISO implementing industry standard was published same day ISPS entered into force. I think this approach is a successful option rather than footnoting individual pages. As with the ISPS Code example, ISO implementing standards will be published to support entry into force of the IGF Code.

As noted, any request for ISO to undertake standards to support IMO will be done on time as has been proven by past performance.

AGENDA ITEM 14

Statement by the observer from ITF

"The ITF understands and is sympathetic to the position of India regarding the issue of armed guard vessels operating in nearby coastal or territorial waters of a State even when such activity is permissible in international waters or in territorial waters under the doctrine of innocent passage under UNCLOS. But, the deployment of armed guard vessels has to be considered in the light of the humanitarian purpose of such activity in suppressing piracy and its threat to innocent seafarers taken as hostages for ransom and subjected to torture or murder. Many of these unfortunate seafarers have been Indian nationals.

Unfortunately, the use of these armed guard vessels has been made necessary by the reluctance of coastal States to permit the transit of armed guards and their equipment through their ports in order to embark or disembark ships needing protection. We understand that India's submission is motivated by a lack of transparency regarding the personnel and equipment on board and the location and intended movement or actions of these vessels. This absence of maritime domain awareness is perceived as a potential security risk.

In our view the solution is not to challenge or change the established interpretation of UNCLOS by unilateral legal action at the national level with its unintended consequences. The solution is to remove the need for armed guard vessels by revisiting IMO position to not endorse the use of armed guards. And, developing the needed internationally recognized standards on the transit of armed guards and their equipment through ports. Including a provision that would permit armed guards to temporarily remain in a port awaiting assignment to a ship. This would permit the regulation, monitoring and accountability of armed guards and their equipment in an open and transparent manner. And, should remove any perceived threat to national security from unregulated armed guard vessels in nearby coastal waters.

The ITF and the international community of seafarers are appalled that the crew and armed guard complement of the "Seaman Guard Ohio" have been detained by Indian authorities for over a year in an attempt to establish a national legal precedent to change the application of international law under UNCLOS. They have been charged as criminals, although there was no criminal intent, and detained without pay or support from the shipowner. Their desperate situation and uncertainty as to their future is causing a great deal of distress and hardship on them and their families. It has been reported that one crew member has even attempted suicide.

We appeal to Indian authorities as an act of compassion to release them. India has seized and now holds the vessel. Any legal precedent that the authorities are seeking can be established by a proceeding against the vessel alone without detaining innocent seafarers who have been cleared of any wrongdoing by an Indian court. India has a reputation as a compassionate and caring nation that places a high value on justice and social responsibility. We respectfully ask the Indian authorities to demonstrate those values by releasing the crew and complement of the "Seaman Guard Ohio."

Statement by the observer from ReCAAP ISC

"MSC 94/INF.7 provides the ReCAAP ISC's update since the last MSC. We are happy to welcome the United States as our twentieth Contracting Member and for the committee to note the law enforcement actions that has been taken to suppress the maritime crime in Asia.

As most are aware or have heard that there had been several reports of fuel siphoning cases in Asia, involving fuel tankers at sea, on top of the usual petty thief and sea robbery cases in various ports and anchorages. The media and several private entities have since been drumming up that Asia is going to be the next hotspot following the winding down of situation in Somalia/Gulf of Aden and have even advocated the deployment of private armed security personnel in Asian waters.

From ReCAAP ISC's preliminary analysis, most of the fuel siphoning cases are more internally induced maritime crime where insiders involvement cannot be ruled out. Some of the incidents involved ships from the same company, whilst alleged kidnapping cases were actually missing crew who were part of the robbery incident as indicated by the local authorities following investigation. We also have reports of mistaken identity or vessel was carrying the wrong grade of Marine Gas Oil. These incidents generally involve staged incidents and not so much the spontaneous/random attacks of ships at sea as suggested by the media through various sources.

Singapore Police Coast Guard (PCG) has recently made some arrests. We are also aware that the Malaysia Maritime Enforcement Agencies (MMEA) and the Indonesian Marine Police (IMP) have likewise responded to this. The Head of Asian Coast Guard Agencies (HACGAM) has also collectively agreed to jointly address the issue and the Asian Shipowners' Forum (ASF) has also urged their members to take greater proactive self-protective measures to safeguard themselves from the maritime crime. Law enforcement actions are been taken and self-protective measures are continuously being implemented as a "Shared responsibility" to address/suppress the maritime crime."
