

MARITIME SAFETY COMMITTEE
101st session
Agenda item 24

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REPORT OF THE MARITIME SAFETY COMMITTEE ON ITS 101ST SESSION

Attached are annexes 1 to 5 and 8 to 38 to the report of the Maritime Safety Committee on its 101st session (MSC 101/24).

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ANNEX 1

**RESOLUTION MSC.456(101)
(adopted on 14 June 2019)**

**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) of the International Convention for the Safety of Life at Sea, 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 101st session, amendments to the Convention 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 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 2023, 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 the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2024 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 REQUESTS ALSO 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**

**APPENDIX
CERTIFICATES**

**RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY
(FORM E)**

3 Details of navigational systems and equipment

1 Item 8.1. is replaced by the following:

"

	Item	Actual provision
8.1	Rudder, propeller, thrust, pitch and operational mode indicator ^{2 3}

"

**RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY
(FORM C)**

5 Details of navigational systems and equipment

2 Item 8.1. is replaced by the following:

"

	Item	Actual provision
8.1	Rudder, propeller, thrust, pitch and operational mode indicator ^{2 3}

"

**RECORD OF EQUIPMENT FOR PASSENGER SHIP SAFETY
(FORM P)**

5 Details of navigational systems and equipment

3 Item 8.1. is replaced by the following:

"

	Item	Actual provision
8.1	Rudder, propeller, thrust, pitch and operational mode indicator ^{3 4}

"

ANNEX 2

**RESOLUTION MSC.457(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO THE INTERNATIONAL CODE
FOR FIRE SAFETY SYSTEMS (FSS 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 resolution MSC.98(73), by which it adopted the International Code for Fire Safety Systems ("the FSS Code"), which has become mandatory under chapter II-2 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"),

RECALLING FURTHER article VIII(b) and regulation II-2/3.22 of the Convention concerning the procedure for amending the FSS Code,

HAVING CONSIDERED, at its 101st session, amendments to the FSS 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 FSS 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 July 2023 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 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 January 2024 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, in conformity with 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 REQUESTS ALSO 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
FOR FIRE SAFETY SYSTEMS (FSS CODE)**

**CHAPTER 15
INERT GAS SYSTEMS**

2 Engineering specifications

2.2 Requirements for all systems

2.2.3.2 Inert gas lines

1 Paragraph 2.2.3.2.1 is replaced by the following:

"2.2.3.2.1 The inert gas main may be divided into two or more branches downstream of the non-return devices required by paragraph 2.2.3.1."

2 Paragraph 2.2.3.2.6 is replaced by the following:

"2.2.3.2.6 Arrangements shall be provided to enable the inert gas main to be connected to an external supply of inert gas. The arrangements shall consist of a 250 mm nominal pipe size bolted flange, isolated from the inert gas main by a valve and located downstream of the non-return valve. The design of the flange should conform to the appropriate class in the standards adopted for the design of other external connections in the ship's cargo piping system."

2.2.4 Indicators and alarms

3 Paragraph 2.2.4.2 is replaced by the following:

"2.2.4.2 Instrumentation shall be fitted for continuously indicating and permanently recording, when inert gas is being supplied:

- .1 the pressure of the inert gas mains downstream of the non-return devices; and
- .2 the oxygen content of the inert gas."

ANNEX 3

**RESOLUTION MSC.458(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR SHIPS USING
GASES OR OTHER LOW-FLASHPOINT FUELS (IGF 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.391(95), by which it adopted the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels ("the IGF Code"), which has become mandatory under chapter II-1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

RECALLING FURTHER article VIII(b) and regulation II-1/2.29 of the Convention concerning the procedure for amending the IGF Code,

HAVING CONSIDERED, at its 101st session, amendments to the IGF 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 IGF 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 July 2023 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 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 January 2024 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, in conformity with 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 REQUESTS ALSO 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 OF SAFETY FOR SHIPS USING GASES OR OTHER LOW-FLASHPOINT FUELS (IGF CODE)

PART A

2 GENERAL

2.2 Definitions

- 1 The following new paragraph 2.2.42 is introduced after existing paragraph 2.2.41:

"2.2.42 *Ship constructed on or after 1 January 2024* means:

- .1 for which the building contract is placed on or after 1 January 2024;
or
- .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 1 July 2024;
or
- .3 the delivery of which is on or after 1 January 2028."

PART A-1

SPECIFIC REQUIREMENTS FOR SHIPS USING NATURAL GAS AS FUEL

5 SHIP DESIGN AND ARRANGEMENT

5.3 Regulations – General

- 2 The text defining f_v in paragraph 5.3.4.2 is replaced by the following:

" f_v is calculated by use of the formulations for factor v contained in SOLAS regulation II-1/7-2.6.1.1 and reflects the probability that the damage is extending vertically above the lowermost boundary of the fuel tank. The formulations to be used are:"

6 FUEL CONTAINMENT SYSTEM

6.8 Regulations on loading limit for liquefied gas fuel tanks

- 3 The following regulation is added after existing regulation 6.8.2:

"6.8.3 For ships constructed on or after 1 January 2024, in cases where the tank insulation and tank location make the probability very small for the tank contents to be heated up due to an external fire, special considerations may be made to allow a higher loading limit than calculated using the reference temperature, but never above 95%."

9 FUEL SUPPLY TO CONSUMERS

9.5 Regulations for fuel distribution outside of machinery space

4 The following regulations are added after existing regulation 9.5.2:

"9.5.3 The requirements in 9.5.4 to 9.5.6 shall apply to ships constructed on or after 1 January 2024 in lieu of the requirements in 9.5.1 and 9.5.2.

9.5.4 Where gaseous fuel pipes pass through enclosed spaces in the ship, they shall be protected by a secondary enclosure. This enclosure can be a ventilated duct or a double wall piping system. The duct or double wall piping system shall be mechanically under pressure ventilated with 30 air changes per hour, and gas detection as required in 15.8 shall be provided. Other solutions providing an equivalent safety level may also be accepted by the Administration.

9.5.5 The requirement in 9.5.4 need not be applied for fully welded fuel gas vent pipes led through mechanically ventilated spaces.

9.5.6 Liquefied fuel pipes shall be protected by a secondary enclosure able to contain leakages. If the piping system is in a fuel preparation room or a tank connection space, the Administration may waive this requirement. Where gas detection as required in 15.8.1.2 is not fit for purpose, the secondary enclosures around liquefied fuel pipes shall be provided with leakage detection by means of pressure or temperature monitoring systems, or any combination thereof. The secondary enclosure shall be able to withstand the maximum pressure that may build up in the enclosure in case of leakage from the fuel piping. For this purpose, the secondary enclosure may need to be arranged with a pressure relief system that prevents the enclosure from being subjected to pressures above their design pressures."

10 POWER GENERATION INCLUDING PROPULSION AND OTHER GAS CONSUMERS

10.3 Regulations for internal combustion engines of piston type

5 New regulation 10.3.1.1.1 is added after existing regulation 10.3.1.1 as follows:

"10.3.1.1.1 For ships constructed on or after 1 January 2024, the exhaust system shall be equipped with explosion relief systems unless designed to accommodate the worst case overpressure due to ignited gas leaks or justified by the safety concept of the engine. A detailed evaluation of the potential for unburnt gas in the exhaust system is to be undertaken covering the complete system from the cylinders up to the open end. This detailed evaluation shall be reflected in the safety concept of the engine."

11 FIRE SAFETY

11.3 Regulations for fire protection

6 Regulation 11.3.3 is replaced by the following:

"11.3.3 The space containing the fuel containment system shall be separated from the machinery spaces of category A or other rooms with high fire risks. The separation shall be done by a cofferdam of at least 900 mm with insulation of A-60 class. When

determining the insulation of the space containing the fuel containment system from other spaces with lower fire risks, the fuel containment system shall be considered as a machinery space of category A, in accordance with SOLAS regulation II-2/9. For type C tanks, the fuel storage hold space may be considered as a cofferdam."

7 The following new regulation 11.3.3.1 is added after regulation 11.3.3:

"11.3.3.1 Notwithstanding the last sentence in 11.3.3, for ships constructed on or after 1 January 2024, the fuel storage hold space may be considered as a cofferdam provided that:

- .1 the type C tank is not located directly above machinery spaces of category A or other rooms with high fire risk; and
- .2 the minimum distance to the A-60 boundary from the outer shell of the type C tank or the boundary of the tank connection space, if any, is not less than 900 mm."

ANNEX 4

**RESOLUTION MSC.459(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO THE INTERNATIONAL
LIFE-SAVING APPLIANCE CODE (LSA 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 resolution MSC.88(66), by which it adopted the International Life-Saving Appliance (LSA) Code ("the LSA Code"), which has become mandatory under chapter III of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

RECALLING FURTHER article VIII(b) and regulation III/3.10 of the Convention concerning the procedure for amending the LSA Code,

HAVING CONSIDERED, at its 101st session, amendments to the LSA 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 LSA 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 July 2023 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 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 January 2024 upon their acceptance in accordance with paragraph 2 above;

4 ALSO INVITES Contracting Governments to note that the amendment to paragraph 6.1.1.3 of the Code shall apply to rescue boats installed on board ships on or after 1 January 2024;

5 REQUESTS the Secretary-General, in conformity with 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;

6 REQUESTS ALSO 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
LIFE-SAVING APPLIANCE CODE (LSA CODE)**

**CHAPTER IV
SURVIVAL CRAFT**

4.4 General requirements for lifeboats

1 Paragraph 4.4.8.1 is replaced by the following:

".1 except for a lifeboat equipped with two independent propulsion systems, where the arrangement consists of two separate engines, shaft lines, fuel tanks, piping systems and any other associated ancillaries, and for a free fall lifeboat, sufficient buoyant oars to make headway in calm seas. Thole pins, crutches or equivalent arrangements shall be provided for each oar provided. Thole pins or crutches shall be attached to the boat by lanyards or chains;"

**CHAPTER VI
LAUNCHING AND EMBARKATION APPLIANCES**

6.1 Launching and embarkation appliances

2 The following text is added at the end of paragraph 6.1.1.3:

"Notwithstanding the above, on cargo ships equipped with a rescue boat which is not one of the ship's survival craft, having a mass not more than 700 kg in fully equipped condition, with engine, but without the crew, the launching appliance of the boat does not need to be fitted with stored mechanical power provided that:

- .1 manual hoisting from the stowed position and turning out to the embarkation position is possible by one person;
- .2 the force on the crank handle does not exceed 160 N at the maximum crank radius of 350 mm; and
- .3 means having sufficient strength such as bowsing line are provided for bringing the rescue boat against the ship's side and holding it alongside so that persons can be safely embarked."

ANNEX 5

**RESOLUTION MSC.460(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO THE INTERNATIONAL CODE FOR
THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING DANGEROUS
CHEMICALS IN BULK (IBC 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 resolution MSC.4(48), by which it adopted the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk ("the IBC Code"), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

RECALLING FURTHER article VIII(b) and regulation VII/8.1 of the Convention concerning the procedure for amending the IBC Code,

HAVING CONSIDERED, at its 101st session, amendments to the IBC 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 IBC 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 July 2020 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 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 January 2021 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, in conformity with 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 REQUESTS ALSO 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 FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK (IBC CODE)

Chapter 1

General

- 1 The existing section 1.3 is replaced by the following:

"1.3 Definitions

The following definitions apply unless expressly provided otherwise. (Additional definitions are given in individual chapters).

- 1.3.1 *Accommodation spaces* are those spaces used for public spaces, corridors, lavatories, cabins, offices, hospitals, cinemas, games and hobbies rooms, barber shops, pantries containing no cooking appliances and similar spaces. *Public spaces* are those portions of the accommodation spaces which are used for halls, dining rooms, lounges and similar permanently enclosed spaces.
- 1.3.2 *Administration* means the Government of the State whose flag the ship is entitled to fly. For *Administration (Port)* see *Port Administration*.
- 1.3.3 *Anniversary date* means the day and the month of each year which will correspond to the date of expiry of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk.
- 1.3.4 *Boiling point* is the temperature at which a product exhibits a vapour pressure equal to the atmospheric pressure.
- 1.3.5 *Breadth (B)* means the maximum breadth of the ship, measured amidships to the moulded line of the frame in a ship with a metal shell and to the outer surface of the hull in a ship with a shell of any other material. The breadth (*B*) shall be measured in metres.
- 1.3.6 *Cargo area* is that part of the ship that contains cargo tanks, slop tanks, cargo pump-rooms including pump-rooms, cofferdams, ballast or void spaces adjacent to cargo tanks or slop tanks and also deck areas throughout the entire length and breadth of the part of the ship over the above-mentioned spaces. Where independent tanks are installed in hold spaces, cofferdams, ballast or void spaces at the after end of the aftermost hold space or at the forward end of the forward-most hold space are excluded from the cargo area.
- 1.3.7 *Cargo pump-room* is a space containing pumps and their accessories for the handling of the products covered by the Code.

- 1.3.8 *Cargo service spaces* are spaces within the cargo area used for workshops, lockers and store-rooms of more than 2 m² in area, used for cargo-handling equipment.
- 1.3.9 *Cargo tank* is the envelope designed to contain the cargo.
- 1.3.10 *Chemical tanker* is a cargo ship constructed or adapted and used for the carriage in bulk of any liquid product listed in chapter 17.
- 1.3.11 *Cofferdam* is the isolating space between two adjacent steel bulkheads or decks. This space may be a void space or a ballast space.
- 1.3.12 *Control stations* are those spaces in which ship's radio or main navigating equipment or the emergency source of power is located or where the fire-recording or fire-control equipment is centralized. This does not include special fire-control equipment which can be most practically located in the cargo area.
- 1.3.13 *Dangerous chemicals* means any liquid chemicals designated as presenting a safety hazard, based on the safety criteria for assigning products to chapter 17.
- 1.3.14 *Density* is the ratio of the mass to the volume of a product, expressed in terms of kilograms per cubic metre. This applies to liquids, gases and vapours.
- 1.3.15 *Explosive/flammability limits/range* are the conditions defining the state of fuel-oxidant mixture at which application of an adequately strong external ignition source is only just capable of producing flammability in a given test apparatus.
- 1.3.16 *Flashpoint* is the temperature in degrees Celsius at which a product will give off enough flammable vapour to be ignited. Values given in the Code are those for a "closed-cup test" determined by an approved flashpoint apparatus.
- 1.3.17 *Gas-freeing* means the process where a portable or fixed ventilation system is used to introduce fresh air into a tank in order to reduce the concentration of hazardous gases or vapours to a level safe for tank entry.
- 1.3.18 *Hold space* is the space enclosed by the ship's structure in which an independent cargo tank is situated.
- 1.3.19 *Independent* means that a piping or venting system, for example, is in no way connected to another system and that there are no provisions available for the potential connection to other systems.
- 1.3.20 *Length (L)* means 96% of the total length on a waterline at 85% of the least moulded depth measured from the top of the keel, or the length from the foreside of the stem to the axis of the rudder stock on that waterline, if that be greater. In ships designed with a rake of keel, the waterline on which this length is measured shall be parallel to the designed waterline. The length (L) shall be measured in metres.

- 1.3.21 *Machinery spaces of category A* are those spaces and trunks to such spaces which contain:
- .1 internal-combustion machinery used for main propulsion; or
 - .2 internal-combustion machinery used for purposes other than main propulsion where such machinery has in the aggregate a total power output of not less than 375 kW; or
 - .3 any oil-fired boiler or oil fuel unit or any oil-fired equipment other than boilers, such as inert gas generators, incinerators, etc.
- 1.3.22 *Machinery spaces* are all machinery spaces of category A and all other spaces containing propelling machinery, boilers, oil fuel units, steam and internal-combustion engines, generators and major electrical machinery, oil filling station, refrigerating, stabilizing, ventilation and air-conditioning machinery, and similar spaces, and trunks to such spaces.
- 1.3.23 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997, as amended.
- 1.3.24 *Noxious Liquid Substance* means any substance indicated in the Pollution Category column of chapters 17 or 18 of the International Bulk Chemical Code, or the current MEPC.2/Circular or provisionally assessed under the provisions of regulation 6.3 of MARPOL Annex II as falling into categories X, Y or Z.
- 1.3.25 *Oil fuel unit* is the equipment used for the preparation of oil fuel for delivery to an oil-fired boiler, or equipment used for the preparation for delivery of heated oil to an internal-combustion engine, and includes any oil pressure pumps, filters and heaters dealing with oil at a gauge pressure of more than 0.18 MPa.
- 1.3.26 *Organization* is the International Maritime Organization (IMO).
- 1.3.27 *Permeability* of a space means the ratio of the volume within that space which is assumed to be occupied by water to the total volume of that space.
- 1.3.28 *Port Administration* means the appropriate authority of the country in the port of which the ship is loading or unloading.
- 1.3.29 *Products* is the collective term used to cover both Noxious Liquid Substances and Dangerous Chemicals.
- 1.3.30 *Pump-room* is a space, located in the cargo area, containing pumps and their accessories for the handling of ballast and oil fuel.
- 1.3.31 *Purging* means the introduction of inert gas into a tank which is already in an inert condition with the object of further reducing the oxygen content; and/or reducing the existing hydrocarbon or other flammable vapours content to a level below which combustion cannot be supported if air is subsequently introduced into the tank.

- 1.3.32 *Recognized organization* is an organization authorized by an Administration in accordance with MARPOL Annex II regulation 8.2.2 and SOLAS regulation XI-1/1.
- 1.3.33 *Recognized standards* are applicable international or national standards acceptable to the Administration or standards laid down and maintained by an organization which complies with the standards adopted by the Organization and which is recognized by the Administration.
- 1.3.34 *Reference temperature* is the temperature at which the vapour pressure of the cargo corresponds to the set pressure of the pressure-relief valve.
- 1.3.35 *Separate* means that a cargo piping system or cargo vent system, for example, is not connected to another cargo piping or cargo vent system.
- 1.3.36 *Service spaces* are those spaces used for galleys, pantries containing cooking appliances, lockers, mail and specie rooms, store-rooms, workshops other than those forming part of the machinery spaces and similar spaces and trunks to such spaces.
- 1.3.37 *SOLAS* means the International Convention for the Safety of Life at Sea, 1974, as amended.
- 1.3.38 *Vapour pressure* is the equilibrium pressure of the saturated vapour above a liquid expressed in Pascals (Pa) at a specified temperature.
- 1.3.39 *Void space* is an enclosed space in the cargo area external to a cargo tank, other than a hold space, ballast space, oil fuel tank, cargo pump-room, pump-room, or any space in normal use by personnel."

2 Paragraph 1.5.1.2 is replaced by the following:

- "1.5.1.2 The recognized organization referred to in 1.3.32 shall comply with the provisions of SOLAS and MARPOL and with parts 1 and 2 of the Code for Recognized Organizations (RO Code), as adopted by resolutions MSC.349(92) and MEPC.237(65), as may be amended."

Chapter 15

Special requirements

3 In paragraph 15.8.25.1, the reference to paragraph "1.3.18" in the second set of brackets is replaced by "1.3.19".

4 Section 15.15 is replaced by the following:

"15.15 Hydrogen sulphide (H₂S) detection equipment for bulk liquids

Hydrogen sulphide (H₂S) detection equipment shall be provided on board ships carrying bulk liquids prone to H₂S formation. It should be noted that scavengers and biocides, when used, may not be 100% effective in controlling the formation of H₂S. Toxic vapour detection instruments complying with the requirement in 13.2.1 of the Code for testing for H₂S may be used to satisfy this requirement."

Chapter 16

Operational requirements

5 Paragraph 16.2.7 is replaced by the following:

"16.2.7 Where *column o* in the table of chapter 17 refers to this paragraph, the cargo is subject to the prewash requirements in regulation 13.7.1.4 of Annex II of MARPOL."

6 The complete text of chapters 17, 18 and 19 is replaced by the following:

"Chapter 17

Summary of minimum requirements

17.1 Mixtures of noxious liquid substances presenting pollution hazards only, and which are assessed or provisionally assessed under regulation 6.3 of MARPOL Annex II, may be carried under the requirements of the Code applicable to the appropriate position of the entry in this chapter for Noxious Liquid Substances, not otherwise specified (n.o.s.).

17.2 EXPLANATORY NOTES

Product name (<i>column a</i>)	The product name shall be used in the shipping document for any cargo offered for bulk shipments. Any additional name may be included in brackets after the product name. In some cases, the product names are not identical with the names given in previous issues of the Code.
UN Number (<i>column b</i>)	Deleted
Pollution Category (<i>column c</i>)	The letter X, Y, Z means the Pollution Category assigned to each product under MARPOL Annex II.
Hazards (<i>column d</i>)	"S" means that the product is included in the Code because of its safety hazards; "P" means that the product is included in the Code because of its pollution hazards; and "S/P" means that the product is included in the Code because of both its safety and pollution hazards.
Ship Type (<i>column e</i>)	1: Ship Type 1 (2.1.2.1) 2: Ship Type 2 (2.1.2.2) 3: Ship Type 3 (2.1.2.3)
Tank type (<i>column f</i>)	1: independent tank (4.1.1) 2: integral tank (4.1.2) G: gravity tank (4.1.3) P: pressure tank (4.1.4)
Tank vents (<i>column g</i>)	Cont.: controlled venting Open: open venting
Tank environmental control (<i>column h</i>)	Inert: inerting (9.1.2.1) Pad: liquid or gas padding (9.1.2.2) Dry: drying (9.1.2.3) Vent: natural or forced ventilation (9.1.2.4) No: no special requirements under this Code (inerting may be required under SOLAS)

Electrical equipment (column i)	Temperature classes (i')	T1 to T6 - indicates no requirements blank no information
	Apparatus group (i'')	IIA, IIB or IIC: - indicates no requirements blank no information
	Flash point (i''')	Yes: flashpoint exceeding 60°C (10.1.6) No: flashpoint not exceeding 60°C (10.1.6) NF: non-flammable product (10.1.6)
Gauging (column j)	O: open gauging (13.1.1.1) R: restricted gauging (13.1.1.2) C: closed gauging (13.1.1.3)	
Vapour detection (column k)	F: flammable vapours T: toxic vapours	
Fire protection (column l)	No: indicates no special requirements under this Code A: alcohol-resistant foam or multi-purpose foam B: regular foam; encompasses all foams that are not of an alcohol-resistant type, including fluoro-protein and aqueous-film-forming foam (AFFF) C: water-spray D: dry chemical No: no special requirements under this Code	
Materials of construction (column m)	Deleted	
Emergency equipment (column n)	Yes: see 14.3.1 No: no special requirements under this Code	
Specific and operational requirements (column o)	When specific reference is made to chapters 15 and/or 16, these requirements shall be additional to the requirements in any other column.	

a	c	d	e	f	g	h	i'	ii''	iii'''	j	k	l	n	o
Acetic acid	Z	S/P	3	2G	Cont	No	T1	IIA	No	C	F	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.17, 15.19, 16.2.9
Acetic anhydride	Z	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.19.6
Acetochlor	X	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Acetone cyanohydrin	Y	S/P	1	1G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2, 16.6.3
Acetonitrile	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Acetonitrile (Low purity grade)	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Acid oil mixture from soya bean, corn (maize) and sunflower oil refining	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Acrylamide solution (50% or less)	Y	S/P	3	2G	Cont	No			NF	C	T	No	No	15.12, 15.13, 15.17, 15.19, 16.2.9, 16.6.1
Acrylic acid	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.13, 15.17, 15.19, 16.2.9, 16.6.1
Acrylic acid/ethenesulphonic acid copolymer with phosphonate groups, sodium salt solution	Z	P	3	2G	Open	No			Yes	O	No	ABC	No	
Acrylonitrile	Y	S/P	2	2G	Cont	No	T1	IIB	No	C	FT	AC	Yes	15.12, 15.13, 15.17, 15.19
Acrylonitrile-Styrene copolymer dispersion in polyether polyol	Y	P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Adiponitrile	Z	S/P	2	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Alachlor technical (90% or more)	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.9
Alcohol (C9-C11) poly (2.5-9) ethoxylate	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Alcohol (C6-C17) (secondary) poly(3-6) ethoxylates	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Alcohol (C6-C17) (secondary) poly(7-12) ethoxylates	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alcohol (C10-C18) poly(7) ethoxylate	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Alcohol (C12-C16) poly(1-6) ethoxylates	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Alcohol (C12-C16) poly(20+) ethoxylates	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Alcohol (C12-C16) poly(7-19) ethoxylates	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Alcohols (C13+)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Alcohols (C12+), primary, linear	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alcohols (C8-C11), primary, linear and essentially linear	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Alcohols (C12-C13), primary, linear and essentially linear	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alcohols (C14-C18), primary, linear and essentially linear	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Alkanes (C6-C9)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Iso- and cyclo-alkanes (C10-C11)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Iso- and cyclo-alkanes (C12+)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
n-Alkanes (C9-C11)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
n-Alkanes (C10 – C20)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Alkaryl polyethers (C9-C20)	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6
Alkenoic acid, polyhydroxy ester borated	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Alkenyl (C11+) amide	X	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alkenyl (C16-C20) succinic anhydride	Z	S/P	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Alkyl acrylate/vinylpyridine copolymer in toluene	Y	S/P	2	2G	Cont	No	T1	IIB	No	C	FT	ABC	No	15.12, 15.17, 15.19.6, 16.2.9
Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomers)	X	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Alkylated (C4-C9) hindered phenols	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Alkylbenzene, alkylindane, alkylindene mixture (each C12-C17)	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Alkyl benzene distillation bottoms	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Alkylbenzene mixtures (containing at least 50% of toluene)	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Alkylbenzenes mixtures (containing naphthalene)	X	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Alkyl (C3-C4) benzenes	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C5-C8) benzenes	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C9+) benzenes	Y	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Alkyl (C11-C17) benzene sulphonic acid	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6

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Alkylbenzene sulphonic acid, sodium salt solution	Y	S/P	2	2G	Cont	No	-	-	NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alkyl/cyclo (C4-C5) alcohols	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C10-C15, C12 rich) phenol poly (4-12) ethoxylate	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Alkyl (C12+) dimethylamine	X	S/P	1	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Alkyl dithiocarbamate (C19-C35)	Y	P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alkyldithiothiadiazole (C6-C24)	Y	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.6
Alkyl ester copolymer (C4-C20)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alkyl (C7-C9) nitrates	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 15.20, 16.6.1, 16.6.2, 16.6.3
Alkyl (C8-C10)/(C12-C14):(40% or less/60% or more) polyglucoside solution (55% or less)	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alkyl (C8-C10)/(C12-C14):(60% or more/40% or less) polyglucoside solution(55% or less)	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Alkyl (C7-C11) phenol poly(4-12) ethoxylate	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C8-C40) phenol sulphide	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	
Alkyl (C8-C9) phenylamine in aromatic solvents	Y	S/P	2	2G	Cont	No	T1	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C9-C15) phenyl propoxylate	Z	S/P	3	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C8-C10) polyglucoside solution (65% or less)	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6

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Alkyl (C8-C10)/(C12-C14):(50%/50%) polyglucoside solution (55% or less)	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alkyl (C12-C14) polyglucoside solution (55% or less)	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Alkyl (C12-C16) propoxyamine ethoxylate	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6
Alkyl (C10-C20, saturated and unsaturated) phosphite	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Alkyl sulphonic acid ester of phenol	Y	P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Alkyl (C18+) toluenes	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.9
Alkyl (C18-C28) toluenesulphonic acid	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alkyl (C18-C28) toluenesulphonic acid, calcium salts, borated	Y	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Alkyl (C18-C28) toluenesulphonic acid, calcium salts, low overbase	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Alkyl (C18-C28) toluenesulphonic acid, calcium salts, high overbase	Y	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Allyl alcohol	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Allyl chloride	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19
Aluminium chloride/Hydrogen chloride solution	Y	S/P	2	2G	Cont	No	-	-	NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19
Aluminium hydroxide, sodium hydroxide, sodium carbonate solution (40% or less)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
Aluminium sulphate solution	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
2-(2-Aminoethoxy) ethanol	Z	S/P	3	2G	Cont	No			Yes	C	T	AD	Yes	15.12, 15.17, 15.19

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Aminoethyldiethanolamine/Aminoethylethanolamine solution	Z	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Aminoethyl ethanolamine	Z	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
N-Aminoethylpiperazine	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
2-Amino-2-methyl-1-propanol	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Ammonia aqueous (28% or less)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
Ammonium chloride solution (less than 25%) (*)	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	
Ammonium hydrogen phosphate solution	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Ammonium lignosulphonate solutions	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Ammonium nitrate solution (93% or less) (*)	Z	S/P	2	1G	Cont	No			NF	R	T	No	No	15.2, 15.11.4, 15.11.6, 15.12.3, 15.12.4, 15.18, 15.19.6, 16.2.9
Ammonium polyphosphate solution	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Ammonium sulphate solution	Z	P	3	2G	Open	No			NF	O	No	No	No	
Ammonium sulphide solution (45% or less) (*)	Y	S/P	2	2G	Cont	Inert	T4	IIB	No	C	FT	AC	No	15.12, 15.17, 15.19, 16.6.1, 16.6.2, 16.6.3
Ammonium thiosulphate solution (60% or less)	Z	S/P	3	2G	Open	No			NF	O	No	No	No	

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Amyl acetate (all isomers)	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
n-Amyl alcohol	Z	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	ABC	Yes	15.12, 15.17, 15.19
Amyl alcohol, primary	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
sec-Amyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
tert-Amyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
tert-Amyl ethyl ether	Z	P	3	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
tert-Amyl methyl ether	X	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Aniline	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Aryl polyolefins (C11-C50)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Aviation alkylates (C8 paraffins and iso-paraffins BPT 95 - 120°C)	X	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Barium long chain (C11-C50) alkaryl sulphonate	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9
Benzene and mixtures having 10% benzene or more (i)	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6, 16.2.9
Benzene sulphonyl chloride	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Benzenetricarboxylic acid, trioctyl ester	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Benzyl acetate	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Benzyl alcohol	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6

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Benzyl chloride	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	ABC	Yes	15.12, 15.13, 15.17, 15.19
Bio-fuel blends of Diesel/gas oil and FAME (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and vegetable oil (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Gasoline and Ethyl alcohol (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.12, 15.17, 15.19.6
Bis (2-ethylhexyl) terephthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Brake fluid base mix: Poly(2-8)alkylene (C2-C3) glycols/Polyalkylene (C2-C10) glycols monoalkyl (C1-C4) ethers and their borate esters	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Bromochloromethane	Z	P	3	2G	Open	No			NF	O	No	No	No	
Butene oligomer	X	P	2	2G	Cont	No	T4	IIB	No	R	F	ABC	No	15.19.6
2-Butoxyethanol (58%)/Hyperbranched polyesteramide (42%) (mixture)	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12.3, 15.12.4, 15.19
Butyl acetate (all isomers)	Y	P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Butyl acrylate (all isomers)	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
tert-Butyl alcohol	Z	P	3	2G	Cont	No	T1	IIA	No	R	F	AC	No	15.19.6
Butylamine (all isomers)	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Butylbenzene (all isomers)	X	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Butyl benzyl phthalate	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6

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Butyl butyrate (all isomers)	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Butyl/Decyl/Cetyl/Eicosyl methacrylate mixture	Y	S/P	2	2G	Open	No	T3	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
Butylene glycol	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	
1,2-Butylene oxide	Y	S/P	3	2G	Cont	Inert	T2	IIB	No	C	FT	AC	No	15.8.1 to 15.8.7, 15.8.12, 15.8.13, 15.8.16, 15.8.17, 15.8.18, 15.8.19, 15.8.21, 15.8.25, 15.8.27, 15.8.29, 15.12, 15.17, 15.19.6
n-Butyl ether	Y	S/P	3	2G	Cont	Inert	T4	IIB	No	R	F	AC	No	15.4.6, 15.19
Butyl methacrylate	Z	S/P	3	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
n-Butyl propionate	Y	P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Butyraldehyde (all isomers)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Butyric acid	Y	S/P	3	2G	Cont	No			Yes	O	No	AC	No	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.19.6
gamma-Butyrolactone	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Calcium alkaryl sulphonate (C11-C50)	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	
Calcium alkyl (C10-C28) salicylate	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Calcium hydroxide slurry	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9

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Calcium hypochlorite solution (15% or less)	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6
Calcium hypochlorite solution (more than 15%)	X	S/P	1	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19
Calcium lignosulphonate solutions	Z	P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Calcium long-chain alkyl (C5-C10) phenate	Y	P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Calcium long-chain alkyl (C11-C40) phenate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Calcium long-chain alkyl phenate sulphide (C8-C40)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Calcium long-chain alkyl salicylate (C13+)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Calcium long-chain alkyl (C18-C28) salicylate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Calcium nitrate/Magnesium nitrate/Potassium chloride solution	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Calcium nitrate solution (50% or less)	Z	S	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Camelina oil	Y	S/P	2(k)	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7
epsilon-Caprolactam (molten or aqueous solutions)	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Carbolic oil	Y	S/P	2	2G	Cont	No			Yes	C	FT	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Carbon disulphide	Y	S/P	1	1G	Cont	Pad+inert	T6	IIC	No	C	FT	C	Yes	15.3, 15.12, 15.17, 15.18, 15.19
Carbon tetrachloride	Y	S/P	2	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19.6

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Cashew nut shell oil (untreated)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9
Castor oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Cesium formate solution (*)	Y	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	15.19.6
Cetyl/Eicosyl methacrylate mixture	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.13, 15.19.6, 16.2.9, 16.6.1, 16.6.2
Chlorinated paraffins (C10-C13)	X	S/P	1	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19, 16.2.6
Chlorinated paraffins (C14-C17) (with 50% chlorine or more, and less than 1% C13 or shorter chains)	X	S/P	1	2G	Cont	No	-	-	Yes	C	T	AC	No	15.12, 15.17, 15.19
Chloroacetic acid (80% or less)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.18, 15.19, 16.2.9
Chlorobenzene	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Chloroform	Y	S/P	3	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19.6
Chlorohydrins (crude)	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
o-Chloronitrobenzene	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9
1-(4-Chlorophenyl)-4,4- dimethyl-pentan-3-one	Y	S/P	2	2G	Open	No			Yes	O	No	ABD	No	15.19.6, 16.2.6, 16.2.9
2- or 3-Chloropropionic acid	Z	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.19, 16.2.9

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Chlorosulphonic acid	Y	S/P	1	2G	Cont	No			NF	C	T	No	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.5, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.16.2, 15.17, 15.18, 15.19
m-Chlorotoluene	Y	S/P	2	2G	Cont	No	T4	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19
o-Chlorotoluene	Y	P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
p-Chlorotoluene	Y	P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6, 16.2.9
Chlorotoluenes (mixed isomers)	Y	P	2	2G	Cont	No	T4	IIA	No	R	F	ABC	No	15.19.6
Choline chloride solutions	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Citric acid (70% or less)	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Coal tar	X	S/P	2	2G	Cont	No	T2	IIA	Yes	C	T	BD	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Coal tar naphtha solvent	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6, 16.2.9
Coal tar pitch (molten) (*)	X	S/P	2	1G	Cont	No	T2	IIA	Yes	C	T	ABCD	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Cocoa butter	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Coconut oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Coconut oil fatty acid	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Coconut oil fatty acid methyl ester	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Copper salt of long chain (C17+) alkanolic acid	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Corn Oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Cotton seed oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9

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Creosote (coal tar)	X	S/P	1	2G	Cont	No	T2	IIA	Yes	C	T	AD	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Cresols (all isomers)	Y	S/P	1	2G	Cont	No	T1	IIA	Yes	C	T	ABC	Yes	15.12, 15.18, 15.19, 16.2.9
Cresol/Phenol/Xylenol mixture	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Cresylic acid, dephenolized	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Cresylic acid, sodium salt solution	Y	S/P	2	2G	Cont	No	T4	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Crotonaldehyde	X	S/P	1	1G	Cont	No	T3	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.18, 15.19
1,5,9-Cyclododecatriene	X	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.13, 15.19.6, 16.6.1, 16.6.2
Cycloheptane	X	S/P	2	2G	Cont	No	T4	IIA	No	R	F	AC	No	15.19.6
Cyclohexane	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6, 16.2.9
Cyclohexane-1,2-dicarboxylic acid, diisononyl ester	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Cyclohexane oxidation products, sodium salts solution	Z	P	3	2G	Open	No			NF	O	No	No	No	
Cyclohexanol	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Cyclohexanone	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Cyclohexanone, Cyclohexanol mixture	Y	S/P	3	2G	Cont	No			Yes	R	F	AC	No	15.19.6
Cyclohexyl acetate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Cyclohexylamine	Y	S/P	3	2G	Cont	No	T3	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19

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1,3-Cyclopentadiene dimer (molten)	Y	S/P	2	2G	Cont	No	T1	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9
Cyclopentane	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Cyclopentene	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
p-Cymene	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Decahydronaphthalene	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Decanoic acid	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Decene	X	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Decyl acrylate	X	S/P	1	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.13, 15.19, 16.6.1, 16.6.2
Decyl alcohol (all isomers)	Y	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9(e)
Decyl/Dodecyl/Tetradecyl alcohol mixture	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Decyloxytetrahydrothiophene dioxide	X	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Diacetone alcohol	Z	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Dialkyl (C8-C9) diphenylamines	Z	P	3	2G	Open	No			Yes	O	No	ABC	No	
Dialkyl (C7-C13) phthalates	X	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6
Dialkyl (C9-C10) phthalates	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Dialkyl thiophosphates sodium salts solution	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9

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2,6-Diaminohexanoic acid phosphonate mixed salts solution	Z	S/P	3	2G	Cont	No			NF	R	No	No	No	15.11, 15.17, 15.19.6
Dibromomethane	Y	S/P	2	2G	Open	No			NF	O	No	No	No	15.19.6
Dibutylamine	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	ABC	Yes	15.12, 15.17, 15.19
Dibutyl hydrogen phosphonate	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
2,6-Di-tert-butylphenol	X	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.9
Dibutyl phthalate	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Dibutyl terephthalate	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.9
Dichlorobenzene (all isomers)	X	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	ABD	No	15.12, 15.17, 15.19.6
3,4-Dichloro-1-butene	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
1,1-Dichloroethane	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Dichloroethyl ether	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.18, 15.19
1,6-Dichlorohexane	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
2,2'-Dichloroisopropyl ether	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19
Dichloromethane	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
2,4-Dichlorophenol	Y	S/P	2	2G	Cont	Dry			Yes	C	T	AD	Yes	15.12, 15.16.2, 15.17, 15.19, 16.2.6, 16.2.9
2,4-Dichlorophenoxyacetic acid, diethanolamine salt solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.9
2,4-Dichlorophenoxyacetic acid, dimethylamine salt solution (70% or less)	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.9

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2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
1,1-Dichloropropane	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
1,2-Dichloropropane	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
1,3-Dichloropropene	X	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	ABC	Yes	15.12, 15.17, 15.19
Dichloropropene/Dichloropropane mixtures	X	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	ABD	No	15.12, 15.17, 15.19
2,2-Dichloropropionic acid	Y	S/P	2	2G	Cont	Dry			Yes	C	T	AD	Yes	15.11.2, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.16.2, 15.17, 15.19, 16.2.9
Dicyclopentadiene, Resin Grade, 81-89%	Y	S/P	2	2G	Cont	Inert	T2	IIB	No	C	FT	ABC	Yes	15.12, 15.13, 15.17, 15.19
Diethanolamine	Y	S/P	3	2G	Cont	No	T1	IIA	Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Diethylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Diethylaminoethanol	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
2,6-Diethylaniline	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Diethylbenzene	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Diethylene glycol	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Diethylene glycol dibutyl ether	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Diethylene glycol diethyl ether	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6

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Diethylene glycol phthalate	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Diethylenetriamine	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19
Diethylenetriaminepentaacetic acid, pentasodium salt solution	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Diethyl ether (*)	Z	S/P	2	1G	Cont	Inert	T4	IIB	No	R	F	AC	No	15.4, 15.14, 15.19
Di-(2-ethylhexyl) adipate	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Di-(2-ethylhexyl) phosphoric acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AD	No	15.12.3, 15.12.4, 15.19.6
Diethyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6
Diethyl sulphate	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Diglycidyl ether of bisphenol A	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Diglycidyl ether of bisphenol F	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.6
Diheptyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Di-n-hexyl adipate	X	S/P	1	2G	Open	No			Yes	O	No	AC	No	15.19
Dihexyl phthalate	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Diisobutylamine	Y	S/P	2	2G	Cont	No	T4	IIB	No	C	FT	ABC	No	15.12.3, 15.12.4, 15.19
Diisobutylene	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Diisobutyl ketone	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Diisobutyl phthalate	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Diisononyl adipate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Diisooctyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Diisopropanolamine	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Diisopropylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.17, 15.19.6

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Diisopropylbenzene (all isomers)	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Diisopropylnaphthalene	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
N,N-Dimethylacetamide	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
N,N-Dimethylacetamide solution (40% or less)	Z	S/P	3	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6
Dimethyl adipate	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Dimethylamine solution (45% or less)	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19
Dimethylamine solution (greater than 45% but not greater than 55%)	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19
Dimethylamine solution (greater than 55% but not greater than 65%)	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.14, 15.19
N,N-Dimethylcyclohexylamine	Y	S/P	2	2G	Cont	No	T3	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Dimethyl disulphide	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
N,N-Dimethyldodecylamine	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Dimethylethanolamine	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Dimethylformamide	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Dimethyl glutarate	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6

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Dimethyl hydrogen phosphite	Y	S/P	3	2G	Cont	No	T4	IIB	No	R	F	AC	No	15.19.6
Dimethyl octanoic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Dimethyl phthalate	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Dimethylpolysiloxane	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
2,2-Dimethylpropane-1,3-diol (molten or solution)	Z	P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	16.2.9
Dimethyl succinate	Y	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Dinitrotoluene (molten)	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19, 15.21, 16.2.6, 16.2.9, 16.6.4
Dinonyl phthalate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Diocetyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
1,4-Dioxane	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12, 15.17, 15.19.6, 16.2.9
Dipentene	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Diphenyl	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Diphenylamine (molten)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Diphenylamine, reaction product with 2,2,4-Trimethylpentene	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19, 16.2.6
Diphenylamines, alkylated	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19, 16.2.6, 16.2.9
Diphenyl/Diphenyl ether mixtures	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Diphenyl ether	X	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Diphenyl ether/Diphenyl phenyl ether mixture	X	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9

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Diphenylmethane diisocyanate	Y	S/P	2	2G	Cont	Dry	-	-	Yes(a)	C	T(a)	AB(b)D	Yes	15.12, 15.16.2, 15.17, 15.19, 16.2.6, 16.2.9
Diphenylol propane-epichlorohydrin resins	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Di-n-propylamine	Y	S/P	2	2G	Cont	No	T3	IIB	No	C	FT	AC	Yes	15.12.3, 15.12.4, 15.17, 15.19.6
Dipropylene glycol	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Dithiocarbamate ester (C7-C35)	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Ditridecyl adipate	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Ditridecyl phthalate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Diundecyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Dodecane (all isomers)	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
tert-Dodecanethiol	Y	S/P	3	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
1-Dodecene	Y	S/P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Dodecene (all isomers)	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Dodecyl alcohol	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
n-Dodecyl mercaptan	X	S/P	1	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Dodecylamine/Tetradecylamine mixture	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Dodecylbenzene	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Dodecyl diphenyl ether disulphonate solution	X	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.6

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Dodecyl hydroxypropyl sulphide	X	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6
Dodecyl methacrylate	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.13, 15.19.6
Dodecyl/Octadecyl methacrylate mixture	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.13, 15.19.6, 16.2.6, 16.6.1, 16.6.2
Dodecyl/Pentadecyl methacrylate mixture	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
Dodecyl phenol	X	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6
Dodecyl Xylene	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Drilling brines (containing zinc chloride)	X	S/P	2	2G	Open	No			NF	O	No	No	Yes	15.19.6
Drilling brines (containing calcium bromide)	Z	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6
Epichlorohydrin	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Ethanolamine	Y	S/P	3	2G	Cont	No	T2	IIA	Yes	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.9
2-Ethoxyethyl acetate	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Ethoxylated long chain (C16+) alkyloxyalkylamine	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Ethoxylated tallow amine (>95%)	X	S/P	2	2G	Cont	Inert	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Ethyl acetate	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Ethyl acetoacetate	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	
Ethyl acrylate	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2
Ethylamine (*)	Y	S/P	2	1G	Cont	No	T2	IIA	No	C	F	AC	No	15.12.3.2, 15.14, 15.19
Ethylamine solutions (72% or less)	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	F	AC	No	15.12.3.2, 15.14, 15.19

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Ethyl amyl ketone	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Ethylbenzene	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Ethyl tert-butyl ether	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Ethyl butyrate	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Ethylcyclohexane	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
N-Ethylcyclohexylamine	Y	S/P	2	2G	Cont	No	T3	IIB	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19
S-Ethyl dipropylthiocarbamate	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.9
Ethylene carbonate	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Ethylene chlorohydrin	Y	S/P	1	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.18, 15.19
Ethylene cyanohydrin	Y	S/P	2	2G	Cont	No		IIB	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Ethylenediamine	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Ethylenediaminetetraacetic acid, tetrasodium salt solution	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Ethylene dibromide	Y	S/P	2	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19, 16.2.9
Ethylene dichloride	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19
Ethylene glycol	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Ethylene glycol acetate	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Ethylene glycol butyl ether acetate	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Ethylene glycol diacetate	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6

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Ethylene glycol methyl ether acetate	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Ethylene glycol monoalkyl ethers	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19, 16.2.9
Ethylene glycol phenyl ether	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9,
Ethylene glycol phenyl ether/Diethylene glycol phenyl ether mixture	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Ethylene glycol (>75%)/sodium alkyl carboxylates/borax mixture	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Ethylene glycol (>85%)/sodium alkyl carboxylates mixture	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Ethylene oxide/Propylene oxide mixture with an ethylene oxide content of not more than 30% by mass	Y	S/P	2	1G	Cont	Inert	T2	IIB	No	C	FT	AC	Yes	15.8, 15.12, 15.14, 15.17, 15.19
Ethylene-vinyl acetate copolymer (emulsion)	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Ethyl-3-ethoxypropionate	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
2-Ethylhexanoic acid	Y	S/P	3	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
2-Ethylhexyl acrylate	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.13, 15.19.6, 16.6.1, 16.6.2
2-Ethylhexylamine	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19.6
2-Ethyl-2-(hydroxymethyl) propane-1,3-diol (C8-C10) ester	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Ethylidene norbornene	Y	S/P	2	2G	Cont	No	T3	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6

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Ethyl methacrylate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
N-Ethylmethylallylamine	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19
Ethyl propionate	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
2-Ethyl-3-propylacrolein	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6, 16.2.9
Ethyl toluene	Y	P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Fatty acid (saturated C13+)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Fatty acid methyl esters (m)	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Fatty acids, (C8-C10)	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Fatty acids, (C12+)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Fatty acids, (C16+)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Fatty acids, essentially linear (C6-C18) 2-ethylhexyl ester	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Ferric chloride solutions	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19, 16.2.9
Ferric nitrate/Nitric acid solution	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19
Fish oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Fish silage protein concentrate (containing 4% or less formic acid)	Y	P	2	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.6
Fish protein concentrate (containing 4% or less formic acid)	Z	P	3	2G	Open	No	-	-	NF	O	No	No	No	
Fluorosilicic acid solution (20-30%)	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19

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Formaldehyde solutions (45% or less)	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Formamide	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.9
Formic acid (85% or less acid)	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T(g)	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.17, 15.19, 16.2.9
Formic acid (over 85%)	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT(g)	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.17, 15.19, 16.2.9
Formic acid mixture (containing up to 18% propionic acid and up to 25% sodium formate)	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T(g)	AC	No	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.19.6
Furfural	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Furfuryl alcohol	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Glucitol/glycerol blend propoxylated (containing less than 10% amines)	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Glucitol/glycerol blend propoxylated (containing 10% or more amines)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Glutaraldehyde solutions (50% or less)	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
Glycerine	Z	S	3	2G	Open	No			Yes	O	No	AC	No	16.2.9
Glycerol monooleate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Glycerol propoxylated	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Glycerol, propoxylated and ethoxylated	Z	P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	

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Glycerol/sucrose blend propoxylated and ethoxylated	Z	P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	
Glyceryl triacetate	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Glycidyl ester of C10 trialkylacetic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Glycine, sodium salt solution	Z	S/P	3	2G	Open	No			NF	O	No	No	No	
Glycolic acid solution (70% or less)	Z	S/P	3	2G	Cont	No	-	-	NF	C	T	No	Yes	15.12.3, 15.12.4, 15.17, 15.19, 16.2.9
Glyoxal solution (40% or less)	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Glyoxylic acid solution (50% or less)	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	ACD	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19, 16.2.9, 16.6.1, 16.6.2, 16.6.3
Glyphosate solution (not containing surfactant)	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Grape Seed Oil	Y	S/P	2(k)	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7
Groundnut oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Heptane (all isomers)	X	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
n-Heptanoic acid	Z	S/P	3	2G	Cont	No			Yes	R	No	ABC	No	15.19.6, 15.17
Heptanol (all isomers) (d)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Heptene (all isomers)	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Heptyl acetate	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
1-Hexadecylnaphthalene / 1,4-bis(hexadecyl)naphthalene mixture	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Hexamethylenediamine (molten)	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9

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Hexamethylenediamine adipate (50% in water)	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Hexamethylenediamine solution	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Hexamethylene diisocyanate	Y	S/P	2	2G	Cont	Dry	T1	IIB	Yes	C	T	AC(b)D	Yes	15.12, 15.16.2, 15.17, 15.18, 15.19
Hexamethylene glycol	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	
Hexamethyleneimine	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19
Hexamethylenetetramine solutions	Z	S	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Hexane (all isomers)	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
1,6-Hexanediol, distillation overheads	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Hexanoic acid	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Hexanol	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Hexene (all isomers)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Hexyl acetate	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Hexylene glycol	Z	S	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Hydrocarbon wax	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Hydrochloric acid (*)	Z	S/P	3	1G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19
Hydrogen peroxide solutions (over 60% but not over 70% by mass)	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.5.1, 15.12.3, 15.12.4, 15.19.6
Hydrogen peroxide solutions (over 8% but not over 60% by mass)	Y	S/P	3	2G	Cont	No			NF	R	T	No	No	15.5.2, 15.18, 15.12.3, 15.12.4, 15.19.6
2-Hydroxyethyl acrylate	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2
N-(Hydroxyethyl)ethylenediaminetriacetic acid, trisodium salt solution	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6

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2-Hydroxy-4-(methylthio)butanoic acid	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Illipe oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Isoamyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Isobutyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Isobutyl formate	Z	P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Isobutyl methacrylate	Z	S/P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
Isophorone	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Isophoronediamine	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Isophorone diisocyanate	Y	S/P	2	2G	Cont	Dry			Yes	C	T	ABD	Yes	15.12, 15.16.2, 15.17, 15.19
Isoprene	Y	S/P	2	2G	Cont	No	T3	IIB	No	C	FT	ABC	No	15.12, 15.13, 15.14, 15.17, 15.19.6, 16.6.1, 16.6.2
Isopropanolamine	Y	S/P	3	2G	Cont	No	T2	IIA	Yes	R	No	AC	No	15.19.6, 16.2.6, 16.2.9
Isopropyl acetate	Z	P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Isopropylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12.3.2, 15.14, 15.19
Isopropylamine (70% or less) solution	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12.3.2, 15.19
Isopropylcyclohexane	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6, 16.2.9
Isopropyl ether	Y	S/P	3	2G	Cont	Inert	T2	IIA	No	R	F	AC	No	15.4.6, 15.13, 15.19.6, 16.6.1, 16.6.2
Jatropha oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7
Lactic acid	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19

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Lactonitrile solution (80% or less)	Y	S/P	1	1G	Cont	No			NF	C	T	No	Yes	15.12, 15.13, 15.17, 15.18, 15.19, 16.6.1, 16.6.2, 16.6.3
Lard	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Latex, ammonia (1% or less)- inhibited	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Latex: Carboxylated styrene-Butadiene copolymer; Styrene-Butadiene rubber	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Lauric acid	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Ligninsulphonic acid, magnesium salt solution	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Ligninsulphonic acid, sodium salt solution	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Linseed oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Liquid chemical wastes	X	S/P	2	2G	Cont	No			No	C	FT	AC	No	15.12, 15.17, 15.19, 20.5.1, 20.7
Long-chain alkaryl polyether (C11-C20)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Long-chain alkaryl sulphonic acid (C16-C60)	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Long-chain alkylphenate/Phenol sulphide mixture	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Long-chain alkylphenol (C14-C18)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Long-chain alkylphenol (C18-C30)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6

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L-Lysine solution (60% or less)	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Magnesium chloride solution	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Magnesium hydroxide slurry	Z	S	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Magnesium long-chain alkaryl sulphonate (C11-C50)	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Magnesium long-chain alkyl salicylate (C11+)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Maleic anhydride	Y	S/P	3	2G	Cont	No			Yes	C	T	AC(f)	Yes	15.12, 15.17, 15.19, 16.2.9
Maleic anhydride-sodium allylsulphonate copolymer solution	Z	P	3	2G	Open	No			Yes	O	No	ABC	No	
Mango kernel oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Mercaptobenzothiazol, sodium salt solution	X	S/P	2	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Mesityl oxide	Z	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Metam sodium solution	X	S/P	2	2G	Cont	No	-	-	NF	C	T	No	No	15.12.3, 15.12.4, 15.19
Methacrylic acid	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.13, 15.12.3, 15.12.4, 15.19, 16.2.9, 16.6.1
Methacrylic acid - alkoxy poly (alkylene oxide) methacrylate copolymer, sodium salt aqueous solution (45% or less)	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Methacrylic resin in ethylene dichloride	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19, 16.2.9
Methacrylonitrile	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	AC	Yes	15.12, 15.13, 15.17, 15.19

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3-Methoxy-1-butanol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
3-Methoxybutyl acetate	Y	S/P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6
N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide	X	S/P	1	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19, 16.2.6
Methyl acetate	Z	P	3	2G	Cont	No	T1	IIA	No	R	F	AC	No	15.19.6
Methyl acetoacetate	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Methyl acrylate	Y	S/P	3	2G	Cont	No	T1	IIB	No	C	FT	AC	No	15.12, 15.17, 15.13, 15.19
Methyl alcohol (*)	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	No	15.12.1, 15.12.2, 15.12.3.2, 15.12.3.3, 15.12.4, 15.17, 15.19
Methylamine solutions (42% or less)	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Methylamyl acetate	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Methylamyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Methyl amyl ketone	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
N-Methylaniline	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
alpha-Methylbenzyl alcohol with acetophenone (15% or less)	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Methylbutenol	Y	S/P	3	2G	Cont	No	T4	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Methyl tert-butyl ether	Z	P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Methyl butyl ketone	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Methylbutynol	Z	S/P	3	2G	Cont	No	T4	IIB	No	R	F	AC	No	15.19.6

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Methyl butyrate	Y	S/P	3	2G	Cont	No	T4	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Methylcyclohexane	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Methylcyclopentadiene dimer	Y	S/P	2	2G	Cont	No	T4	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Methylcyclopentadienyl manganese tricarbonyl	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.18, 15.19, 16.2.9
Methyl diethanolamine	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
2-Methyl-6-ethyl aniline	Y	S/P	3	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Methyl ethyl ketone	Z	S/P	3	2G	Cont	No	T1	IIA	No	R	F	AC	No	15.19.6
2-Methyl-5-ethyl pyridine	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Methyl formate	Z	S/P	2	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.14, 15.19.6
2-Methylglutaronitrile with 2-Ethylsuccinonitrile (12% or less)	Z	S/P	3	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
2-Methyl-2-hydroxy-3-butyne	Z	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6, 16.2.9
Methyl isobutyl ketone	Z	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Methyl methacrylate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.13, 15.19.6
3-Methyl-3-methoxybutanol	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Methyl naphthalene (molten)	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
N-Methylglucamine solution (70% or less)	Z	S	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
2-Methyl-1,3-propanediol	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
2-Methylpyridine	Z	S/P	3	2G	Cont	No	T1	IIA	No	C	F	AC	No	15.12.3.2, 15.19
3-Methylpyridine	Z	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19
4-Methylpyridine	Z	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19, 16.2.9
N-Methyl-2-pyrrolidone	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Methyl propyl ketone	Z	S	3	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Methyl salicylate	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
alpha-Methylstyrene	Y	S/P	2	2G	Cont	No	T1	IIB	No	C	FT	AD(j)	No	15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2
3-(methylthio)propionaldehyde	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12, 15.17, 15.19.6
Molybdenum polysulphide long chain alkyl dithiocarbamide complex	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Morpholine	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19
Motor fuel anti-knock compound (containing lead alkyls)	X	S/P	1	1G	Cont	Inert	T4	IIA	No	C	FT	AC	Yes	15.6, 15.12, 15.17, 15.18, 15.19
Myrcene	X	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Naphthalene (molten)	X	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.9
Naphthalene crude (molten)	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Naphthalenesulphonic acid-Formaldehyde copolymer, sodium salt solution	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Neodecanoic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Nitrating acid (mixture of sulphuric and nitric acids)	Y	S/P	1	1G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.16.2, 15.17, 15.18, 15.19

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Nitric acid (70% and over)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.16.2, 15.17, 15.19
Nitric acid (less than 70%)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19
Nitilotriacetic acid, trisodium salt solution	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Nitrobenzene	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19, 16.2.9
Nitroethane	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	ABC(f)	No	15.12.3, 15.12.4, 15.19.6, 16.6.1, 16.6.2, 16.6.4
Nitroethane (80%)/ Nitropropane(20%)	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	ABC(f)	No	15.12.3, 15.12.4, 15.19.6, 16.6.1, 16.6.2, 16.6.3
Nitroethane, 1-Nitropropane (each 15% or more) mixture	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	ABC(f)	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.6.1, 16.6.2, 16.6.3
o-Nitrophenol (molten)	Y	S/P	2	2G	Cont	No	T4	IIB	No	R	F	ABC	No	15.19.6, 16.2.6, 16.2.9
1- or 2-Nitropropane	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12, 15.17, 15.19
Nitropropane (60%)/Nitroethane (40%) mixture	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	ABC(f)	No	15.12, 15.17, 15.19.6
o- or p-Nitrotoluenes	Y	S/P	2	2G	Cont	No		IIB	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Nonane (all isomers)	X	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Nonanoic acid (all isomers)	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Non-edible industrial grade palm oil	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9
Nonene (all isomers)	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Nonyl alcohol (all isomers)	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6

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Nonyl methacrylate monomer	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Nonylphenol	X	S/P	1	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Nonylphenol poly(4+)ethoxylate	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Noxious liquid, NF, (1) n.o.s. (trade name, contains) ST1, Cat. X	X	P	1	2G	Open	No	-	-	Yes	O	No	AC	No	15.19, 16.2.6
Noxious liquid, F, (2) n.o.s. (trade name, contains) ST1, Cat. X	X	P	1	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19, 16.2.6
Noxious liquid, NF, (3) n.o.s. (trade name, contains) ST2, Cat. X	X	P	2	2G	Open	No	-		Yes	O	No	AC	No	15.19, 16.2.6
Noxious liquid, F, (4) n.o.s. (trade name, contains) ST2, Cat. X	X	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19, 16.2.6
Noxious liquid, NF, (5) n.o.s. (trade name, contains) ST2, Cat. Y	Y	P	2	2G	Open	No	-		Yes	O	No	AC	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, F, (6) n.o.s. (trade name, contains) ST2, Cat. Y	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, NF, (7) n.o.s. (trade name, contains) ST3, Cat. Y	Y	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	15.19, 16.2.6, 16.2.9(l)

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Noxious liquid, F, (8) n.o.s. (trade name, contains) ST3, Cat. Y	Y	P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, NF, (9) n.o.s. (trade name, contains) ST3, Cat. Z	Z	P	3	2G	Open	No	-		Yes	O	No	AC	No	
Noxious liquid, F, (10) n.o.s. (trade name, contains) ST3, Cat. Z	Z	P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Octamethylcyclotetrasiloxane	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6, 16.2.9
Octane (all isomers)	X	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Octanoic acid (all isomers)	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Octanol (all isomers)	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Octene (all isomers)	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
n-Octyl acetate	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Octyl aldehydes	Y	S/P	2	2G	Cont	No	T4	IIB	No	R	F	AC	No	15.19.6, 16.2.9
Octyl decyl adipate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.9
n-Octyl mercaptan	X	S/P	1	2G	Open	No			Yes	O	No	ABC	No	15.19
Offshore contaminated bulk liquid P (o)	X	P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Offshore contaminated bulk liquid S (o)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	Yes	15.12, 15.15, 15.17, 15.19
Olefin-Alkyl ester copolymer (molecular weight 2000+)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Olefin Mixture (C7-C9) C8 rich, stabilized	X	P	2	2G	Cont	No	T3	IIB	No	R	F	ABC	No	15.13, 15.19.6
Olefin mixtures (C5-C7)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Olefin mixtures (C5-C15)	X	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6

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Olefins (C13+, all isomers)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
alpha-Olefins (C6-C18) mixtures	X	S/P	2	2G	Cont	No	T4	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Oleic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Oleum	Y	S/P	2	2G	Cont	Dry	-	-	NF	C	T	No	Yes	15.11.2 to 15.11.8, 15.12, 15.16.2, 15.17, 15.19, 16.2.6
Oleylamine	X	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Olive oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Oxygenated aliphatic hydrocarbon mixture	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	
Palm acid oil	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm fatty acid distillate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel acid oil	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel fatty acid distillate	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel olein	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel stearin	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm mid-fraction	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9

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Palm oil fatty acid methyl ester	Y	P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.9
Palm olein	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm stearin	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Paraffin wax, highly-refined	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Paraffin wax, semi-refined	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Paraldehyde	Z	S/P	3	2G	Cont	No	T3	IIB	No	R	F	AC	No	15.19.6, 16.2.9
Paraldehyde-ammonia reaction product	Y	S/P	2	2G	Cont	No	T1	IIB	No	C	FT	ABC	Yes	15.12, 15.17, 15.19
Pentachloroethane	Y	S/P	2	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19.6
1,3-Pentadiene	Y	P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2, 16.6.3
1,3-Pentadiene (greater than 50%), cyclopentene and isomers, mixtures	Y	S/P	2	2G	Cont	Inert	T3	IIB	No	C	FT	ABC	Yes	15.12, 15.13, 15.17, 15.19
Pentaethylenhexamine	X	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Pentane (all isomers)	Y	P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.14, 15.19.6
Pentanoic acid	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
n-Pentanoic acid (64%)/2-Methyl butyric acid (36%) mixture	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19
Pentene (all isomers)	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.14, 15.19.6
n-Pentyl propionate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Perchloroethylene	Y	S/P	2	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19.6

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Phenol	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
1-Phenyl-1-xylyl ethane	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Phosphate esters, alkyl (C12-C14) amine	Y	S/P	2	2G	Cont	No	T4	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Phosphoric acid	Z	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.11.1, 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19, 16.2.9
Phosphorus, yellow or white (*)	X	S/P	1	1G	Cont	Pad+(vent or inert)			No(c)	C	No	ABC	No	15.7, 15.19, 16.2.9
Phthalic anhydride (molten)	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
alpha-Pinene	X	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
beta-Pinene	X	S/P	2	2G	Cont	No	T1	IIB	No	R	F	ABC	No	15.19.6
Pine oil	X	S/P	2	2G	Open	No			Yes	O		ABC	No	15.19.6, 16.2.6, 16.2.9
Piperazine, 68% solution	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Polyacrylic acid solution (40% or less)	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Polyalkyl (C18-C22) acrylate in xylene	Y	S/P	2	2G	Cont	No	T1	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Polyalkylalkenaminesuccinimide, molybdenum oxysulphide	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Poly(2-8)alkylene glycol monoalkyl (C1-C6) ether acetate	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Polyalkyl (C10-C20) methacrylate	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9

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Polyalkyl (C10-C18) methacrylate/ethylene-propylene copolymer mixture	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyaluminium chloride solution	Z	S	3	2G	Open	No			NF	O	No	No	No	
Polybutene	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Polybutenyl succinimide	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Poly(2+)cyclic aromatics	X	S/P	1	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Polyether (molecular weight 1350+)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Polyethylene glycol	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Polyethylene glycol dimethyl ether	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	
Poly(ethylene glycol) methylbutenyl ether (MW>1000)	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Polyethylene polyamines	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Polyethylene polyamines (more than 50% C5 -C20 paraffin oil)	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Polyferric sulphate solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
Poly(iminoethylene)-graft-N-poly(ethyleneoxy) solution (90% or less)	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Polyisobutenamine in aliphatic (C10-C14) solvent	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
(Polyisobutene) amino products in aliphatic hydrocarbons	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6

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Polyisobutenyl anhydride adduct	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	
Poly(4+)isobutylene (MW>224)	X	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyisobutylene (MW≤224)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Polyglycerin, sodium salt solution (containing less than 3% sodium hydroxide)	Z	S	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19. 16.2.9
Polymethylene polyphenyl isocyanate	Y	S/P	3	2G	Cont	Dry			Yes(a)	C	T(a)	AD	Yes	15.12, 15.16.2, 15.17, 15.19.6, 16.2.9
Polyolefin (molecular weight 300+)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefin amide alkeneamine (C17+)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Polyolefin amide alkeneamine borate (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefin amide alkeneamine polyol	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefinamine (C28-C250)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Polyolefinamine in alkyl (C2-C4) benzenes	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Polyolefinamine in aromatic solvent	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Polyolefin aminoester salts (molecular weight 2000+)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefin anhydride	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Polyolefin ester (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9

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Polyolefin phenolic amine (C28-C250)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefin phosphorosulphide, barium derivative (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Poly(20)oxyethylene sorbitan monooleate	Y	P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Poly(5+)propylene	Y	P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.9
Polypropylene glycol	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Polysiloxane	Y	P	2	2G	Cont	No	T2	IIB	No	R	F	ABC	No	15.19.6, 16.2.9
Potassium chloride solution	Z	P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Potassium hydroxide solution (*)	Y	S/P	3	2G	Open	No			NF	C	No	No	No	15.12.3.2, 15.19
Potassium formate solutions (*)	Z	S	3	2G	Open	No			NF	R	No	No	No	15.19.6
Potassium oleate	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Potassium thiosulphate (50% or less)	Y	S/P	3	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
n-Propanolamine	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
2-Propene-1-aminium, N,N-dimethyl-N-2-propenyl-, chloride, homopolymer solution	Y	P	3	2G	Open	No	-	-	NF	O	No	No	No	15.19.6
beta-Propiolactone	Y	S/P	1	2G	Cont	No		IIA	Yes	C	T	AC	Yes	15.12, 15.17, 15.18, 15.19
Propionaldehyde	Y	S/P	3	2G	Cont	Inert	T4	IIB	No	R	F	AC	No	15.19.6
Propionic acid	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19

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Propionic anhydride	Y	S/P	2	2G	Cont	No	T2	IIA	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Propionitrile	Y	S/P	1	1G	Cont	No	T1	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.18, 15.19
n-Propyl acetate	Y	P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
n-Propyl alcohol	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
n-Propylamine	Z	S/P	2	2G	Cont	Inert	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Propylbenzene (all isomers)	Y	P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Propylene carbonate	Z	S	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Propylene glycol methyl ether acetate	Z	P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	
Propylene glycol monoalkyl ether	Z	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Propylene glycol phenyl ether	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	
Propylene oxide	Y	S/P	2	2G	Cont	Inert	T2	IIB	No	C	FT	AC	No	15.8, 15.12, 15.14, 15.17, 15.19
Propylene tetramer	X	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Propylene trimer	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Pyridine	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Pyrolysis gasoline (containing benzene)	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Rapeseed oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Rapeseed oil (low erucic acid containing less than 4% free fatty acids)	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Rape seed oil fatty acid methyl esters	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Resin oil, distilled	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Rice bran oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9

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Rosin	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Safflower oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Shea butter	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Sodium alkyl (C14-C17) sulphonates (60-65% solution)	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Sodium aluminosilicate slurry	Z	P	3	2G	Open	No			NF	O	No	No	No	16.2.9
Sodium benzoate	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	16.2.9
Sodium borohydride (15% or less)/Sodium hydroxide solution (*)	Y	S/P	3	2G	Open	No			NF	C	No	No	No	15.19, 16.2.6, 16.2.9
Sodium bromide solution (less than 50%) (*)	Y	S/P	3	2G	Open	No	-	-	NF	R	No	No	No	15.19.6
Sodium carbonate solution (*)	Z	S/P	3	2G	Open	No			NF	R	No	No	No	15.19.6
Sodium chlorate solution (50% or less) (*)	Z	S/P	3	2G	Open	No			NF	R	No	No	No	15.9, 15.12, 15.19, 16.2.9
Sodium dichromate solution (70% or less)	Y	S/P	1	1G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.18, 15.19
Sodium hydrogen sulphide (6% or less)/Sodium carbonate (3% or less) solution	Z	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Sodium hydrogen sulphite solution (45% or less)	Z	P	3	2G	Open	No			NF	O	No	No	No	16.2.9
Sodium hydrosulphide/Ammonium sulphide solution (*)	Y	S/P	2	2G	Cont	No	T4	IIB	No	C	FT	AC	Yes	15.12, 15.15, 15.17, 15.19, 16.6.1, 16.6.2, 16.6.3
Sodium hydrosulphide solution (45% or less) (*)	Z	S/P	3	2G	Cont	Vent or pad (gas)			NF	R	T	No	Yes	15.12, 15.15, 15.19.6, 16.2.9
Sodium hydroxide solution (*)	Y	S/P	3	2G	Open	No			NF	C	No	No	No	15.19, 16.2.6, 16.2.9

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Sodium hypochlorite solution (15% or less)	Y	S/P	2	2G	Cont	No	-	-	NF	R	No	No	No	15.17, 15.19.6
Sodium methylate 21-30% in methyl alcohol	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.6 (only if >28%), 16.2.9
Sodium nitrite solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	No	15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9
Sodium petroleum sulphonate	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	Yes	15.12.3, 15.12.4, 15.19.6, 16.2.6
Sodium poly(4+)acrylate solutions	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Sodium silicate solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.9
Sodium sulphate solutions	Z	S	3	2G	Open	No			NF	O	No	No	No	16.2.9,
Sodium sulphide solution (15% or less)	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.9
Sodium sulphite solution (25% or less)	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Sodium thiocyanate solution (56% or less)	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Soyabean oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Soybean Oil Fatty Acid Methyl Ester	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Styrene monomer	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2
Sulphohydrocarbon (C3-C88)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Sulpholane	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Sulphur (molten) (*)	Z	S	3	1G	Open	Vent or pad (gas)	T3		Yes	O	FT	No	No	15.10, 16.2.9

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Sulphuric acid	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.16.2, 15.17, 15.19, 16.2.9
Sulphuric acid, spent	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.16.2, 15.17, 15.19
Sulphurized fat (C14-C20)	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	
Sulphurized polyolefinamide alkene (C28-C250) amine	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Sunflower seed oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Tall oil, crude	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Tall oil, distilled	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Tall oil fatty acid (resin acids less than 20%)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Tall oil pitch	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Tall oil soap, crude	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6
Tallow	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Tallow fatty acid	Y	P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Tetrachloroethane	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19
Tetraethylene glycol	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Tetraethylene pentamine	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Tetrahydrofuran	Z	S	3	2G	Cont	No	T3	IIB	No	R	F	AC	No	15.19.6
Tetrahydronaphthalene	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Tetramethylbenzene (all isomers)	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Titanium dioxide slurry	Z	P	3	2G	Open	No			NF	O	No	No	No	

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Toluene	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Toluenediamine	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.18, 15.19, 16.2.6, 16.2.9
Toluene diisocyanate	Y	S/P	2	2G	Cont	Dry	-	-	Yes	C	T	ABC(b)D	Yes	15.12, 15.16.2, 15.17, 15.18, 15.19, 16.2.9
o-Toluidine	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19
Tributyl phosphate	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	No	15.12.3, 15.12.4, 15.19.6
1,2,3-Trichlorobenzene (molten)	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
1,2,4-Trichlorobenzene	X	S/P	1	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19, 16.2.9
1,1,1-Trichloroethane	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
1,1,2-Trichloroethane	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6
Trichloroethylene	Y	S/P	2	2G	Cont	No	-	-	NF	C	T	No	No	15.12, 15.17, 15.19.6
1,2,3-Trichloropropane	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19
1,1,2-Trichloro-1,2,2-Trifluoroethane	Y	P	2	2G	Open	No			NF	O	No	No	No	15.19.6
Tricresyl phosphate (containing 1% or more ortho-isomer)	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19, 16.2.6
Tricresyl phosphate (containing less than 1% ortho-isomer)	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6
Tridecane	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Tridecanoic acid	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Tridecyl acetate	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Triethanolamine	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Triethylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12.3, 15.12.4, 15.19

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Triethylbenzene	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Triethylenetetramine	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Triethyl phosphate	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Triethyl phosphite	Z	S/P	3	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Triisopropanolamine	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Triisopropylated phenyl phosphates	X	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.6
Trimethylacetic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.11, 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Trimethylamine solution (30% or less)	Z	S/P	2	2G	Cont	No	T3	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.14, 15.19.6
Trimethylbenzene (all isomers)	X	S/P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Trimethylol propane propoxylated	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	Y	S/P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6
2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
1,3,5-Trioxane	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12, 15.17, 15.19.6, 16.2.9
Tripropylene glycol	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Trixylyl phosphate	X	S/P	1	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Tung oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Turpentine	X	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.19.6
Undecanoic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
1-Undecene	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Undecyl alcohol	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Urea/Ammonium nitrate solution	Y	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	15.19.6
Urea/Ammonium phosphate solution	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Urea solution	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	16.2.9,
Used cooking oil (m)	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Used cooking oil (Triglycerides, C16-C18 and C18 unsaturated) (m) (n)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Valeraldehyde (all isomers)	Y	S/P	3	2G	Cont	Inert	T3	IIB	No	R	F	ABC	No	15.4.6, 15.13, 15.19.6, 16.6.1, 16.6.2
Vegetable acid oils (m)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Vegetable fatty acid distillates (m)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Vegetable oil mixtures, containing less than 15% free fatty acid (m)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Vinyl acetate	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2
Vinyl ethyl ether	Z	S/P	2	2G	Cont	Inert	T3	IIB	No	R	F	ABC	No	15.4, 15.13, 15.14, 15.19.6, 16.6.1, 16.6.2

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Vinylidene chloride	Y	S/P	2	2G	Cont	Inert	T2	IIA	No	C	FT	ABC	No	15.12, 15.13, 15.14, 15.17, 15.19, 16.6.1, 16.6.2
Vinyl neodecanoate	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2
Vinyltoluene	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2
White spirit, low (15-20%) aromatic	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Wood lignin with sodium acetate/oxalate	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	
Xylenes	Y	P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6, 16.2.9 (h)
Xylenes/ethylbenzene (10% or more) mixture	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Xylenol	Y	S/P	2	2G	Cont	No	-	IIA	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Zinc alkaryl dithiophosphate (C7-C16)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Zinc alkenyl carboxamide	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Zinc alkyl dithiophosphate (C3-C14)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6

Footnotes to products in chapter 17

Some entries in chapter 17 contain footnotes, as either letters or symbols in parentheses following the name of the product, in *column a* of the tables. These provide additional information about the carriage requirements for the product. The definitions of these footnotes are included below.

- a If the product to be carried contains flammable solvents such that the flashpoint does not exceed 60°C, then special electrical systems and a flammable-vapour detector shall be provided.
- b Although water is suitable for extinguishing open-air fires involving chemicals to which this footnote applies, water shall not be allowed to contaminate closed tanks containing these chemicals because of the risk of hazardous gas generation.
- c Phosphorus, yellow or white, is carried above its autoignition temperature and therefore flashpoint is not appropriate. Electrical equipment requirements may be similar to those for substances with a flashpoint above 60°C.
- d Requirements are based on those isomers having a flashpoint of 60°C or less; some isomers have a flashpoint greater than 60°C and therefore the requirements based on flammability would not apply to such isomers.
- e Applies to n-decyl alcohol only.
- f Dry chemical shall not be used as fire-extinguishing media.
- g Confined spaces shall be tested for both formic acid vapours and carbon monoxide gas, a decomposition product.
- h Applies to p-xylene only.
- i For mixtures containing no other components with safety hazards and where the pollution category is Y or less.
- j Only certain alcohol-resistant foams are effective.
- k Requirements for Ship Type identified in *column e* might be subject to regulation 4.1.3 of Annex II of MARPOL.
- l Applicable when the melting point is equal to or greater than 0°C.
- m From vegetable oils, animal fats and fish oils specified in the IBC Code.
- n Confirmation that the product is composed of Triglycerides, C16-C18 and C18 unsaturated shall be required in order for the entry to be used. Otherwise, the more generic entry "Used cooking oil (m)" must be used.
- o Indicates that the entries are to be used solely for backloading of contaminated bulk liquids from offshore installations used in the search and exploitation of seabed mineral resources.
- * Indicates that with reference to chapter 21 of the IBC Code (paragraph 21.1.3), deviations from the normal assignment criteria used for some carriage requirements have been implemented.

Chapter 18

List of products to which the Code does not apply

18.1 The following are products which have been reviewed for their safety and pollution hazards and determined not to present hazards to such an extent as to warrant application of the Code.

18.2 Although the products listed in this chapter fall outside the scope of the Code, the attention of Administrations is drawn to the fact that some safety precautions may be needed for their safe transportation. Accordingly, Administrations shall prescribe appropriate safety requirements.

18.3 Some liquid substances are identified as falling into Pollution Category Z and, therefore, subject to certain requirements of MARPOL Annex II.

18.4 Liquid mixtures which are assessed or provisionally assessed under regulation 6.3 of MARPOL Annex II as falling into Pollution Category Z or OS, and which do not present safety hazards, may be carried under the appropriate entry in this chapter for "Noxious or Non-Noxious Liquid Substances, not otherwise specified (n.o.s.)".

EXPLANATORY NOTES

Product name	The product name shall be used in the shipping document for any cargo offered for bulk shipments. Any additional name may be included in brackets after the product name. In some cases, the product names are not identical with the names given in previous issues of the Code.
Pollution Category	The letter Z means the Pollution Category assigned to each product under Annex II of MARPOL. OS means the product was evaluated and found to fall outside Categories X, Y, or Z.

Product Name	Pollution Category
Acetone	Z
Alcoholic beverages, n.o.s.	Z
Apple juice	OS
n-Butyl alcohol	Z
sec-Butyl alcohol	Z
Calcium carbonate slurry	OS
Clay slurry	OS
Coal slurry	OS
Ethyl alcohol	Z
Glucose solution	OS
Glycerol ethoxylated	OS
Hydrogenated starch hydrolysate	OS
Isopropyl alcohol	Z
Kaolin slurry	OS
Lecithin	OS
Maltitol solution	OS

Product Name	Pollution Category
Microsilica slurry	OS
Molasses	OS
Noxious liquid, (11) n.o.s. (trade name, contains) Cat. Z	Z
Non noxious liquid, (12) n.o.s. (trade name, contains) Cat. OS	OS
Orange juice (concentrated)	OS
Orange juice (not concentrated)	OS
Potassium chloride solution (less than 26%)	OS
Propylene glycol	OS
Sodium acetate solutions	Z
Sodium bicarbonate solution (less than 10%)	OS
Sorbitol solution	OS
Sulphonated polyacrylate solution	Z
Tetraethyl silicate monomer/oligomer (20% in ethanol)	Z
Triethylene glycol	OS
Vegetable protein solution (hydrolysed)	OS
Water	OS

Chapter 19

Index of Products Carried in Bulk

19.1 The first column of the Index of Products Carried in Bulk (hereafter referred to as "the Index") provides the so-called Index Name. Where the Index Name is in capitals and in bold, the Index Name is identical to the Product Name in either chapter 17 or chapter 18. The second column listing the relevant Product Name is therefore empty. Where the Index Name is non-bold lower case it reflects a synonym for which the Product Name in either chapter 17 or chapter 18 is given in the second column. The relevant chapter of the IBC Code is reflected in the third column.

19.2 Following a review of chapter 19, a column listing UN numbers which was previously included had been removed from the Index. Since UN numbers are only available for a limited number of Index Names and there are inconsistencies between some of the names used in chapter 19 and those linked to UN numbers, it was decided to remove UN number references in order to avoid any confusion.

19.3 The Index has been developed for information purposes only. None of the Index Names indicated in non-bold lower case in the first column shall be used as the Product Name on the shipping document.

19.4 Prefixes forming an integral part of the name are shown in ordinary (roman) type and are taken into account in determining the alphabetical order of entries. These include such prefixes as:

Mono Di Tri Tetra Penta Iso Bis Neo Ortho Cyclo

19.5 Prefixes that are disregarded for purposes of alphabetical order are the following:

n-	(normal-)
sec-	(secondary-)
tert-	(tertiary-)
o-	(ortho-)
m-	(meta-)
p-	(para-)
N-	
O-	
S-	
sym-	(symmetrical)
uns-	(unsymmetrical)
dl-	
D-	
L-	
cis-	
trans-	
(E)-	
(Z)-	
alpha-	(α -)
beta-	(β -)
gamma-	(γ -)
epsilon-	(ϵ -)
omega-	(ω -)

19.6 The Index utilizes a note after the index name for some entries (shown as (a) or (b)) which indicates that the following qualifications apply:

- (a) This Index Name represents a subset of the corresponding Product Name.
- (b) The Product Name corresponding to this Index Name contains a carbon chain length qualification. Since the Index Name should always represent a subset or be an exact synonym of the corresponding Product Name, the carbon chain length characteristics should be checked for any product identified by this Index Name.

Index Name	Product Name	Chapter
Abietic anhydride	ROSIN	17
acedimethylamide	N,N-DIMETHYLACETAMIDE	17
Acetaldehyde cyanohydrin solution (80% or less)	LACTONITRILE SOLUTION (80% OR LESS)	17
Acetaldehyde trimer	PARALDEHYDE	17
ACETIC ACID		17
Acetic acid anhydride	ACETIC ANHYDRIDE	17
Acetic acid, ethenyl ester	VINYL ACETATE	17
Acetic acid, methyl ester	METHYL ACETATE	17
Acetic acid, vinyl ester	VINYL ACETATE	17
ACETIC ANHYDRIDE		17
Acetic ester	ETHYL ACETATE	17
Acetic ether	ETHYL ACETATE	17
Acetic oxide	ACETIC ANHYDRIDE	17
Acetoacetic acid, methyl ester	METHYL ACETOACETATE	17
Acetoacetic ester	ETHYL ACETOACETATE	17
ACETOCHLOR		17
ACETONE		18
ACETONE CYANOHYDRIN		17
ACETONITRILE		17
ACETONITRILE (LOW PURITY GRADE)		17
Acetyl anhydride	ACETIC ANHYDRIDE	17
Acetylene tetrachloride	TETRACHLOROETHANE	17
Acetyl ether	ACETIC ANHYDRIDE	17
Acetyl oxide	ACETIC ANHYDRIDE	17
ACID OIL MIXTURE FROM SOYABEAN, CORN (MAIZE) AND SUNFLOWER OIL REFINING		17
Acroleic acid	ACRYLIC ACID	17
ACRYLAMIDE SOLUTION (50% OR LESS)		17
ACRYLIC ACID		17
ACRYLIC ACID/ETHENESULPHONIC ACID COPOLYMER WITH PHOSPHONATE GROUPS, SODIUM SALT SOLUTION		17
Acrylic acid, 2-hydroxyethyl ester	2-HYDROXYETHYL ACRYLATE	17
Acrylic amide solution, 50% or less	ACRYLAMIDE SOLUTION (50% OR LESS)	17
Acrylic resin monomer	METHYL METHACRYLATE	17
ACRYLONITRILE		17
ACRYLONITRILE-STYRENE COPOLYMER DISPERSION IN POLYETHER POLYOL		17
Adipic acid, bis(2-ethylhexyl) ester	DI-(2-ETHYLHEXYL) ADIPATE	17
ADIPONITRILE		17
ALACHLOR TECHNICAL (90% OR MORE)		17
Alcohol	ETHYL ALCOHOL	18
Alcohol, C10	DECYL ALCOHOL (ALL ISOMERS)	17
Alcohol, C11	UNDECYL ALCOHOL	17
Alcohol, C12	DODECYL ALCOHOL	17
Alcohol, C7 (a)	HEPTANOL (ALL ISOMERS) (D)	17
Alcohol, C8	OCTANOL (ALL ISOMERS)	17

Index Name	Product Name	Chapter
Alcohol, C9	NONYL ALCOHOL (ALL ISOMERS)	17
ALCOHOLIC BEVERAGES, N.O.S.		18
ALCOHOL (C9-C11) POLY(2.5-9)ETHOXYLATE		17
ALCOHOL (C10-C18) POLY (7) ETHOXYLATE		17
ALCOHOL (C6-C17) (SECONDARY) POLY(3-6)ETHOXYLATES		17
ALCOHOL (C6-C17) (SECONDARY) POLY(7-12)ETHOXYLATES		17
ALCOHOL (C12-C16) POLY(1-6) ETHOXYLATES		17
ALCOHOL (C12-C16) POLY(20+)ETHOXYLATES		17
ALCOHOL (C12-C16) POLY(7-19)ETHOXYLATES		17
ALCOHOLS (C13+)		17
Alcohols, C13 - C15	ALCOHOLS (C13+)	17
ALCOHOLS (C12+), PRIMARY, LINEAR		17
ALCOHOLS (C8-C11), PRIMARY, LINEAR AND ESSENTIALLY LINEAR		17
ALCOHOLS (C12-C13), PRIMARY, LINEAR AND ESSENTIALLY LINEAR		17
ALCOHOLS (C14-C18), PRIMARY, LINEAR AND ESSENTIALLY LINEAR		17
Aldehyde collidine	2-METHYL-5-ETHYL PYRIDINE	17
Aldehydine	2-METHYL-5-ETHYL PYRIDINE	17
ALKANES (C6-C9)		17
ISO- AND CYCLO-ALKANES (C10-C11)		17
ISO- AND CYCLO-ALKANES (C12+)		17
N-ALKANES (C9-C11)		17
N-ALKANES (C10-C20)		17
Alkane(C10-C18)sulfonic acid, phenyl ester (a)	ALKYL SULPHONIC ACID ESTER OF PHENOL	17
ALKARYL POLYETHERS (C9-C20)		17
ALKENOIC ACID, POLYHYDROXY ESTER BORATED		17
ALKENYL (C11+) AMIDE		17
ALKENYL (C16-C20) SUCCINIC ANHYDRIDE		17
ALKYL ACRYLATE/VINYLPYRIDINE COPOLYMER IN TOLUENE		17
ALKYL/CYCLO (C4-C5) ALCOHOLS		17
ALKYLARYL PHOSPHATE MIXTURES (MORE THAN 40% DIPHENYL TOLYL PHOSPHATE, LESS THAN 0.02% ORTHO-ISOMERS)		17
ALKYLATED (C4-C9) HINDERED PHENOLS		17
ALKYLBENZENE, ALKYLINDANE, ALKYLINDENE MIXTURE (EACH C12-C17)		17
ALKYLBENZENE DISTILLATION BOTTOMS		17
ALKYLBENZENE MIXTURES (CONTAINING AT LEAST 50% OF TOLUENE)		17
ALKYL (C3-C4) BENZENES		17
ALKYL (C5-C8) BENZENES		17
ALKYL(C9+)BENZENES		17

Index Name	Product Name	Chapter
ALKYLBENZENES MIXTURES (CONTAINING NAPHTHALENE)		17
ALKYL (C11-C17) BENZENE SULPHONIC ACID		17
ALKYLBENZENE SULPHONIC ACID, SODIUM SALT SOLUTION		17
ALKYL (C12+) DIMETHYLAMINE		17
ALKYL DITHIOCARBAMATE (C19-C35)		17
ALKYL DITHIOTHIAZOLE (C6-C24)		17
ALKYL ESTER COPOLYMER (C4-C20)		17
ALKYL (C8-C10)/(C12-C14):(40% OR LESS/60% OR MORE) POLYGLUCOSIDE SOLUTION (55% OR LESS)		17
ALKYL (C8-C10)/(C12-C14):(60% OR MORE/40% OR LESS) POLYGLUCOSIDE SOLUTION(55% OR LESS)		17
ALKYL (C7-C9) NITRATES		17
2,2'- [3-(Alkyl(C16-C18)oxy)propylimino]diethanol (a)	ETHOXYLATED LONG CHAIN (C16+) ALKYLOXYALKYLAMINE	17
Alkylphenol, long-chain (C14-C18)	LONG-CHAIN ALKYLPHENOL (C14-C18)	17
Alkylphenol, long-chain (C18-C30)	LONG-CHAIN ALKYLPHENOL (C18-C30)	17
ALKYL(C7-C11)PHENOL POLY(4-12) ETHOXYLATE		17
ALKYL (C8-C40) PHENOL SULPHIDE		17
ALKYL (C8-C9) PHENYLAMINE IN AROMATIC SOLVENTS		17
ALKYL (C9-C15) PHENYL PROPOXYLATE		17
ALKYL (C8-C10) POLYGLUCOSIDE SOLUTION (65% OR LESS)		17
ALKYL (C8-C10)/(C12-C14):(50%/50%) POLYGLUCOSIDE SOLUTION (55% OR LESS)		17
ALKYL (C12-C14) POLYGLUCOSIDE SOLUTION (55% OR LESS)		17
ALKYL(C12-C16) PROPOXYAMINE ETHOXYLATE		17
ALKYL (C10-C15, C12 RICH) PHENOL POLY(4-12)ETHOXYLATE		17
ALKYL (C10-C20, SATURATED AND UNSATURATED) PHOSPHITE		17
ALKYL SULPHONIC ACID ESTER OF PHENOL		17
ALKYL (C18+) TOLUENES		17
Alkyltoluenesulfonic acid, calcium salts, high overbase (up to 70% in mineral oil)	ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, HIGH OVERBASE	17
Alkyl(C18-C28)toluenesulfonic acid,calcium salts, low overbase (up to 60% in mineral oil)	ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, LOW OVERBASE	17
ALKYL(C18-C28)TOLUENESULPHONIC ACID		17
ALKYL(C18-C28)TOLUENESULPHONIC ACID, CALCIUM SALTS, BORATED		17
ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, HIGH OVERBASE		17
ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, LOW OVERBASE		17
3-Alky(C16-C18)oxy-N,N'-bis(2-hydroxyethyl)propan-1-amine (a)	ETHOXYLATED LONG CHAIN (C16+) ALKYLOXYALKYLAMINE	17
ALLYL ALCOHOL		17
ALLYL CHLORIDE		17
ALUMINIUM CHLORIDE/HYDROGEN CHLORIDE SOLUTION		17

Index Name	Product Name	Chapter
ALUMINIUM HYDROXIDE, SODIUM HYDROXIDE, SODIUM CARBONATE SOLUTION (40% OR LESS)		17
Aluminium silicate hydroxide	KAOLIN SLURRY	18
ALUMINIUM SULPHATE SOLUTION		17
Aminoacetic acid, sodium salt solution	GLYCINE, SODIUM SALT SOLUTION	17
1-Amino-3-aminomethyl-3,5,5-trimethylcyclohexane	ISOPHORONEDIAMINE	17
Aminobenzene	ANILINE	17
1-Aminobutane (a)	BUTYLAMINE (ALL ISOMERS)	17
2-Aminobutane	BUTYLAMINE (ALL ISOMERS)	17
Aminocyclohexane	CYCLOHEXYLAMINE	17
Aminoethane	ETHYLAMINE	17
Aminoethane solutions, 72% or less	ETHYLAMINE SOLUTIONS (72% OR LESS)	17
2-Aminoethanol	ETHANOLAMINE	17
2-(2-AMINOETHOXY) ETHANOL		17
2-(2-Aminoethylamino)ethanol	AMINOETHYL ETHANOLAMINE	17
AMINOETHYLDIETHANOLAMINE/AMINOETHYLETHANOLAMINE SOLUTION		17
AMINOETHYL ETHANOLAMINE		17
N-(2-aminoethyl)ethylenediamine	DIETHYLENETRIAMINE	17
1-(2-Aminoethyl)piperazine	N-AMINOETHYLPIPERAZINE	17
N-AMINOETHYLPIPERAZINE		17
2-Aminoisobutane (a)	BUTYLAMINE (ALL ISOMERS)	17
Aminomethane solutions, 42% or less	METHYLAMINE SOLUTIONS (42% OR LESS)	17
1-Amino-2-methylbenzene	O-TOLUIDINE	17
2-Amino-1-methylbenzene	O-TOLUIDINE	17
2-AMINO-2-METHYL-1-PROPANOL		17
3-Aminomethyl-3,5,5-trimethylcyclohexylamine	ISOPHORONEDIAMINE	17
Aminophen	ANILINE	17
1-Aminopropane	N-PROPYLAMINE	17
2-Aminopropane	ISOPROPYLAMINE	17
2-Aminopropane (70% or less) solution	ISOPROPYLAMINE (70% OR LESS) SOLUTION	17
1-Amino-2-propanol	ISOPROPANOLAMINE	17
1-Aminopropan-2-ol	ISOPROPANOLAMINE	17
3-Aminopropan-1-ol	N-PROPANOLAMINE	17
2-Aminotoluene	O-TOLUIDINE	17
o-Aminotoluene	O-TOLUIDINE	17
5-Amino-1,3,3-trimethylcyclohexylmethylamine	ISOPHORONEDIAMINE	17
AMMONIA AQUEOUS (28% OR LESS)		17
Ammonia water, 28% or less	AMMONIA AQUEOUS (28% OR LESS)	17
AMMONIUM CHLORIDE SOLUTION (LESS THAN 25%) (*)		17
AMMONIUM HYDROGEN PHOSPHATE SOLUTION		17
Ammonium hydroxide, 28% or less	AMMONIA AQUEOUS (28% OR LESS)	17
AMMONIUM LIGNOSULPHONATE SOLUTIONS		17
AMMONIUM NITRATE SOLUTION (93% OR LESS) (*)		17
AMMONIUM POLYPHOSPHATE SOLUTION		17

Index Name	Product Name	Chapter
AMMONIUM SULPHATE SOLUTION		17
AMMONIUM SULPHIDE SOLUTION (45% OR LESS) (*)		17
AMMONIUM THIOSULPHATE SOLUTION (60% OR LESS)		17
AMYL ACETATE (ALL ISOMERS)		17
Amyl acetate, commercial (a)	AMYL ACETATE (ALL ISOMERS)	17
n-Amyl acetate (a)	AMYL ACETATE (ALL ISOMERS)	17
sec-Amyl acetate (a)	AMYL ACETATE (ALL ISOMERS)	17
Amylacetic ester (a)	AMYL ACETATE (ALL ISOMERS)	17
Amyl alcohol	N-AMYL ALCOHOL	17
N-AMYL ALCOHOL		17
AMYL ALCOHOL, PRIMARY		17
SEC-AMYL ALCOHOL		17
TERT-AMYL ALCOHOL		17
Amyl aldehyde	VALERALDEHYDE (ALL ISOMERS)	17
Amylcarbinol	HEXANOL	17
Amylene hydrate	TERT-AMYL ALCOHOL	17
TERT-AMYL ETHYL ETHER		17
Amyl ethyl ketone	ETHYL AMYL KETONE	17
TERT-AMYL METHYL ETHER		17
n-Amyl methyl ketone	METHYL AMYL KETONE	17
n-Amyl propionate	N-PENTYL PROPIONATE	17
Anaesthetic ether	DIETHYL ETHER (*)	17
ANILINE		17
Aniline oil	ANILINE	17
Anilinobenzene	DIPHENYLAMINE (MOLTEN)	17
Anthracene oil (coal tar fraction) (a)	COAL TAR	17
Ant oil, artificial	FURFURAL	17
APPLE JUICE		18
Aqua fortis	NITRIC ACID (70% AND OVER)	17
Argilla	KAOLIN SLURRY	18
ARYL POLYOLEFINS (C11-C50)		17
AVIATION ALKYLATES (C8 PARAFFINS AND ISO-PARAFFINS BPT 95 - 120°C)		17
Azacycloheptane	HEXAMETHYLENEIMINE	17
3-Azapentane-1,5-diamine	DIETHYLENTRIAMINE	17
Azepane	HEXAMETHYLENEIMINE	17
Azotic acid	NITRIC ACID (70% AND OVER)	17
BARIUM LONG CHAIN (C11-C50) ALKARYL SULPHONATE		17
Basic calcium alkyl salicylate in approximately 30% mineral oil (b)	CALCIUM LONG-CHAIN ALKYL SALICYLATE (C13+)	17
Battery acid	SULPHURIC ACID	17
Behenyl alcohol (a)	ALCOHOLS (C13+)	17
Benzenamine	ANILINE	17
1,4-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	BIS(2-ETHYLHEXYL) TEREPHTHALATE	17
1,4-Benzenedicarboxylic acid, butyl ester	DIBUTYL TEREPHTHALATE	17
1,2-Benzenedicarboxylic acid, diethyl ester	DIETHYL PHTHALATE	17

Index Name	Product Name	Chapter
1,2-Benzenedicarboxylic acid, diundecyl ester	DIUNDECYL PHTHALATE	17
BENZENE AND MIXTURES HAVING 10% BENZENE OR MORE (I)		17
BENZENE SULPHONYL CHLORIDE		17
BENZENESULPHONYL CHLORIDE	BENZENE SULPHONYL CHLORIDE	17
BENZENETRICARBOXYLIC ACID, TRIOCTYL ESTER		17
Benzenol	PHENOL	17
Benzol	BENZENE AND MIXTURES HAVING 10% BENZENE OR MORE (I)	17
Benzole	BENZENE AND MIXTURES HAVING 10% BENZENE OR MORE (I)	17
Benzophenol	PHENOL	17
2-Benzothiazolethiol, sodium salt solution	MERCAPTOBENZOTHIAZOL, SODIUM SALT SOLUTION	17
Benzothiazole-2-thiol, sodium salt solution	MERCAPTOBENZOTHIAZOL, SODIUM SALT SOLUTION	17
(2-Benzothiazolylthio) sodium solution	MERCAPTOBENZOTHIAZOL, SODIUM SALT SOLUTION	17
BENZYL ACETATE		17
BENZYL ALCOHOL		17
Benzyl butyl phthalate	BUTYL BENZYL PHTHALATE	17
BENZYL CHLORIDE		17
Betaprone	BETA-PROPIOLACTONE	17
Betula oil	METHYL SALICYLATE	17
Biformyl	GLYOXAL SOLUTION (40% OR LESS)	17
BIO-FUEL BLENDS OF DIESEL/GAS OIL AND FAME (>25% BUT <99% BY VOLUME)		17
BIO-FUEL BLENDS OF DIESEL/GAS OIL AND VEGETABLE OIL (>25% BUT <99% BY VOLUME)		17
BIO-FUEL BLENDS OF GASOLINE AND ETHYL ALCOHOL (>25% BUT <99% BY VOLUME)		17
Biphenyl	DIPHENYL	17
Bis(methylcyclopentadiene)	METHYLCYCLOPENTADIENE DIMER	17
2,5-Bis(alkyl(C7+)thio)-1,3,4-thiadiazole	ALKYL DITHIOTHIAZADIAZOLE (C6-C24)	17
Bis(2-aminoethyl)amine	DIETHYLENETRIAMINE	17
N,N'-Bis(2-aminoethyl)ethane-1,2-diamine	TRIETHYLENETETRAMINE	17
N,N'-Bis(2-aminoethyl)ethylenediamine	TRIETHYLENETETRAMINE	17
N,N-Bis(2-(bis(carboxymethyl)amino)ethyl)glycine, pentasodium salt solution	DIETHYLENETRIAMINEPENTAACETIC ACID, PENTASODIUM SALT SOLUTION	17
Bis(2-butoxyethyl) ether	DIETHYLENE GLYCOL DIBUTYL ETHER	17
N,N- Bis(carboxymethyl)glycine trisodium salt solution	NITRILOTRIACETIC ACID, TRISODIUM SALT SOLUTION	17
Bis(chloroethyl) ether	DICHLOROETHYL ETHER	17
Bis(2-chloroethyl) ether	DICHLOROETHYL ETHER	17
Bis (2-chloroisopropyl) ether	2,2'-DICHLOROISOPROPYL ETHER	17
Bis(2-chloro-1-methylethyl) ether	2,2'-DICHLOROISOPROPYL ETHER	17
Bis[2-(2,3-epoxypropoxy)phenyl]methane	DIGLYCIDYL ETHER OF BISPHENOL F	17
2,2-Bis[4-(2,3-epoxypropoxy)phenyl]propane	DIGLYCIDYL ETHER OF BISPHENOL A	17
Bis(2-ethoxyethyl) ether	DIETHYLENE GLYCOL DIETHYL ETHER	17
Bis(2-ethylhexyl) adipate	DI-(2-ETHYLHEXYL) ADIPATE	17
Bis (2-ethylhexyl)-1-4-benzenedicarboxylate	BIS(2-ETHYLHEXYL) TEREPHTHALATE	17

Index Name	Product Name	Chapter
Bis(2-ethylhexyl) hydrogen phosphate	DI-(2-ETHYLHEXYL) PHOSPHORIC ACID	17
Bis(2-ethylhexyl) phthalate	DIOCTYL PHTHALATE	17
BIS(2-ETHYLHEXYL) TEREPHTHALATE		17
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Tetradecene (a)	OLEFINS (C13+, ALL ISOMERS)	17
Tetradecylbenzene	ALKYL(C9+)BENZENES	17
TETRAETHYLENE GLYCOL		17
TETRAETHYLENE PENTAMINE		17
Tetraethyllead	MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYL)	17
Tetraethylplumbane	MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYL)	17
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TETRAHYDROFURAN		17
TETRAHYDRONAPHTHALENE		17
1,2,3,4-Tetrahydronaphthalene	TETRAHYDRONAPHTHALENE	17
Tetrahydro-1,4-oxazine	MORPHOLINE	17
2H-Tetrahydro-1,4-oxazine	MORPHOLINE	17
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Tetrahydrothiophene-1-dioxide	SULPHOLANE	17
Tetrahydrothiophene 1,1-dioxide	SULPHOLANE	17
Tetralin	TETRAHYDRONAPHTHALENE	17
TETRAMETHYLBENZENE (ALL ISOMERS)		17
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1,2,3,5-Tetramethylbenzene (a)	TETRAMETHYLBENZENE (ALL ISOMERS)	17
1,2,4,5-Tetramethylbenzene (a)	TETRAMETHYLBENZENE (ALL ISOMERS)	17
Tetramethylene cyanide	ADIPONITRILE	17
Tetramethylene dicyanide	ADIPONITRILE	17
Tetramethylene glycol (a)	BUTYLENE GLYCOL	17
Tetramethylene oxide	TETRAHYDROFURAN	17
Tetramethylenesulphone	SULPHOLANE	17
Tetramethyllead	MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYL)	17
Tetrapropylbenzene	ALKYL(C9+)BENZENES	17
Tetrapropylenebenzene	DODECYLBENZENE	17
Tetryl formate	ISOBUTYL FORMATE	17
4-thiapentanal	3-(METHYLTHIO)PROPIONALDEHYDE	17
Thiophan sulphone	SULPHOLANE	17
Thiosulphuric acid, dipotassium salt (50% or less)	POTASSIUM THIOSULPHATE (50% OR LESS)	17
Titanium(IV) oxide slurry	TITANIUM DIOXIDE SLURRY	17
TITANIUM DIOXIDE SLURRY		17
TOLUENE		17
TOLUENEDIAMINE		17
2,4-Toluenediamine (a)	TOLUENEDIAMINE	17
2,6-Toluenediamine (a)	TOLUENEDIAMINE	17
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Toluol	TOLUENE	17
o-Tolylamine	O-TOLUIDINE	17
2,4-Tolylenediamine (a)	TOLUENEDIAMINE	17
2,6-Tolylenediamine (a)	TOLUENEDIAMINE	17
Tolylenediisocyanate	TOLUENE DIISOCYANATE	17
2,4-Tolylene diisocyanate	TOLUENE DIISOCYANATE	17
m-Tolylene diisocyanate	TOLUENE DIISOCYANATE	17
Toxilic anhydride	MALEIC ANHYDRIDE	17
Treacle (a)	MOLASSES	18
Triacetin	GLYOXAL SOLUTION (40% OR LESS)	17
3,6,9-Triazaundecamethylenediamine	TETRAETHYLENE PENTAMINE	17
3,6,9-Triazaundecane-1,11-diamine	TETRAETHYLENE PENTAMINE	17
TRIBUTYL PHOSPHATE		17
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1,2,4-TRICHLOROENZENE		17
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beta-Trichloroethane	1,1,2-TRICHLOROETHANE	17
Trichloroethene	TRICHLOROETHYLENE	17
TRICHLOROETHYLENE		17
Trichloromethane	CHLOROFORM	17
1,2,3-TRICHLOROPROPANE		17
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TRICRESYL PHOSPHATE (CONTAINING 1% OR MORE ORTHO-ISOMER)		17
TRICRESYL PHOSPHATE (CONTAINING LESS THAN 1% ORTHO-ISOMER)		17
TRIDECANE		17
TRIDECANOIC ACID		17
Tridecanol (a)	ALCOHOLS (C13+)	17
Tridecene (a)	OLEFINS (C13+, ALL ISOMERS)	17
Tridecoic acid	TRIDECANOIC ACID	17
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Tridecyl alcohol (a)	ALCOHOLS (C13+)	17
Tridecylbenzene	ALKYL(C9+)BENZENES	17
Tridecylic acid	TRIDECANOIC ACID	17
Tridecylic acid (a)	FATTY ACID (SATURATED C13+)	17
Tri(dimethylphenyl) phosphate (all isomers)	TRIXYLYL PHOSPHATE	17
TRIETHANOLAMINE		17
TRIETHYLAMINE		17
TRIETHYLBENZENE		17
TRIETHYLENE GLYCOL		18
Triethylene glycol butyl ether (a)	POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER	17

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Triethylene glycol methyl ether (a)	POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER	17
Triethylene glycol monobutyl ether (a)	POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER	17
TRIETHYLENETETRAMINE		17
TRIETHYL PHOSPHATE		17
TRIETHYL PHOSPHITE		17
Triformol	1,3,5-TRIOXANE	17
Triglycol	TRIETHYLENE GLYCOL	18
Trihydroxypropane	GLYCERINE	17
Trihydroxytriethylamine	TRIETHANOLAMINE	17
TRISOPROPANOLAMINE		17
TRISOPROPYLATED PHENYL PHOSPHATES		17
TRIMETHYLACETIC ACID		17
TRIMETHYLAMINE SOLUTION (30% OR LESS)		17
TRIMETHYLBENZENE (ALL ISOMERS)		17
1,2,3-Trimethylbenzene (a)	TRIMETHYLBENZENE (ALL ISOMERS)	17
1,2,4-Trimethylbenzene (a)	TRIMETHYLBENZENE (ALL ISOMERS)	17
1,3,5-Trimethylbenzene (a)	TRIMETHYLBENZENE (ALL ISOMERS)	17
2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene	ALPHA-PINENE	17
Trimethylcarbinol	TERT-BUTYL ALCOHOL	17
1,1,3-Trimethyl-3-cyclohexene-5-one	ISOPHORONE	17
3,5,5-Trimethylcyclohex-2-enone	ISOPHORONE	17
3,5,5-Trimethylcyclohex-2-en-one	ISOPHORONE	17
TRIMETHYLOL PROPANE PROPOXYLATED		17
2,2,4-Trimethylpentane (a)	OCTANE (ALL ISOMERS)	17
2,2,4-TRIMETHYL-1,3-PENTANEDIOL DIISOBUTYRATE		17
2,2,4-Trimethylpentane-1,3-diol diisobutyrate	2,2,4-TRIMETHYL-1,3-PENTANEDIOL DIISOBUTYRATE	17
2,2,4-TRIMETHYL-1,3-PENTANEDIOL-1-ISOBUTYRATE		17
2,4,4-Trimethylpentene-1	DIISOBUTYLENE	17
2,4,4-Trimethylpent-1-ene	DIISOBUTYLENE	17
2,4,4-Trimethylpentene-2	DIISOBUTYLENE	17
2,4,4-Trimethylpent-2-ene	DIISOBUTYLENE	17
2,4,6-Trimethyl-1,3,5-trioxane	PARALDEHYDE	17
2,4,6-Trimethyl-s-trioxane	PARALDEHYDE	17
Trioxan	1,3,5-TRIOXANE	17
1,3,5-TRIOXANE		17
5,8,11-Trioxapentadecane	DIETHYLENE GLYCOL DIBUTYL ETHER	17
3,6,9-Trioxaundecane	DIETHYLENE GLYCOL DIETHYL ETHER	17
Trioxymethylene	1,3,5-TRIOXANE	17
Tripropylene	PROPYLENE TRIMER	17
TRIPROPYLENE GLYCOL		17
Tripropylene glycol methyl ether (a)	POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER	17

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2,4-D-tris(2-hydroxy-2-methylethyl)ammonium	2,4-DICHLOROPHENOXYACETIC ACID, TRIISOPROPANOLAMINE SALT SOLUTION	17
Tris(2-hydroxypropyl)amine	TRIISOPROPANOLAMINE	17
Tris(2-hydroxy-1-propyl)amine	TRIISOPROPANOLAMINE	17
Tris(2-hydroxypropyl)ammonium 2,4-dichlorophenoxyacetate solution	2,4-DICHLOROPHENOXYACETIC ACID, TRIISOPROPANOLAMINE SALT SOLUTION	17
Trisodium 2-[carboxylatomethyl(2-hydroxyethyl)amino]ethyliminodi(acetate) solution	N-(HYDROXYETHYL)ETHYLENEDIAMINETRIACETIC ACID, TRISODIUM SALT SOLUTION	17
Trisodium N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine solution	N-(HYDROXYETHYL)ETHYLENEDIAMINETRIACETIC ACID, TRISODIUM SALT SOLUTION	17
Trisodium N-(2-hydroxyethyl)ethylenediamine-N,N',N'-triacetate solution	N-(HYDROXYETHYL)ETHYLENEDIAMINETRIACETIC ACID, TRISODIUM SALT SOLUTION	17
Trisodium nitrilotriacetate solution	NITRILOTRIACETIC ACID, TRISODIUM SALT SOLUTION	17
Tritolyl phosphate, containing less than 1% ortho- isomer	TRICRESYL PHOSPHATE (CONTAINING LESS THAN 1% ORTHO-ISOMER)	17
Tritolyl phosphate, containing 1% or more ortho- isomer	TRICRESYL PHOSPHATE (CONTAINING 1% OR MORE ORTHO-ISOMER)	17
Trixylenyl phosphate	TRIXYLYL PHOSPHATE	17
TRIXYLYL PHOSPHATE		17
TUNG OIL		17
TURPENTINE		17
Turpentine oil	TURPENTINE	17
Turps	TURPENTINE	17
Type A Zeolite slurry (a)	SODIUM ALUMINOSILICATE SLURRY	17
1-Undecanecarboxylic acid	LAURIC ACID	17
N-Undecane (a)	N-ALKANES (C10-C20)	17
UNDECANOIC ACID		17
Undecan-1-ol	UNDECYL ALCOHOL	17
1-UNDECENE		17
Undec-1-ene	1-UNDECENE	17
UNDECYL ALCOHOL		17
Undecylbenzene	ALKYL(C9+)BENZENES	17
Undecylic acid	UNDECANOIC ACID	17
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uns-Trimethylbenzene (a)	TRIMETHYLBENZENE (ALL ISOMERS)	17
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USED COOKING OIL (TRIGLYCERIDES, C16-C18 AND C18 UNSATURATED)** (M)		17
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Valerianic acid	PENTANOIC ACID	17
Valeric acid	PENTANOIC ACID	17
n-Valeric acid	PENTANOIC ACID	17
Valeric aldehyde	VALERALDEHYDE (ALL ISOMERS)	17
Valerone	DIISOBUTYL KETONE	17
Vaseline (cosmetic)	PARAFFIN WAX, HIGHLY-REFINED	17
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VEGETABLE FATTY ACID DISTILLATES (M)		17
VEGETABLE OIL MIXTURES, CONTAINING LESS THAN 15% FREE FATTY ACID (M)		17
VEGETABLE PROTEIN SOLUTION (HYDROLYSED)		18
Vinegar acid	ACETIC ACID	17
Vinegar naphtha	ETHYL ACETATE	17
VINYL ACETATE		17
Vinylbenzene	STYRENE MONOMER	17
Vinylcarbinol	ALLYL ALCOHOL	17
Vinyl cyanide	ACRYLONITRILE	17
vinyl ethanoate	VINYL ACETATE	17
VINYL ETHYL ETHER		17
Vinylformic acid	ACRYLIC ACID	17
VINYLDENE CHLORIDE		17
VINYL NEODECANOATE		17
VINYLTOLUENE		17
Vinyltoluene (all isomers)	VINYLTOLUENE	17
Vinyl trichloride	1,1,2-TRICHLOROETHANE	17
Vitriol brown oil	SULPHURIC ACID	17
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Water glass solutions	SODIUM SILICATE SOLUTION	17
White bole	KAOLIN SLURRY	18
White caustic solution	SODIUM HYDROXIDE SOLUTION (*)	17
WHITE SPIRIT, LOW (15-20%) AROMATIC		17
White tar	NAPHTHALENE (MOLTEN)	17
Wine (a)	ALCOHOLIC BEVERAGES, N.O.S.	18
Wintergreen oil	METHYL SALICYLATE	17
Wood alcohol	METHYL ALCOHOL (*)	17
WOOD LIGNIN WITH SODIUM ACETATE/OXALATE		17
Wood naphtha	METHYL ALCOHOL (*)	17
Wood spirit	METHYL ALCOHOL (*)	17
XYLENES		17
XYLENES/ETHYLBENZENE (10% OR MORE) MIXTURE		17
XYLENOL		17
Xylenol (all isomers)	XYLENOL	17
2,3-Xylenol (a)	XYLENOL	17
2,4-Xylenol (a)	XYLENOL	17

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2,6-Xylenol (a)	XYLENOL	17
3,4-Xylenol (a)	XYLENOL	17
3,5-Xylenol (a)	XYLENOL	17
Xylols	XYLENES	17
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ZINC ALKYL DITHIOPHOSPHATE (C3-C14)		17
Zinc bromide drilling brine	DRILLING BRINES (CONTAINING ZINC CHLORIDE)	17
z-Octadec-9-enamine	OLEYLAMINE	17
(Z)-Octadec-9-enoic acid	OLEIC ACID	17
Z-Octadec-9-enoic acid	OLEIC ACID	17
(Z)-Octadec-9-enylamine	OLEYLAMINE	17

”

7 The complete text of chapter 21 is replaced by the following:

"Chapter 21

Criteria for assigning carriage requirements for products subject to the IBC Code

21.1 Introduction

21.1.1 The following criteria are used for the determination of pollution classification and assignment of appropriate carriage requirements for bulk liquid cargoes being assessed for entry into the IBC Code or lists 1, 3 or 4 of the MEPC.2/Circular.

21.1.2 In developing such criteria, every effort has been made to follow the criteria and cut-off points developed under the Globally Harmonized System (GHS).

21.1.3 Although the criteria are intended to be closely defined in order to establish a uniform approach, it must be emphasized that where human experience or other factors indicate the need for alternative arrangements, these shall always be taken into account. Where deviations from the criteria have been recognized, they shall be properly recorded with justifications.

21.2 Contents

21.2.1 This chapter contains the following:

- .1 minimum safety and pollution criteria for products subject to chapter 17 of the IBC Code;
- .2 criteria used to assign the minimum carriage requirements for products that meet the safety or pollution criteria to make them subject to chapter 17 of the IBC Code;
- .3 criteria used for determining special requirements in chapter 15 of the IBC Code to be included in *column o* of chapter 17 of the IBC Code;
- .4 criteria used for determining special requirements in chapter 16 of the IBC Code to be included in *column o* of chapter 17 of the IBC Code;
- .5 definitions of properties used within this chapter;
- .6 information on the use of the GESAMP Hazard Ratings; and
- .7 information on the application of the SVC/LC₅₀ ratio method.

21.2.2 The information included in parentheses following the classification criteria throughout this chapter refers to the GESAMP Hazard Profile ratings set out in appendix I of MARPOL Annex II under the "Abbreviated legend to the revised GESAMP Hazard Evaluation procedure". The full listing of GESAMP Hazard Profile ratings for evaluated substances are published annually in the GESAMP Composite List as a PPR circular. It should be noted that ratings in parentheses (based on estimation methods applied by GESAMP) are considered as equivalent to ratings without parentheses for the purpose of assigning carriage requirements.

21.3 Minimum safety and pollution criteria for products subject to chapter 17 of the IBC Code

21.3.1 Products are deemed to be hazardous and subject to chapter 17 of the IBC Code if they meet one or more of the following criteria:

- .1 inhalation $LC_{50}/ATE \leq 20$ mg/L/4h (see paragraph 21.7.1.3) (C3 = 1, 2, 3 or 4);
- .2 dermal $LD_{50}/ATE \leq 2000$ mg/kg (see paragraph 21.7.1.2) (C2 = 1, 2, 3, or 4);
- .3 oral $LD_{50}/ATE \leq 2000$ mg/kg (see paragraph 21.7.1.1) (C1 = 1, 2, 3, or 4);
- .4 toxic to mammals by prolonged exposure (see paragraph 21.7.2) (D3 = C, M, R, N, T, or I);
- .5 cause skin sensitization (see paragraph 21.7.3) (D3 = Ss);
- .6 cause respiratory sensitization (see paragraph 21.7.4) (D3 = Sr);
- .7 corrosive to skin (see paragraph 21.7.5) (D1 = 3, 3A, 3B, or 3C);
- .8 with a Water Reactive Index (WRI) of ≥ 1 (see paragraph 21.7.6);
- .9 require inertion, inhibition, stabilization, temperature control or tank environmental control in order to prevent a hazardous reaction (see definitions in paragraph 21.7.10);
- .10 flashpoint $< 23^{\circ}C$; and have an explosive/flammability range (expressed as a percentage by volume in air) of $\geq 20\%$;
- .11 auto-ignition temperature of $\leq 200^{\circ}C$; and
- .12 classified as pollution category X or Y or meeting the criteria for rules 11 to 13 in table 2 in paragraph 21.4.5.2.

21.4 Criteria used to assign the minimum carriage requirements for products that meet the minimum safety or pollution criteria to make them subject to chapter 17 of the IBC Code

21.4.1 Column a – Product name

21.4.1.1 A standardized chemical name, preferably assigned on the basis of the Chemical Abstracts Service (CAS) or the International Union of Pure and Applied Chemistry (IUPAC) system, shall be used as far as possible. However, where this is unnecessarily complex, then a technically correct and unambiguous alternative name may be used.

21.4.2 Column b – Deleted

21.4.3 Column c – Pollution category

21.4.3.1 *Column c* identifies the pollution category assigned to each product in accordance with MARPOL Annex II, based on table 1 below (see MARPOL Annex II, appendix I).

Table 1 – Guidelines for the categorization of Noxious Liquid Substances

Rule	A1 Bio- accumulation	A2 Bio- degradation	B1 Acute toxicity	B2 Chronic toxicity	D3 Long-term health effects	E2 Effects on marine wildlife and on benthic habitats	Cat
1			≥ 5				X
2	≥ 4		4				
3		NR	4				
4	≥ 4	NR			CMRTNI ¹		Y
5			4				
6			3				
7			2				
8	≥ 4	NR		Not 0			
9				≥ 1			
10						Fp, F or S If not Inorganic	
11					CMRTNI ¹		
12	Any product not meeting the criteria of rules 1 to 11 and 13						Z
13	All products identified as: ≤ 2 in column A1; R in column A2; blank in column D3; not Fp, F or S (if not organic) in column E2; and 0 (zero) in all other columns of the GESAMP Hazard Profile						OS

21.4.4 Column d – Hazards

21.4.4.1 An "S" is assigned to *column d* if any of the safety criteria described in paragraphs 21.3.1.1 to 21.3.1.11 are met.

21.4.4.2 A "P" is assigned to *column d* if the product meets the criteria for assigning Ship Type 1 to 3 as defined by rules 1 to 14 in the table 2.

21.4.5 Column e – Ship Type

21.4.5.1 Assignment of Ship Types is carried out from both a pollution and safety perspective. The basic criteria for assigning Ship Types from a pollution perspective is carried out based on the GESAMP Hazard Profile, shown in table 2. An explanation of the details in the columns is provided in appendix I of MARPOL Annex II.

21.4.5.2 The following criteria are used to assign the Ship Type:

Ship Type 1:

- Inhalation LC₅₀/ATE ≤ 0.5 mg/L/4h (C3 = 4) and SVC/LC₅₀ ≥ 20; and/or
- Dermal LD₅₀/ATE ≤ 50 mg/kg (C2 = 4); and/or
- WRI = 3; and/or
- Auto-ignition temperature ≤ 65°C; and/or
- Explosive range ≥ 50% v/v in air and the flashpoint < 23°C; and/or
- Rules 1 or 2 of the table 2 shown in 21.4.5.2 (below).

¹ Applies if the D3 rating contains any of these letters or any combination thereof.

Ship Type 2:

Inhalation LC₅₀/ATE ≤ 0.5 mg/L/4h (C3 = 4) and SVC/LC₅₀ < 20; or
 Inhalation LC₅₀/ATE > 0.5 mg/L/4h – ≤ 2mg/L/4h (C3 = 3) and SVC/LC₅₀ ≥ 2 (see note); and/or
 Dermal LD₅₀/ATE > 50 mg/kg – ≤ 200 mg/kg (C2 = 3); and/or
 WRI = 2; and/or
 Auto-ignition temperature ≤ 200°C; and/or
 Explosive range ≥ 40% v/v in air and the flashpoint < 23°C; and/or
 Any product meeting the criteria of rules 3 to 10 in table 2.

Note: Products with a density >1025 kg/m³ (sinkers) or a water solubility of >50% (dissolvers) that are assigned to Ship Type 2 based on the inhalation toxicity criteria, may be re-assigned to Ship Type 3.

Ship Type 3:

Any of the minimum safety or pollution criteria for bulk liquid cargoes subject to chapter 17 of the IBC Code not meeting the requirements for Ship Types 1 or 2 and not meeting rule 15 of table 2 shown in 21.4.5.2 (below).

Table 2 – Assignment of Ship Types based on the GESAMP Hazard Profile

Rule	A1	A2	B1	B2	D3	E2	Ship Type
1			≥ 5				1
2	≥ 4	NR	4		CMRTNI ²		
3	≥ 4	NR			CMRTNI ²		
4			4				2
5	≥ 4		3				
6		NR	3				
7				≥ 1			
8						Fp	
9					CMRTNI ²	F	
10			≥ 2			S	3
11	≥ 4						
12		NR					
13			≥ 1				
14	All other category Y Substances						NA
15	All other category Z Substances All "Other Substances" (OS)						

21.4.6 Column f – Tank type

21.4.6.1 The tank type is assigned according to the following criteria:

Tank type 1G: Inhalation LC₅₀/ATE ≤ 0.5 mg/L/4h (C3 = 4) and SVC/LC₅₀ ≥ 1000; and/or
 Dermal LD₅₀/ATE ≤ 50 mg/kg (C2 = 4); and/or;
 WRI=3; and/or
 Auto-ignition temperature ≤ 65°C; and/or

² Applies if the D3 rating contains any of these letters or any combination thereof.

Explosive range $\geq 40\%$ v/v in air and the flashpoint $< 23^{\circ}\text{C}$.
Based on expert judgement, tank type 1G may be required for specific products (e.g. for molten sulphur, hydrochloric acid).

Tank type 2G: Any of the minimum safety or pollution criteria for bulk liquid cargoes subject to chapter 17 or the IBC Code not meeting the requirements for tank type 1G.

21.4.7 *Column g* – Tank vents

21.4.7.1 The tank venting arrangements are assigned according to the following criteria:

Controlled: Inhalation $\text{LC}_{50}/\text{ATE} \leq 10 \text{ mg/L/4h}$ (C3 = 2, 3 or 4), unless in accordance with 21.7.12; and/or
Toxic to mammals by prolonged exposure (D3 = C, M, R, T, N, or I); and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Special carriage control needed; and/or
Flashpoint $\leq 60^{\circ}\text{C}$; and
Corrosive to skin ($\leq 4\text{h}$ exposure). (D1 = 3A, 3B, or 3C).

Open: Any of the minimum safety or pollution criteria for bulk liquid cargoes subject to chapter 17 or the IBC Code not meeting the requirements for controlled tank vents.

21.4.8 *Column h* – Tank environmental control

21.4.8.1 The tank environmental control conditions are assigned according to the following criteria:

Inert: Auto-ignition temperature $\leq 200^{\circ}\text{C}$; and/or
Reacts with air to cause a hazard; and/or
Explosive range $\geq 40\%$ and the flashpoint $< 23^{\circ}\text{C}$.
Dry: WRI > 1
Pad: Only applies to specific products identified on a case by case basis.
Vent: Only applies to specific products identified on a case by case basis.
No: Where the above criteria do not apply (inerting requirements may be required under SOLAS).

21.4.9 *Column i* – Electrical equipment

21.4.9.1 If the flashpoint of the product is $\leq 60^{\circ}\text{C}$ or the product is heated to within 15°C of its flashpoint then the electrical equipment required are assigned according to the following criteria, otherwise "-" is assigned in column *i'* and *i''*:

.1 *Column i'* – Temperature class:

T1	Auto-ignition temperature $\geq 450^{\circ}\text{C}$
T2	Auto-ignition temperature $\geq 300^{\circ}\text{C}$ but $< 450^{\circ}\text{C}$
T3	Auto-ignition temperature $\geq 200^{\circ}\text{C}$ but $< 300^{\circ}\text{C}$
T4	Auto-ignition temperature $\geq 135^{\circ}\text{C}$ but $< 200^{\circ}\text{C}$
T5	Auto-ignition temperature $\geq 100^{\circ}\text{C}$ but $< 135^{\circ}\text{C}$
T6	Auto-ignition temperature $\geq 85^{\circ}\text{C}$ but $< 100^{\circ}\text{C}$

.2 **Column i'' – Apparatus group:**

Apparatus group	MESG at 20°C (mm)	MIC ratio product/methane
IIA	> 0.90	> 0.80
IIB	> 0.50 to ≤ 0.90	> 0.45 to ≤ 0.80
IIC	≤ 0.50	≤ 0.45

- .1 The tests shall be carried out in accordance with the procedures described in IEC 60079-1-1:2002 and IEC 79-3.
- .2 For gases and vapours it is sufficient to make only one determination of either the Maximum Experimental Safe Gap (MESG) or the Minimum Igniting Current (MIC) provided that:
- for Group IIA: the MESG > 0.90 mm or the MIC ratio > 0.80
for Group IIB: the MESG is > 0.50 mm and ≤ 0.90 mm; or the MIC ratio is > 0.50 and ≤ 0.80
for Group IIC: the MESG is ≤ 0.50 mm or the MIC ratio is ≤ 0.45
- .3 It is necessary to determine both the MESG and the MIC ratio when:
- .1 the MIC ratio determination only has been made, and the ratio is between 0.80 and 0.90, when an MESG determination will be required;
- .2 the MIC ratio determination only has been made, and the ratio is between 0.45 and 0.50, when an MESG determination will be required; or
- .3 the MESG only has been found, and is between 0.50 mm and 0.55 mm, when an MIC ratio determination will be required.

.3 **Column i''' Flashpoint:**

> 60°C	Yes
≤ 60°C	No
Non-flammable	NF

21.4.10 Column j – Gauging

21.4.10.1 The gauging equipment is assigned according to the following criteria:

- Closed: Inhalation LC₅₀/ATE ≤ 2 mg/L/4h (C3 = 3 or 4), unless in accordance with 21.7.12; and/or
Dermal LD₅₀/ATE ≤ 1000 mg/kg (C2 = 2, 3 or 4); and/or
Toxic to mammals by prolonged exposure (D3 = C, M, R, T, N, or I); and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Severely corrosive to skin (≤ 3 min exposure) (D1= 3C).

- Restricted: Inhalation LC₅₀/ATE >2 - ≤10 mg/L/4h (C3 = 2), unless in accordance with 21.7.12; and/or
Special carriage control indicates inerting required; and/or
Highly corrosive to skin (> 3 min - ≤1h exposure) (D1 = 3B); and/or
Flashpoint ≤ 60°C.
- Open: Any of the minimum safety or pollution criteria for bulk liquid cargoes subject to chapter 17 or the IBC Code not meeting the requirements for closed or restricted gauging.

21.4.11 *Column k* – Vapour detection

21.4.11.1 The vapour detection equipment is assigned according to the following criteria:

- Toxic (T): Inhalation LC₅₀/ATE ≤ 10 mg/L/4h (C3 = 2, 3, or 4), unless in accordance with 21.7.12, and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Toxic to mammals by prolonged exposure (D3 = C, M, R, T, N, or I).
- Flammable (F): Flashpoint ≤ 60°C
- No (No): Where the above criteria do not apply

21.4.12 *Column l* – Fire protection equipment

21.4.12.1 The appropriate firefighting media are defined as being appropriate according to the following criteria related to the properties of the product:

- | | | |
|----------------------------------|----|--|
| Solubility > 10% (> 100000 mg/L) | A | Alcohol-resistant foam. |
| Solubility ≤ 10% (≤ 100000 mg/L) | A | Alcohol-resistant foam; and/or |
| | B | Regular foam. |
| WRI = 0 | C | Water spray (generally used as a coolant and can be used with A and/or B providing that the WRI = 0). |
| WRI ≥ 1 | D | Dry chemical. |
| | No | No requirements under this Code. This applies where a product is identified as NF in column i" (see paragraph 21.4.9.1.3). |

Note: all appropriate media shall be listed.

21.4.13 *Column m* – Deleted

21.4.14 Column n – Emergency equipment

21.4.14.1 The requirement to have personnel emergency equipment on board is identified by "Yes" in *column n* according to the following criteria:

Inhalation $LC_{50}/ATE \leq 2$ mg/L/4h (C3 = 3 or 4); unless in accordance with 21.7.12;
and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Severely corrosive to skin (≤ 3 min exposure) (D1 = 3C); and/or
WRI = 2

No: indicates that the above criteria do not apply.

21.5 Column o – Criteria for special requirements in chapter 15

21.5.1 The assignment of special requirements in *column o* shall normally follow clear criteria based on the data supplied in the reporting form. Where it is considered appropriate to deviate from such criteria, this shall be clearly documented in such a way that it can easily be retrieved on demand.

21.5.2 The criteria for making reference to the special requirements identified in chapters 15 and 16 are defined below with comments where relevant.

21.5.3 Paragraphs 15.2 to 15.10 and 15.20

21.5.3.1 Paragraphs 15.2 to 15.10 and 15.20 identify specific products by name with special carriage requirements that cannot be easily accommodated in any other way.

21.5.4 Paragraph 15.11 – Acids

21.5.4.1 Paragraph 15.11 applies to all acids unless they:

- .1 are organic acids – when only paragraphs 15.11.2 to 15.11.4 and paragraphs 15.11.6 to 15.11.8 apply; or
- .2 do not evolve hydrogen – when paragraph 15.11.5 need not apply.

21.5.5 Paragraph 15.12 – Toxic products

21.5.5.1 All of paragraph 15.12 is added to *column o* according to the following criteria:

Inhalation $LC_{50}/ATE \leq 2$ mg/L/4h (C3 = 3 or 4), unless in accordance with 21.7.12;
and/or
the product is a respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
the product is toxic to mammals by prolonged exposure (D3 = C, M, R, T, N, or I).

21.5.5.2 Paragraphs 15.12.3 and 15.12.4 are added to *column o* according to the following criterion:

Inhalation $LC_{50}/ATE > 2 - \leq 10$ mg/L/4h (C3 = 2), unless in accordance with 21.7.12.

21.5.5.3 Paragraph 15.12.3.2 is added to *column o* according to the following criteria:

Dermal $LD_{50}/ATE \leq 1000$ mg/kg (C2 = 2, 3, or 4); and/or
Oral $LD_{50}/ATE \leq 300$ mg/kg (C1 = 2, 3, or 4).

21.5.6 Paragraph 15.13 – Cargoes protected by additives

21.5.6.1 The requirement to assign paragraph 15.13 to *column o* is based on the information related to the product's tendency to polymerize, decompose, oxidize or undergo other chemical changes which may cause a hazard under normal carriage conditions, but which would be prevented by the addition of appropriate additives.

21.5.7 Paragraph 15.14 – Cargoes with a vapour pressure greater than atmospheric at 37.8°C

21.5.7.1 The requirement to assign paragraph 15.14 to *column o* is based on the following criterion:

Boiling point $\leq 37.8^{\circ}\text{C}$

21.5.8 Paragraph 15.16 – Cargo contamination

21.5.8.1 Paragraph 15.16.1 is deleted.

21.5.8.2 Paragraph 15.16.2 is added to *column o* according to the following criterion:

WRI > 1

21.5.9 Paragraph 15.17 – Increased ventilation requirements

21.5.9.1 Paragraph 15.17 shall be added to *column o* according to the following criteria:

Inhalation $\text{LC}_{50}/\text{ATE} > 0.5 - \leq 2 \text{ mg/L/4h}$ (C3 = 3), unless in accordance with 21.7.12; and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Toxic to mammals by prolonged exposure (D3 = C, M, R, T, N, or I); and/or
Highly to severely corrosive to skin ($\leq 1\text{h}$ exposure time) (D1 = 3B or 3C).

21.5.10 Paragraph 15.18 – Special cargo pump-room requirements

21.5.10.1 Paragraph 15.18 shall be added to *column o* according to the following criterion:
Inhalation $\text{LC}_{50}/\text{ATE} \leq 0.5 \text{ mg/L/4h}$ (C3 = 4), unless in accordance with 21.7.12

21.5.11 Paragraph 15.19 – Overflow control

21.5.11.1 Paragraph 15.19 shall be added to *column o* according to the following criteria:

Inhalation $\text{LC}_{50}/\text{ATE} \leq 2 \text{ mg/L/4h}$ (C3 = 3 or 4), unless in accordance with 21.7.12; and/or
Dermal $\text{LD}_{50}/\text{ATE} \leq 1000 \text{ mg/kg}$ (C2 = 2, 3, or 4); and/or
Oral $\text{LD}_{50}/\text{ATE} \leq 300 \text{ mg/kg}$ (C1 = 2, 3, or 4); and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Severely corrosive to skin ($\leq 3 \text{ min}$ exposure) (D1 = 3C); and/or
Auto-ignition temperature $\leq 200^{\circ}\text{C}$; and/or
Explosive range $\geq 40\% \text{ v/v}$ in air and flashpoint $< 23^{\circ}\text{C}$; and/or
Classified as Ship Type 1 on pollution grounds.

21.5.11.2 Only paragraph 15.19.6 shall apply if the product has any of the following properties:

Inhalation $LC_{50}/ATE > 2 \text{ mg/L/4h} - \leq 10 \text{ mg/L/4h}$ (C3 = 2), unless in accordance with 21.7.12; and/or
Dermal $LD_{50}/ATE > 1000 \text{ mg/kg} - \leq 2000 \text{ mg/kg}$ (C2 = 1); and/or
Oral $LD_{50}/ATE > 300 \text{ mg/kg} - \leq 2000 \text{ mg/kg}$ (C1 = 1); and/or
Skin sensitizer (D3=Ss); and/or
Highly corrosive to skin (> 3 min - ≤ 1h exposure) (D1 = 3B); and/or
Flashpoint ≤ 60°C; and/or
Classified as Ship Type 2 on pollution grounds; and/or
Pollution category X or Y.

21.5.12 Paragraph 15.21 –Temperature sensors

21.5.12.1 Paragraph 15.21 is added to *column o* according to the heat sensitivity of the product. This requirement is related to pumps in cargo pump-rooms only.

21.6 Column o – Criteria for special requirements in chapter 16

21.6.1 Paragraphs 16.1 to 16.2.5 and 16.3 to 16.5

21.6.1.1 These apply to all cargoes and so are not referenced specifically in *column o*.

21.6.2 Paragraph 16.2.6

21.6.2.1 Paragraph 16.2.6 is added to *column o* for products which meet the following criteria: Pollution Category X or Y and viscosity ≥ 50 mPa·s at 20°C.

21.6.3 Paragraph 16.2.9

21.6.3.1 Paragraph 16.2.9 is added to *column o* for products which meet the following criterion: Melting point ≥ 0°C.

21.6.4 Paragraph 16.6 – Cargo not to be exposed to excessive heat

21.6.4.1 Paragraphs 16.6.2 to 16.6.4 are added to *column o* for products which are identified as requiring temperature control during carriage.

21.6.5 Paragraph 16.2.7 – Persistent floaters

Paragraph 16.2.7 is added to *column o* for products which meet the following criteria: Pollution Category Y that are persistent floaters (E2 = Fp) with a viscosity greater than or equal to 50 mPa·s at 20°C and/or with a melting point greater than or equal to 0°C.

21.7 Definitions

21.7.1 Acute mammalian toxicity

LC_{50} is the concentration in air, LD_{50} is the amount (dose) of test substance, which causes mortality to 50% of a test species. ATE refers to a dose (concentration) range or extrapolated dose (concentration) leading to lethal effects in mammals, equivalent to an LC_{50} or LD_{50} .

21.7.1.1 Acutely toxic if swallowed

Oral toxicity (LD ₅₀ /ATE)		GESAMP Hazard Profile Rating C1
Hazard Level	mg/kg	
High	≤ 5	4
Moderately High	> 5 - ≤ 50	3
Moderate	> 50 - ≤ 300	2
Slight	> 300 - ≤ 2000	1
Negligible	> 2000	0

21.7.1.2 Acutely toxic in contact with skin

Dermal toxicity (LD ₅₀ /ATE)		GESAMP Hazard Profile Rating C2
Hazard Level	mg/kg	
High	≤ 50	4
Moderately high	> 50 - ≤ 200	3
Moderate	> 200 - ≤ 1000	2
Slight	> 1000 - ≤ 2000	1
Negligible	> 2000	0

21.7.1.3 Acutely toxic by inhalation

All inhalation toxicity data are assumed to be for vapours and not mists or sprays, unless otherwise indicated.

Inhalation toxicity (LC ₅₀ /ATE)		GESAMP Hazard Profile Rating C3
Hazard level	mg/L/4h	
High	≤ 0.5	4
Moderately high	> 0.5 - ≤ 2	3
Moderate	> 2 - ≤ 10	2
Slight	> 10 - ≤ 20	1
Negligible	> 20	0

21.7.2 Toxic to mammals by prolonged exposure

21.7.2.1 A product is classified as *toxic to mammals by prolonged exposure* if it meets any of the following criteria: it is known to be, or suspected of being carcinogenic, mutagenic, reprotoxic, neurotoxic, immunotoxic or exposure below the lethal dose is known to cause Specific Target Organ Toxicity.

21.7.2.2 Such effects may be identified from the GESAMP Hazard Profile of the product (D3 = C, M, R, T, N, or I) or other recognized sources of such information.

21.7.3 Skin sensitization

21.7.3.1 A product is classified as a *skin sensitizer*:

- .1 if there is evidence in humans that the substance can induce sensitization by skin contact in a substantial number of persons; or
- .2 where there are positive results from an appropriate test.

21.7.3.2 Such effects are identified in the GESAMP Hazard Profile for the product (D3 = Ss).

21.7.4 Respiratory sensitization

21.7.4.1 A product is classified as a *respiratory sensitizer*:

- .1 if there is evidence in humans that the substance can induce specific respiratory hypersensitivity; and/or
- .2 where there are positive results from an appropriate test; and/or
- .3 where the product does not have a GESAMP Hazard Profile and is identified as a skin sensitizer and there is no evidence to show that it is not a respiratory sensitizer.

21.7.4.2 Such effects are identified in the GESAMP Hazard Profile for the product (D3 = Sr) or other recognized sources of such information, if no profile exists.

21.7.5 Corrosive to skin³

Hazard Level	Exposure time to cause full thickness necrosis of skin	GESAMP Hazard Profile Rating D1
Severely corrosive to skin	≤ 3 min	3C
Highly corrosive to skin	> 3 min - ≤ 1h	3B
Moderately corrosive to skin	> 1h - ≤ 4h	3A

Note: A rating of 3 or (3) in the D1 column of the GESAMP Hazard Profile without any additional letter notation (A, B or C), means that the severity of corrosivity has not been established. For such cases, a rating of 3 or (3) is understood to be equivalent to a rating of 3B for the purpose of assigning carriage requirements.

21.7.6 Water reactive substances

21.7.6.1 These are classified as follows:

Water Reactive Index (WRI)	Definition
3	Any chemical which is extremely reactive with water and produces large quantities of flammable, toxic or corrosive gas or aerosol
2	Any chemical which, in contact with water, may produce a toxic, flammable or corrosive gas or aerosol
1	Any chemical which, in contact with water, may generate heat or produce a non-toxic, non-flammable or non-corrosive gas
0	Any chemical which, in contact with water, would not undergo a reaction to justify a value of 1, 2 or 3

³ Products that are corrosive to skin are also deemed to be corrosive by inhalation.

21.7.7 Air reactive substances

21.7.7.1 Air reactive substances are products that react with air to cause a potentially hazardous situation, e.g. the formation of peroxides that may cause an explosive reaction.

21.7.8 Electrical apparatus – Temperature class

(for products which either have a flashpoint of $\leq 60^{\circ}\text{C}$ or are heated to within 15°C of their flashpoint)

21.7.8.1 The temperature class is defined by the International Electrotechnical Commission (IEC) as:

"The highest temperature attained under practical conditions of operation within the rating of the apparatus (and recognized overloads, if any, associated therewith) by any part of any surface, the exposure of which to an explosive atmosphere may involve a risk."

21.7.8.2 The temperature class of the electrical apparatus is assigned by selecting the Maximum Surface Temperature which is closest to, but less than, the product's auto-ignition temperature (see 21.4.9.1.1).

21.7.9 Electrical apparatus – Apparatus group

(for products with a flashpoint of $\leq 60^{\circ}\text{C}$)

21.7.9.1 This refers to intrinsically safe and associated electrical apparatus for explosive gas atmospheres which the IEC divide into the following groups:

Group I: for mines susceptible to firedamp (not used by IMO); and

Group II: for applications in other industries – further sub-divided according to its Maximum Experimental Safe Gap (MESG) and/or the Minimum Igniting Current (MIC) of the gas/vapour into groups IIA, IIB and IIC.

21.7.9.2 This property cannot be determined from other data associated with the product; it has to be either measured or assigned by assimilation with related products in a homologous series.

21.7.10 Special carriage control conditions

21.7.10.1 Special carriage control conditions refer to specific measures that need to be taken in order to prevent a hazardous reaction. They include:

- .1 *Inhibition*: the addition of a compound (usually organic) that retards or stops an undesired chemical reaction such as corrosion, oxidation or polymerization;
- .2 *Stabilization*: the addition of a substance (stabilizer) that tends to keep a compound, mixture or solution from changing its form or chemical nature. Such stabilizers may retard a reaction rate, preserve a chemical equilibrium, act as antioxidants, keep pigments and other components in emulsion form or prevent the particles in colloidal suspension from precipitating;
- .3 *Inertion*: the addition of a gas (usually nitrogen) in the ullage space of a tank that prevents the formation of a flammable cargo/air mixture;

- .4 *Temperature control*: the maintenance of a specific temperature range for the cargo in order to prevent a hazardous reaction or to keep the viscosity low enough to allow the product to be pumped; and
- .5 *Padding and venting*: only applies to specific products identified on a case by case basis.

21.7.11 Flammable cargoes

21.7.11.1 A cargo is defined as flammable according to the following criteria:

IBC Code descriptor	Flashpoint (degrees Centigrade)
Highly flammable	< 23
Flammable	≤ 60 but ≥ 23

21.7.11.2 It should be noted that flashpoints of mixtures and aqueous solutions need to be measured unless all of the components are non-flammable.

21.7.11.3 It should be noted that the carriage of bulk liquid cargoes that have a flashpoint of ≤ 60°C are subject to other SOLAS regulations.

21.7.12 Application of the SVC/LC₅₀ ratio method

21.7.12.1 If the vapour pressure and the molecular weight of a substance are known, an estimate of the maximum vapour concentration in a closed compartment (e.g. a tank) can be calculated. This is called the Saturated Vapour Concentration (SVC).

21.7.12.2 The hazard quotient SVC/LC₅₀⁴ is a substance specific value for the velocity of a vapour for achieving a hazardous concentration when emerging from a liquid source (e.g. leak, spillage or tank ventilation), and can be used in the assignment of specific carriage requirements related to inhalation toxicity.

21.7.12.3 If a solid substance is transported in an aqueous solution, the vapour pressure⁵ of this solid rather than that of water may be used in the calculation of the SVC/LC₅₀ ratio.

21.7.12.4 Application of the SVC/LC₅₀ ratio for assigning Ship Type and Tank type

21.7.12.4.1 For the assignment of Ship Type and tank type, as set out in paragraphs 21.4.5 and 21.4.6, the application of the SVC/LC₅₀ ratio method is optional. Should this method be used, the vapour pressure at 20°C shall be used when calculating the SVC/LC₅₀ ratio.

21.7.12.4.2 The SVC mg/L of a substance should be calculated as follows:

$$SVC(mg / L) = \left(\frac{\text{Vapour pressure @ } 20^{\circ} C (Pa)}{101300 (Pa)} \times 10^6 \right) \times \frac{M_w \left(\frac{g}{mol} \right)}{24(L/mol) \times 1000}$$

⁴ ATE values can be considered as equivalent to LC₅₀ values. See paragraph 21.7.1.

⁵ If this data is not available, an estimate may be used.

where M_w is the molecular weight of the substance.

21.7.12.4.3 The SVC/LC₅₀ ratio should be calculated as follows:

$$SVC/LC_{50} = \frac{SVC (mg/L)}{LC_{50} mg/L/4h}$$

21.7.12.5 Application of the SVC/LC₅₀ ratio for assigning carriage requirements

21.7.12.5.1 For the carriage requirements listed in 21.7.12.5.5, the application of the SVC/LC₅₀ ratio method is optional. If the SVC/LC₅₀ ratio method is used in the assignment of these carriage requirements, the vapour pressure at 40°C shall be used when calculating the SVC/LC₅₀ ratio. If the carriage temperature is higher than 40°C, then the SVC/LC₅₀ ratio should be calculated at that temperature.

21.7.12.5.2 The SVC (mg/l) of a substance should be calculated as follows:

$$SVC(mg/L) = \left(\frac{\text{Vapour pressure@ } 40^{\circ} C (Pa)}{101300(Pa)} \times 10^6 \right) \times \frac{M_w \left(\frac{g}{mol} \right)}{26 (L/mol) \times 1000}$$

where M_w is the molecular weight of the substance.

21.7.12.5.3 The SVC/LC₅₀ ratio should be calculated as follows:

$$SVC/LC_{50} = \frac{SVC (mg/L)}{LC_{50} mg/L/4h}$$

21.7.12.5.4 The SVC (mg/L) formula described in 21.7.12.5.2 is standardized for calculations at 40°C. When using the vapour pressure at higher temperatures in the calculations, the formula must be amended accordingly.

21.7.12.5.5 For the following carriage requirements, the SVC/LC₅₀ ratio method, calculated at 40°C or higher, may be used as an alternative to the acute inhalation toxicity criteria given in paragraphs 21.4 and 21.5:

.1 **Column g – Tank vents**

Assignment of controlled venting is not required based on the inhalation hazard only, if:

Inhalation LC₅₀/ATE ≤ 10 mg/L/4h (C3 = 2, 3, or 4) and SVC/LC₅₀ < 0.2

.2 **Column j – Gauging**

Closed gauging is not required based on the inhalation hazard only, if:

Inhalation LC₅₀/ATE ≤ 2 mg/L/4h (C3 = 3 or 4) and SVC/LC₅₀ < 0.2 but restricted gauging is required.

Restricted gauging is not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE > 2 - \leq 10$ mg/L/4h (C3 = 2) and $SVC/LC_{50} < 0.2$

.3 **Column k – Vapour detection**

Assignment of toxic vapour detection is not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE \leq 10$ mg/L/4h (C3 = 2, 3, or 4) and $SVC/LC_{50} < 0.2$

.4 **Column n – Emergency Equipment**

Inhalation $LC_{50}/ATE \leq 2$ mg/L/4h (C3 = 3 or 4) and $SVC/LC_{50} < 0.2$

.5 **Column o – Special requirements in chapter 15**

15.12.1 and 15.12.2 are not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE \leq 2$ mg/L/4h (C3 = 3 or 4) and $SVC/LC_{50} < 0.2$

15.12.3 and 15.12.4 are not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE > 2 - \leq 10$ mg/L/4h (C3 = 2) and $SVC/LC_{50} < 0.2$

15.17 is not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE \leq 0.5$ mg/L/4h (C3 = 4) and $SVC/LC_{50} < 0.2$

15.18 is not required based on the inhalation hazard only if:

Inhalation $LC_{50}/ATE \leq 0.5$ mg/L/4h (C3 = 4) and $SVC/LC_{50} < 0.2$

15.19 is not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE \leq 2$ mg/L/4h (C3 = 3 or 4) and $SVC/LC_{50} < 0.2$, but 15.19.6 applies

15.19.6 is not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE > 2 - \leq 10$ mg/L/4h (C3 = 2) and $SVC/LC_{50} < 0.2$ "

ANNEX 8

**RESOLUTION MSC.463(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT
OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK (BCH 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 resolution A.212(VII) by which the Assembly, at its seventh session, adopted the *Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk* (BCH Code), which provides safety requirements for chemical tankers supplementary to the provisions of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended,

RECALLING FURTHER resolution MEPC.20(22), by which the Marine Environment Protection Committee (MEPC) adopted the BCH Code to make it mandatory under MARPOL,

NOTING resolution MSC.29(61), by which, at its sixty-first session, it adopted the revised BCH Code,

NOTING ALSO resolutions MSC.460(101) and MEPC.318(74), respectively, by which it, and MEPC, adopted corresponding amendments to the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code),

CONSIDERING that it is highly desirable for the provisions of the BCH Code, which are mandatory under MARPOL and recommendatory from a safety standpoint, to remain identical when adopted by the Marine Environment Protection Committee and the Maritime Safety Committee,

HAVING CONSIDERED, amendments to the BCH Code approved by the Committee at its 100th session,

RECOGNIZING the need to bring the approved amendments to the BCH Code into force on the date on which corresponding amendment to the IBC Code enters into force,

1 ADOPTS amendments to the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, as amended, the text of which is set out in the annex to the present resolution;

2 DETERMINES that said amendments should become effective on 1 January 2021 upon acceptance and entry into force of the corresponding amendment to the IBC Code, adopted by resolution MSC.460(101).

ANNEX

AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK (BCH CODE)

Chapter IV

Special requirements

- 1 A new section 4.24 is inserted after existing section 4.23 as follows:

"4.24 Hydrogen sulphide (H₂S) detection equipment for bulk liquids

Hydrogen sulphide (H₂S) detection equipment shall be provided on board ships carrying bulk liquids prone to H₂S formation. It should be noted that scavengers and biocides, when used, may not be 100% effective in controlling the formation of H₂S. Toxic vapour detection instruments complying with the requirement in 3.11.1 of the Code for testing for H₂S may be used to satisfy this requirement."

Chapter V

Operational requirements

- 2 Paragraph 5.2.7 is replaced by the following:

"5.2.7 Where *column m* in the table of chapter VI of this Code refers to this paragraph, the cargo is subject to the prewash requirements in regulation 13.7.1.4 of Annex II of MARPOL."

Chapter VI

Summary of minimum requirements

IBC/BCH Codes cross-references to the requirements

- 3 The following cross-references are added under section Special requirements (*column o*):

"15.15 4.24
16.2.7 5.2.7"

ANNEX 9

**RESOLUTION MSC.464(101)
(adopted on 14 June 2019)**

AMENDMENTS TO THE CODE OF SAFETY FOR SPECIAL PURPOSE SHIPS (SPS 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 resolution A.534(13), by which the Assembly, at its thirteenth session, adopted the Code of Safety for Special Purpose Ships ("the SPS Code"),

RECALLING FURTHER that the Assembly authorized the Committee to amend the SPS Code as may be necessary,

NOTING that it adopted, at its ninety-ninth session, amendments to SOLAS chapter IV and the appendix (Certificates) by resolution MSC.436(99),

NOTING ALSO that, at its 100th session it adopted amendments to the SPS code by resolution MSC.453(100) and agreed that further amendments to the SPS Code were necessary to update the Record of Equipment for the SPS Safety Certificate,

HAVING CONSIDERED, at its 101st session, amendments to Special Purpose Ship Safety Certificate and its associated Record of Equipment,

1 ADOPTS amendments to the SPS Code, the text of which is set out in the annex to the present resolution;

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

ANNEX

AMENDMENTS TO THE CODE OF SAFETY FOR SPECIAL PURPOSE SHIPS (SPS CODE)

APPENDIX

FORM OF SAFETY CERTIFICATE FOR SPECIAL PURPOSE SHIPS

SPECIAL PURPOSE SHIP SAFETY CERTIFICATE

1 The existing paragraph 2.8 is replaced by the following:

"2.8 the ship was provided with lights, shapes and means of making sound signals and distress signals, in accordance with the provisions of the Code and the International Regulations for Preventing Collisions at Sea in force; and"

ANNEX

**RECORD OF EQUIPMENT FOR THE SPECIAL PURPOSE SHIP SAFETY CERTIFICATE
(FORM SPS)**

1 Particulars of ship

2 The existing entry " Number of persons ... which certified" is replaced by the following:

"Number of special personnel on board (including passengers) for which certified"

2 Details of life-saving appliances

3 In the table, existing entries in 2.2, 2.3, 2.4, 11.1, 11.2 are modified by the following:

"11.1 Number of radar transponders (SART)";

"11.2 AIS search and rescue transmitters (AIS-SART)"; and

"11.3 Number of two-way VHF radiotelephone apparatus"

3 Details of radio facilities

4 In the table, entry 6 is replaced by the following:

"6 Ship's search and rescue locating device

6.1 Radar search and rescue transponder (SART)

6.2 AIS search and rescue transmitters (AIS-SART)"

ANNEX 10

REVISED TIMETABLE AND SCHEDULE OF ACTIVITIES FOR THE IMPLEMENTATION OF THE GBS VERIFICATION SCHEME

Timeline	Action
May 2016	<ul style="list-style-type: none"> • MSC 96 takes final decisions on conformity with GBS for all rules submitted • MSC 96 circulates appropriate MSC circular to Member Governments • Secretariat maintains list of all rules verified to conform to Standards • MSC 96 agrees on the revised timetable and schedule of activities for the implementation of the GBS verification scheme • Secretary-General notifies the relevant Administrations/ROs of MSC's decision
1 July 2016	GBS SOLAS amendments (and Standards) become applicable
November 2016	MSC 97 reconsiders the verification process and funding mechanism, and initiates the consideration of amendments to GBS Verification Guidelines, taking into account the observations provided by the audit teams (MSC 96/5/2)
31 December 2016	Deadline for the receipt of new self-assessment and verification request for the rectification of non-conformities, as well as the status of addressing of observations
January 2017 to March 2017	Secretariat organizes verification audit for the rectification of non-conformities and finalizes report
March 2017	Secretariat prepares documentation on audit for the rectification of non-conformities and the status of addressing of observations
June 2017	<ul style="list-style-type: none"> • MSC 98 confirms that the non-conformities are rectified and circulates appropriate MSC circular to Member Governments • MSC 98 finalizes the amendments to part A on verification process to the GBS Verification Guidelines for future audits • MSC 98 takes decisions on the funding mechanism for future audit • Secretariat maintains list of all rules verified to conform to Standards
31 March 2018	Deadline for the receipt of rule change information and request for new initial verification audits, if any
April 2018 to September 2018	<ul style="list-style-type: none"> • Secretariat organizes audits of rule changes, ad hoc rule change audits and new initial verification audits as may be requested • Secretariat processes any appeal requests

Timeline	Action
October 2018	<ul style="list-style-type: none">• Secretariat prepares documentation on annual audits,¹ ad hoc rule change audits and new initial verification audits (submission to MSC 100 after the corresponding deadline)
December 2018	<ul style="list-style-type: none">• MSC 100 finalizes the amendments to part B on information/documentation requirements and evaluation criteria of the GBS Verification Guidelines, and adopts the Revised GBS Verification Guidelines• MSC 100 takes decisions on audits, including any new initial verification audits
31 March 2019	<ul style="list-style-type: none">• Deadline for the receipt of rule change information and request for new initial verification audits, if any
April 2019 to 30 November 2019	<ul style="list-style-type: none">• Secretariat organizes audits of rule changes, ad hoc rule change audits and new initial verification audits as may be requested• Secretariat processes any appeal requests
1 January 2020	<ul style="list-style-type: none">• The Revised GBS Verification Guidelines (resolution MSC.454(100)) take effect²
April 2022	<ul style="list-style-type: none">• First three-year cycle for maintenance audits, Secretariat organizes audits of rule changes

¹ This term is used based on the *Guidelines for the verification of conformity with Goal-based ship construction standards for bulk carriers and oil tankers* (resolution MSC.296(87)).

² Resolution MSC.454(100) will revoke resolution MSC.296(87) on 1 January 2020.

ANNEX 11

DRAFT ASSEMBLY RESOLUTION ON INTERIM SAFETY MEASURES FOR SHIPS NOT CERTIFIED UNDER THE SOLAS CONVENTION OPERATING IN POLAR WATERS

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, the prevention and control of marine pollution from ships and other matters concerning the effect of shipping on the marine environment,

RECALLING ALSO that the Maritime Safety Committee (MSC) at its ninety-fourth session, by resolution MSC.385(94), and the Marine Environment Protection Committee (MEPC), at its sixty-eighth session, by resolution MEPC.264(68), adopted the International Code for Ships Operating in Polar Waters (Polar Code), which entered into force on 1 January 2017,

RECOGNIZING that the Polar Code was 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,

NOTING that the Polar Code sets out a mandatory framework of safety standards for ships certified under the SOLAS Convention operating in polar waters to mitigate the additional risks to ships, their systems and operation, as well as their personnel,

RECOGNIZING ALSO that resolution MSC.385(94) invites SOLAS Contracting Governments to consider the voluntary application of the Polar Code, as far as practicable, to ships not covered by the Code and operating in polar waters,

RECOGNIZING FURTHER that accident and incident data submitted to the Organization since 2010 continues to demonstrate that ships not certified under the SOLAS Convention, especially fishing vessels and yachts, are operating with increasing frequency in polar waters and are vulnerable to the same risks as ships certified under the SOLAS Convention, including accidents or other incidents potentially causing loss of life and injury, as well as loss or damage to the vessels concerned,

NOTING the progress that has been made in applying the additional safety measures of the Polar Code to ships not certified under the SOLAS Convention,

BEING CONVINCED therefore of the desirability that ships not certified under the SOLAS Convention operating in polar waters, and those on board, achieve the same level of safety as ships certified under the SOLAS Convention,

CONSIDERING IT DESIRABLE that Member States encourage the application of safety measures set out in the Polar Code to ships not certified under the SOLAS Convention operating in polar waters,

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee at its 101st session:

1 URGES Member States, on a voluntary basis, to implement the safety measures of the Polar Code, as far as practicable, for ships not certified under the SOLAS Convention

operating in polar waters, including fishing vessels of 24 metres in length and above and pleasure yachts of 300 gross tonnage and above not engaged in trade;

2 URGES Member States to continue contributing to the work underway to improve the safety of ships not covered by the Polar Code.

ANNEX 12

**RESOLUTION MSC.465(101)
(adopted on 14 June 2019)**

**RECOMMENDED INTERIM MEASURES TO ENHANCE THE SAFETY OF SHIPS
RELATING TO THE USE OF OIL FUEL**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO resolution A.886(21), by which the Assembly resolved that the function of adopting performance standards and technical specifications, as well as amendments thereto, shall be performed by the Maritime Safety Committee and/or the Marine Environment Protection Committee, as appropriate, on behalf of the Organization,

RECALLING FURTHER resolution A.947(23), by which the Assembly acknowledged the need for increased focus on human-related activities in the safe operation of ships, and the need to achieve and maintain high standards of safety and environmental protection for the purpose of significantly reducing maritime casualties,

NOTING that, while SOLAS regulation II-2/4.2.1 contains provisions related specifically to the minimum flashpoint requirement for marine oil fuel, other aspects relating to fuel oil safety are specified in regulation 18 of MARPOL Annex VI,

NOTING ALSO that regulation 18.9.6 of MARPOL Annex VI provides that Parties to MARPOL Annex VI undertake to inform the Organization, for transmission to Parties and Member States of the Organization, of all cases where fuel oil suppliers have failed to meet the requirements specified in regulations 14 or 18 of the Annex,

NOTING FURTHER that regulation 18.9.4 of MARPOL Annex VI provides that Parties to MARPOL Annex VI undertake to take action as appropriate against fuel oil suppliers that have been found to deliver fuel oil that does not comply with that stated on the bunker delivery note (BDN) and that Appendix V of MARPOL Annex VI contains the minimum mandatory information to be included in the BDN,

MINDFUL that flashpoint is not part of the minimum mandatory information to be included in the BDN,

MINDFUL ALSO that SOLAS regulation VI/5-1 requires that ships are provided with a material safety data sheet (MSDS) prior to the bunkering of oil fuel, where the flashpoint of the oil fuel should be reported (resolution MSC.286(86)),

RECALLING MSC-MEPC.5/Circ.15 on *Delivery of compliant fuel oil by suppliers*, approved by the Marine Environment Protection Committee, at its seventy-fourth session, and the Maritime Safety Committee, at its 101st session,

RECOGNIZING the overall objectives of enhancing the safety of ships relating to use of oil fuel and ensuring that only safe and compliant oil fuel is delivered to ships,

RECOGNIZING ALSO the need to further consider oil fuel safety issues, not limited to the flashpoint, and the need to enhance the Global Integrated Shipping Information System (GISIS) to facilitate reporting of oil fuel safety issues,

HAVING CONSIDERED interim measures to enhance the safety of ships relating to the use of oil fuel at its 101st session,

RECOMMENDS SOLAS Contracting Governments to:

1 INFORM the Organization, for transmission to Parties and Member States of the Organization, of all confirmed cases where oil fuel suppliers delivered oil fuel failing to meet the requirements specified in SOLAS regulation II-2/4.2.1, taking into account regulation 18.9.6 of MARPOL Annex VI;

2 TAKE ACTION as appropriate against oil fuel suppliers in confirmed cases of deliveries of oil fuel that does not comply with the requirements specified in SOLAS regulation II-2/4.2.1, taking into account regulation 18.9.4 of MARPOL Annex VI;

3 ENCOURAGE the widest possible application of the latest edition of relevant industry standards* and guidance to enhance the safety of ships related to supply and use of oil fuel;

4 INFORM the Organization, for transmission to Parties and Member States of the Organization, of confirmed cases where oil fuel suppliers had delivered fuel that jeopardized the safety of ships or personnel; or adversely affected the performance of the machinery.

* ISO 8217:2017 and any subsequent revision thereof, and ISO/PAS 23263 (currently under development).

ANNEX 13

**ACTION PLAN FOR MEASURES TO ENHANCE THE SAFETY OF SHIPS
RELATING TO THE USE OF OIL FUEL**

Timeline	Action
<p>MSC 102 (2020)</p>	<p>Further consideration of measures related to flashpoint:</p> <ul style="list-style-type: none"> - development of mandatory requirements regarding the reporting of confirmed cases where oil fuel suppliers have failed to meet the flashpoint requirements to the organization, taking into account that feedback should also be provided to the supplier; - development of mandatory requirements to ensure parties take action as appropriate against oil fuel suppliers in confirmed cases of deliveries of oil fuel that does not comply with the requirements specified in SOLAS regulation II-2/4.2.1, taking into account regulation 18.9.4 of MARPOL Annex VI; - development of mandatory requirements regarding the documentation of the flashpoint of the actual fuel batch when bunkering providing a statement that the oil fuel delivered complies with regulation SOLAS II-2/4.2.1; and - development of guidelines for ships to address situations where independent test results indicating that non-compliant oil fuel was delivered. <p>Collect information on possible measures related to oil fuel parameters other than flashpoint.</p>
<p>MSC 103 (2020)</p>	<p>Finalization of measures related to flashpoint;</p> <p>Further consideration of the development of provisions to enhance safety of ships related to oil fuel quality, taking into account the latest edition of industry standards (e.g. ISO 8217:2017, and ISO/PAS 23263 (currently under development));</p> <p>Further consideration of the development of provisions to enhance safety of ships related to the stability of oil fuel, taking into account the latest edition of industry standards (e.g. ISO 8217:2017, and ISO/PAS 23263 (currently under development)) and guidance;</p> <p>Further consideration of the development of provisions to enhance safety of ships related to the compatibility of oil fuel, taking into account the latest edition of industry standards (e.g. ISO 8217:2017, and ISO/PAS 23263 (currently under development)) and guidance, also taking into account that operational aspects have influence on this parameter;</p> <p>Further consideration of the development of provisions to enhance safety of ships related to the cold flow properties of oil fuel, taking into account the latest edition of industry standards (e.g. ISO 8217:2017, and ISO/PAS 23263 (currently under development)) and guidance;</p>

	<p>Consideration of possible measures to enhance safety of ships related to the acid number of oil fuel, taking into account the latest edition of industry standards (e.g. ISO 8217:2017, and ISO/PAS 23263 (currently under development)) and guidance;</p> <p>Further consideration of the development of provisions to enhance safety of ships related to the cat fines content in oil fuel, taking into account the latest edition of industry standards (e.g. ISO 8217:2017, and ISO/PAS 23263 (currently under development)) and guidance, also taking into account that operational aspects have influence on this parameter based on existing fuel treatment machinery available on board;</p> <p>Further consideration of the development of provisions to enhance safety of ships related to the use of low viscosity oil fuel, taking into account the latest edition of industry standards (e.g. ISO 8217:2017, and ISO/PAS 23263 (currently under development)) and guidance; and</p> <p>Consideration of possible measures to enhance safety of ships related to unusual components in oil fuel, taking into account the latest edition of industry standards (e.g. ISO 8217:2017, and ISO/PAS 23263 (currently under development)) and guidance.</p>
MSC 104 (2021)	Finalization of measures to enhance the safety of ships relating to the use of oil fuel.

ANNEX 14

DRAFT AMENDMENTS TO THE IGF CODE¹

PART A-1

SPECIFIC REQUIREMENTS FOR SHIPS USING NATURAL GAS AS FUEL

6 FUEL CONTAINMENT SYSTEM

6.7 Regulation for pressure relief system

1 Regulation 6.7.1.1 is amended to read as follows:

"All fuel storage tanks shall be provided with a pressure relief system appropriate to the design of the fuel containment system and the fuel being carried. Fuel storage hold spaces, interbarrier spaces ~~and tank connection spaces and tank cofferdams~~, which may be subject to pressures beyond their design capabilities, shall also be provided with a suitable pressure relief system. Pressure control systems specified in 6.9 shall be independent of the pressure relief systems."

11 FIRE SAFETY

2 A new regulation 11.8 is added after existing regulation 11.7 as follows:

11.8 Regulation for fuel preparation room fire-extinguishing systems

Fuel preparation rooms containing pumps, compressors or other potential ignition sources shall be provided with a fixed fire-extinguishing system complying with the provisions of SOLAS II-2/10.4.1.1 and taking into account the necessary concentrations/application rate required for extinguishing gas fires."

PART B-1

16 MANUFACTURE, WORKMANSHIP AND TESTING

16.3 Welding of metallic materials and non-destructive testing for the fuel containment system

3 The existing text of paragraph 16.3.3.5.1 is amended to read as follows:

"16.3.3.5 Each test shall satisfy the following requirements:

- .1 tensile tests: cross-weld tensile strength is not to be less than the specified minimum tensile strength for the appropriate parent materials. For ~~materials such as~~ aluminium alloys, reference shall be made to 6.4.12.1.1.3 with regard to the regulations for weld metal strength of under-matched welds (where the weld metal has a lower tensile strength than the parent metal). In every case, the position of fracture shall be recorded for information;"

¹ Deleted text is shown in strike-through and grey shading and new text is shown in grey shading.

ANNEX 15

DRAFT AMENDMENTS TO THE IGC CODE*

- Chapter 6** **Materials of construction and quality control**
- 6.5** **Welding of metallic materials and non-destructive testing**
- 6.5.3** **Welding procedure tests for cargo tanks and process pressure vessels**

The existing text of paragraph 6.5.3.5.1 is amended to read as follows:

"6.5.3.5 Each test shall satisfy the following requirements:

- .1 tensile tests: cross-weld tensile strength shall not be less than the specified minimum tensile strength for the appropriate parent materials. For materials such as aluminium alloys, reference shall be made to 4.18.1.3 with regard to the requirements for weld metal strength of under-matched welds (where the weld metal has a lower tensile strength than the parent metal). In every case, the position of fracture shall be recorded for information;"

* Newly inserted text is shown in grey shading.

ANNEX 16

DRAFT GUIDANCE ON COMMUNICATION OF INFORMATION BY MEMBER STATES

1 Purpose

The purpose of this Guidance is to facilitate compliance by Member States with the communication of information requirements under various IMO instruments and to assist them in fulfilling their reporting obligations more effectively.

2 Application

This Guidance applies to all parties that are involved in the communication of information by Member States to all concerned. The concerned parties include, but are not limited to, IMO, other Member States and other related international organizations and institutions.

3 Communication of information requirements

3.1 Reporting requirements include the obligation of communication of information under various IMO instruments, as well as those under paragraph 9 of the IMO Instruments Implementation (III) Code (resolution A.1070(28)).

3.2 An inventory of reporting requirements under IMO instruments, including associated guidance and information, is available in the Reporting Requirements Dashboard module of the Global Integrated Shipping Information System (GISIS).

4 Objectives

The objectives of this Guidance are:

- .1 to promote the capacity-building of Member States in fulfilling their obligations for communication of information; and
- .2 to address difficulties encountered by Member States in fulfilling their obligations for communication of information and to take measures to further improve the effectiveness of the communication of information as required under the applicable IMO instruments.

5 Plan

5.1 Member States are recommended to establish a reporting system by identifying the obligations for communication of information under IMO instruments and assigning related responsibilities among relevant entities participating in the implementation and enforcement of the applicable IMO instruments.

5.2 A comprehensive reporting plan (CRP) is recommended to be developed, which includes, but is not limited to, the following:

- .1 coordinating department(s) for communication of information to IMO and other entities;
- .2 format of the reports;

- .3 frequency of reporting;
- .4 modality(ies) for reporting; and
- .5 periodical evaluation of the fulfilment of obligations.

6 Do

Who

6.1 Since information may have to be communicated to several entities, Member States should first identify relevant parties, and respective reporting requirements, and whether the communication is done through GISIS or not. While doing so, care should be taken to ensure consistency of information, and to avoid repetitive reporting and excessive use of resources.

6.2 Each Member State should designate a GISIS Administrator, in accordance with Circular Letter No.2892, who should be responsible for creating and maintaining all user accounts for the Member State.

How

6.3 The communication of information can be done in the following four ways:

- .1 through GISIS (E-notification)

Resolution A.1074(28) states that "*once Contracting Governments or Parties have notified through GISIS in respect of a reporting requirement to the Organization, the requirement for the Organization to circulate any such notification under the IMO instrument concerned would have been met.*" Therefore, GISIS is one of the important ways for Member States to fulfil their reporting obligations;

- .2 through a letter (written notification)

Each Member State could fulfil its reporting obligation by forwarding the required information through a letter, with a request to inform other Member States, as appropriate;

- .3 through XML (E-notification)

Member States may consult the Secretariat to consider a cooperation agreement on XML software development. In this case, Member States should bear the expenses of software development. The IMO Secretariat could provide standard data formats and data verification methods for each module's interface in a suitable manner or upon the request of a Member State; and

- .4 through other platform(s) for reporting (E-notification)

Member States should verify whether an information can be submitted through other platforms (such as Equasis, European Marine Casualty Information Platform (EMCIP), etc.).

What

6.4 Reporting requirements, format for communication (where available), reporting frequency, method of reporting and other related information are listed in the GISIS Reporting Requirements Dashboard module.

6.5 For communication of information requirements without specified instructions, the IMO Secretariat can be contacted.

When

6.6 While planning the communication of information, the reporting times and frequency should be given due attention and the following factors may be considered:

.1 for the information reported directly from Member States to IMO:

.1 when the reporting frequency is clearly mentioned in the IMO instruments, it should be followed; and

.2 when reporting frequency is not clearly stated in the IMO instruments:

.1 the texts of national legislation should be communicated after promulgation of each legislation or, alternatively, uploaded onto relevant web-pages of the Member State, with a link provided to IMO;

.2 for information such as the change of contact points or the outcomes of hook evaluation, the communication should be made through GISIS as and when the changes take place; and

.3 all other information should be reported annually; and

.2 for the information to be communicated by Member States under the IMO instruments to other international organizations or institutions, the reporting frequency should be implemented by Member States according to requirements of the organizations or the institutions.

7 Check

7.1 Each Member State should establish a mechanism to evaluate the effectiveness of its communication of information. If the performance in reporting does not reach the anticipated goals, the Member State should analyse root causes and take corrective measures, including seeking technical assistance from IMO, if necessary. The verification mechanism may include internal and external checks.

7.2 In the context of an internal check, Member States should carry out a self-evaluation to determine whether remedial measures need to be taken to enhance implementation capabilities. Internal checks may include, but are not limited to:

.1 verification whether there are new reporting requirements, and if so, to include them to the reporting system;

.2 self-evaluation of performance in reporting with reference to the GISIS Reporting Requirements Dashboard module;

- .3 identification of best practices and difficulties encountered in reporting; and
- .4 consideration of suggestions for improvements in the reporting.

7.3 Member States may ascertain the shortcomings and potential improvements in communication through external checks, which may include, but are not limited to:

- .1 verification of the level of the reporting performance as indicated in the GISIS Reporting Requirements Dashboard;
- .2 findings and/or best practices related to communication of information as reported from audits of Member States under IMSAS and listed in the Consolidated Audit Summary Reports (CASRs) as issued from time to time through circular letters (e.g. Circular Letter No.3772);
- .3 analysis of data published by relevant international industries about the status of communication by Member States; and
- .4 collection of results of the above-mentioned three external-checks to prepare an independent report on lessons learned. Such a report could be used by the department of a Member State responsible for reporting to improve the performance.

8 Act

8.1 Member States should develop a corrective action plan to correct any shortcomings and implement improvements in reporting.

8.2 The corrective action plan may include, but is not limited to, the following:

- .1 timeline for corrective action;
- .2 entities responsible for corrective action;
- .3 expected improvement in the performance; and
- .4 post-evaluation after the implementation of the corrective action.

ANNEX 17

PROVISIONAL AGENDA FOR THE FOURTH SESSION OF THE JOINT FAO/ILO/IMO AD HOC WORKING GROUP ON ILLEGAL, UNREPORTED AND UNREGULATED (IUU) FISHING AND RELATED MATTERS*

**to be held at the Torremolinos Congress Centre, Torremolinos, Spain
from 23 to 25 October 2019
(session commences at 2.30 p.m. on 23 October 2019)**

- 1 Opening
- 2 Arrangements for the fourth session of the Joint Working Group
- 3 Election of the Chair and Vice-Chair
- 4 Adoption of the agenda
- 5 Update by the Secretariats on the status of IUU fishing (responsibilities of flag States, port States, coastal States, market States, fishing personnel training/providing States, and States with fleet managing, food processing and food distribution companies)
- 6 Global legal framework:
 - .1 status of instruments:
 - .1 FAO (PSMA, Voluntary Guidelines for Flag State Performance (VGFSP) and FAO Voluntary Guidelines for the Marking of Fishing Gear and other relevant international fisheries instruments);
 - .2 ILO Work in Fishing Convention, 2007 (No.188); Declaration and Conventions concerning Fundamental Principles and Rights at Work; Protocol of 2014 to the Forced Labour Convention, 1930 (also relevant are the Work in Fishing Recommendation, 2007 (No.199) and ILO non-binding guidelines relevant to implementation of these binding standards); and
 - .3 IMO (Cape Town Agreement; STCW-F Convention; Code of Safety for Fishermen and Fishing Vessels, 2005; Voluntary Guidelines for the Design, Construction and Equipment of Small Fishing Vessels, 2005; Safety recommendations for decked fishing vessels of less than 12 metres in length and undecked fishing vessels; Implementation Guidelines on part B of the Code, the Voluntary Guidelines and the Safety Recommendations; MARPOL Annex V; and London Convention and Protocol (LC/LP)).
 - .2 ocean governance and urgency for bringing the Cape Town Agreement into force; and

* Subject to approval by C 122

- .3 road map for United Nations inter-agency cooperation for rapid worldwide ratification and implementation of the international agreements relating to the fisheries sector, and development of indicators for the 2030 SDGs (Inter-Agency and Expert Group on SDG Indicators).
- 7 Status of combating IUU fishing International, regional and national interagency coordination to combat IUU fishing, fisheries-related crimes and crimes associated with fisheries:
- .1 use of monitoring, control and surveillance tools;
 - .2 compliance information and intelligence exchange;
 - .3 regulation of transshipment practices at sea and in port;
 - .4 joint or coordinated inspection and enforcement schemes (integrated broader port State control);
 - .5 cooperation with other organizations (e.g. UNODC, Interpol);
 - .6 regional and global information exchange mechanisms; and
 - .7 national interagency coordination.
- 8 Cooperation and dialogue on labour issues and fisheries
- .1 relationship to the improvement of working conditions on board fishing vessels, including addressing violations of fundamental principles and rights at work (e.g. forced labour, child labour); and
 - .2 safety of observers at sea.
- 9 Cooperation and dialogue on environmental issues related to fisheries (e.g. marine debris)
- 10 Joint/Global capacity development programmes (including PSMA/IUU fishing, marine debris, ALDFG, port reception facilities and waste management, regulatory aspects of MARPOL Annex V, and the LC/LP):
- .1 development and implementation; and
 - .2 funding, including potential additional partnerships.
- 11 Status of development of the FAO's Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels and IMO ship identification number scheme (resolution A.1078(28))
- .1 allocation and use of ship identification numbers;
 - .2 reliability of data collected and verification processes;
 - .3 linkage with other relevant information systems and schemes; and
 - .4 progress in adopting the IMO ship number scheme through Regional Fisheries Management Organizations (RFMOs).

- 12 Agencies' review processes of, and follow-up actions to, the report and recommendations of JWG 4
- 13 Future collaboration between FAO, ILO and IMO and preparation of JWG 5
- 14 Any other business
- 15 Adoption of the report

ANNEX 18

**RESOLUTION MSC.466(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO THE PERFORMANCE STANDARDS FOR THE
PRESENTATION OF NAVIGATION-RELATED INFORMATION
ON SHIPBORNE NAVIGATIONAL DISPLAYS
(RESOLUTION MSC.191(79))**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO resolution A.886(21) by which the Assembly resolved that the function of adopting performance standards and technical specifications, as well as amendments thereto, shall be performed by the Maritime Safety Committee on behalf of the Organization,

RECOGNIZING that harmonization of the requirements for the presentation of navigation-related information on the bridge will ensure that all navigational displays adopt a consistent human-machine interface philosophy and implementation,

RECOGNIZING ALSO that, for safety reasons, the terms, abbreviations and symbols used for the display of navigation-related information on all shipborne navigation equipment and systems should be consistent,

HAVING CONSIDERED the recommendation on the performance standards for the presentation of navigation-related information on shipborne navigational displays made by the Sub-Committee on Navigation, Communications and Search and Rescue, at its sixth session,

1 ADOPTS amendments to the *Performance standards for the presentation of navigation-related information on shipborne navigational displays* (resolution MSC.191(79)), set out in the annex to the present resolution;

2 RECOMMENDS Governments to ensure that, from the presentation of navigation-related information point of view:

- .1 shipborne navigational displays on the bridge of a ship for radar equipment, electronic chart display and information system (ECDIS) and integrated navigation systems (INS) installed on or after 1 January 2024;
- .2 all other navigational displays on the bridge of a ship installed on or after 1 July 2025,

conform to performance standards not inferior to those specified in the annex to resolution MSC.191(79), as amended by the present resolution, taking into account the guidance provided in SN.1/Circ.243/Rev.2;

3 ALSO RECOMMENDS Governments to ensure that, from the presentation of navigation-related information point of view:

- .1 shipborne navigational displays on the bridge of a ship for radar equipment, ECDIS and INS installed on or after 1 July 2008 but before 1 January 2024;
- .2 all other navigational displays on the bridge of a ship installed on or after 1 July 2008 but before 1 July 2025,

conform to performance standards not inferior to those specified in the annex to resolution MSC.191(79), taking into account the guidance provided in SN.1/Circ.243/Rev.1.

ANNEX

**AMENDMENTS TO THE PERFORMANCE STANDARDS FOR THE
PRESENTATION OF NAVIGATION-RELATED INFORMATION ON
SHIPBORNE NAVIGATIONAL DISPLAYS (RESOLUTION MSC.191(79))**

**5 GENERAL REQUIREMENTS FOR THE PRESENTATION OF
INFORMATION**

5.1 Arrangement of information

- 1 The existing paragraph 5.1.1 is replaced with the following:

"5.1.1 The presentation of information should be consistent with respect to screen layout and arrangement of information. Data and control functions should be logically grouped. Appendix 3 of the annex to MSC.1/Circ.1609 on *Guidelines for the standardization of user interface design for navigation equipment* defines groups of related navigational information. Priority of information should be identified for each application, permanently displayed and presented to the user in a prominent manner by, for example, use of position, size and colour."

5.2 Readability

- 2 The existing paragraphs 5.2.3 and 5.2.4 are replaced with the following:

"5.2.3 Text should be presented using simple unambiguous language that is easy to understand. Navigation terms and abbreviations should be presented using the nomenclature defined in the *Guidelines for the presentation of navigation-related symbols, terms and abbreviations* (SN.1/Circ.243, as revised) and appendix 2 of the annex to MSC.1/Circ.1609 on *Guidelines for the standardization of user interface design for navigation equipment*.

5.2.4 When icons are used, their purpose should be intuitively recognized by appearance, placement and grouping as defined in appendix 2 of the annex to MSC.1/Circ.1609 on *Guidelines for the standardization of user interface design for navigation equipment*."

ANNEX 19

**RESOLUTION MSC.467(101)
(adopted on 14 June 2019)**

**GUIDANCE ON THE DEFINITION AND HARMONIZATION OF
THE FORMAT AND STRUCTURE OF MARITIME SERVICES
IN THE CONTEXT OF E-NAVIGATION**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO the *E-navigation Strategy Implementation Plan – update 1* (MSC.1/Circ.1595) approved by it, in particular, the need to harmonize the exchange of maritime-related information and data to enhance berth-to-berth navigation and related services for safety of navigation and security at sea and protection of the marine environment,

NOTING the available Maritime Services which provide and/or exchange maritime information and data with shipping related, but not limited to, vessel traffic service information, navigational assistance, traffic organization, maritime safety information, pilotage, tugs, vessel shore reporting, telemedical assistance, local port information, nautical charts and publications, ice navigation, meteorological, hydrographic and environmental information, search and rescue and other Maritime Services that may be developed and implemented in the future,

RECOGNIZING the responsibilities of the Organization and other international organizations, among others, the International Hydrographic Organization (IHO), the World Meteorological Organization (WMO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Maritime Pilots Association (IMPA) and the International Harbour Masters Association (IHMA), in defining specific services under their respective domains, including technical and product specifications, standards, guidelines and recommendations,

RECOGNIZING ALSO the need to harmonize the format and structure of Maritime Services and the maritime-related information and data provided by them in order to enhance the safety and efficiency of shipping,

RECOGNIZING FURTHER the need to work in collaboration with all involved international organizations in order to harmonize the exchange of maritime information and data provided through different Maritime Services,

NOTING the willingness of international organizations to act as domain coordinating bodies for Maritime Services under their respective domains, in collaboration with other relevant stakeholders,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Navigation, Communications and Search and Rescue, at its sixth session,

1 ADOPTS the *Guidance on the definition and harmonization of the format and structure of Maritime Services in the context of e-navigation*, set out in the annex to the present resolution;

2 AGREES to consolidate the descriptions of Maritime Services and to consider them together with all involved international organizations and interested Member States in order to harmonize the provision and exchange of maritime information and data;

3 INVITES Member States and international organizations acting as domain coordinating bodies to submit descriptions of Maritime Services to the Organization, taking into account the present guidance.

ANNEX

GUIDANCE ON THE DEFINITION AND HARMONIZATION OF THE FORMAT AND STRUCTURE OF MARITIME SERVICES IN THE CONTEXT OF E-NAVIGATION

1 Introduction

1.1 Modern shipping relies on a large amount of data and information to safely navigate from berth to berth. A very important set of information is promulgated as maritime safety information (MSI), as defined in resolution A.705(17), as amended, on *Promulgation of maritime safety information* and MSC.1/Circ.1310/Rev.1 on *Revised Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI)*. MSI includes navigational warnings, meteorological information and other urgent safety-related information. In addition to being safety-relevant, marine information services are used for optimizing voyage routes, which can include the best passage through ice, a security-risk area or avoiding the known path of marine mammals. Route optimization may also include taking advantage of favourable winds and currents and engine loads may be adjusted accordingly.

1.2 To assess the dynamic effects mentioned above, the ship's bridge team needs up-to-date information for the ship's planned operation. The information flow also comprises ship-to-shore communications, in particular prior to entering the coastal waters of a State, as ships are usually requested to provide details of their voyage, cargo, crew and passengers on board, advising on the next port of call and other information. Shore-to-ship, ship-to-ship, ship-to-shore and shore-to-shore information exchange enable new services and technologies to improve safety and efficiency of shipping. All those marine information services, referred to as Maritime Services in the e-navigation Strategy Implementation Plan (SIP) (MSC.1/Circ.1595, as may be revised), are being considered to be transitioned from conventional transmission methods to contemporary digital technologies.

1.3 The *Strategy for the development and implementation of e-navigation* (MSC 85/26/Add.1, annex 20) assigns the governance of the e-navigation concept to IMO as the organization responsible for establishing mandatory standards for enhancing the safety of life at sea, maritime security and protection of the marine environment, as well as having global remit.

2 Purpose

2.1 The purpose of this Guidance is to ensure that Maritime Services are implemented internationally in a standardized and harmonized format. To support this purpose, a template to describe Maritime Services is provided in appendix 1 and descriptions of Maritime Services are consolidated under MSC.1/Circ.1610, as may be revised, as appropriate.

2.2 The SIP requires that all Maritime Services be S-100 conformant as a baseline. The International Hydrographic Organization (IHO) S-100 framework standard specifies the method for data modelling and developing product specifications.

3 Application

This Guidance is recommended for Member States providing Maritime Services, international organizations acting as domain coordinating bodies and other service providers.

4 Terminology

For the purpose of the Guidance, unless expressly provided otherwise:

- .1 *Maritime Service* refers to the provision and exchange of maritime-related information and data in a harmonized, unified format.
- .2 *Technical Service* comprises a set of technical solutions including data model and communications means to provide a Maritime Service.
- .3 *S-100 IHO Universal Hydrographic Data Model* is a standard that makes provision for the development of data models and associated product specifications.

5 Three levels of responsibility

Overarching coordination level

5.1 IMO, in its role in leading e-navigation development, is responsible for guiding the establishment and harmonization of information and data transfers relating to Maritime Services. This includes providing leadership to harmonize Maritime Services through the provision of guidance.

Functional and operational level

5.2 International organizations and Member States propose the description of specific Maritime Services, using the template as provided in appendix 1, to the Organization and manage and maintain the agreed description through harmonized operational and technical specifications.

5.3 International organizations as domain coordinating bodies, such as IHO, WMO, IALA and others, provide guidelines to stakeholders and domain management. This should include descriptions of current and future Maritime Services and identification and specification of associated technical services.

5.4 When domain coordinating bodies for Maritime Services are unknown or may not exist, descriptions and specifications derived from other Maritime Services may assist with harmonizing technical specifications.

Service level

5.5 Member States and other service providers within Member States (e.g. port authorities, Hydrographic Offices, SAR services, etc.) are responsible for the provision of Maritime Services.

6 Flow chart for the development of a new Maritime Service

6.1 Figure 1 reflects a recommended process of steps to be followed for the development of a new Maritime Service.

6.2 The domain coordinating bodies and Member States should submit the descriptions of Maritime Services, using the template in appendix 1, to the Organization (1).

6.3 Descriptions of Maritime Services should contain references to relevant international standards, recommendations and guidelines which may contain criteria for the implementation of these Maritime Services, as well as identified user requirements for data and information (2).

6.4 The assigned IMO body should consider the submitted descriptions of Maritime Services (3) and decide, as appropriate, the steps needed to resolve any issues and agree to update the relevant IMO instrument (4).

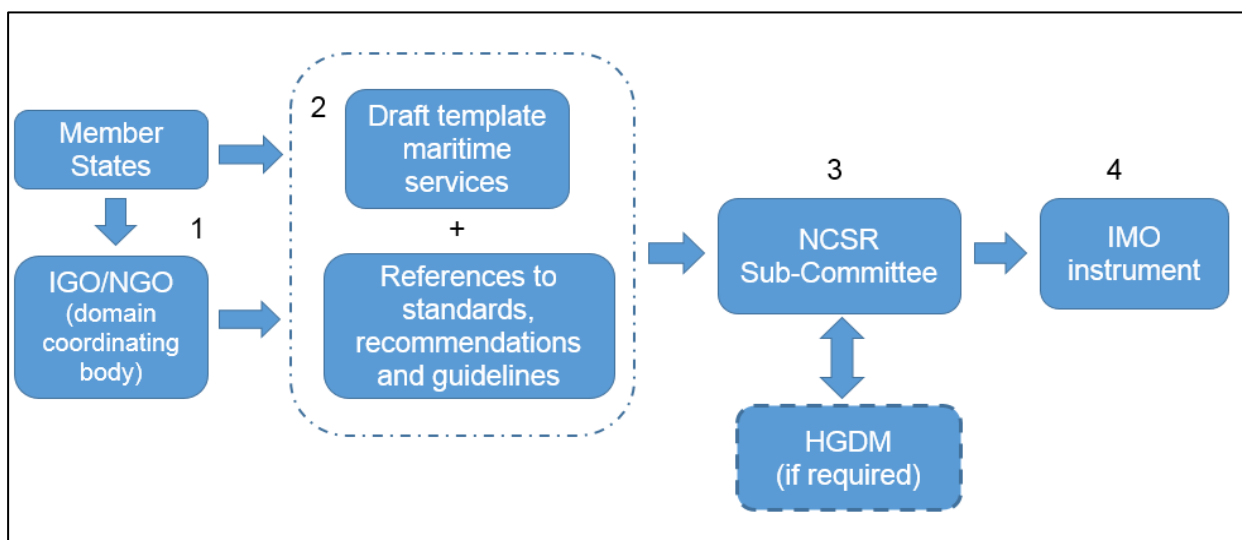


Figure 1: Recommended process for the development of Maritime Services

7 Relationship between the different levels of service descriptions

7.1 Figure 1 illustrates the interactions between service levels.

7.2 The description in the template reflects a common understanding and definition of a Maritime Service. This safeguards the harmonization of the information needed as decision support based on the user needs and operational requirements. The information could be presented on a graphical display on board in accordance with e-navigation solution 4 (see MSC.1/Circ.1595, as may be revised). The harmonized development of S-100 based specifications aims at ensuring userfriendliness for all relevant stakeholders in receiving and using the information in addition to enable the industry to develop systems based on the same data language.

7.3 Technical services are needed to coordinate a seamless combination between different product specifications. Information provided using S-100 based product specifications is brought together by technical services to deliver a Maritime Service.

7.4 Digital information regarding, for instance a restricted area, will combine several attributes from a set of S-100 products to provide the navigator with a complete information picture.

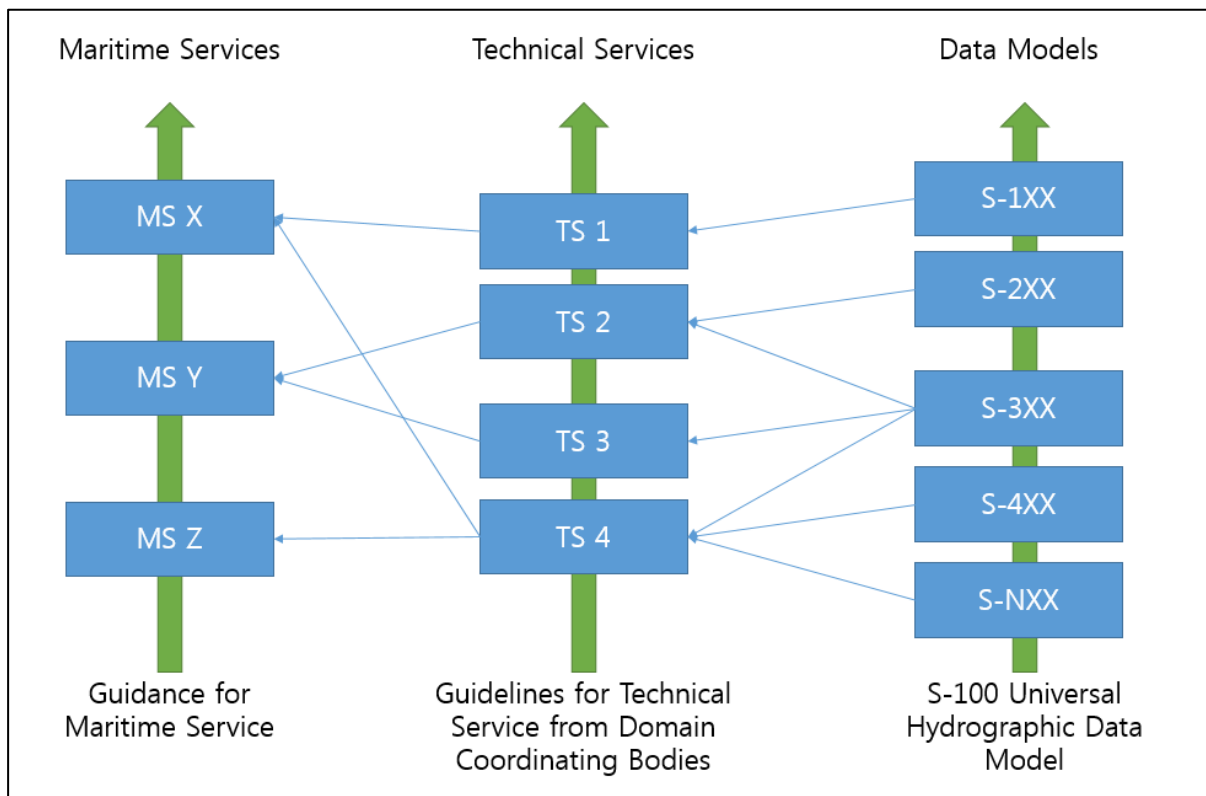


Figure 2: Interaction between different service levels

8 Description for the harmonized specification of technical services

8.1 Maritime Services are described by using a common template, as set out in appendix 1. This template includes references to relevant technical services.

8.2 The interoperability of technical services is ensured by a coordinated approach of the domain coordinating bodies to define needed communication means and data models.

8.3 Technical services should follow the appropriate guidance and product specification developed by the appropriate domain coordinating body and, where appropriate, be based on the S-100 framework with associated S-100 based product specifications.

8.4 Appendix 2 provides a description for the harmonized specification of technical services.

9 Relationship between Maritime Service and S-100 based product specification

9.1 Some Maritime Services and their associated technical services may rely on information from multiple S-100 based products. In cases where information is produced by different domain stakeholders, care should be taken to ensure compatibility at both the feature/attribute and data products levels.

9.2 The IHO GI Registry is the mechanism to ensure consistency in the way that different stakeholder communities model real-world concepts and define them as features/attribute combinations. To ensure complete service provision, stakeholders should consult the IHO GI Registry, in particular the Feature Data Dictionary and the test-bed registers.

APPENDIX 1

TEMPLATE FOR DRAFT DESCRIPTIONS OF MARITIME SERVICES IN THE CONTEXT OF E-NAVIGATION

This template should be used to describe Maritime Services. Descriptions of Maritime Services provided to IMO using this template will enable IMO to exercise leadership and overarching oversight and to provide a globally harmonized list of recognized Maritime Services.

To ensure a standardized approach in the development and implementation of Maritime Services, the content should include a general description of the operational services, and a reference to associated technical services that will enable the exchange of information in digital format:

1 Title of the Maritime Service (Maritime Service number)

2 Submitting organization

3 Coordinating body

4 Description of the Maritime Service

Stating the exact nature and scope of the Maritime Service in accordance, if applicable, with existing IMO instruments. Additional details might be added for clarity as required.

5 Purpose

What is the purpose of the Maritime Service?

What value does it bring to its intended stakeholders?

Is the Maritime Service compliant with regulatory requirements, if applicable?

In the case that the Maritime Service covers existing services, a description of the steps required to transition from analogue to digital information promulgation must be included.

6 Operational approach

How is the purpose of the Maritime Service achieved, taking into account existing guidance of the Organization and other international bodies?

7 User needs

Describe the user needs the Maritime Service addresses. In so doing make reference to any relevant IMO instruments and, where applicable, include one or more use cases.

8 Information to be provided

List the information elements the Maritime Service provides. The information elements will be the starting point for data modelling, as part of the technical services to access, promulgate or exchange the information.

9 Associated technical services

Using the table below list existing or potential technical services associated with this Maritime Service.

Name	ID (MRN) ¹	Description (incl. measure for quality assurance ²)	Standardization body

10 Relation to other Maritime Services

Describe any relationships between this and other Maritime Services such as interdependencies or areas of overlap. This section should clarify the nature of interdependencies, overlaps and provide recommendations for their resolution.

¹ Maritime Resource Name (MRN), see: <http://mmregistry.org>

² MSC.1/Circ.1512 on *Guideline on software quality assurance and human-centred design for e-navigation* or others, as appropriate.

APPENDIX 2

DESCRIPTION FOR THE HARMONIZED SPECIFICATION OF TECHNICAL SERVICES IN THE CONTEXT OF E-NAVIGATION

1 Maritime Services are implemented by a set of Technical Services. For harmonization, the Maritime Services are described by using a common template, as set out in appendix 1. This template includes references to technical services.

2 The specifications are divided into three parts:

- .1 a service specification;
- .2 a service design description; and
- .3 a service instance description.

3 The technical service specification covers the technical/digital service on a general level to implement the Maritime Services. The service specification is still technology-agnostic. The service specification should include the following information:

- .1 MRN ID for the service specification;
- .2 reference to the Maritime Services which make usage of the Technical Services;
- .3 the operational context of the service in (e.g. requirements, use cases);
- .4 the service interface descriptions (operations, parameters);
- .5 the information provided and used by the service (the service data model);
- .6 the dynamic behaviour of the service (sequence of operations, behaviour description); and
- .7 author of the service specification (organization, contact person).

4 A technical service specification will have one or several associated (technical) service design descriptions. Each technical design describes how the service is implemented using specific technologies. Service design descriptions should include the following information:

- .1 MRN ID for the service design description;
- .2 reference to the service specification;
- .3 description of the chosen technologies (data processing, communication technologies, infrastructure, networks, etc.);
- .4 detailed description of the used data structures and types (service physical data model, encoding);
- .5 mapping of the used data structures to the service specification's service data model; and
- .6 author of the technical design (organization, contact person).

5 A technical service design will have one or several associated technical service instance descriptions. Each instance description is a reference (endpoint) to a specific service provider for this specific service following the specific design description. The instance description also contains additional information such as coverage area for the service providers' instance of the service. A service instance includes the following information:

- .1 MRN ID for the service instance description;
- .2 reference to the service technical design (and thus, implicitly, to the service specification);
- .3 information about service provider;
- .4 access/information (e.g. URL, frequencies etc.); and
- .5 geographical coverage information.

6 The relationship between the different levels of service descriptions are shown in this example for a VTS service:

Maritime Service	Technical Service specification	Technical Service design description	Technical Service instance description
VTS service	Inter-VTS information exchange	Web service using REST	Provided by Sound VTS Provided by Helsinki VTS
		Web service using SOAP	Provided by Zandvliet VTS
		Other technical design for VTS information exchange	Another instance of that design provided by someone somewhere
	Route exchange ship to shore	Some technical design	Some instance
		Another design	Another instance
	Another technical VTS service
Another Maritime Service
...

7 In order to achieve a harmonized use of technical services, it is recommended to use guidelines developed by the domain coordinating bodies,³ if available.

³ E.g. IALA Guideline G1128.

ANNEX 20

**RESOLUTION MSC.468(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO PROMULGATION OF MARITIME SAFETY INFORMATION
(RESOLUTION A.705(17), 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 that, by resolution A.705(17), the Assembly adopted the *Recommendation on promulgation of Maritime Safety Information*,

RECALLING FURTHER that the Committee, at its eighty-fifth and ninety-second sessions, approved MSC.1/Circ.1287 and MSC.1/Circ.1287/Rev.1, respectively, on *Amendments to resolution A.705(17) – Promulgation of Maritime Safety Information*,

NOTING that the Assembly, at its seventeenth session, resolved that the procedures for the provision and promulgation of maritime safety information should be in accordance with resolution A.705(17) on *Promulgation of Maritime Safety Information*,

NOTING ALSO that the said Assembly resolution urged Member States to cooperate in providing maritime safety information in accordance with the structure established by the aforementioned Recommendation,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Navigation, Communications and Search and Rescue, at its sixth session,

1 ADOPTS the *Revised recommendation on promulgation of Maritime Safety Information*, set out in the annex to the present resolution, which revises in its entirety the existing text of the annex to resolution A.705(17), as amended by MSC.1/Circ.1287 and MSC.1/Circ.1287/Rev.1;

2 RESOLVES that the procedures for the provision and promulgation of maritime safety information should be in accordance with the *Revised recommendation on promulgation of Maritime Safety Information* set out in the annex to the present resolution;

3 DETERMINES that the *Revised recommendation on promulgation of Maritime Safety Information* should become effective on 1 January 2020.

ANNEX

**REVISED RECOMMENDATION ON PROMULGATION OF
MARITIME SAFETY INFORMATION**

1 INTRODUCTION

1.1 The purpose of this Recommendation is to set out the organization, standards and methods which should be used for the promulgation and reception of Maritime Safety Information (MSI).

1.2 The Maritime Safety Information service of the Global Maritime Distress and Safety System (GMDSS) is the internationally and nationally coordinated network of broadcasts containing information which is necessary for safe navigation, received on ships by equipment which automatically monitors the appropriate transmissions, displays information which is relevant to the ship and provides a print capability. This concept is illustrated in figure 1.

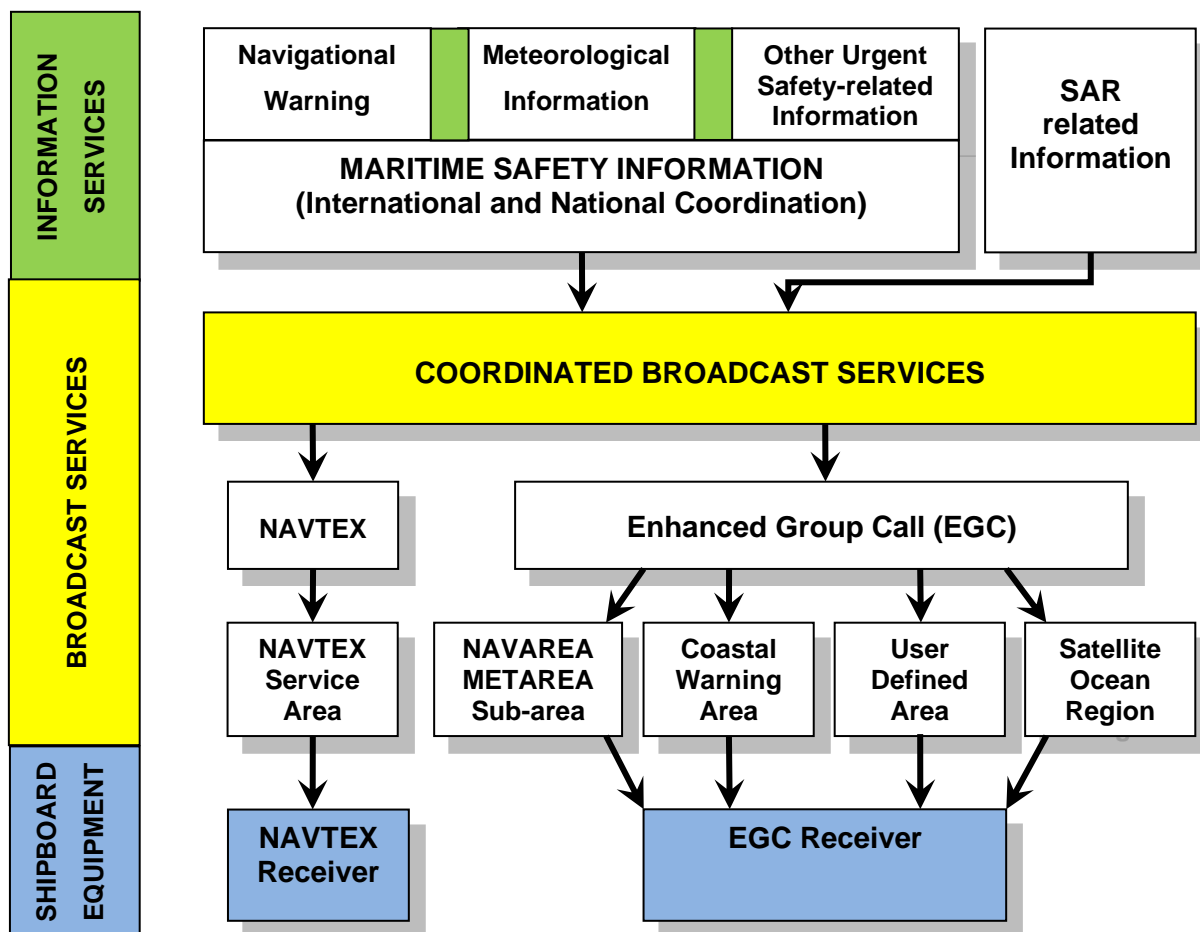


Figure 1 – The Maritime Safety Information service of the Global Maritime Distress and Safety System

1.3 MSI is of vital concern to all ships. It is therefore essential that common standards are applied to the collection, editing and dissemination of this information. Only by doing so will the mariners be assured of receiving the information they need, in a form which they understand, at the earliest possible time.

2 DEFINITIONS

For the purposes of this document, the following definitions apply:

- .1 *Coastal warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a National Coordinator. Broadcast should be made by the International NAVTEX service to defined NAVTEX service areas and/or by an International Enhanced Group Call service to the coastal warning area (in addition, Administrations may issue coastal warnings by other means).
- .2 *Coastal warning area* means a unique and precisely defined sea area within a NAVAREA/METAREA or Sub-area established by a coastal State for the purpose of coordinating the broadcast of coastal Maritime Safety Information through an International Enhanced Group Call service.
- .3 *Enhanced Group Call (EGC)* means the broadcast of coordinated Maritime Safety Information and Search and Rescue related information, to a defined geographical area using a recognized mobile satellite service.
- .4 *Global Maritime Distress and Safety System (GMDSS)* means a system that performs the functions set out in SOLAS regulation IV/4, as amended.
- .5 *HF NBDP* means High Frequency narrow-band direct-printing, using radio telegraphy as defined in Recommendation ITU-R M.688.
- .6 *In-force bulletin* means a list of serial numbers of those NAVAREA, Sub-area or coastal warnings in force issued and broadcast by the NAVAREA Coordinator, Sub-area Coordinator or National Coordinator.
- .7 *International Enhanced Group Call service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via Enhanced Group Call, using the English language.
- .8 *International NAVTEX service* means the coordinated broadcast and automatic reception on 518 kHz of Maritime Safety Information by means of narrow-band direct-printing telegraphy using the English language.¹
- .9 *Maritime Safety Information (MSI)*² means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.
- .10 *Maritime Safety Information service* means the internationally and nationally coordinated network of broadcasts containing information which is necessary for safe navigation.
- .11 *METAREA* means a geographical sea area³ established for the purpose of coordinating the broadcast of marine meteorological information. The term METAREA followed by a roman numeral may be used to identify a particular

¹ As set out in the IMO NAVTEX Manual.

² As defined in SOLAS regulation IV/2.

- sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .12 *Meteorological information* means the marine meteorological warning and forecast information in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .13 *National NAVTEX service* means the broadcast and automatic reception of Maritime Safety Information by means of narrow-band direct-printing telegraphy using frequencies other than 518 kHz and languages as decided by the Administration concerned.
- .14 *National Enhanced Group Call service* means the broadcast and automatic reception of Maritime Safety Information via the EGC system, using languages as decided by the Administration concerned.
- .15 *NAVAREA* means a geographical sea area³ established for the purpose of coordinating the broadcast of navigational warnings. The term NAVAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .16 *Navigational warning* means a message containing urgent information relevant to safe navigation broadcast to ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .17 *NAVTEX* means the system for the broadcast and automatic reception of Maritime Safety Information by means of narrow-band direct-printing telegraphy.
- .18 *NAVTEX coverage area* means an area defined by an arc of a circle having a radius from the transmitter calculated according to the method and criteria given in resolution A.801(19), as amended.
- .19 *NAVTEX service area* means a unique and precisely defined sea area, wholly contained within the NAVTEX coverage area, for which Maritime Safety Information is provided from a particular NAVTEX transmitter. It is normally defined by a line that takes full account of local propagation conditions and the character and volume of information and maritime traffic patterns in the region, as given in resolution A.801(19), as amended.
- .20 *Other urgent safety-related information* means Maritime Safety Information broadcast to ships that is not defined as a navigational warning or meteorological information. This may include, but is not limited to, significant malfunctions or changes to maritime communications systems, and new or amended mandatory ship reporting systems or maritime regulations affecting ships at sea.
- .21 *Recognized mobile satellite service* means any service which operates through a satellite system and is recognized by IMO for use in the GMDSS.

³ Which may include inland seas, lakes and waterways navigable by seagoing ships.

- .22 *Search and Rescue (SAR) related information* means distress alert relays and other urgent search and rescue related information broadcast to ships.
- .23 *Sub-area* means a subdivision of a NAVAREA/METAREA in which a number of countries have established a coordinated system for the promulgation of Maritime Safety Information. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .24 *User defined area* means a temporary geographic area, either circular or rectangular, to which Maritime Safety Information or Search and Rescue-related information is addressed.
- .25 *World-Wide Met-Ocean Information and Warning Service (WWMIWS)*⁴ means the internationally coordinated service for the promulgation of meteorological warnings and forecasts.
- .26 *World-Wide Navigational Warning Service (WWNWS)*⁵ means the internationally and nationally coordinated service for the promulgation of navigational warnings.
- .27 In the operating procedures, *coordination* means that the allocation of the time for data broadcast is centralized, the format and criteria of data transmissions are compliant as described in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and that all services are managed as set out in resolutions A.705(17), as amended, A.706(17), as amended, and A.1051(27), as amended.

3 BROADCAST METHODS

3.1 The two principal methods used for broadcasting MSI in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended (the 1974 SOLAS Convention), in the areas covered by these methods, are as follows:

- .1 NAVTEX: broadcasts to coastal waters; and
- .2 Enhanced Group Call: broadcasts to the geographical sea areas covered by a recognized mobile satellite service.

3.2 Information should be provided for unique and precisely defined sea areas, each being served only by the most appropriate of the above methods. Although there will be some duplication to allow a ship to change from one method to another, the majority of MSI will be broadcast either on NAVTEX or by EGC.

3.3 NAVTEX broadcasts should be made in accordance with the standards and procedures set out in the NAVTEX Manual.

3.4 EGC broadcasts should be made in accordance with the standards and procedures set out in the IMO manuals of the recognized mobile satellite service providers.

⁴ As set out in resolution A.1051(27), as amended.

⁵ As set out in resolution A.706(17), as amended.

3.5 HF NBDP may be used to promulgate MSI in areas outside EGC and NAVTEX coverage (SOLAS regulation IV/7.1.5).

3.6 In addition, Administrations may also provide MSI by other means.

3.7 In the event of failure of normal transmission facilities, an alternative means of transmission should be utilized. A NAVAREA/METAREA warning and a coastal warning, if possible, should be issued detailing the failure, its duration and, if known, the alternative route for the dissemination of MSI.

4 SHIPBOARD EQUIPMENT

4.1 Ships are required to be capable of receiving MSI broadcasts for the area in which they operate in accordance with the provisions of the 1974 SOLAS Convention.

4.2 The NAVTEX receiver should operate in accordance with the technical specifications set out in Recommendation ITU-R M.540. Resolution MSC.148(77) recommends Governments to ensure that NAVTEX receiver equipment, if installed on or after 1 July 2005, conforms to performance standards not inferior to those specified in resolution MSC.148(77), and if installed before 1 July 2005, conforms to performance standards not inferior to those specified in the annex to resolution A.525(13).

4.3 Performance standards for EGC equipment are provided in resolution MSC.306(87), as amended by resolution MSC.431(98), for equipment installed on or after 1 July 2019; resolution MSC.306(87) for equipment installed on or after 1 July 2012 and before 1 July 2019; and resolution A.664(16) for equipment installed before 1 July 2012.

4.4 In sea area A4, outside of the coverage of NAVTEX, where MSI may be received using HF NBDP, the HF NBDP receiver should operate in accordance with the technical specifications set out in Recommendation ITU-R M.688 and should meet the performance standards adopted by the Organization by resolution A.700(17), as amended.

5 PROVISION OF INFORMATION

5.1 Navigational warnings should be provided in accordance with the standards, organization and procedures of WWNWS under the functional guidance of the International Hydrographic Organization (IHO) through its World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC).

5.2 Meteorological information should be provided in accordance with the World Meteorological Organization (WMO) technical regulations, recommendations, and procedures defined for the World-Wide Met-Ocean Information and Warning Service (WWMIWS) through the World-Wide Met-Ocean Information and Warning Service Committee (WWMIWS-C) of the Joint WMO-IOC⁶ Technical Commission for Oceanography and Marine Meteorology (JCOMM).

5.3 Other urgent safety-related information should be provided by the relevant national or international authority responsible for managing the system or scheme.

5.4 SAR related information should be provided by the various authorities responsible for coordinating maritime search and rescue operations in accordance with the standards and procedures established by the Organization.

⁶ IOC is the Intergovernmental Oceanographic Commission of UNESCO.

5.5 Relevant national or international authorities should take into account the need for contingency planning.

6 COORDINATION PROCEDURES

6.1 In order to make the best use of automated reception facilities, and to ensure that the mariner receives at least the minimum information necessary for safe navigation, careful coordination is required.

6.2 In general, this requirement for coordination will be met by the standard operational procedures of IMO, IHO and WMO. Coordination issues should be referred, in the first instance, to the most appropriate parent body.

6.3 Administrations responsible for MSI providers should provide details of their services to IMO, which will maintain and publish this as part of the GMDSS Master Plan.

6.4 The coordination of changes to operational NAVTEX services and of the establishment of new stations is undertaken by the IMO NAVTEX Coordinating Panel on behalf of the Maritime Safety Committee.

6.5 The coordination of changes to operational EGC services and of the authorization and registration of information providers is undertaken by the IMO Enhanced Group Call Coordinating Panel on behalf of the Maritime Safety Committee.

6.6 MSI providers should arrange the content and means of their broadcast transmissions to suit specific service areas.⁷ The designation of service areas is an important part of the coordination process since it is intended that a ship should be able to obtain all the information relevant to a given area from a single source. The Maritime Safety Committee approves NAVAREAs/METAREAs and service areas for the International NAVTEX and EGC services as advised by IHO and WMO.

7 EGC SERVICE AVAILABILITY

7.1 The EGC system(s) of recognized mobile satellite service providers should provide continuous availability for broadcasting MSI and SAR related information in accordance with the relevant provisions of resolution A.1001(25).

7.2 Cases of difficulty affecting the broadcast of MSI and SAR related information through the EGC system(s) of a recognized mobile satellite service provider in ways that limit the ability of information providers to monitor the EGC broadcasts that they originate, or the ability of ships to receive EGC broadcasts intended for reception throughout their intended voyages, should be brought to the attention of IMSO as and when necessary for the purpose of discharging IMSO's technical oversight responsibilities in respect of the recognized satellite service provider(s) involved.

8 PROCEDURE FOR AMENDING THE MARITIME SAFETY INFORMATION SERVICE

8.1 Proposals for amendment or enhancement of the MSI service should be submitted for evaluation by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR). Amendments should only be adopted after consideration and approval by the NCSR Sub-Committee.

⁷ Coordination of HF NBDP broadcasts in the Arctic should be undertaken by relevant MSI service providers.

8.2 Amendments to the service should be adopted at intervals as determined by the Maritime Safety Committee. Amendments adopted by the Maritime Safety Committee will be notified to all concerned and will come into force on 1 January of the following year, or at another date as decided by the Committee.

8.3 The agreement of IHO, WMO, IMSO and ITU, as appropriate, and the active participation of other bodies should be sought, according to the nature of the proposed amendments.

ANNEX 21

**RESOLUTION MSC.469(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO WORLD-WIDE NAVIGATIONAL WARNING SERVICE
(RESOLUTION A.706(17), 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 that, by resolution A.706(17), the Assembly adopted the IMO/IHO *World-Wide Navigational Warning Service – Guidance Document*,

RECALLING FURTHER that the Committee, at its eighty-fifth and ninety-second sessions, approved MSC.1/Circ.1288 and MSC.1/Circ.1288/Rev.1, respectively, on *Amendments to resolution A.706(17) – World-Wide Navigational Warning Service*,

NOTING that the Assembly, at its seventeenth session, recommended that Member States implement the world-wide navigational warning service and authorized the Committee to amend the world-wide navigational warning service, as might be necessary,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Navigation, Communications and Search and Rescue, at its sixth session,

1 ADOPTS the *Revised IMO/IHO World-Wide Navigational Warning Service – Guidance Document*, set out in the annex to the present resolution, which revises in its entirety the existing text of annex 1, annex 2 and the appendix to resolution A.706(17), as amended by MSC.1/Circ.1288 and MSC.1/Circ.1288/Rev.1;

2 RECOMMENDS that Member States continue implementing the World-Wide Navigational Warning Service, taking into account the Revised Guidance Document set out in the annex to the present resolution;

3 DETERMINES that the *Revised IMO/IHO World-Wide Navigational Warning Service – Guidance Document* should become effective on 1 January 2020.

ANNEX

REVISED IMO/IHO WORLD-WIDE NAVIGATIONAL WARNING SERVICE GUIDANCE

1 INTRODUCTION

1.1 The World-Wide Navigational Warning Service (WWNWS) is the internationally and nationally coordinated service for the promulgation of navigational warnings.

1.2 The purpose of this Guidance is to provide specific guidance for the promulgation of internationally coordinated NAVAREA and coastal warnings. Its guidance does not apply to purely national warning services which supplement these internationally coordinated services.

1.3 The original resolution of the tenth International Hydrographic Conference in 1972 recommended the formation of an ad hoc joint IMO/IHO Commission to study the "establishment of a coordinated, efficient global radio navigational warning service". Subsequently, this became a purely IHO commission known as the Commission on Promulgation of Radio Navigational Warnings, which in January 2009 became the IHO World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC) but nevertheless consults continuously with IMO. In its report to the eleventh International Hydrographic Conference in 1977, the Commission submitted the Draft Plan for the Establishment of a World-Wide Navigational Warning System, also referred to as Plan for the Establishment of a coordinated Radio Navigational Warning Service. The title World-Wide Navigational Warning Service or WWNWS used for this revised edition of the document reflects the evolution of the system from a proposed action to an effective and fully operational coordinated service. This revised edition reflects the evolution of the WWNWS since the advent of the Global Maritime Distress and Safety System (GMDSS), as adopted by the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea, 1974, on the Global Maritime Distress and Safety System in November 1988, effective on 1 February 1992.

1.4 Future amendments to this Guidance will be considered formally and approved by both IHO and IMO in accordance with the procedures set out in section 7. Proposed amendments should be evaluated by the IHO WWNWS-SC, which includes an ex-officio representative of the IMO Secretariat, prior to any extensive IHO or IMO consideration.

2 DEFINITIONS

For the purposes of the WWNWS, the following definitions apply:

- .1 *Coastal warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a National Coordinator. Broadcast should be made by the International NAVTEX service to defined NAVTEX service areas and/or by an International Enhanced Group Call service to the coastal warning area (in addition, Administrations may issue coastal warnings by other means).
- .2 *Coastal warning area* means a unique and precisely defined sea area within a NAVAREA/METAREA or Sub-area established by a coastal State for the purpose of coordinating the broadcast of coastal Maritime Safety Information through the Enhanced Group Call service.

- .3 *Enhanced Group Call (EGC)* means the broadcast of coordinated Maritime Safety Information and Search and Rescue related information, to a defined geographical area using a recognized mobile satellite service.
- .4 *Global Maritime Distress and Safety System (GMDSS)* means a system that performs the functions set out in SOLAS regulation IV/4, as amended.
- .5 *HF NBDP* means High Frequency narrow-band direct-printing, using radio telegraphy as defined in Recommendation ITU-R M.688.
- .6 *In-force bulletin* means a list of serial numbers of those NAVAREA, Sub-area or coastal warnings in force issued and broadcast by the NAVAREA Coordinator, Sub-area Coordinator or National Coordinator.
- .7 *International Iridium service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via Enhanced Group Call, using the English language.
- .8 *International Enhanced Group Call service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via Enhanced Group Call, using the English language.
- .9 *International NAVTEX service* means the coordinated broadcast and automatic reception on 518 kHz of Maritime Safety Information by means of narrow-band direct-printing telegraphy using the English language.¹
- .10 *International SafetyNET service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via Enhanced Group Call, using the English language.
- .11 *Local warning* means a navigational warning which covers inshore waters, often within the limits of jurisdiction of a harbour or port authority.
- .12 *Maritime Safety Information (MSI)*² means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.
- .13 *Maritime Safety Information service* means the internationally and nationally coordinated network of broadcasts containing information, which is necessary for safe navigation.
- .14 *METAREA* means a geographical sea area³ established for the purpose of coordinating the broadcast of marine meteorological information. The term METAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.

¹ As set out in the IMO NAVTEX Manual.

² As defined in regulation SOLAS regulation IV/2.

³ Which may include inland seas, lakes and waterways navigable by seagoing ships.

- .15 *National Coordinator* means the national authority charged with collating and issuing coastal warnings within a national area of responsibility.
- .16 *National NAVTEX service* means the broadcast and automatic reception of Maritime Safety Information by means of narrow-band direct-printing telegraphy using frequencies other than 518 kHz and languages as decided by the Administration concerned.
- .17 *National Enhanced Group Call service* means the broadcast and automatic reception of Maritime Safety Information via the EGC system, using languages as decided by the Administration concerned.
- .18 *NAVAREA* means a geographical sea area³ established for the purpose of coordinating the broadcast of navigational warnings. The term NAVAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .19 *NAVAREA Coordinator* means the authority charged with coordinating, collating and issuing NAVAREA warnings for a designated NAVAREA.
- .20 *NAVAREA warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a NAVAREA Coordinator.
- .21 *Navigational warning* means a message containing urgent information relevant to safe navigation broadcast to ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .22 *NAVTEX* means the system for the broadcast and automatic reception of Maritime Safety Information by means of narrow-band direct-printing telegraphy.
- .23 *NAVTEX Coordinator* means the authority charged with operating and managing one or more NAVTEX stations broadcasting Maritime Safety Information as part of the International NAVTEX service.
- .24 *NAVTEX coverage area* means an area defined by an arc of a circle having a radius from the transmitter calculated according to the method and criteria given in resolution A.801(19), as amended.
- .25 *NAVTEX service area* means a unique and precisely defined sea area, wholly contained within the NAVTEX coverage area, for which Maritime Safety Information is provided from a particular NAVTEX transmitter. It is normally defined by a line that takes full account of local propagation conditions and the character and volume of information and maritime traffic patterns in the region, as given in resolution A.801(19), as amended.
- .26 *Other urgent safety-related information* means Maritime Safety Information broadcast to ships that is not defined as a navigational warning or meteorological information. This may include, but is not limited to, significant malfunctions or changes to maritime communications systems, and new or amended mandatory ship reporting systems or maritime regulations affecting ships at sea.

- .27 *Recognized mobile satellite service* means any service which operates through a satellite system and is recognized by IMO, for use in the GMDSS.
- .28 *Sub-area* means a subdivision of a NAVAREA/METAREA in which a number of countries have established a coordinated system for the promulgation of navigational warnings. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .29 *Sub-area Coordinator* means the authority charged with coordinating, collating and issuing Sub-area warnings for a designated Sub-area.
- .30 *Sub-area warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a Sub-area Coordinator. Broadcast should be made by the International NAVTEX service to defined NAVTEX service areas or by the International Enhanced Group Call service (through the appropriate NAVAREA Coordinator).
- .31 *User defined area* means a temporary geographic area, either circular or rectangular, to which Maritime Safety Information or Search and Rescue related information is addressed.
- .32 In the operating procedures, *coordination* means that the allocation of the time for data broadcast is centralized, the format and criteria of data transmissions are compliant as described in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and that all services are managed as set out in resolutions A.705(17), as amended, A.706(17), as amended, and A.1051(27), as amended.

3 NAVIGATIONAL WARNING BROADCASTS

3.1 Methods

3.1.1 The two principal methods used for broadcasting navigational warnings as part of MSI in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended (1974 SOLAS Convention), in the areas covered by these methods, are as follows:

- .1 NAVTEX: broadcasts to coastal waters; and
- .2 Enhanced Group Call: broadcasts to the geographical sea areas covered by a recognized mobile satellite service.

3.1.2 Information should be provided for unique and precisely defined sea areas, each being served only by the most appropriate of the above methods. Although there will be some duplication to allow a ship to change from one method to another, the majority of warnings will be broadcast either on NAVTEX or by EGC.

3.1.3 NAVTEX broadcasts should be made in accordance with the standards and procedures set out in the NAVTEX Manual.

3.1.4 EGC broadcasts should be made in accordance with the standards and procedures set out in the IMO manuals of the recognized mobile satellite service providers.

3.1.5 HF NBDP may be used to promulgate MSI in areas outside EGC and NAVTEX coverage (SOLAS regulation IV/7.1.5).

3.1.6 In addition, Administrations may also provide navigational warnings by other means.

3.1.7 In the event of failure of normal transmission facilities, an alternative means of transmission should be utilized. A NAVAREA/METAREA warning and a coastal warning, if possible, should be issued detailing the failure, its duration and, if known, the alternative route for the dissemination of MSI.

3.2 Scheduling

3.2.1 Automated methods (NAVTEX/Enhanced Group Call)

3.2.1.1 Navigational warnings should be broadcast as soon as possible or as dictated by the nature and timing of the event. Normally, the initial broadcast should be made as follows:

- .1 for NAVTEX, at the next scheduled broadcast, unless circumstances indicate the use of procedures for VITAL or IMPORTANT warnings; and
- .2 for EGC, within 30 minutes of receipt of original information, or at the next scheduled broadcast.

3.2.1.2 Navigational warnings should be repeated in scheduled broadcasts in accordance with the guidelines promulgated in the NAVTEX Manual and in the IMO manuals of the recognized mobile satellite service providers, as appropriate.

3.2.1.3 At least two scheduled daily broadcast times are necessary to provide adequate promulgation of NAVAREA warnings. When NAVAREAs extend across more than six time zones, more than two broadcasts should be considered to ensure that warnings can be received. When using EGC in lieu of NAVTEX for coastal warnings, Administrations may need to consider an increase in the number of scheduled daily broadcasts compared with the requirement for NAVAREA warnings.

3.2.2 Schedule changes

3.2.2.1 Broadcast times for NAVTEX are defined by the B1 transmitter identification character of the station, allocated by the IMO NAVTEX Coordinating Panel.

3.2.2.2 Times of scheduled broadcasts under the International EGC service are coordinated through the IMO Enhanced Group Call Coordinating Panel.

4 NAVIGATIONAL WARNINGS

4.1 General

4.1.1 There are four types of navigational warnings: NAVAREA warnings, Sub-area warnings, coastal warnings and local warnings. The WWNWS guidance and coordination are involved with only three of them:

- .1 NAVAREA warnings;
- .2 Sub-area warnings; and

.3 Coastal warnings.

4.1.2 Navigational warnings should remain in force until cancelled by the originating coordinator. Navigational warnings should be broadcast for as long as the information is valid; however, if they are readily available to mariners by other official means, for example in Notices to Mariners, then after a period of six weeks they may no longer be broadcast.

4.1.3 The minimum information in a navigational warning which a mariner requires is "hazard" and "position". It is usual, however, to include sufficient extra detail to allow some freedom of action in the vicinity of the hazard. This means that the message should give enough extra data for the mariner to be able to recognize the hazard and assess its effect upon their navigation.

4.1.4 If known, the duration of the event causing a navigational warning should be given in the text.

4.1.5 Some of the subjects for navigational warnings listed in paragraph 4.2.1.3 (e.g. drifting ice and tsunami warnings) may also be suitable for inclusion as METAREA warnings or forecasts. In this event, appropriate coordination between the relevant NAVAREA and METAREA Coordinator should occur.

4.2 The four types of navigational warnings

4.2.1 NAVAREA warnings

4.2.1.1 NAVAREA warnings are concerned with the information detailed below which oceangoing mariners require for their safe navigation. This includes, in particular, new navigational hazards and failures of important aids to navigation as well as information which may require changes to planned navigational routes.

4.2.1.2 Coastal warnings are broadcast by the International NAVTEX service, or by International EGC service when implemented in lieu of NAVTEX. They are not normally rebroadcast as NAVAREA warnings unless deemed of such significance that the mariner should be aware of them before entering a NAVTEX service area. The National Coordinator will evaluate the significance of the information for consideration as a NAVAREA warning while the NAVAREA Coordinator will make the final determination.

4.2.1.3 The following subjects are considered suitable for broadcast as NAVAREA warnings. This list is not exhaustive and should be regarded only as a guideline. Furthermore, it presupposes that sufficiently precise information about the item has not previously been disseminated in a Notice to Mariners:

- .1 casualties to lights, fog signals, buoys and other aids to navigation affecting main shipping lanes;
- .2 the presence of dangerous wrecks in or near main shipping lanes and, if relevant, their marking;
- .3 establishment of major new aids to navigation or significant changes to existing ones when such establishment or change, might be misleading to shipping;
- .4 the presence of large unwieldy tows in congested waters;

- .5 drifting hazards (including derelict ships, ice, mines, containers, other large items over 6 metres in length, etc.);
- .6 areas where Search and Rescue (SAR) and anti-pollution operations are being carried out (for avoidance of such areas);
- .7 the presence of newly discovered rocks, shoals, reefs and wrecks likely to constitute a danger to shipping, and, if relevant, their marking;
- .8 unexpected alteration or suspension of established routes;
- .9 cable or pipe-laying activities, the towing of large submerged objects for research or exploration purposes, the employment of manned or unmanned submersibles, or other underwater operations constituting potential dangers in or near shipping lanes;
- .10 the establishment of research or scientific instruments in or near shipping lanes;
- .11 the establishment of offshore structures in or near shipping lanes;
- .12 significant malfunctioning of radionavigation services and shore-based Maritime Safety Information radio or satellite services;
- .13 information concerning events which might affect the safety of shipping, sometimes over wide areas, e.g. naval exercises, missile firings, space missions, nuclear tests and ordnance dumping zones. It is important that where the degree of hazard is known, this information is included in the relevant warning. Whenever possible such warnings should be originated not less than five days in advance of the scheduled event and reference may be made to relevant national publications in the warning;
- .14 operating anomalies identified within Electronic Chart Display and Information System (ECDIS) including Electronic Navigational Chart (ENC) issues;
- .15 acts of piracy and armed robbery against ships;
- .16 tsunamis and other natural phenomena, such as abnormal changes to sea level;
- .17 World Health Organization (WHO) health advisory information; and
- .18 security-related requirements.⁴

4.2.2 Sub-area warnings

4.2.2.1 Sub-area warnings broadcast information which is necessary for safe navigation within a Sub-area. They will normally include all subjects listed in paragraph 4.2.1.3 above, but will usually affect only the Sub-area.

⁴ In accordance with the requirements of the International Ship and Port Facility Security Code.

4.2.3 Coastal warnings

4.2.3.1 Coastal warnings broadcast information which is necessary for safe navigation within areas seaward of the fairway buoy or pilot station, should not be restricted to main shipping lanes. Where the area is served by International NAVTEX, it should provide navigational warnings for the entire NAVTEX service area. Where the area is not served by International NAVTEX, it is necessary to include all warnings relevant to the coastal waters up to 250 miles from the coast in the International EGC service broadcast.

4.2.3.2 Coastal warnings should include at least the subjects listed in paragraph 4.2.1.3.

4.2.4 Local warnings

Local warnings broadcast information which cover inshore waters, often within the limits of jurisdiction of a harbour or port authority. They are broadcast by means other than NAVTEX or EGC, and supplement coastal warnings by giving detailed information within inshore waters.

5 NAVIGATIONAL WARNING REQUIREMENTS

5.1 Guidance

Operational guidance for handling and formatting navigational warnings is given in the Joint IMO/IHO/WMO Manual on Maritime Safety Information, the IMO NAVTEX Manual and the IMO manuals of the recognized mobile satellite service providers.

5.2 Numbering

5.2.1 Navigational warnings in each series should be consecutively numbered throughout the calendar year, commencing with 1/YY at 0000 UTC on 1 January.

5.2.2 Navigational warnings should be transmitted in reverse numerical order on scheduled broadcasts.

5.3 Language

5.3.1 All NAVAREA, Sub-area and coastal warnings should be broadcast only in English in the International NAVTEX and International EGC services.

5.3.2 In addition to the required broadcasts in English, NAVAREA, Sub-area and coastal warnings may be broadcast in a national language using National NAVTEX and National EGC services and/or other means.

5.3.3 Local warnings may be issued in the national language and/or in English.

5.4 "No warnings" message

When there are no navigational warnings to be disseminated at a scheduled broadcast time, a brief unnumbered message should be transmitted to identify the broadcast and advise the mariner that there is no navigational warning message traffic on hand.

6 COORDINATOR RESOURCES AND RESPONSIBILITIES

6.1 NAVAREA Coordinator resources

The NAVAREA Coordinator should have:

- .1 the expertise and information sources of a well-established national hydrographic service;
- .2 effective communications, e.g. telephone, email, facsimile and internet, with Sub-area and National Coordinators in the NAVAREA, with other NAVAREA Coordinators and with other data providers; and
- .3 access to broadcast systems for transmission to the navigable waters of the NAVAREA. As a minimum, this should include those described in paragraph 3.1.1. Reception should normally be possible at least 300 nautical miles beyond the limit of the NAVAREA.

6.2 NAVAREA Coordinator responsibilities

The NAVAREA Coordinator should:

- .1 endeavour to be informed of all events that could significantly affect the safety of navigation within the NAVAREA;
- .2 assess all information immediately upon receipt for relevance to navigation in the NAVAREA;
- .3 select information for broadcast in accordance with the guidance given in section 4.2.1 above;
- .4 draft NAVAREA warnings in accordance with the Joint IMO/IHO/WMO Manual on Maritime Safety Information;
- .5 direct and control the broadcast of NAVAREA warnings, in accordance with the provisions of the 1974 SOLAS Convention;
- .6 forward NAVAREA warnings and relevant associated information which may require wider promulgation directly to adjacent NAVAREA Coordinators and/or others as appropriate, using the quickest possible means;
- .7 ensure that NAVAREA warnings which remain in force for more than six weeks are made available immediately to NAVAREA Coordinators, other authorities and mariners in general, as appropriate;
- .8 ensure that information concerning all navigational warning subject areas listed in paragraph 4.2.1.3 that may not require a NAVAREA warning within their own NAVAREA is forwarded immediately to the appropriate National and NAVAREA Coordinators affected by the event;
- .9 broadcast in-force bulletins not less than once per week at a regular scheduled time;

- .10 promulgate the cancellation of NAVAREA warnings which are no longer valid;
- .11 act as the central point of contact on matters relating to navigational warnings within the NAVAREA;
- .12 promote and oversee the use of established international standards and practices in the promulgation of navigational warnings throughout the NAVAREA;
- .13 when notified by the authority designated to act on reports of piracy and armed robbery against ships, arrange for the broadcast of a suitable NAVAREA warning. Additionally, keep the national or regional piracy control centre informed of long-term broadcast action(s);
- .14 when notified by the appropriate authorities, arrange for the broadcast of suitable NAVAREA warnings to promulgate World Health Organization (WHO) health advisories, tsunami-related warnings and other information which is necessary for safe navigation;
- .15 monitor the broadcasts which they originate to ensure that the warnings have been correctly broadcast;
- .16 maintain records of source data relating to NAVAREA warnings in accordance with the requirement of the national Administration of the NAVAREA Coordinator;
- .17 coordinate preliminary discussions between neighbouring Member States, seeking to establish or amend NAVTEX services, and with other adjacent Administrations, prior to formal application;
- .18 contribute to the development of international standards and practices through attendance and participation in the IHO World-Wide Navigational Warning Service Sub-Committee meetings, and also participate in relevant IMO, IHO and WMO fora as appropriate; and
- .19 take into account the need for contingency planning.

6.3 Sub-area Coordinator resources

The Sub-area Coordinator should have, or have access to:

- .1 the expertise and information sources of a well-established national hydrographic service;
- .2 effective communications, e.g. telephone, email, facsimile and Internet, with National Coordinators in the Sub-area, with the NAVAREA Coordinator, and with other data providers; and
- .3 broadcast systems for transmission to the entire Sub-area.

6.4 Sub-area Coordinator responsibilities

The Sub-area Coordinator should:

- .1 endeavour to be informed of all events that could significantly affect the safety of navigation within the Sub-area;
- .2 assess all information immediately upon receipt for relevance to navigation in the Sub-area;
- .3 select information for broadcast in accordance with the guidance given in section 4.2.1 above;
- .4 draft Sub-area warnings in accordance with the Joint IMO/IHO/WMO Manual on Maritime Safety Information;
- .5 direct and control the broadcast of Sub-area warnings, in accordance with the provisions of the 1974 SOLAS Convention;
- .6 forward Sub-area warnings and relevant associated information which may require wider promulgation directly to their own NAVAREA Coordinator using the quickest possible means;
- .7 broadcast in-force bulletins not less than once per week at a regular scheduled time;
- .8 promulgate the cancellation of Sub-area warnings which are no longer valid;
- .9 act as the central point of contact on matters relating to navigational warnings within the Sub-area;
- .10 promote the use of established international standards and practices in the promulgation of navigational warnings within the Sub-area;
- .11 monitor the broadcasts which they originate to ensure that the warnings have been correctly broadcast;
- .12 maintain records of source data relating to Sub-area warnings in accordance with the requirement of the national Administration of the Sub-area Coordinator;
- .13 contribute to the development of international standards and practices through attendance and participation in the IHO World-Wide Navigational Warning Service Sub-Committee meetings, and also participate in relevant IMO, IHO and WMO fora as appropriate; and
- .14 take into account the need for contingency planning.

6.5 National Coordinator resources

The national Coordinator should have:

- .1 established sources of information relevant to the safety of navigation within national waters;
- .2 effective communications, e.g. telephone, email, facsimile and Internet, with the NAVAREA/Sub-area Coordinator and adjacent national Coordinators; and
- .3 access to broadcast systems for transmission to their area of national responsibility.

6.6 National Coordinator responsibilities

The national Coordinator should:

- .1 endeavour to be informed of all events that could significantly affect the safety of navigation within their area of national responsibility;
- .2 assess all information immediately upon receipt for relevance to navigation in their area of national responsibility;
- .3 select information for broadcast in accordance with the guidance given in section 4.2.1 above;
- .4 draft coastal warnings in accordance with the Joint IMO/IHO/WMO Manual on Maritime Safety Information;
- .5 direct and control the broadcast of coastal warnings, in accordance with the provisions of the 1974 SOLAS Convention;
- .6 forward coastal warnings and relevant associated information which may require wider promulgation directly to their NAVAREA/Sub-area Coordinator and/or adjacent national Coordinators as appropriate, using the quickest possible means;
- .7 broadcast in-force bulletins not less than once per week at a regular scheduled time;
- .8 promulgate the cancellation of coastal warnings which are no longer valid;
- .9 act as the central point of contact on matters relating to navigational warnings within their area of national responsibility;
- .10 promote the use of established international standards and practices in the promulgation of navigational warnings within their area of national responsibility;
- .11 monitor the broadcasts which they originate to ensure that the warnings have been correctly broadcast;

- .12 maintain records of source data relating to coastal warnings in accordance with the requirement of the national Administration of the national Coordinator; and
- .13 take into account the need for contingency planning.

7 PROCEDURE FOR AMENDING THE WORLD-WIDE NAVIGATION WARNING SERVICE

7.1 Proposals for amendment or enhancement of the World-Wide Navigational Warning Service should be submitted for evaluation by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR). Amendments should only be adopted after consideration and approval by the NCSR Sub-Committee.

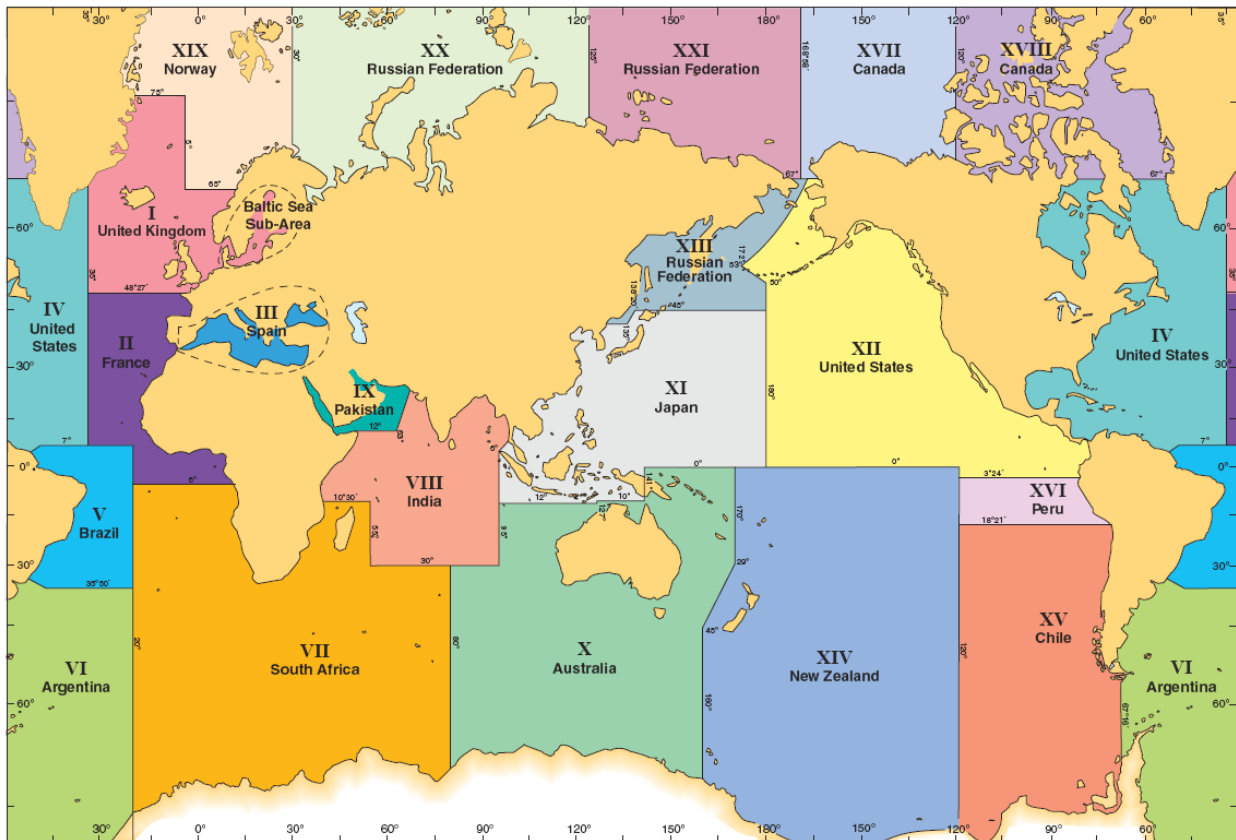
7.2 Amendments to the service should be adopted at intervals as determined by the Maritime Safety Committee. Amendments adopted by the Maritime Safety Committee will be notified to all concerned and will come into force on 1 January of the following year, or at another date as decided by the Committee.

7.3 The agreement of the International Hydrographic Organization and the active participation of other bodies should be sought according to the nature of the proposed amendments.

7.4 The schedule of broadcast times and frequencies for the WWNWS, being subject to frequent changes, will not be subject to these amendment procedures, but should be coordinated through the IMO Enhanced Group Call Coordinating Panel or the IMO NAVTEX Coordinating Panel, as appropriate.

APPENDIX

**GEOGRAPHICAL AREAS FOR COORDINATING AND PROMULGATING
NAVAREA WARNINGS**



The delimitation of these NAVAREAs is not related to and should not prejudice the delimitations of any boundaries between States.

ANNEX 22

**RESOLUTION MSC.470(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO IMO/WMO WORLDWIDE MET-OCEAN INFORMATION
AND WARNING SERVICE – GUIDANCE DOCUMENT
(RESOLUTION A.1051(27))**

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, by resolution A.1051(27), the Assembly adopted the *IMO/WMO Worldwide Met-Ocean Information and Warning Service – Guidance Document*,

NOTING that the Assembly, at its twenty-seventh session, recommended that Member States implement the IMO/WMO Worldwide Met-Ocean Information and Warning Service and authorized the Committee to keep the aforementioned guidance document under review and update it as necessary in light of experience gained in its application,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Navigation, Communications and Search and Rescue at its sixth session,

1 ADOPTS the *Revised IMO/WMO Worldwide Met-Ocean Information and Warning Service – Guidance Document*, set out in the annex to the present resolution, which revises in its entirety the existing text of the annex to resolution A.1051(27);

2 RECOMMENDS that Member States continue implementing the Worldwide Met-Ocean Information and Warning Service, taking into account the Revised Guidance Document set out in the annex to the present resolution;

3 DETERMINES that the *Revised IMO/WMO Worldwide Met-Ocean Information and Warning Service – Guidance Document* should become effective on 1 January 2020.

ANNEX

REVISED IMO/WMO WORLDWIDE MET-OCEAN INFORMATION AND WARNING SERVICE – GUIDANCE

1 INTRODUCTION

1.1 The IMO/WMO Worldwide Met-Ocean Information and Warning Service (WWMIWS) is the internationally coordinated service for the promulgation of meteorological warnings and forecasts to vessels undertaking international or national voyages.

1.2 The purpose of this Guidance is to provide specific guidance for the promulgation of meteorological warnings and forecasts. Its guidance does not apply to purely national services which supplement these internationally coordinated services.

1.3 WWMIWS coordinates the necessary meteorological information requirements outlined in regulation V/5 (Meteorological services and warnings) of the International Convention for the Safety of Life at Sea, 1974, as amended (the 1974 SOLAS Convention), which states:

"2 In particular, Contracting Governments undertake to carry out, in cooperation, the following meteorological arrangements:

.10 To endeavour to obtain a uniform procedure in regard to the international meteorological services already specified, and, as far as is practicable, to conform to the Technical Regulations and recommendations made by the World Meteorological Organization, to which the Contracting Governments may refer for study and advice any meteorological question which may arise in carrying out the present Convention."

1.4 Resolution A.705(17), as amended, on *Promulgation of Maritime Safety Information*, sets out the organization, standards and methods which should be used for the promulgation and reception of Maritime Safety Information, including navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships, as documented in the 1974 SOLAS Convention. The WMO Executive Council, at its sixty-first session (June 2009), requested WMO to establish and develop, in collaboration with IMO, terms of reference for the development of an IMO/WMO Worldwide Met-Ocean Information and Warning Service guidance document, to complement the existing IMO/IHO World-Wide Navigational Warning Service guidance document, provided in resolution A.706(17), as amended.

1.5 The regulatory framework for the provision of marine meteorological services within the new WMO GMDSS Marine Broadcast System was developed from Recommendation 3 (CMM-XI) in 1993, endorsed by the WMO Executive Council at its forty-fourth session. This new system reflects the evolution since the advent of the GMDSS, as adopted by the Conference of Contracting Governments to the 1974 SOLAS Convention on the Global Maritime Distress and Safety System in November 1988, effective on 1 February 1992. The WMO GMDSS Marine Broadcast System is an integral part of WWMIWS.

1.6 Future amendments to this guidance document will be considered formally and approved by both WMO and IMO in accordance with the procedure set out in section 8. Proposed amendments should be evaluated by the World-Wide Met-Ocean Information and

Warning Service Committee (WWMIWS-C) of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM), which includes an ex-officio representative of the IMO Secretariat, prior to any extensive WMO and IMO consideration.

2 DEFINITIONS

For the purposes of WWMIWS, the following definitions apply:

- .1 *Coastal and offshore waters* apply to areas for which WMO Members issue weather and sea bulletins, governed by the procedures in the Manual on Marine Meteorological Services (WMO-No. 558).
- .2 *Enhanced Group Call (EGC)* means the broadcast of coordinated Maritime Safety Information and Search and Rescue related information, to a defined geographical area using a recognized mobile satellite service.
- .3 *Global Maritime Distress and Safety System (GMDSS)* means a system that performs the functions set out in SOLAS regulation IV/4, as amended.
- .4 *HF NBDP* means High Frequency narrow-band direct-printing, using radio telegraphy as defined in Recommendation ITU-R M.688.
- .5 *International Enhanced Group Call service* means the coordinated broadcast of Maritime Safety Information and Search and Rescue related information, via Enhanced Group Call, using the English language.
- .6 *International Iridium service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via Enhanced Group Call, using the English language.
- .7 *International NAVTEX service* means the coordinated broadcast and automatic reception on 518 kHz of Maritime Safety Information by means of narrow-band direct-printing telegraphy using the English language.¹
- .8 *International SafetyNET service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via Enhanced Group Call, using the English language.
- .9 *Issuing Service* means a National Meteorological and Hydrological Service (NMHS) or National Authority which has accepted responsibility for ensuring that meteorological warnings and forecasts for shipping are disseminated through the International EGC service to the designated METAREA for which the NMHS or National Authority has accepted responsibility under the broadcast requirements of the GMDSS.²
- .10 *Maritime Safety Information (MSI)*³ means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.

¹ As set out in the IMO NAVTEX Manual.

² As defined in WMO-No. 558.

³ As defined in regulation IV/2 of the International Convention for the Safety of Life at Sea, 1974, as amended.

- .11 *Maritime Safety Information service* means the internationally and nationally coordinated network of broadcasts containing information, which is necessary for safe navigation.
- .12 *METAREA* means a geographical sea area⁴ established for the purpose of coordinating the broadcast of marine meteorological information. The term *METAREA* followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .13 *METAREA Coordinator* means the individual with the authority to coordinate marine meteorological information broadcasts by one or more National Meteorological and Hydrological Services acting as Preparation or Issuing Services within the *METAREA*.
- .14 *Meteorological information* means the marine meteorological warning and forecast information in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .15 *National NAVTEX service* means the broadcast and automatic reception of Maritime Safety Information by means of narrow-band direct-printing telegraphy using frequencies other than 518 kHz and languages as decided by the Administration concerned.
- .16 *National Enhanced Group Call service* means the broadcasting and automated reception of Maritime Safety Information via EGC, using languages as decided by the Administration concerned.
- .17 *NAVAREA* means a geographical sea area⁴ established for the purpose of coordinating the broadcast of navigational warnings. The term *NAVAREA* followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .18 *NAVTEX* means the system for the broadcast and automatic reception of Maritime Safety Information by means of narrow-band direct-printing telegraphy.
- .19 *NAVTEX Coordinator* means the authority charged with operating and managing one or more *NAVTEX* stations broadcasting Maritime Safety Information as part of the International *NAVTEX* service.
- .20 *NAVTEX coverage area* means an area defined by an arc of a circle having a radius from the transmitter calculated according to the method and criteria given in resolution A.801(19), as amended.
- .21 *NAVTEX service area* means a unique and precisely defined sea area, wholly contained within the *NAVTEX* coverage area, for which Maritime Safety Information is provided from a particular *NAVTEX* transmitter. It is normally defined by a line that takes full account of local propagation conditions and the character and volume of information and maritime traffic patterns in the region, as given in resolution A.801(19), as amended.

⁴ Which may include inland seas, lakes and waterways navigable by seagoing ships.

- .22 *Other urgent safety-related information* means Maritime Safety Information broadcast to ships that is not defined as a navigational warning or meteorological information. This may include, but is not limited to, significant malfunctions or changes to maritime communications systems, and new or amended mandatory ship reporting systems or maritime regulations affecting ships at sea.
- .23 *Preparation Service* means a National Meteorological and Hydrological Service or National Authority which has accepted responsibility for the preparation of warnings and forecasts for parts of or an entire METAREA in the WMO system for the dissemination of meteorological forecasts and warnings to shipping under the GMDSS and for their transfer to the relevant Issuing Service for broadcast.
- .24 *Recognized mobile satellite service* means any service which operates through a satellite system and is recognized by IMO for use in the GMDSS.
- .25 *Sub-area* means a subdivision of a NAVAREA/METAREA in which a number of countries have established a coordinated system for the promulgation of Maritime Safety Information. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .26 *Sub-area Coordinator* means the authority charged with coordinating, collating and issuing Sub-area warnings for a designated Sub-area.
- .27 *User defined area* means a temporary geographic area, either circular or rectangular, to which Maritime Safety Information or Search and Rescue related information is addressed.
- .28 *UTC* means Coordinated Universal Time which is equivalent to GMT (or ZULU) as the international time standard.
- .29 In the operating procedures, *coordination* means that the allocation of the time for data broadcast is centralized, the format and criteria of data transmissions are compliant as described in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and that all services are managed as set out in resolutions A.705(17), as amended, A.706(17), as amended, and A.1051(27), as amended.

3 METEOROLOGICAL INFORMATION BROADCASTS

3.1 Methods

3.1.1 The two principal methods used for broadcasting marine meteorological information as part of MSI in accordance with the provisions of the 1974 SOLAS Convention, in the areas covered by these methods, are as follows:

- .1 *NAVTEX*: broadcasts to coastal waters; and
- .2 *Enhanced Group Call*: broadcasts to the geographical sea areas covered by a recognized mobile satellite service.

3.1.2 Information should be provided for unique and precisely defined sea areas, each being served only by the most appropriate of the above methods. Although there will be some

duplication to allow a ship to change from one method to another, the majority of MSI will be broadcast either on NAVTEX or by EGC.

3.1.3 NAVTEX broadcasts should be made in accordance with the standards and procedures set out in the NAVTEX Manual.

3.1.4 EGC broadcasts should be made in accordance with the standards and procedures set out in the IMO Manuals of the recognized mobile satellite service providers.

3.1.5 HF NBDP may be used to promulgate MSI in areas outside EGC and NAVTEX coverage (SOLAS regulation IV/7.1.5).

3.1.6 In addition, Administrations may also provide meteorological warnings and forecasts by other means. WMO has organized an Internet-based website portal to display MSI bulletins for each METAREA and some national services.

3.1.7 In the event of failure of normal transmission facilities, an alternative means of transmission should be utilized. A NAVAREA/METAREA warning and a coastal warning, if possible, should be issued detailing the failure, its duration and, if known, the alternative route for the dissemination of MSI.

3.2 Scheduling

3.2.1 Automated methods (NAVTEX/Enhanced Group Call)

3.2.1.1 At least two scheduled daily broadcast times are necessary to provide adequate promulgation for routine meteorological information.

3.2.1.2 Meteorological warnings are issued in a timely manner when hazardous conditions are expected to reach documented threshold values and updated, amended or cancelled, as appropriate, according to documented criteria. Normally, the initial broadcast should be made as follows:

- .1 for NAVTEX, at the next scheduled broadcast, unless circumstances indicate the use of procedures for VITAL or IMPORTANT warnings; and
- .2 for EGC, broadcast is immediate.

3.2.1.3 Meteorological warnings should be repeated in scheduled broadcasts in accordance with the guidelines promulgated in the NAVTEX Manual and in the IMO manuals of the recognized mobile satellite service providers, as appropriate.

3.2.2 Schedule changes

3.2.2.1 Broadcast times for NAVTEX are defined by the B1 character of the station, allocated by the IMO NAVTEX Coordinating Panel.

3.2.2.2 Times of scheduled broadcasts under the International EGC service are coordinated through the IMO Enhanced Group Call Coordinating Panel.

3.2.2.3 Information on broadcast schedules for WWMIWS bulletins are contained in WMO-No.9, Volume D, Information for shipping.

4 METEOROLOGICAL INFORMATION

4.1 General

4.1.1 Marine meteorological services are provided to satisfy the requirements for information on marine environmental conditions and phenomena, established by national practices and international conventions in relation to marine operations.

4.1.2 Marine meteorological services are designed for the safety of marine operations and to promote, where possible, the efficiency and economy of marine activities.

4.1.3 The WWMIWS guidance and coordination for marine meteorological MSI messages issued on EGC, NAVTEX and HF NBDP communication systems covers the following areas:

- .1 warnings and forecasts for the high seas; and
- .2 warnings and forecasts for coastal, offshore and local waters (including ports, lakes and harbour areas).

4.1.4 Operational guidance for formatting meteorological information is given in detail in the WMO Manual on Marine Meteorological Services (WMO-No.558) and the Joint IMO/IHO/WMO Manual on Maritime Safety Information.

4.2 Services for the High Seas

Marine meteorological services for the high seas include provision of:

- .1 meteorological warnings;
- .2 marine forecasts; and
- .3 sea-ice information services.

4.2.1 Meteorological Warnings

4.2.1.1 Warnings are issued for the following phenomena:

- .1 wind warnings of gale force (Beaufort force 8) and above; and
- .2 ice accretion.

4.2.1.2 The severity of wind warnings will use the following categories:

- .1 gale-force (Beaufort force 8 or 9);
- .2 storm-force (Beaufort force 10 or 11); and
- .3 hurricane-force (Beaufort force 12 or over).

4.2.1.3 Warnings for dangerous sea states and unusual and hazardous sea-ice conditions could be issued within some METAREAs.

4.2.1.4 Warnings will include the following information:

- .1 type and severity of warning;
- .2 date and time of reference in UTC;
- .3 location of disturbance in terms of latitude and longitude or with reference to well-known landmarks;
- .4 extent of affected area; and
- .5 description of the warning phenomenon characteristics.

4.2.2 Marine Forecasts

4.2.2.1 Marine forecasts for the high seas are structured in three parts:

Part I: Warnings

Part II: Synopsis of major features

Part III: Forecasts

4.2.2.2 The valid period of the forecast will be at least 24 hours.

4.2.2.3 Part I will include a reference to current warnings issued for the area. This reference should be in the form of an identifier for a uniquely numbered or named warning, or include the relevant contents of the warning.

4.2.2.4 When no wind warnings are in effect, this fact will be explicitly stated within Part I of the marine forecast.

4.2.2.5 The synopsis of major features in Part II of the marine forecast will include details of significant low-pressure systems, significant fronts and tropical disturbances that are affecting, or are expected to affect, the area within or near the valid period of the forecast. The central pressure and/or intensity, location, movement and changes of intensity will be given for each system.

4.2.2.6 The forecast information provided in Part III of marine forecasts will include:

- .1 wind speed or force and direction;
- .2 sea state; and
- .3 visibility when forecast is less than six nautical miles.

4.2.2.7 The forecasts could include expected significant changes during the forecast period, significant hydrometeors such as freezing precipitation, snowfall or rainfall.

4.2.3 Sea-ice information

4.2.3.1 Sea-ice information services will provide the limits of sea ice and icebergs, where ice conditions pose a hazard to navigation.

4.2.3.2 Sea-ice information services could include information about sea-ice concentration and stage of development.

4.2.3.3 Descriptions of the limit of all known ice, ice edge or iceberg risk are given using latitude and longitude coordinates. The location of the ice, ice edge or iceberg risk are given relative to the limit.

4.3 Services for the coastal, offshore and local waters areas

4.3.1 Marine meteorological services for coastal, offshore and local waters areas are similar to those for the high seas, but modified according to local requirements.

4.3.2 Naming conventions, the extent of inshore and offshore boundaries, and land boundary reference points, for areas referenced in marine forecasts will be clearly defined and documented in relevant publications.

4.3.3 Forecasts and warnings for coastal, offshore and local waters should be considered as complementary to the high seas forecasts and warnings for ships navigating close to the coast.

5 METEOROLOGICAL WARNING BROADCAST REQUIREMENTS

5.1 Language

5.1.1 All meteorological information should be broadcast only in English in the International NAVTEX and International EGC services.

5.1.2 In addition to the required broadcasts in English, meteorological information may be broadcast in a national language using National NAVTEX and National EGC services and/or other means.

5.1.3 Marine meteorological services for broadcast on NAVTEX should be prepared using the accepted abbreviations outlined in appendix 1.2 within the WMO Manual on Marine Meteorological Services (WMO-No.558).

5.2 Guidance

Operational guidance for handling and formatting meteorological information is given in the Joint IMO/IHO/WMO Manual on Maritime Safety Information, the IMO NAVTEX Manual, the IMO manuals of the recognized mobile satellite service providers and the WMO Manual on Marine Meteorological Services (WMO-No.558).

6 ISSUING AND PREPARATION SERVICES

6.1 Responsibilities

6.1.1 The Issuing Service is responsible for composing a complete broadcast bulletin on the basis of information input from the relevant Preparation Services and for broadcasting this in accordance with the guidelines contained within the IMO manuals of the recognized mobile satellite service providers and the IMO NAVTEX Manual.

6.1.2 The Issuing Service is also responsible for monitoring the broadcasts of their MSI to their designated area of responsibility.

6.1.3 The Preparation Service is responsible for providing the relevant information to the Issuing Service.

7 METAREA COORDINATOR RESOURCES AND RESPONSIBILITIES

7.1 METAREA Coordinator resources

7.1.1 The METAREA Coordinator should have:

- .1 the expertise and information resources of NMHS or equivalent National Authority;
- .2 effective means of communication such as telephone, email, facsimile and Internet, with NMHS and National Authorities in the METAREA, with other METAREA Coordinators and with other data providers; and
- .3 access to broadcast systems for transmission to the navigable waters of the METAREA. As a minimum, this should include those described in paragraph 3.1.1. Reception should normally be possible at least 300 nautical miles beyond the limit of the METAREA.

7.2 METAREA Coordinator responsibilities

7.2.1 The METAREA Coordinator should:

- .1 act as the central point of contact on matters relating to meteorological information and warnings within the METAREA;
- .2 promote and oversee the use of established international standards and practices in the dissemination of meteorological information and warnings throughout the METAREA;
- .3 coordinate preliminary discussions between neighbouring Members, seeking to establish and operate NAVTEX services, prior to formal application;
- .4 coordinate the dissemination of meteorological bulletins on the WMO Information System (WIS), and ensure the correct display of MSI messages on the WWMIWS website;
- .5 liaise with entities that have responsibility for maritime safety, marine communications, port authorities and other relevant maritime responsibilities on the effective use of meteorological information and warning services;
- .6 act as a coordination point for implementation of WMO strategic initiatives under the WMO Services Delivery Framework, including verification, quality management, Marine Forecaster Competency framework and resilience activities;
- .7 be responsible for maintaining details of marine weather services and marine communications relevant for international service documentation such as Weather Reporting (WMO No-9), Volume D – Information for Shipping, IMO GMDSS Master Plan, ITU List IV – List of Coast Stations and Special Service Stations or other relevant nautical publications of national Administrations;

- .8 contribute to the development of international standards and practices through attendance and participation in the meetings of the WWMIWS-C of JCOMM, and also attend and participate in relevant IMO, IHO and WMO meetings as appropriate and required;
- .9 monitor the broadcasts which they originate, to ensure that the information has been correctly broadcast; and
- .10 take into account the need for contingency planning.

7.2.2 The METAREA Coordinator has to also ensure that within their METAREA, NMHS and National Authorities that act as Issuing Services have the capability to:

- .1 select meteorological information and warnings for broadcast in accordance with the guidance given in the WMO Manual on Marine Meteorological Services (WMO-No. 558);
- .2 provide insights and monitor changes in customer requirements for updates to the WMO Guide on Marine Meteorological Services (WMO-No.471);
- .3 ensure meteorological information is drafted in accordance with the Joint IMO/IHO/WMO Manual on Maritime Safety Information; and
- .4 monitor the MSI transmission of the bulletins that are broadcast by the Issuing Service within the respective METAREA.

7.2.3 The METAREA Coordinator has to further ensure that within their METAREA, NMHS and National Authorities that act as Preparation Services have the capability to:

- .1 be informed of/gather information on all meteorological events that could significantly affect the safety of navigation within their area of responsibility;
- .2 assess all meteorological information immediately upon receipt in the light of expert knowledge for relevance to navigation within their area of responsibility;
- .3 forward marine meteorological information that may require wider promulgation directly to adjacent METAREA Coordinators and/or others as appropriate, using the quickest possible means;
- .4 ensure that information concerning all meteorological warning subject areas listed in the Manual on Marine Meteorological Services (WMO-No.558) that may require a METAREA warning within their own area of responsibility is forwarded immediately to the appropriate National Meteorological Services and METAREA Coordinators affected by the meteorological event;
- .5 provide insights and monitor changes in customer requirements for updates to the WMO Guide on Marine Meteorological Services (WMO-No.471); and
- .6 maintain records of source data relating to METAREA warnings and forecasts in accordance with the requirement of the national Administration of the METAREA Coordinator.

8 PROCEDURE FOR AMENDING THE WORLDWIDE MET-OCEAN INFORMATION AND WARNING SERVICE

8.1 Proposals for amendment or enhancement of the IMO/WMO Worldwide Met-Ocean Information and Warning Service should be submitted for evaluation by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR). Amendments will only be adopted after consideration and approval by the NCSR Sub-Committee.

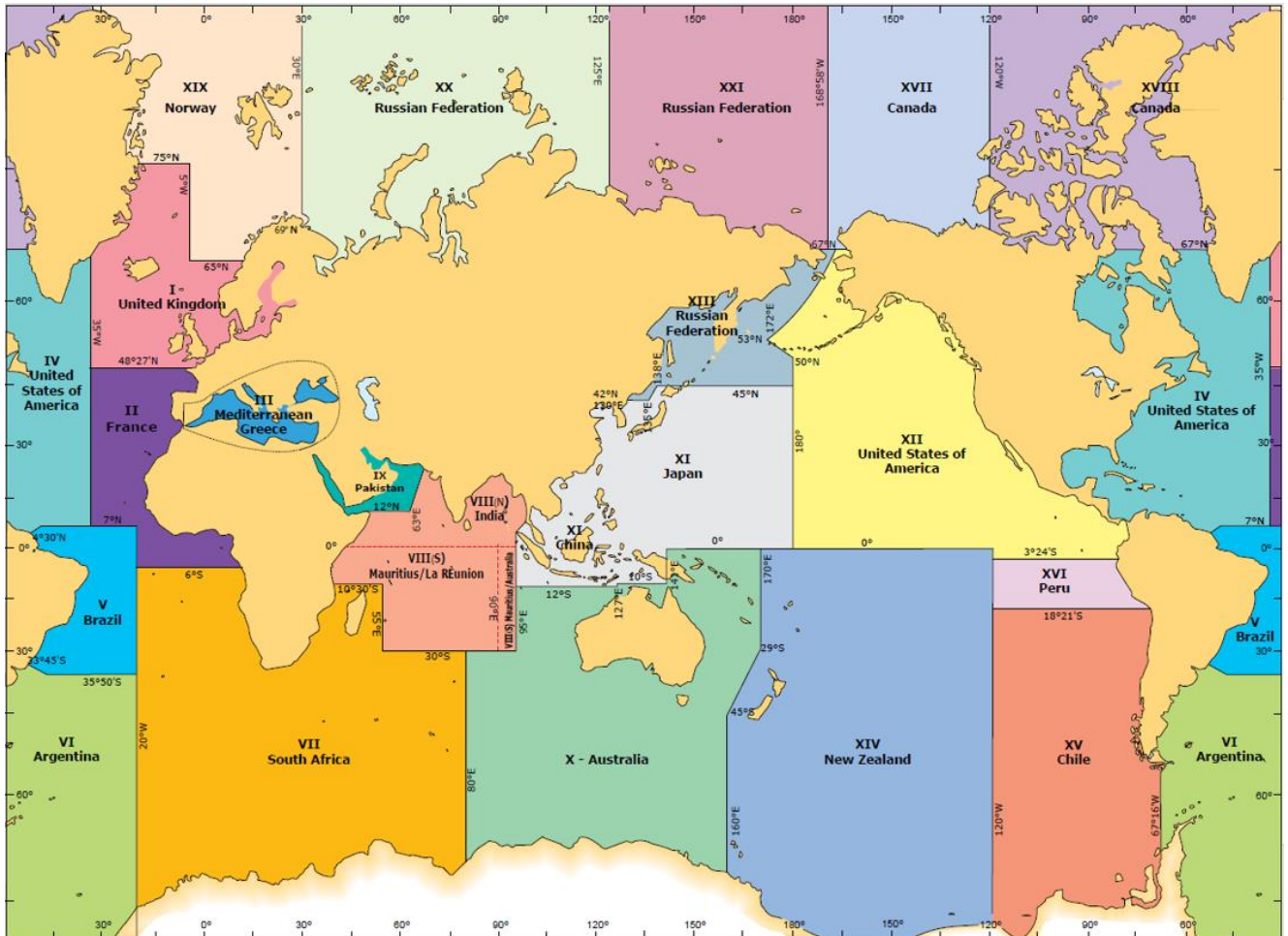
8.2 Amendments to the service should be adopted at intervals as determined by the Maritime Safety Committee. Amendments adopted by the Maritime Safety Committee will be notified to all concerned and will come into force on 1 January of the following year, or at another date as decided by the Committee.

8.3 The agreement of the WMO and the active participation of other bodies should be sought according to the nature of the proposed amendments.

8.4 The schedule of broadcast times and frequencies for WWMIWS, being subject to frequent changes, will not be subject to these amendment procedures, but should be coordinated through the IMO Enhanced Group Call Coordinating Panel or the IMO NAVTEX Coordinating Panel, as appropriate.

APPENDIX

**GEOGRAPHICAL AREAS FOR COORDINATING AND PROMULGATING
METAREA WARNINGS AND FORECASTS**



The delimitation of these METAREAs is not related to and should not prejudice the delimitations of any boundaries between States

ANNEX 23

IMO POSITION ON WORLD RADIOCOMMUNICATION CONFERENCE 2019 (WRC-19) AGENDA ITEMS CONCERNING MATTERS RELATING TO MARITIME SERVICES

General

Over 80% of world trade is transported by sea. This totals some 10 billion tonnes (53,600 billion tonne miles), of which about 29% is oil and gas, 30% is bulk (ore, coal, grain and phosphates), the remaining 41% being general cargo. Operating these merchant ships generates an estimated annual income of \$380 billion in freight rates within the global economy, amounting to 5% of total world trade.

The industry employs over 1.5 million seafarers.

Agenda item 1.3

1.3 To consider possible upgrading of the secondary allocation to the meteorological-satellite service (space-to-Earth) to primary status and a possible primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460-470 MHz, in accordance with Resolution **766 (WRC-15)**;

Background

Part of the frequency band 460-470 MHz is used by maritime mobile service for on board communication stations in accordance with RR 5.287. The functions of these types of onboard communication include anchoring, berthing, damage control parties, security patrols, terrorism threats, fire-fighter communication etc. The use of this frequency band is considered very important for maritime community.

IMO position

Protection of the existing maritime mobile service used for onboard communication stations to which the frequency band is already allocated on a primary basis should be ensured, and no additional constraints should be imposed.

Agenda item 1.5

1.5 To consider the use of the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) by earth stations in motion communicating with geostationary space stations in the fixed-satellite service and take appropriate action, in accordance with Resolution **158 (WRC15)**;

Background

Currently, there is a growing need for global broadband satellite communications by the maritime community for commercial, public and operational purposes. Some of this need can be met by allowing earth stations in motion to communicate with space stations of the FSS operating in the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space).

IMO position

Recognizing the growing need for global broadband satellite communications in motion by the maritime community, IMO supports the establishment of appropriate operational and technical conditions for Earth Stations in Motion.

Agenda item 1.7

1.7 To study the spectrum needs for telemetry, tracking and command in the space operation service for non-GSO satellites with short duration missions, to assess the suitability of existing allocations to the space operation service and, if necessary, to consider new allocations, in accordance with Resolution **659 (WRC-15)**;

Background

Resolution **659 (WRC-15)** invites ITU-R to consider possible new allocations or an upgrade of the existing allocations to the space operation service within the frequency ranges 150.05-174 MHz and 400.15-420 MHz. In the parts of the frequency band 150.05-174 MHz priority is given to the maritime mobile service in accordance with RR 5.226 (see also RR articles 31 and 52, and RR appendix 18). The provision of RR 5.266 specifies the use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radio beacons (see also article 31).

The following frequency bands within 150.05-174 MHz and 400.15-420 MHz are listed in appendix 15 as frequencies for distress and safety communications for the Global Maritime Distress and Safety System (GMDSS), in which any emission causing harmful interference is prohibited:

- 156.2975 MHz - 156.3125 MHz (AP18 CH06): be used for communication between ship stations and aircraft stations engaged in coordinated search and rescue operations. It may also be used by aircraft stations to communicate with ship stations for other safety purposes;
- 156.5125 MHz - 156.5275 MHz (AP18 CH70): be exclusively used in the maritime mobile service for distress and safety calls using digital selective calling;
- 156.6475 MHz - 156.6625 MHz (AP18 CH13): be used for ship-to-ship communications relating to the safety of navigation;
- 156.7875 MHz - 156.8125 MHz (AP18 CH16): be used for distress and safety communications by radiotelephony. Additionally, the frequency 156.8 MHz may be used by aircraft stations for safety purposes only;
- 161.9625 MHz - 161.9875 MHz (AP18 AIS 1) and 162.0125 MHz - 162.0375 MHz (AP18 AIS 2): be used for AIS search and rescue transmitters (AIS-SART) for use in search and rescue operations;
- 406.000 MHz - 406.100 MHz: be used exclusively by satellite emergency position indicating radio beacons in the Earth-to-space direction.

IMO position

The integrity of GMDSS should be protected, and the following frequency bands should not be included in the study:

- 156.000 MHz -157.450 MHz, 160.600 -160.975 MHz and 161.475-162.050 MHz;
and
- 405.900 MHz -406.200 MHz.

Taking account of the relevance on the frequency bands with agenda items 1.9.1 and 1.9.2 the coordination with these agenda items needs to be considered.

Agenda item 1.8

1.8 to consider possible regulatory actions to support Global Maritime Distress Safety Systems (GMDSS) modernization and to support the introduction of additional satellite systems into the GMDSS, in accordance with Resolution **359 (Rev.WRC-15)**;

Background

Issue A

IMO is in the process of GMDSS modernization. The modernization plan of the GMDSS has been endorsed by NCSR 4 and approved by MSC 98. Some new technologies are introduced for consideration in the modernization plan of the GMDSS, such as MF/HF NAVDAT. Meanwhile, ITU is continuing the study on NAVDAT, including revisions to ITU-R recommendations, as well as spectrum and regulatory issues, under this agenda item 1.8.

Issue B

At MSC 98 the Committee adopted resolution MSC.434(98) on *Performance standards for a ship earth station for use in the GMDSS* and approved amendments to SOLAS chapter IV, enabling, when adopted at MSC 99, the introduction of additional GMDSS mobile satellite service providers. This followed the IMSO report to NCSR 4 noting the suggested timeline provided by Iridium for completing the technical and operational assessment of Iridium in 2018.

At MSC 99 the Committee adopted resolution MSC.451(99) on *Statement of Recognition of Maritime Mobile Satellite Services Provided by Iridium Satellite LLC*.

MSC 99 also adopted resolution MSC.436(99) on *Amendments to the International Convention for the Safety of Life at Sea*, including amendments through chapter IV to replace references to "Inmarsat" with the term "recognized mobile satellite service". The change reflects the ability of recognized providers of mobile satellite services to meet the GMDSS carriage requirements effective 1 January 2020.

IMO position

IMO invites ITU to:

- .1 when considering *resolves 1*, consider frequency allocations for NAVDAT which IMO supports but without committing the Organization regarding future requirements on the use of NAVDAT;
- .2 when considering *resolves 2* to take regulatory measures to ensure full protection and availability of the frequency bands to be used by recognized GMDSS satellite service providers for the provision of GMDSS services by 1 January 2020; and
- .3 resolve any issues under Resolution **359 (Rev.WRC-15)**, in relation to the future operation of newly recognized GMDSS satellite service providers.

Agenda item 1.9.1

1.9.1 Regulatory actions within the frequency band 156-162.05 MHz for autonomous maritime radio devices to protect the GMDSS and automatic identifications system (AIS), in accordance with Resolution **362 (WRC-15)**;

Background

There are some types of autonomous maritime radio devices using automatic identification system (AIS) technology or digital selective calling (DSC) technology, or transmitting synthetic voice messages, or with a combination of those technologies, which have been developed for, and are operating in, the maritime environment, and their number is expected to increase.

Some of these devices do not enhance the safety of navigation or serve the purpose of communication between coast stations and ship stations, or between ship stations, or between associated on board communication stations, or survival craft stations and emergency position-indicating radio beacon stations, but occupy the spectrum and identities of the maritime mobile service.

There is a need to categorize and regulate the usage of autonomous maritime radio devices. ITU at its seventeenth WP 5B session adopted the preliminary draft definition of AMRD developed at the twelfth Joint IMO/ITU Experts Group meeting and finalized the definition at its eighteenth WP 5B session in May 2017. The categorization of AMRD and relevant information are contained in the draft new recommendation ITU-R M.[AMRD].

IMO position:

- .1 the integrity of AIS and the GMDSS should be protected;
- .2 autonomous maritime radio devices which enhance the safety of navigation should be regulated for the use of frequencies and identities of the maritime mobile service; and
- .3 for autonomous maritime radio devices which do not enhance the safety of navigation, regulation of the use of frequencies, and technical and operational characteristics, should benefit both the user of devices as well as

maritime safety. A new numbering scheme which is different from those in the existing maritime mobile service should be considered.

Agenda item 1.9.2

1.9.2 Modifications of the Radio Regulations, including new spectrum allocations to the maritime mobile-satellite service (Earth-to-space and space-to-Earth), preferably within the frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of appendix 18, to enable a new VHF data exchange system (VDES) satellite component, while ensuring that this component will not degrade the current terrestrial VDES components, applications specific messages (ASM) and AIS operations and not impose any additional constraints on existing services in these and adjacent frequency bands as stated in recognizing d) and e) of Resolution 360 (Rev.WRC-15);

Background

The concept of VDES includes the function of AIS, ASM, VDE terrestrial and VDE satellite. The VDES is one of the potential elements of e-navigation.

According to IALA Guideline 1117 "VDES Overview", the following potential VDES use cases are identified:

- Search and rescue communications;
- Maritime Safety Information;
- Ship Reporting;
- Vessel Traffic Services;
- Charts and Publications;
- Route Exchange; and
- Logistics.

VDES satellite component would offer additional communications in polar regions and other remote areas for the above use cases.

These use cases are all cross referenced to Maritime Service Portfolios identified in IMO e-navigation Strategic Implementation Plan and possibly also to modernization of GMDSS in future.

Insufficient study on sharing and compatibility between the VDES satellite component and incumbent services in the same and adjacent frequency bands was the cause that the spectrum issue could not be resolved at WRC-15. As a consequence, VDES is still not a complete functional system as a whole.

The study of the candidate frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz would mainly concern the relationship with the existing services primarily allocated for the land mobile service and maritime mobile service, and with the services within lower adjacent frequency band from 154 MHz to 156 MHz and for the higher adjacent frequency band from 162 MHz to 164 MHz.

IMO position

- .1 Recognizing that the VDES satellite component should not bring any harmful interference:

- .1 modifications should not be required to existing AIS equipment on board existing vessels;
 - .2 the integrity of the GMDSS should be protected; and
 - .3 an identification of the frequencies for the VDES satellite component should protect the integrity of the original operational purpose of AIS on the existing AIS frequencies.
- .2 IMO supports the availability of VDES including both terrestrial and satellite components.

Agenda item 1.10

1.10 to consider spectrum needs and regulatory provisions for the introduction and use of the Global Aeronautical Distress and Safety System (GADSS), in accordance with Resolution **426 (WRC-15)**;

Background

The Global Aeronautical Distress and Safety System (GADSS) is intended to address the timely identification and location of an aircraft during all phases of flight as well as distress and emergency situations; and also intended to use existing and new applications to support search and rescue (SAR) and flight data retrieval. The full concept of GADSS is still to be defined by the International Civil Aviation Organization (ICAO), and some of the applications may be developed after 2019.

IMO position

The integrity of the GMDSS should be protected. The regulations for GADSS should be kept in a separate Article from the provisions on GMDSS contained within Chapter VII of the Radio Regulations.

Agenda item 2

2 To examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with Resolution **28 (Rev.WRC-15)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in annex 1 to Resolution **27 (Rev.WRC-12)**;

Background

There are a number of Recommendations incorporated by reference in the Radio Regulations. IMO has reviewed all these Recommendations.

IMO position

IMO has studied the Recommendations of relevance and commented on each as given in annex 1. Incorporation by reference is of importance to IMO because of the close relationship between many of the ITU-R Recommendations related to GMDSS equipment and its operation, and to IMO performance standards. IMO requests prompt indication of any changes proposed by ITU to the mechanism of incorporation by reference and to the list of incorporated Recommendations.

Agenda item 4

4 In accordance with Resolution **95 (Rev.WRC-07)**, to review the Resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

Background

There are a number of Resolutions and Recommendations in the Radio Regulations. IMO has reviewed all these Resolutions and Recommendations.

IMO position

IMO has studied the Resolutions and Recommendations of relevance and commented on each as given in annex 2.

Agenda item 9

9 To consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with article 7 of the Convention:

- 9.1 on the activities of the Radiocommunication Sector since WRC 15;
- 9.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations; and
- 9.3 on action in response to Resolution **80 (Rev.WRC-07)**.

Issue 9.1.3:

Study of technical and operational issues and regulatory provisions for new non-geostationary-satellite orbit systems in the 3700-4200 MHz, 4500-4800 MHz, 5925-6425 MHz and 6725-7025 MHz frequency bands allocated to the fixed-satellite service.

Background

It is noted that the frequency band 6 424- 6 454 MHz is in use for the feeder links of Inmarsat.

IMO position

Non-GSO systems shall not cause harmful interference to or claim protection from GSO FSS networks.

Agenda item 10

10 To recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with article 7 of the Convention.

Background

Resolution 810 (WRC-15) containing the preliminary agenda for WRC-23, lists as item 2.1 for inclusion in the agenda for WRC-23, to consider possible spectrum

needs and regulatory actions to support Global Maritime Distress and Safety System (GMDSS) modernization and the implementation of e-navigation, in accordance with Resolution **361 (WRC-15)**.

As a consequence of GMDSS modernization, the SOLAS Convention will be revised, which is preliminarily planned to be finalized by June 2022 and to enter into force in 2024.

MSC 99 has received an application to recognize an existing mobile satellite system as part of the GMDSS and instructed the NCSR Sub-Committee to undertake the technical and operational evaluation.

IMO position

Retain agenda item 2.1 of resolution 810 (WRC-15) containing the preliminary agenda for WRC-23, to consider possible spectrum needs and regulatory actions to support GMDSS modernization and the implementation of e-navigation, in accordance with Resolution **361 (WRC-15)**, which may need to be amended.

ANNEX 1

RECOMMENDATION ITU-R M.476-5

Direct-printing telegraph equipment in the maritime mobile service
(Question ITU-R 5/8)

(1970-1974-1978-1982-1986-1995)

Required by the maritime community.

RECOMMENDATION ITU-R M.489-2

**Technical characteristics of VHF radiotelephone equipment operating
in the maritime mobile service in channels spaced by 25 kHz**

(1974-1978-1995)

Needed by IMO to support the carriage requirements of SOLAS chapter IV and needed by the maritime community in general. Will likely be needed into the foreseeable future.

RECOMMENDATION ITU-R M.492-6

**Operational procedures for the use of direct-printing telegraph equipment
in the maritime mobile service**
(Question ITU-R 5/8)

(1974-1978-1982-1986-1990-1992-1995)

Currently needed by IMO to support the NBDP carriage requirement in SOLAS chapter IV, although the system is little used.

RECOMMENDATION ITU-R M.541-10

**Operational procedures for the use of digital selective-calling equipment
in the maritime mobile service**
(Question ITU-R 9/8)

(1978-1982-1986-1990-1992-1994-1995-1996-1997-2004-2015)

Needed by IMO. Likely to be needed into the foreseeable future.

RECOMMENDATION ITU-R M.585-7

Assignment and use of identities in the maritime mobile service

(1982-1986-1990-2003-2007-2009-2012-2015)

Required by the maritime community and useful to IMO.

RECOMMENDATION ITU-R M.625-4

**Direct-printing telegraph equipment employing automatic identification
in the maritime mobile service**

(1986-1990-1992-1995-2012)

Currently needed by IMO to support the NBDP carriage requirement in SOLAS chapter IV, although the system is little used.

RECOMMENDATION ITU-R M.633-4

**Transmission characteristics of a satellite emergency position-indicating
radio beacon (satellite EPIRB) system operating through
a satellite system in the 406 MHz band**

(1986-1990-2000-2004-2010)

Used by IMO to support the Performance standards for EPIRBs.

RECOMMENDATION ITU-R M.690-3

**Technical characteristics of emergency position-indicating radio beacons (EPIRBs)
operating on the carrier frequencies of 121.5 MHz and 243 MHz**

(1990-1995-2012-2015)

Required by IMO to define the homing signal characteristics for the satellite EPIRB required by SOLAS chapter IV. Likely to be used by the maritime community for some time to come for EPIRBs and man overboard devices.

RECOMMENDATION ITU-R M.1084-5

**Interim solutions for improved efficiency in the use of the band
156-174 MHz by stations in the maritime mobile service**

(1994-1995-1997-1998-2001-2012)

Used by IMO for the description of VHF channels.

RECOMMENDATION ITU-R M.1171-0

Radiotelephony procedures in the maritime mobile service

(1995)

Required by IMO and the maritime community as long as coast stations offer a public correspondence service. The number of such coast stations is however declining.

RECOMMENDATION ITU-R M.1172-0

**Miscellaneous abbreviations and signals to be used for radiocommunications
in the maritime mobile service**

(1995)

Required by the maritime community.

RECOMMENDATION ITU-R M.1173-1

**Technical characteristics of single-sideband transmitters used in the maritime mobile
service for radiotelephony in the bands between 1 606.5 kHz (1 605 kHz Region 2)
and 4 000 kHz and between 4 000 kHz and 27 500 kHz**

(1995 -2012)

Required by IMO and the maritime community and likely to be required into the foreseeable future.

RECOMMENDATION ITU-R M.1174-3

**Technical characteristics of equipment used for onboard vessel communications in
the bands between 450 and 470 MHz**

(1995-1998- 2004-2015)

Required by the maritime community and useful to IMO.

RECOMMENDATION ITU-R M.1638-0

**Characteristics of and protection criteria for sharing studies for radiolocation,
aeronautical radionavigation and meteorological radars operating
in the frequency bands between 5 250 and 5 850 MHz**

(2003)

Not required by IMO but may be required by the maritime community where radars in this band are used.

ANNEX 2

RESOLUTION 13 (REV.WRC-97)

Formation of call signs and allocation of new international series

Retain.

RESOLUTION 18 (REV.WRC-15)

Relating to the procedure for identifying and announcing the position of ships and aircraft of States not parties to an armed conflict

Retain.

RESOLUTION 205 (REV.WRC-15)

Protection of the systems operating in the mobile-satellite service in the frequency band 406-406.1 MHz

Retain.

RESOLUTION 207 (REV.WRC-15)

Measures to address unauthorized use of and interference to frequencies in the bands allocated to the maritime mobile service and to the aeronautical mobile (R) service

Retain.

RESOLUTION 222 (REV.WRC-12)

Use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite service, and procedures to ensure long-term spectrum access for the aeronautical mobile-satellite (R) service

Retain.

RESOLUTION 331 (REV.WRC-12)

Operation of the Global Maritime Distress and Safety System

Retain.

RESOLUTION 339 (REV.WRC-07)

Coordination of NAVTEX services

Retain.

RESOLUTION 343 (REV.WRC-12)

**Maritime certification for personnel of ship stations and ship earth stations
for which a radio installation is not compulsory**

Retain to ensure common operations between convention and non-convention ships.

RESOLUTION 344 (REV.WRC-12)

Management of the maritime identity numbering resource

Retain.

RESOLUTION 349 (REV.WRC-12)

**Operational procedures for cancelling false distress alerts in the
Global Maritime Distress and Safety System**

Retain.

RESOLUTION 352 (WRC-03)

**Use of the carrier frequencies 12 290 kHz and 16 420 kHz for
safety-related calling to and from rescue coordination centres**

Retain.

RESOLUTION 354 (WRC-07)

Distress and safety radiotelephony procedures for 2 182 kHz

Retain.

RESOLUTION 356 (WRC-07)

ITU maritime service information registration

Retain.

RESOLUTION 359 (REV.WRC-15)

**Consideration of regulatory provisions for updating and modernization of the Global
Maritime Distress and Safety System**

Subject of agenda item 1.8.

RESOLUTION 360 (REV.WRC-15)

**Consideration of regulatory provisions and spectrum allocations to the maritime
mobile-satellite service to enable the satellite component of the VHF Data Exchange
System and enhanced maritime radiocommunication**

Subject of agenda item 1.9.2.

RESOLUTION 361 (WRC-15)

**Consideration of regulatory provisions for modernization of the
Global Maritime Distress and Safety System and
related to the implementation of e-navigation**

In the preliminary agenda for WRC-23.

RESOLUTION 362 (WRC-15)

**Autonomous maritime radio devices operating in
the frequency band 156-162.05 MHz**

Subject of agenda item 1.9.1.

RESOLUTION 612 (REV.WRC-12)

**Use of the radiolocation service between 3 and 50 MHz to support
oceanographic radar operations**

Retain.

RECOMMENDATION 7 (REV.WRC-97)

**Adoption of standard forms for ship station and ship earth station licences
and aircraft station and aircraft earth station licences**

Retain.

RECOMMENDATION 37 (WRC-03)

**Operational procedures for earth stations
on board vessels (ESVs) use**

Retain.

RECOMMENDATION 316 (REV.MOB-87)

**Use of ship earth stations within harbours and other waters
under national jurisdiction**

Amend.

ANNEX 24

**RESOLUTION MSC.471(101)
(adopted on 14 June 2019)**

**PERFORMANCE STANDARDS FOR FLOAT-FREE EMERGENCY
POSITION-INDICATING RADIO BEACONS (EPIRBs)
OPERATING ON 406 MHz**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO regulations IV/7.1 and 14.1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, concerning radiocommunications for the Global Maritime Distress and Safety System (GMDSS), which require, inter alia, that ships be provided with an emergency position-indicating radio beacon (EPIRB), which shall conform to appropriate performance standards not inferior to those adopted by the Organization,

RECOGNIZING the need to prepare performance standards for float-free EPIRBs operating on 406 MHz through the Cospas-Sarsat System of low-altitude earth orbiting, medium-altitude earth orbiting, and geostationary earth orbiting satellites to be used in the GMDSS, in order to ensure the operational reliability of such equipment and to avoid, as far as practicable, adverse interaction between such equipment and other communication and navigation equipment on board ships,

RECOGNIZING ALSO that EPIRBs, as a component of the GMDSS and operating through the Cospas-Sarsat System in the frequency band 406-406.1 MHz, should be type-approved to ensure the integrity of the Cospas-Sarsat satellite system, avoid harmful interference to the spaceborne equipment, exclude unauthorized transmissions, and to provide reliable data to rescue coordination centres,

HAVING CONSIDERED the recommendation made by Sub-Committee on Navigation, Communications and Search and Rescue, at its sixth session,

1 ADOPTS the *Recommendation on performance standards for float-free Emergency Position-Indicating Radio Beacons (EPIRBs) operating on 406 MHz*, set out in the annex to the present resolution;

2 RECOMMENDS that Member States ensure that float-free EPIRBs operating on the frequency 406 MHz, which form part of the GMDSS:

- .1 if installed on or after 1 July 2022, conform to performance standards and type-approval standards not inferior to those specified in the annex to the present resolution;
- .2 if installed before 1 July 2022, conform to performance standards not inferior to those specified in the annex to resolution A.810(19), as amended by resolutions MSC.56(66) and MSC.120(74), and type-approval standards not inferior to those specified in resolution A.696(17);

3 INVITES the Cospas-Sarsat partners to ensure that any amendments to the specification for Cospas-Sarsat 406 MHz distress beacons that could impact on this performance standard are agreed with the Organization prior to their adoption;

4 AGREES that any proposed amendments to this resolution are agreed with the Cospas-Sarsat partners prior to their adoption;

5 ALSO AGREES to keep these Performance Standards under review and to adopt amendments thereto, as necessary.

ANNEX

**RECOMMENDATION ON PERFORMANCE STANDARDS FOR
FLOAT-FREE-EMERGENCY POSITION-INDICATING RADIO
BEACONS (EPIRBs) OPERATING ON 406 MHz**

Part A – GENERAL

1 INTRODUCTION

The emergency position-indicating radio beacon (EPIRB) should, in addition to meeting the requirements of the Radio Regulations, the relevant ITU-R Recommendations and the general requirements set out in resolution A.694(17), comply with the following performance standards.

2 GENERAL

2.1 The EPIRB should be capable of transmitting a distress alert, including encoded position information from a receiver using a recognised global navigation satellite system (GNSS) with global coverage, to satellites equipped with a search and rescue 406 MHz processor or repeater.

2.2 The EPIRB should be of an automatic float-free type. The equipment, mounting and releasing arrangements should be reliable, and should operate satisfactorily under the most extreme conditions likely to be met with at sea.

2.3 The EPIRB should:

- .1 be fitted with adequate means to prevent inadvertent activation;
- .2 be so designed that the electrical portions are watertight at a depth of 10 m for at least 5 min. Consideration should be given to a temperature variation of 45°C during transitions from the mounted position to immersion. The harmful effects of a marine environment, condensation and water leakage should not affect the performance of the beacon;
- .3 be automatically activated after floating free;
- .4 be capable of manual activation and deactivation;
- .5 be provided with means to indicate that signals are being emitted;
- .6 be capable of floating upright in calm water and have positive stability and sufficient buoyancy in all sea conditions;
- .7 be capable of being dropped into the water without damage from a height of 20 m;
- .8 be capable of being tested, without using the satellite system, to determine that the EPIRB is capable of operating properly;
- .9 be of highly visible yellow/orange colour and be fitted with retroreflecting material;

- .10 be equipped with a buoyant lanyard suitable for use as a tether (to a liferaft, lifeboat or person in the water but not to the ship), which should be so arranged as to prevent its being trapped in the ship's structure when floating free;
- .11 be provided with a low duty cycle light (0.75 cd), active during darkness, visible to the human eye and detectable by all types of night vision devices, to indicate its position to nearby survivors and to rescue units;
- .12 not be unduly affected by seawater or oil or both;
- .13 be resistant to deterioration in prolonged exposure to sunlight;
- .14 be provided with a 121.5 MHz beacon primarily for homing by aircraft;
- .15 be provided with a GNSS receiver for position fixes and an associated indication that GNSS signal reception is satisfactory or unsatisfactory; and
- .16 be provided with an Automatic Identification System (AIS) locating signal in accordance with the Recommendation ITU-R M.1371, Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile frequency band.

2.4 The battery should have sufficient capacity to operate the EPIRB for a period of at least 48 h.

2.5 The EPIRB should be so designed as to operate under any of the following environmental conditions:

- .1 ambient temperatures of -20°C to +55°C;
- .2 icing;
- .3 relative wind speeds up to 100 knots; and
- .4 after stowage, at temperatures between -30°C and +70°C.

2.6 The installed EPIRB should:

- .1 have local manual activation; remote activation may also be provided from the navigating bridge, while the device is installed in the float-free mounting;
- .2 be capable, while mounted on board, of operating properly over the ranges of shock and vibration and other environmental conditions normally encountered above deck on seagoing ships; and
- .3 be designed to release itself and float free before reaching a depth of 4 m at a list or trim of any angle.

3 DISTRESS FUNCTION

3.1 When the EPIRB is manually operated a distress alert should be initiated only by means of a dedicated distress alert activator.

- 3.2 The dedicated activator should:
- .1 be clearly identified; and
 - .2 be protected against inadvertent operation.
- 3.3 Manual distress alert initiation should require at least two independent actions.
- 3.4 The EPIRB should not be automatically activated after being manually removed from the release mechanism.

4 GNSS RECEIVER POSITION REPORTING

When the EPIRB is activated:

- .1 the GNSS position fix shall be updated at intervals of no more than five minutes; and
- .2 when an updated fix is transmitted in the AIS message for the first time, the error between the transmitted and the actual position shall not exceed 30 m assuming a drift rate of 3 kn.

5 LABELLING

- 5.1 Labelling for operation controls and indicators should, as far as possible, be understood through graphical images and symbols without the need for text.
- 5.2 In addition to the items specified in resolution A.694(17) on general requirements, the following should be clearly indicated on the exterior of the equipment:
- .1 brief operating instructions;
 - .2 expiry date for the primary battery used; and
 - .3 the identity codes programmed into the transmitters.

Part B – RADIO-FREQUENCY SIGNALS

- 1 The technical characteristics of the transmitted signal and the message format should be in accordance with the requirements of Cospas-Sarsat System documents C/S T.001 or C/S T.018.
- 2 Provisions should be included for storing the fixed portion of the distress message in the EPIRB using non-volatile memory.
- 3 A unique beacon identification code should be made part of all 406 MHz messages. For EPIRBs compliant with C/S T.001 this identification code should include a three-digit maritime identification digits (MID) code to denote the country in which the beacon is registered, followed by either:
- .1 the trailing 6 digits of the ship station identity in accordance with appendix 43 of ITU Radio Regulations Recommendation ITU-R M.585, Assignment and use of identities in the maritime mobile service; or

- .2 a unique serial number; or
- .3 a radio call sign.

Preference is given to the method in sub-paragraph .1 above.

For EPIRBs compliant with C/S T.018 this identification code should include a three-digit maritime identification digits (MID) code to denote the country in which the beacon is registered, followed by a unique serial number and either the maritime mobile service identity or a radio call sign.

4 The 121.5 MHz homing signal should:

- .1 have a 121.5 MHz transmitting duty cycle not less than 50% (1.125 seconds on, 1.125 seconds off) and if more than 50%, the on time should be increased beyond 1.125 seconds and the off time reduced accordingly; and
- .2 with the exception of the sweep direction, meet the technical characteristics of appendix 15 of the Radio Regulations. The sweep may be either upward or downward.

5 The AIS locating signal should:

- .1 transmit in accordance with recommendation ITU-R Rec M.1371;
- .2 start after the first 406 MHz satellite message and ensure the AIS signal does not conflict with a scheduled 406 MHz satellite signal;
- .3 when the AIS signal coincides with a scheduled 121.5 MHz homing signal, then the 121.5 MHz homing signal may be interrupted for the transmission of the AIS signal, provided the minimum 50% duty cycle is maintained;
- .4 broadcast the Cospas-Sarsat beacon 15 HEX-ID in the AIS message 14, alternating with the text "EPIRB ACTIVE" on AIS1 and AIS2; and
- .5 indicate in the transmitted AIS locating signal when the included position fix is more than five minutes old.

Part C –TYPE APPROVAL OF EPIRBs OPERATING IN THE Cospas-Sarsat SYSTEM

1 EPIRBs forming an integral component of the GMDSS and operating through the Cospas-Sarsat satellite system in the frequency band 406 - 406.1 MHz should be type approved to ensure the integrity of the Cospas-Sarsat satellite system, avoid harmful interference to the spaceborne equipment, exclude unauthorized transmissions, and to provide reliable data to rescue coordination centres.

2 National administrations should:

- .1 ensure, as part of national type approval procedures, that any new type of EPIRB to be deployed on board ships is tested to confirm that it is in accordance with the performance standards for EPIRBs; confirmation that the EPIRB meets part B of this performance standard can be achieved by either:

- .1 performing, or having performed, under national procedures, all appropriate tests; and/or
 - .2 accepting type approval test results obtained through the Cospas-Sarsat type approval procedure for first generation beacons (Cospas-Sarsat document C/S T.007) or the Cospas-Sarsat type approval procedure for second generation beacons (Cospas-Sarsat document C/S T.021) and confirmed by the delivery of a Cospas-Sarsat Type Approval Certificate; and
- .2 encourage national type approval authorities to develop test procedures compatible, to the extent possible, with Cospas-Sarsat System document C/S T.007 or C/S T.021 as appropriate and, if necessary, in consultation with the Cospas-Sarsat Secretariat.

ANNEX 25

DRAFT AMENDMENTS TO SOLAS CHAPTER II-1¹

**Chapter II-1
Construction – Structure, subdivision and stability, machinery
and electrical installations**

**PART A
GENERAL**

Regulation 1
Application

1 Existing regulation 1.3 is replaced with the following:

"1.3 For the purpose of this chapter:

.1 the expression ships constructed means ships the keels of which are laid or which are at a similar stage of construction;

.2 the expression ships constructed on or after 1 January 2024 means:

.1 for which the building contract is placed on or after 1 January 2024;
or

.2 in the absence of a building contract, the keel of which is laid or which are at a similar stage of construction on or after 1 July 2024;
or

.3 the delivery of which is on or after 1 January 2028.

.2.3 the expression all ships means ships constructed before, on or after 1 January 2009;

.3.4 a cargo ship, whenever built, which is converted to a passenger ship shall be treated as a passenger ship constructed on the date on which such a conversion commences."

**Part A-1
Structure of ships**

Regulation II-1/3-8 – Towing and mooring equipment

2 Existing regulation 3-8 is replaced with the following:

"Towing and mooring equipment

1 Paragraphs 4 to 6 of this regulation apply to ships constructed on or after 1 January 2007.

¹ Deleted text is shown in strike-through and grey shading and new text is shown in grey shading

- 2 Paragraphs 7 and 8 of this regulation only apply to ships:
- .1 for which the building contract is placed on or after [date of entry into force]; or
 - .2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after [date of entry into force plus six months]; or
 - .3 the delivery of which is on or after [date of entry into force plus three years].
- 13 This regulation applies to ships constructed on or after 1 January 2007, but does not apply to emergency towing arrangements provided in accordance with regulation 3-4.
- 24 Ships shall be provided with arrangements, equipment and fittings of sufficient safe working load to enable the safe conduct of all towing and mooring operations associated with the normal operation of the ship.
- 35 Arrangements, equipment and fittings provided in accordance with paragraph 24 above shall meet the appropriate requirements of the Administration or an organization recognized by the Administration under regulation I/6.*
- 46 Each fitting or item of equipment provided under this regulation shall be clearly marked with any restrictions limitation associated with its safe operation, taking into account the strength of its attachment to the supporting ship's structure and its attachment to it.
- 7 For ships of 3,000 gross tonnage and above, the mooring arrangement shall be designed, and the mooring equipment including lines shall be selected, in order to ensure occupational safety and safe mooring of the ship, based on the guidelines developed by the Organization.† Ship-specific information shall be provided and kept on board.‡
- 8 Ships of less than 3,000 gross tonnage should comply with the requirement in paragraph 7 above as far as reasonably practicable, or with applicable national standards of the Administration.
- 9 For all ships, mooring equipment including lines shall be inspected and maintained in suitable condition for their intended purposes.§

* Refer to the *Guidance on shipboard towing and mooring equipment* (MSC.1/Circ.1175) for ships constructed on or after 1 January 2007 but before [date of entry into force] and the *Guidance on shipboard towing and mooring equipment* (MSC.1/Circ.1175/Rev.1) for the ships constructed on or after [date of entry into force].

† Refer to the *Guidelines on the design of mooring arrangements and the selection of appropriate mooring equipment and fittings for safe mooring* (MSC.1/Circ.[...]).

‡ Refer to *Towing and mooring arrangement plan* (MSC.1/Circ.[...]) N.B. insert reference to *Guidelines on the design of mooring arrangements and the selection of appropriate mooring equipment and fittings for safe mooring*.

§ [Refer to the *Guidelines for inspection and maintenance of mooring equipment including lines* (MSC.1/Circ.[...]).

Part B-1 Stability

3 Existing regulation 7-2 is amended as follows:

"Regulation 7-2

Calculation of the factor s_i

5.2 The factor s_i is to be taken as zero in those cases where the final waterline, taking into account sinkage, heel and trim, immerses:

- .1 for cargo ships, the lower edge of openings through which progressive flooding may take place and such flooding is not accounted for in the calculation of factor s_i . Such openings shall include air pipes, ventilators and openings which are closed by means of weathertight doors or hatch covers; ~~and~~
- .2 any part of the bulkhead deck in passenger ships considered a horizontal evacuation route for compliance with chapter II-2; ~~and~~
- .3 for passenger ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, the lower edge of openings through which progressive flooding may take place and such flooding is not accounted for in the calculation of factor s_i . Such openings shall include air pipes, ventilators and openings which are closed by means of weathertight doors or hatch covers.

5.3 The factor s_i is to be taken as zero if, taking into account sinkage, heel and trim, any of the following occur in any intermediate stage or in the final stage of flooding:

- .1 immersion of any vertical escape hatch in the bulkhead deck of passenger ships and the freeboard deck of cargo ships intended for compliance with chapter II-2;
- .2 any controls intended for the operation of watertight doors, equalization devices, valves on piping or on ventilation ducts intended to maintain the integrity of watertight bulkheads from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships become inaccessible or inoperable;
- .3 immersion of any part of piping or ventilation ducts located within the assumed extent of damage and carried through a watertight boundary if this can lead to the progressive flooding of compartments not assumed as flooded; ~~and~~
- .4 for passenger ships constructed on or after 1 January 2024, immersion of the lower edge of openings through which progressive flooding may take place and such flooding is not accounted for in the calculation of factor s_i . Such openings shall include air pipes, ventilators and openings which are closed by means of weathertight doors or hatch covers.

5.5 Except as provided in paragraph 5.3.1, openings closed by means of watertight manhole covers and flush scuttles, remotely operated sliding watertight doors, side scuttles of the non-opening type as well as watertight access doors and watertight hatch covers required to be kept closed ~~at sea~~ during navigation in accordance with regulations 22 to 24 need not be considered."

Part B-2
Subdivision, watertight and weathertight integrity

4 Existing regulation 12 is amended as follows:

"Regulation 12

Peak and machinery space bulkheads, shaft tunnels, etc.

6.1 For ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, ~~except as provided in paragraph 6.23,~~ the collision bulkhead may be pierced below the bulkhead deck of passenger ships and the freeboard deck of cargo ships by not more than one pipe for dealing with fluid in the forepeak tank, provided that the pipe is fitted with a screw-down valve capable of being operated from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships, the valve being located inside the forepeak at the collision bulkhead. The Administration may, however, authorize the fitting of this valve on the after side of the collision bulkhead provided that the valve is readily accessible under all service conditions and the space in which it is located is not a cargo space. Alternatively, for cargo ships, the pipe may be fitted with a butterfly valve suitably supported by a seat or flanges and capable of being operated from above the freeboard deck. All valves shall be of steel, bronze or other approved ductile material. Valves of ordinary cast iron or similar material are not acceptable.

6.2 For ships constructed on or after 1 January 2024, except as provided in paragraph 6.3, the collision bulkhead may be pierced below the bulkhead deck of passenger ships and the freeboard deck of cargo ships by not more than one pipe for dealing with fluid in the forepeak tank, provided that the pipe is fitted with a remotely controlled valve capable of being operated from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships. The valve shall be normally closed. If the remote control system should fail during operation of the valve, the valve shall close automatically or be capable of being closed manually from a position above the bulkhead deck of passenger ships and the freeboard deck of cargo ships. The valve shall be located at the collision bulkhead on either the forward or aft side, provided the space on the aft side is not a cargo space. The valve shall be of steel, bronze or other approved ductile material. Valves of ordinary cast iron or similar material are not acceptable."

Note: Re-number subsequent paragraphs

5 Existing regulation 13 is amended as follows:

"Regulation 13

Openings in watertight ~~bulkheads boundaries~~ below the bulkhead deck in passenger ships

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

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

2.2 Valves not forming part of a piping system shall not be permitted in watertight bulkheads boundaries.

2.3 Lead or other heat sensitive materials shall not be used in systems which penetrate watertight bulkheads boundaries, where deterioration of such systems in the event of fire would impair the watertight integrity of the bulkheads boundaries.

3 No doors, manholes or access openings are permitted in watertight transverse bulkheads dividing a cargo space from an adjoining cargo space, except as provided in paragraph 98.1 and in regulation 14.

4 Subject to paragraph 109, not more than one door, apart from the doors to shaft tunnels, may be fitted in each watertight bulkhead within spaces containing the main and auxiliary propulsion machinery including boilers serving the needs of propulsion. Where two or more shafts are fitted, the tunnels shall be connected by an intercommunicating passage. There shall be only one door between the machinery space and the tunnel spaces where two shafts are fitted and only two doors where there are more than two shafts. All these doors shall be of the sliding type and shall be so located as to have their sills as high as practicable. The hand gear for operating these doors from above the bulkhead deck shall be situated outside the spaces containing the machinery.

5.1 Watertight doors, except as provided in paragraph 98.1 or regulation 14, shall be power-operated sliding doors complying with the requirements of paragraph 76 capable of being closed simultaneously from the central operating console at the navigation bridge in not more than 60 s with the ship in the upright position.

5.2 The means of operation whether by power or by hand of any power-operated sliding watertight door shall be capable of closing the door with the ship listed to 15° either way. Consideration shall also be given to the forces which may act on either side of the door as may be experienced when water is flowing through the opening applying a static head equivalent to a water height of at least 1 m above the sill on the centreline of the door.

5.3 Watertight door controls, including hydraulic piping and electric cables, shall be kept as close as practicable to the bulkhead in which the doors are fitted, in order to minimize the likelihood of them being involved in any damage which the ship may sustain. The positioning of watertight doors and their controls shall be such that if the ship sustains damage within one fifth of the breadth of the ship, as defined in regulation 2, such distance being measured at right angles to the centreline at the level of the deepest subdivision draught, the operation of the watertight doors clear of the damaged portion of the ship is not impaired.

~~6 All power-operated sliding watertight doors shall be provided with means of indication which will show at all remote operating positions whether the doors are open or closed. Remote operating positions shall only be at the navigation bridge as required by paragraph 7.1.5 and at the location where hand operation above the bulkhead deck is required by paragraph 7.1.4.~~

- 76.1 Each power-operated sliding watertight door:
- .1 shall have a vertical or horizontal motion;
 - .2 shall, subject to paragraph 409, be normally limited to a maximum clear opening width of 1.2 m. The Administration may permit larger doors only to the extent considered necessary for the effective operation of the ship provided that other safety measures, including the following, are taken into consideration:
 - .2.1 special consideration shall be given to the strength of the door and its closing appliances in order to prevent leakages; and
 - .2.2 the door shall be located inboard the damage zone *B/5*;
 - .3 shall be fitted with the necessary equipment to open and close the door using electric power, hydraulic power or any other form of power that is acceptable to the Administration;
 - .4 shall be provided with an individual hand-operated mechanism. It shall be possible to open and close the door by hand at the door itself from either side, and in addition, close the door from an accessible position above the bulkhead deck with an all-round crank motion or some other movement providing the same degree of safety acceptable to the Administration. Direction of rotation or other movement is to be clearly indicated at all operating positions. The time necessary for the complete closure of the door, when operating by hand gear, shall not exceed 90 s with the ship in the upright position. Visual indicators to show whether the door is open or closed shall be provided at the accessible position above the bulkhead deck.
 - .5 shall be provided with controls for opening and closing the door by power from both sides of the door and also for closing the door by power from the central operating console(s) at the navigation bridge required by paragraph 7.1;
 - .6 shall be provided with an audible alarm, distinct from any other alarm in the area, which will sound whenever the door is closed remotely by power and which shall sound for at least 5 s but no more than 10 s before the door begins to move and shall continue sounding until the door is completely closed. In the case of remote hand operation it is sufficient for the audible alarm to sound only when the door is moving. Additionally, in passenger areas and areas of high ambient noise the Administration may require the audible alarm to be supplemented by an intermittent visual signal at the door; and
 - .7 shall have an approximately uniform rate of closure under power. The closure time, from the time the door begins to move to the time it reaches the completely closed position, shall in no case be less than 20 s or more than 40 s with the ship in the upright position.

76.2 The electrical power required for power-operated sliding watertight doors shall be supplied from the emergency switchboard either directly or by a dedicated distribution board situated above the bulkhead deck. The associated control, indication and alarm circuits shall be supplied from the emergency switchboard either directly or by a dedicated distribution board situated above the bulkhead deck and be capable of being automatically supplied by the transitional source of emergency electrical power required by regulation 42.3.1.3 in the event of failure of either the main or emergency source of electrical power.

76.3 Power-operated sliding watertight doors shall have either:

- .1 a centralized hydraulic system with two independent power sources each consisting of a motor and pump capable of simultaneously closing all doors. In addition, there shall be for the whole installation hydraulic accumulators of sufficient capacity to operate all the doors at least three times, i.e. closed-open-closed, against an adverse list of 15°. This operating cycle shall be capable of being carried out when the accumulator is at the pump cut-in pressure. The fluid used shall be chosen considering the temperatures liable to be encountered by the installation during its service. The power-operating system shall be designed to minimize the possibility of having a single failure in the hydraulic piping adversely affect the operation of more than one door. The hydraulic system shall be provided with a low-level alarm for hydraulic fluid reservoirs serving the power-operated system and a low gas pressure alarm or other effective means of monitoring loss of stored energy in hydraulic accumulators. These alarms are to be audible and visual and shall be situated on the central operating console(s) ~~at the navigation bridge~~ required by paragraph 7.1; or
- .2 an independent hydraulic system for each door with each power source consisting of a motor and pump capable of opening and closing the door. In addition, there shall be a hydraulic accumulator of sufficient capacity to operate the door at least three times, i.e. closed-open-closed, against an adverse list of 15°. This operating cycle shall be capable of being carried out when the accumulator is at the pump cut-in pressure. The fluid used shall be chosen considering the temperatures liable to be encountered by the installation during its service. A low gas pressure group alarm or other effective means of monitoring loss of stored energy in hydraulic accumulators shall be provided at the central operating console(s) ~~on the navigation bridge~~ required by paragraph 7.1. Loss of stored energy indication at each local operating position shall also be provided; or
- .3 an independent electrical system and motor for each door with each power source consisting of a motor capable of opening and closing the door. The power source shall be capable of being automatically supplied by the transitional source of emergency electrical power as required by regulation 42.4.2 - in the event of failure of either the main or emergency source of electrical power and with sufficient capacity to operate the door at least three times, i.e. closed-open-closed, against an adverse list of 15°.

For the systems specified in paragraphs 76.3.1, 76.3.2 and 76.3.3, provision should be made as follows: Power systems for power-operated watertight sliding doors shall be separate from any other power system. A single failure in the electric or hydraulic power-operated systems excluding the hydraulic actuator shall not prevent the hand operation of any door.

76.4 Control handles shall be provided at each side of the bulkhead at a minimum height of 1.6 m above the floor and shall be so arranged as to enable persons passing through the doorway to hold both handles in the open position without being able to set the power closing mechanism in operation accidentally. The direction of movement of the handles in opening and closing the door shall be in the direction of door movement and shall be clearly indicated.

76.5 As far as practicable, electrical equipment and components for watertight doors shall be situated above the bulkhead deck and outside hazardous areas and spaces.

76.6 The enclosures of electrical components necessarily situated below the bulkhead deck shall provide suitable protection against the ingress of water.*

* Refer to the following publication IEC 60529:2003:

- .1 electrical motors, associated circuits and control components; protected to IPX 7 standard;
- .2 door position indicators and associated circuit components; protected to IPX 8 standard; and
- .3 door movement warning signals; protected to IPX 6 standard.

Other arrangements for the enclosures of electrical components may be fitted provided the Administration is satisfied that an equivalent protection is achieved. The water pressure IPX 8 shall be based on the pressure that may occur at the location of the component during flooding for a period of 36 h.

76.7 Electric power, control, indication and alarm circuits shall be protected against fault in such a way that a failure in one door circuit will not cause a failure in any other door circuit. Short circuits or other faults in the alarm or indicator circuits of a door shall not result in a loss of power operation of that door. Arrangements shall be such that leakage of water into the electrical equipment located below the bulkhead deck will not cause the door to open.

76.8 A single electrical failure in the power operating or control system of a power-operated sliding watertight door shall not result in a closed door opening. Availability of the power supply should be continuously monitored at a point in the electrical circuit as near as practicable to each of the motors required by paragraph 76.3. Loss of any such power supply should activate an audible and visual alarm at the central operating console(s) at the navigation bridge required by paragraph 7.1.

87.1 A central operating console for all power-operated sliding watertight doors shall be located in the safety centre in accordance with regulation II-2/23. If the safety centre is located in a separate space adjacent to the navigation bridge, a central operating console shall also be located on the navigation bridge. The central operating console(s) at the navigation bridge shall have a "master mode" switch with two modes of control: a "local control" mode which shall allow any door to be locally opened and locally closed after use without automatic closure, and a "doors closed" mode which shall automatically close any door that is open in not more than 60 s with the ship in an upright position. ~~The "doors closed" mode shall automatically close any door that is open.~~ The "doors closed" mode shall permit doors to be opened locally and shall automatically re-close the doors upon release of the local control mechanism. The "master mode" switch shall normally be in the "local control" mode. The "doors closed" mode shall only be used in an emergency or for testing purposes. ~~Special consideration shall be given to the reliability of the "master mode" switch.~~

87.2 For ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, the central operating console at the navigation bridge shall be provided with a diagram showing the location of each door, with visual indicators to show whether each door is open or closed. A red light shall indicate a door is fully open and a green light shall indicate a door is fully closed. When the door is closed remotely the red light shall indicate the intermediate position by flashing. The indicating circuit shall be independent of the control circuit for each door.

7.3 For ships constructed on or after 1 January 2024, the central operating console(s) shall be provided with a diagram showing the location of each power-operated sliding watertight door, with visual indicators to show whether each door is open or closed. A red light shall indicate a door is fully open and a green light shall indicate a door is fully closed. When the door is closed remotely the red light shall indicate the intermediate position by flashing. The indicating circuit shall be independent of the control circuit for each door. Indication shall also be provided to the onboard stability computer, if installed in accordance with regulation II-1/8-1.3.1.

87.34 It shall not be possible to remotely open any door from the central operating console.

98.1 If the Administration is satisfied that such doors are essential, watertight doors of satisfactory construction may be fitted in watertight bulkheads dividing cargo ~~between deck spaces on 'tween decks~~. Such doors may be hinged, rolling or sliding doors but shall not be remotely controlled. They shall be fitted at the highest level and as far from the shell plating as practicable, but in no case shall the outboard vertical edges be situated at a distance from the shell plating which is less than one fifth of the breadth of the ship, as defined in regulation 2, such distance being measured at right angles to the centreline at the level of the deepest subdivision draught.

98.2 Should any such doors be accessible during the voyage, they shall be fitted with a device which prevents unauthorized opening. When it is proposed to fit such doors, the number and arrangements shall receive the special consideration of the Administration.

109 Portable plates on bulkheads shall not be permitted except in machinery spaces. The Administration may permit not more than one power-operated sliding watertight door ~~in each watertight bulkhead~~ larger than those specified in paragraph 76.1.2 to be substituted for these portable plates in each watertight bulkhead, provided these doors are intended to remain closed during navigation except in case of urgent necessity at the discretion of the master. These doors need not meet the requirements of paragraph 76.1.4 regarding complete closure by hand-operated gear in 90 s.

140.1 Where trunkways or tunnels for access from crew accommodation to the machinery spaces, for piping, or for any other purpose are carried through watertight bulkheads, they shall be watertight and in accordance with the requirements of regulation 16-1. The access to at least one end of each such tunnel or trunkway, if used as a passage at sea, shall be through a trunk extending watertight to a height sufficient to permit access above the bulkhead deck. The access to the other end of the trunkway or tunnel may be through a watertight door ~~of the type required by its location in the ship~~. Such trunkways or tunnels shall not extend through the first subdivision bulkhead abaft the collision bulkhead."

Note: Re-number subsequent paragraphs

6 Existing regulation 15 is amended as follows:

"Regulation 15

Openings in the shell plating below the bulkhead deck of passenger ships and the freeboard deck of cargo ships

9 For ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, ~~G~~gangway, cargo and fuelling ports fitted below the bulkhead deck of passenger ships and the freeboard deck of cargo ships shall be watertight and in no case be so fitted as to have their lowest point below the deepest subdivision draught.

10 For ships constructed on or after 1 January 2024, cargo ports and other similar openings (e.g. gangway and fuelling ports) in the side of ships below the bulkhead deck of passenger ships and the freeboard deck of cargo ships shall be fitted with doors so designed as to ensure the same watertightness and structural integrity as the surrounding shell plating. Unless otherwise granted by the Administration, these openings shall open outwards. The number of such openings shall be the minimum compatible with the design and proper working of the ship. In no case shall these openings be so fitted as to have their lowest point below the deepest subdivision draught.

~~10.1 The inboard opening of each ash-chute, rubbish-chute, etc., shall be fitted with an efficient cover.~~

~~10.2 If the inboard opening is situated below the bulkhead deck of passenger ships and the freeboard deck of cargo ships, the cover shall be watertight and, in addition, an automatic non-return valve shall be fitted in the chute in an easily accessible position above the deepest subdivision draught."~~

7 Existing regulation 16 is amended as follows:

"Regulation 16

Construction and initial tests of watertight closures

1.1 The design, materials and construction of all watertight closures such as doors, hatches, sidescuttles, gangway and cargo ports, valves, and pipes, ~~ash-chutes and rubbish-chutes~~ referred to in these regulations shall be to the satisfaction of the Administration."

8 Existing regulation 17 is amended as follows:

"Regulation 17

Internal watertight integrity of passenger ships above the bulkhead deck

1 For passenger ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, ~~T~~the Administration may require that all reasonable and practicable measures shall be taken to limit the entry and spread of water above the bulkhead deck. Such measures may include partial bulkheads or webs. When partial watertight bulkheads and webs are fitted on the bulkhead deck, above or in the immediate vicinity of watertight bulkheads, they shall have watertight shell and bulkhead deck connections so as to restrict the flow of water along the deck when the ship is in a heeled damaged condition. Where the partial watertight bulkhead does not line up with the bulkhead below, the bulkhead deck between shall be made

effectively watertight. Where openings, pipes, scuppers, electric cables etc. are carried through the partial watertight bulkheads or decks within the immersed part of the bulkhead deck, arrangements shall be made to ensure the watertight integrity of the structure above the bulkhead deck.*

* Refer to the Guidance notes on the integrity of flooding boundaries above the bulkhead deck of passenger ships for proper application of regulations II-1/8 and 20, paragraph 1, of SOLAS 1974, as amended (MSC/Circ.541, as may be amended).

2 For ships constructed on or after 1 January 2024, the internal watertight subdivision arrangements to limit the entry and spread of water above the bulkhead deck shall be in accordance with the design arrangements necessary for compliance with the stability requirements in parts B-1, and B-2 if applicable. Where pipes, scuppers, electric cables, etc. are carried through internal watertight boundaries that are immersed at any intermediate or final stage of flooding in damage cases that contribute to the attained subdivision index *A*, arrangements shall be made to ensure their watertight integrity.

3 For ships constructed on or after 1 January 2024, doors in internal watertight subdivision arrangements above the bulkhead deck, and also above the worst intermediate or final stage of flooding waterlines, shall be capable of preventing the passage of water when immersed in the required range of positive stability for any damage cases contributing to the attained subdivision index *A*. These doors may remain open provided they can be remotely closed from the navigation bridge. They shall always be ready to be immediately closed."

Note: Re-number subsequent paragraphs

9 Existing regulation 17-1 is amended as follows:

"Regulation 17-1

Integrity of the hull and superstructure, damage prevention and control on ro-ro passenger ships

1.1 ~~Subject to the provisions of paragraphs 1.2 and 1.3, a~~ All accesses from the ro-ro deck that lead to spaces below the bulkhead deck shall have a lowest point which is not less than 2.5 m above the bulkhead deck, unless the access is covered by the provisions in paragraphs 1.2 or 1.3.

1.2 Where vehicle ramps are installed to give access to spaces below the bulkhead deck, their openings shall be able to be closed weathertight to prevent ingress of water below, ~~alarmed and indicated to the navigation bridge~~ and fitted with alarms and open/close indicators on the navigation bridge. The means of closure shall be watertight if the deck is intended as a watertight horizontal boundary under regulation 7-2.6.

1.3 ~~Subject to regulations 23.3 and 23.6, t~~The Administration may permit the fitting of particular accesses to spaces below the bulkhead deck provided they are necessary for the essential working of the ship, e.g. the movement of machinery and stores, and subject to such accesses being made watertight, ~~alarmed and indicated on the navigation bridge~~ fitted with alarms and open/close indicators on the navigation bridge."

PART B-4
STABILITY MANAGEMENT

10 Existing regulation 19 is amended as follows:

"Regulation 19

*Damage control information**

1 There shall be permanently exhibited, or readily available on the navigation bridge, for the guidance of the officer in charge of the ship, plans showing clearly for each deck and hold the boundaries of the watertight compartments, the openings therein with the means of closure and position of any controls thereof, and the arrangements for the correction of any list due to flooding. In addition, booklets containing the aforementioned information shall be made available to the officers of the ship.

2 General precautions to be included shall consist of a listing of equipment, conditions and operational procedures, considered by the Administration to be necessary to maintain watertight integrity under normal ship operations.

3 Specific precautions to be included shall consist of a listing of elements (i.e. closures, security of cargo, sounding of alarms, etc.) considered by the Administration to be vital to the survival of the ship, passengers and crew.

4 In case of ships to which damage stability requirements of part B-1 apply, damage stability information shall provide the master a simple and easily understandable way of assessing the ship's survivability in all damage cases involving a compartment or group of compartments.

5 For passenger ships constructed on or after 1 January 2024, and to which regulation 8-1.3 applies, the damage control information shall include a reference to activation of damage stability support from the onboard stability computer, if installed, and to shore-based support when provided."

11 Existing regulation 21 is amended as follows:

"Regulation 21

Periodical operation and inspection of watertight doors, etc., in passenger ships

1 Operational tests of watertight doors, sidescuttles, valves and closing mechanisms of scuppers, ~~ash chutes and rubbish chutes~~ shall take place weekly. In ships in which the voyage exceeds one week in duration, a complete set of operational tests shall be held before the voyage commences, and others thereafter at least once a week during the voyage."

12 Existing regulation 22 is amended as follows:

"Regulation 22

Prevention and control of water ingress, etc.

5 Watertight doors fitted in watertight bulkheads dividing cargo ~~between deck spaces on 'tween decks~~ in accordance with regulation 13.98.1 shall be closed before the voyage commences and shall be kept closed during navigation. The time at which

such doors are opened or closed shall be recorded in such log-book as may be prescribed by the Administration.

6 For ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, Gangway, cargo and fuelling ports fitted below the bulkhead deck of passenger ships and the freeboard deck of cargo ships shall be effectively closed and secured watertight before the voyage commences, and shall be kept closed during navigation.

7 For ships constructed on or after 1 January 2024, gangway, cargo and fuelling ports fitted below the bulkhead deck of passenger ships and the freeboard deck of cargo ships and all watertight hatches shall be effectively closed and secured watertight before the voyage commences, and shall be kept closed during navigation. However, the master may permit a watertight hatch to be opened during navigation for a limited period of time sufficient to permit passage or for access. It shall then be closed.

13 Where in a between-deck, the sills of any of the sidescuttles referred to in regulation 15.3.2 are below a line drawn parallel to the bulkhead deck at side of passenger ships and the freeboard deck at side of cargo ships, and having its lowest point 1.4 m plus 2.5% of the breadth of the ship above the water when the voyage commences, all the sidescuttles in that between-deck shall be closed watertight and locked before the voyage commences, and they shall not be opened before the ship arrives at the next port. In the application of this paragraph the appropriate allowance for fresh water may be made when applicable.

.1 The time at which such sidescuttles are opened in port and closed and locked before the voyage commences shall be recorded in such log-book as may be prescribed by the Administration.

.2 For any ship that has one or more sidescuttles so placed that the requirements of paragraph 13 would apply when it was floating at its deepest subdivision draught, the Administration may indicate the limiting mean draught at which these sidescuttles will have their sills above the line drawn parallel to the bulkhead deck at side of passenger ships and the freeboard deck at side of cargo ships, and having its lowest point 1.4 m plus 2.5% of the breadth of the ship above the waterline corresponding to the limiting mean draught, and at which it will therefore be permissible for the voyage to commence without them being closed and locked and to be opened during navigation on the responsibility of the master during navigation. In tropical zones as defined in the International Convention on Load Lines in force, this limiting draught may be increased by 0.3 m.

~~16 When a rubbish chute, etc. is not in use, both the cover and the valve required by regulation 15.10.2 shall be kept closed and secured."~~

Note: Re-number subsequent paragraphs.

ANNEX 26

**RESOLUTION MSC.472(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO THE REVISED RECOMMENDATION ON TESTING OF
LIFE-SAVING APPLIANCES (RESOLUTION MSC.81(70), 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 that the Assembly, when adopting resolution A.689(17) on Testing of life-saving appliances, authorized the Committee to keep the annexed Recommendation on testing of life-saving appliances under review and to adopt, when appropriate, amendments thereto,

RECALLING FURTHER that, since the adoption of resolution A.689(17), the Committee has amended the Recommendation annexed thereto by resolutions MSC.54(66) and MSC.81(70), and by circulars MSC/Circ.596, MSC/Circ.615 and MSC/Circ.809,

RECOGNIZING the need to ensure that the references in the *Revised recommendation on testing of life-saving appliances (resolution MSC.81(70))* is kept up to date,

- 1 ADOPTS the *Amendments to the Revised recommendation on testing of life-saving appliances (MSC.81(70))*, set out in the annex to the present resolution;
- 2 INVITES Contracting Governments to the SOLAS Convention to bring the above amendments to the attention of all parties concerned.

ANNEX

**AMENDMENTS TO THE REVISED RECOMMENDATION ON TESTING OF
LIFE-SAVING APPLIANCES (RESOLUTION MSC.81(70), AS AMENDED)**

Part 1 – Prototype tests for life-saving appliances

8 LAUNCHING AND EMBARKATION APPLIANCES

8.1 Testing of davits and launching appliances

The fifth sentence of paragraph 8.1.1 is replaced by the following:

"For free-fall lifeboats, the launching appliances for lowering a free-fall lifeboat by falls, except winches, should be subjected to a static proof load of 2.2 times the maximum working load at the full outboard position."

ANNEX 27

DRAFT ASSEMBLY RESOLUTION

**AMENDMENTS TO USE AND FITTING OF RETRO-REFLECTIVE MATERIALS
ON LIFE-SAVING APPLIANCES (RESOLUTION A.658(16))**

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 resolution MSC.47(66) whereby the Maritime Safety Committee adopted a revised chapter III of the International Convention for the Safety of Life at Sea, 1974, as amended, herewith referred to as "the Convention",

RECALLING FURTHER resolution MSC.47(66) by which the Maritime Safety Committee adopted, inter alia, amendments to the revised chapter III of the Convention to make the provisions of the International Life-Saving Appliance (LSA) Code mandatory under that Convention on or after 1 July 1998,

CONSIDERING that under the provisions of paragraph 1.2.2.7 of the LSA Code, life-saving appliances shall be fitted with retro-reflective material where it will assist in detection and in accordance with the recommendations of the Organization,

RECALLING that the Assembly, when adopting resolution A.658(16) on *Use and fitting of retro-reflective materials on life-saving appliances*, authorized the Committee to keep the recommendation under review and to report as necessary to the Assembly,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its 101st session,

1 ADOPTS amendments to the *Use and fitting of retro-reflective materials on life-saving appliances (resolution A.658(16))*, set out in the annex to the present resolution;

2 AGREES that the Administration may accept life-saving appliances already fitted with retro-reflective materials in accordance with resolution A.658(16);

3 INVITES Contracting Governments to the Convention to bring the above amendments to the attention of all parties concerned.

ANNEX

**AMENDMENTS TO USE AND FITTING OF RETRO-REFLECTIVE MATERIALS
ON LIFE-SAVING APPLIANCES (RESOLUTION A.658(16))**

Paragraph 4.10 of the annex to resolution A.658(16) is replaced by the following:

"4.10 Accelerated weathering

The photometric performance of the material should be determined according to section 4.2 after the material has been exposed in a sunshine weatherometer for the following periods:

- Type I material: 750 h
- Type II material: 1,500 h

After exposure, the material should be examined for the requirements and characteristics in section 3.2."

ANNEX 28

TERMS OF REFERENCE OF THE INTERSESSIONAL WORKING GROUP ON THE REVIEW OF THE STCW-F CONVENTION

Taking into account the report by the Working Group on the Comprehensive Review of the 1995 STCW-F Convention at HTW 6 and the Sub-Committee's decisions thereof, as well as the principles and provisional scope for the comprehensive review of the 1995 STCW-F Convention, as approved by MSC 96, using annexes 1 and 2 to document HTW 6/WP.5, the Working Group is instructed, in order of priority, to:

- .1 continue work on chapter III of the revised draft annex to the STCW-F Convention and its corresponding section in part A of the draft STCW-F Code, taking into consideration relevant discussions of the Working Group in document HTW 6/WP.5, and proposals in documents HTW 6/6/4 and HTW 6/INF.8;
- .2 continue work on part B of the draft STCW-F Code, taking into consideration documents HTW 4/6/1 and HTW 4/INF.6; and HTW 5/6/2 and HTW 6/INF.8; and
- .3 submit a report to HTW 7.

ANNEX 29

MSC-MEPC.1/Circ.5/Rev.1²
18 June 2019

**DRAFT REVISED MSC-MEPC.1 CIRCULAR ON ORGANIZATION AND METHOD OF
WORK OF THE MARITIME SAFETY COMMITTEE AND THE MARINE ENVIRONMENT
PROTECTION COMMITTEE AND THEIR SUBSIDIARY BODIES¹**

- 1 The Marine Environment Protection Committee, at its seventy-second session (9 to 13 April 2018), and the Maritime Safety Committee, at its ninety-ninth session (16 to 25 May 2018), approved the revised document on *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies*, as set out in the annex, taking into account the document on *Application of the Strategic Plan of the Organization* (resolution A.1111(30)).
- 2 Members are invited to apply the annexed document with immediate effect, as appropriate, and to bring it to the attention of their representatives at relevant IMO meetings, advising them to strictly observe its provisions.
- 3 This circular revokes MSC-MEPC.1/Circ.5/Rev.1.

¹ Deleted text is shown in strike-through and grey shading and new text is shown in grey shading.

ANNEX

**DRAFT REVISED ORGANIZATION AND METHOD OF WORK OF THE MARITIME
SAFETY COMMITTEE AND THE MARINE ENVIRONMENT PROTECTION COMMITTEE
AND THEIR SUBSIDIARY BODIES**

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1 INTRODUCTION

Purpose and application

1.1 The purpose of this document is to provide a uniform basis for the Maritime Safety Committee (MSC) and the Marine Environment Protection Committee (MEPC) and their subsidiary bodies to conduct their work in an efficient and effective manner and to strengthen the linkage between the Organization's strategy, the work of the Committees and the biennial budget, with a view to achieving IMO's mission over a biennium. This in turn will enable the Committees to respond successfully to the needs for enhanced maritime safety, maritime security and protection of the marine environment, thus providing an efficient mechanism towards achieving the desired goals of the Organization.

1.2 Proper application of the document will also enhance the ability of Committee members and delegations to meetings of subsidiary bodies of the Committees to cover the full spectrum of IMO activities relevant to their work and thus provide for their effective participation in the rule-making process of the Organization. It is also expected that the document will enable the Committees to further improve their decision-making functions.

1.3 The document is applicable to the work of the Committees and their subsidiary bodies as well as to that of working, drafting and correspondence, intersessional working and other groups set up by these bodies. The Chairs of the Committees, subsidiary bodies, and working, drafting, intersessional working and other groups as well as coordinators of correspondence groups should make all efforts to ensure strict compliance with the document.

1.4 The document will be kept under review and will be updated as necessary in light of experience gained in its application, taking into account the document on *Application of the Strategic Plan of the Organization* (resolution A.1111(30)).

Objectives

1.5 The provisions of this document are aimed at achieving the following objectives:

- .1 to align and strengthen the planning and reporting processes by linking agenda-setting and reporting clearly to the Strategic Plan;
- .2 to strengthen the linkage between outputs on the biennial agenda and the resources required to deliver the outputs;
- .3 to facilitate the efforts of the Committees in controlling and monitoring the Organization's work;
- .4 to promote discipline in adherence to the planning procedures and documents;
- .5 to promote objectivity, clarity and realistic time frames in the establishment of biennial agendas by the Committees and their subsidiary bodies;
- .6 to ensure maximum possible participation by all Member States and by organizations with observer status in the work of the Committees and their subsidiary bodies; and
- .7 to establish responsibilities and promote involvement in the planning and reporting processes.

2 DEFINITIONS

For the purpose of this document, the following definitions apply:

- .1 *IMO organs* are the Council and committees of the Organization specified in Article 11 of the IMO Convention, including their subsidiary bodies.
- .2 *Strategic Plan* is the Strategic Plan for the Organization for a six-year period as adopted by the Assembly, which includes key strategic directions to enable IMO to achieve its mission.
- .3 *Output* is an item to be delivered by one or more IMO organs during the current biennium or accepted for a subsequent biennium.
- .4 *Agenda* is a list of outputs for discussion at a particular meeting.
- .5 *Biennial agenda* is a list of outputs to be delivered by a Committee or subsidiary body during a biennium.
- .6 *Post-biennial agenda* is a list of outputs accepted by the Committees in one biennium that are to be delivered or initiated in the next biennium.

3 COORDINATION OF WORK

3.1 The Committees should function as policy-making bodies and their subsidiary bodies as purely technical bodies.

3.2 The Committees should routinely examine their outputs, allocate work to their subsidiary bodies, review the allocation of meeting weeks to each body and approve their respective biennial and provisional agendas, taking into account any recommendations made by meetings of the Committees' and subsidiary bodies' Chairs, convened as provided in paragraph 3.4.

3.3 The Committees should regularly review the status of all conventions, protocols and other major instruments under their purview.

3.4 The Committee Chairs may convene a meeting of Chairs of the Committees' subsidiary bodies at least once a year. This meeting should preferably take place at the spring session of MSC or MEPC, to advise the Committees on subjects such as those referred to in paragraph 3.2, ensure coordination of the work and examine other matters pertinent to the effective conduct of business and management of the work of the Committees and their subsidiary bodies.

3.5 The Committee Chairs should, at the end of the first year of the biennium, submit to their respective Committees a joint plan covering the activities, priorities and meetings of the Committees and their subsidiary bodies for the coming biennium, for consideration in the subsequent year.

3.6 When both Committees have been charged by the Council, Assembly or a conference with considering a specific item and one Committee has finalized its consideration, the other Committee should consider it at its first subsequent session.

3.7 When an issue is transferred to one of the Committees by another committee of the Organization for specific action, the Committee, before including the subject in question in the biennial agenda, should decide that the provisions of section 4, as appropriate, are fully satisfied, even if the issue, in accordance with the criteria of the referring committee, satisfies the requirements of resolutions A.500(XII), A.777(18) and A.900(21).

4 WORK PLANNING AND DELIVERY PROCESS

Outputs

4.1 The Committees shall identify, in a timely manner, the outputs to be included in the list of outputs for the next biennium, and the Secretariat should develop its Business Plan, as such identification provides a basis for making an estimate of the budget required for that biennium.

4.2 In the process of constructing the list of outputs for the next biennium, the following should be included:

- .1 continuous and annual outputs within the current list of outputs;
- .2 outputs that have not been completed;
- .3 outputs from the post-biennial agenda, subject to resource availability; and
- .4 any other proposals for new outputs, following their assessment in accordance with the provisions in paragraph 4.6.

4.3 Decisions on the list of outputs for the next biennium shall be guided by the strategic directions in the Strategic Plan and shall take due account of:

- .1 the specific necessity for an output to be started during the current biennium;¹
- .2 the potential impact that the inclusion of an output in the biennial agenda may have in the timely delivery of outputs during the biennium;
- .3 the potential impact that the inclusion of an output may have on the workload of the Committees and their subsidiary bodies delivering the output;
- .4 the personnel and budgetary resources available;
- .5 the potential adverse impacts on the ability of the Organization to meet its objectives if a decision is made not to accept a proposal for inclusion of an output in the biennial or post-biennial agendas; and
- .6 the potential impact that the inclusion of an output may have on small island developing States (SIDS) and the least developed countries (LDCs).

4.4 Outputs may be revised during the biennium by the Committees, taking into account the provisions of paragraph 4.3, if subsequently endorsed by the Council.

¹ The normal action will be for outputs, if accepted, to be placed on the post-biennial agenda, and only in exceptional circumstances will outputs be added to the biennial agenda and current list of outputs.

4.5 The overview of the Organization's overall planning hierarchy and its links to related processes, and of the Organization's strategic planning process and its related planning and reporting flows during the course of a biennium are shown in diagrams 1 and 2 contained in annex 1 to the document on *Application of the Strategic Plan of the Organization* (resolution A.1111(30)).

Submission of proposals for new outputs

4.6 To enable the Committees to carry out a proper assessment of proposals for new outputs, submissions containing such proposals must, at a minimum, contain the information, including demonstration and documentation, set out in annex 1 (see also annex 5).

4.7 The Committees may receive the results of a Formal Safety Assessment (FSA) study carried out in accordance with *Revised guidelines for Formal Safety Assessment (FSA) for use in the IMO rule-making process* (FSA Guidelines) (MSC-MEPC.2/Circ.12/Rev.2). The criteria in paragraph 4.3 also apply to the outcomes of an FSA study that may be regarded by the Committees as proposals for new outputs (see also paragraph 4.17).

4.8 Member States should refrain from submitting to the Committees proposals for new outputs under specific agenda items. The Secretariat should not accept such submissions and should advise the submitting Administrations accordingly.

4.9 Proposals for new outputs shall not be submitted to a subsidiary body. A subsidiary body shall not undertake work on outputs or expand the scope of outputs unless directed or authorized to do so by its parent organ.

4.10 Proposals for new outputs may be developed and submitted by a subsidiary body when such proposals arise from other outputs already on the agenda of that subsidiary body.

4.11 Proposals for the inclusion of outputs submitted to the Committees by non-governmental organizations shall be co-sponsored by Member States.

4.12 Follow-up action in response to specific requests for action emanating from the Assembly and diplomatic conferences convened by IMO, United Nations conferences and bodies, regional intergovernmental conferences and other international and intergovernmental organizations, etc. shall be evaluated in the light of paragraph 4.3, unless they are specifically identified as urgent matters requiring immediate actions, and it is demonstrated that the risk of not acting will adversely affect the Organization's ability to meet its purposes.

Preliminary assessment by the Committees' Chairs of proposals for outputs

4.13 In order to facilitate the consideration of proposals for new outputs by the Committees, the Chair of the Committee concerned should undertake a preliminary assessment of such proposals. The Chair should, for that purpose, be supported by the Vice-Chair and the Secretariat and should consult the Chair of any subsidiary body concerned.

4.14 The outcome of the preliminary assessment should be submitted to the Committee concerned for consideration and approval, and should include the appraisal by the Chair of:

- .1 whether the proposal complies with the requirements for the submission of proposals for outputs, as specified in paragraph 4.6;
- .2 whether the proposal complies with the criteria specified in paragraph 4.15;

- .3 whether the demonstrated need of the proposal requires its inclusion on the biennial agenda; and, if so,
- .4 whether the agenda of the Committee can absorb the work associated with the output.

Assessment of proposals for outputs

4.15 Before deciding to accept a proposal for a new output, the Committee concerned shall carry out an assessment of the proposal against the following criteria:

- .1 Is the subject addressed by the proposal considered to be within the scope of the mission of IMO?
- .2 Does the proposal involve the exercise of functions conferred upon a Committee by or under any international convention or related instrument?
- .3 Has a need for the output been justified and documented?
- .4 Has an analysis been provided that justifies and documents the practicality, feasibility and proportionality of the proposed output?
- .5 Has the analysis of the issue sufficiently addressed both the cost to the maritime industry and the relevant legislative and administrative burdens?²
- .6 Are the benefits (e.g. enhanced maritime safety, maritime security, protection of the marine environment or facilitation of maritime traffic) that are expected to be derived from the inclusion of the proposed output clearly stated?
- .7 Do adequate industry standards exist or are they being developed?
- .8 Has the proposed output been properly specified in SMART terms (specific, measurable, achievable, realistic, time-bound)?
- .9 Does the completed checklist for considering human element issues by IMO bodies, as set out in MSC-MEPC.7/Circ.1, demonstrate that the human element has been sufficiently addressed?
- .10 If inclusion of the output in the current biennium is proposed, is this action properly justified?
- .11 Would a decision to reject or postpone the commencement of the work in relation to the proposal pose an unreasonable risk to the Organization's overall mission?

4.16 Nothing in this document shall prohibit the Committees from taking immediate action on urgent matters if the risk of not acting will adversely affect the Organization's ability to meet its purposes.

² Refer to the checklist in annex 5, which should be completed by all proponents of outputs and attached to their proposals for consideration by the Committees. The Committees may also use the checklist before adopting new, or amending existing, mandatory instruments, in order to satisfy themselves that administrative requirements have been minimized to the greatest extent possible.

4.17 Paragraph 4.15 above is also applicable to the outcome of an FSA study (see also paragraph 4.7). Annex 6 provides guidance for considering and reviewing the outcomes of FSA studies.

Decision on acceptance and inclusion of outputs

4.18 Based on its assessment in accordance with paragraph 4.15, having taken due account of the Chair's appraisal of the proposal in accordance with paragraphs 4.13 and 4.14, a Committee may decide that:

- .1 the proposal is not within the scope of the mission of the Organization and should not, therefore, be accepted for inclusion;
- .2 the need has not been sufficiently demonstrated and therefore the output should not be included;
- .3 for outputs for which extensive work is required, such as the revision of conventions or the preparation of codes, the Chair of the associated body, or the coordinating body if applicable, should be invited, with the support of the Secretariat, to prepare a comprehensive and coherent plan of work in order to inform the Committee of the full impact of the proposed output before it finalizes its decision on the output;
- .4 the urgency of the proposed action did not justify inclusion within the current biennium, and therefore accept the output for inclusion in the next biennium;
- .5 the implications for the present workload of the Organization are unacceptable within the current biennium, and therefore accept the output for inclusion in the next biennium; or
- .6 the demonstrated need for the output is such that it should be included, together with a target date for completion, in the biennial agenda, provided it is satisfied that the implications for the workload and planning are acceptable.

Mission	Need to carry out the work	Urgency to deliver the output	Workload/personnel and budgetary resources	Decision
Within the mission of the Organization	Demonstrated	Justified	Implication of workload and planning are acceptable within the current biennium	Accept output for inclusion within the current biennium
			Implications for the present workload of the Organization are unacceptable within the current biennium	Accept output for inclusion in the next biennium
	Demonstrated	Not Justified	Acceptable to next biennium	Accept output for inclusion in the next biennium
	Not demonstrated	Not Justified	No need to further consider	Output not to be accepted for inclusion
Outside the mission of the Organization	No need to further consider	No need to further consider	No need to further consider	Output not to be accepted for inclusion

4.19 Following a decision by a Committee to include an output in its biennial or post biennial agenda, it shall decide whether the output contributes to the delivery of a strategic direction. Outputs that are not directly related to the Strategic directions can be accepted as "Other work".

4.20 Upon a decision by a Committee to include an output in its post-biennial agenda, the Committee shall include the accepted output, and the timescale for completion, in its proposals for the list of outputs for the next biennium.

4.21 The Committees shall report on their decisions on proposals for outputs in their regular reports to the Council, for endorsement and in order to facilitate the monitoring of the delivery of current biennial agendas and the planning of future work.

4.22 In pursuance of resolution A.998(25) on *Need for capacity-building for the development and implementation of new, and amendments to existing, instruments*, the Committees should assess the implications for capacity-building and technical cooperation and assistance, ~~initiated on acceptance of a proposal for an output concerning new, or amendments to existing, mandatory instruments,~~ against the criteria for identification of capacity-building implications, set out in annex 2.

Decision on inclusion of outputs in the biennial agenda of subsidiary bodies

4.23 A decision by a Committee to include an output in the biennial agenda of a subsidiary body shall include clear and detailed instructions for the work to be undertaken by the subsidiary body or bodies concerned, preferably by establishing the terms of reference under which such work should be undertaken.

Coordination of outputs included in the agenda of more than one subsidiary body

4.24 In deciding to include an output on the agenda of more than one subsidiary body, the Committee shall:

- .1 designate the subsidiary body that is to coordinate the work so as to avoid duplication, maintain consistency in the standards being developed and ensure effective communication between the subsidiary bodies concerned;
- .2 ensure that the coordinating subsidiary body can complete the work by the target completion year;
- .3 ensure that only those subsidiary bodies essential for the completion of the work will be involved, in order to avoid superfluous work and documentation;
- .4 ensure that the work is included in the biennial agendas of all the subsidiary bodies concerned;
- .5 ensure that the coordinating subsidiary body reports to its parent organ(s) on the status of the work; and
- .6 for interrelated outputs contributing to the same overall objective, designate the subsidiary body to oversee the consistency of the work on those outputs.

Additional considerations

4.25 Submissions to the Committees or subsidiary bodies highlighting problems or shortcomings identified in a particular area(s) of maritime safety, maritime security or protection of the marine environment should, in general and where possible, also suggest appropriate solutions.

4.26 When new constructional requirements have been proposed for new ships, the Committees and subsidiary bodies should, in order to minimize the unavoidable gaps in safety standards between new and existing ships, consider applying the proposed new requirements, or any modifications to them, to existing ships using the *Interim guidelines for the systematic application of the grandfather clauses* (MSC/Circ.765-MEPC/Circ.315).

4.27 Recognizing the human factor as an integral part of any effort to enhance maritime safety, maritime security or protection of the marine environment, the subsidiary bodies should consider the human factor whenever new requirements are developed and existing requirements are reviewed, by taking into account the human element principles, as set out in the annex to resolution A.947(23) on *Human element vision, principles and goals for the Organization*, particularly when:

- .1 reviewing the adequacy of requirements and recommendations for equipment and operating manuals on board ships, including the simplification and standardization of terminology; in this respect, when developing new or amending existing performance standards, careful consideration should be given to including recommendations on:
 - .1 user-friendliness;
 - .2 safety of use of the equipment;
 - .3 harmonization of essential safety features of the equipment; and
 - .4 the need for clear, easily understandable and updated operating and technical manuals and drawings;
- .2 reviewing the adequacy of requirements and recommendations for operational guidelines on board ships, in particular with respect to their being easily understandable;
- .3 continuing the simplification and standardization of symbols and signs used on board ships; and
- .4 identifying words and phrases used in IMO instruments such as "adequate", "sufficient", "to the satisfaction of the Administration", etc. and determining the extent to which they can be more specifically defined.

4.28 Outputs for which extensive work is required, such as the preparation of codes, should, when appropriate, be placed on the provisional agendas of alternate sessions of the bodies concerned to allow adequate time for preparatory work by delegations.

4.29 In respect of subjects requiring research, contributions from other organizations and appropriate entities should be encouraged and taken into account. Exchange of information on technological development should be encouraged.

4.30 In the context of resolution A.911(22) on *Uniform wording for referencing IMO instruments*, subsidiary bodies should be guided in their work, as appropriate, by the guidelines annexed thereto.

4.31 Substantial modifications of draft amendments to mandatory instruments being considered by the Committees with a view to adoption should be accepted for discussion only if they have been submitted in writing. However, in exceptional circumstances, where the draft amendments under consideration include significant discrepancies or omissions, or where serious difficulties in their application can be foreseen, the Committees may accept to discuss oral proposals aimed at resolving any problems identified.

Management, control and reporting

4.32 In implementing the list of outputs, proper management and control mechanisms shall be in place to ensure that:

- .1 biennial agendas and agendas are both clearly linked to the Strategic Plan, including the list of outputs;
- .2 the objectives of the Strategic Plan can be met within the resource constraints of the Organization and its membership;
- .3 the Organization's response to changes in the environment within which it operates is consistent with the Strategic Plan; and
- .4 monitoring and reporting are such that progress on biennial agendas is explicitly linked to progress made on outputs.

4.33 In order to provide a transparent link between the Strategic Plan and the Organization's work, the following principles shall be applied:

- .1 the list of outputs shall – together with the Secretariat's Business Plan – form the basis of the biennial work of all the IMO organs and the budget of the Organization;
- .2 the items contained in the agendas and biennial agendas of all IMO organs shall all be outputs in the list of outputs or included in the Secretariat's Business Plan;
- .3 the biennial agendas of the Committees and their subsidiary bodies shall follow format 1 set out in annex 3 and should be annexed to the reports of each session;
- .4 for outputs with target completion dates within the current biennium, the biennial agenda shall specify the planned year of completion and include any tasks that are to be completed on an annual basis;
- .5 for an action that is expected to take more than one biennium to complete, the list of outputs shall specify the planned year of completion; the responsible Committee shall review the relevant output at the end of the biennium to assess the progress made and make a recommendation on whether to include it in the next list of outputs;

- .6 continuous items are discouraged, but in those cases where they are deemed unavoidable it is still necessary for them to be given a "SMART" definition so that progress during the biennium can be assessed; and
- .7 documents submitted to the Committees and their subsidiary bodies shall clearly demonstrate the direct relation between the proposals they contain and the output to be delivered under the relevant agenda item, on the basis of the list of outputs.

4.34 Reports on the status of outputs included in the list of outputs shall follow format 1 set out in annex 3, and shall be annexed to the reports of each session of the Committees and their subsidiary bodies.³ Such reports shall identify new outputs accepted for inclusion in the biennial agendas.

4.35 In preparing their own reports, the Committees and their subsidiary bodies shall incorporate all reports they have received since their previous report on the status of outputs.

4.36 The Committees shall establish and maintain post-biennial agendas which should follow format 2 set out in annex 3. These shall be annexed to the reports of each session. For planning purposes, the subsidiary bodies shall also maintain a list of the accepted outputs in the Committees' post-biennial agendas for outputs under their purview.

Responsibilities

4.37 Member States and the Secretariat shall ensure consistency and discipline in the administrative management of the planning and reporting cycle.

4.38 Accordingly, the Chairs, Vice-Chairs and Secretaries of the Committees and their subsidiary bodies have a specific responsibility for effective management of the planning and reporting cycle and for consistent and rigorous application of this document and the document on *Application of the Strategic Plan of the Organization* (resolution A.1111(30)).

4.39 In order to fulfil the function mentioned in paragraph 4.38, well-established cooperation and coordination are expected between the Chairs, Vice-Chairs and Secretaries of the Committees and their subsidiary bodies by all available means, including face to face meetings and teleconferences, as deemed necessary.

5 WORKING ARRANGEMENTS

Committees and subsidiary bodies

5.1 The subsidiary bodies should, as necessary, operate under the instructions of both MSC and MEPC and should report on specific outputs directly and separately to the Committee that has sought their expert advice, rather than reporting to both Committees.

5.2 The subsidiary bodies should periodically review their terms of reference to ensure that they accurately reflect the work being carried out.

5.3 The Committees should periodically review the necessity for the continued existence of their subsidiary bodies.

³ Should an associated organ not have been requested to consider an output during a session in the biennium, that organ is not required to include the specific output in its biennial agenda for that session.

5.4 The subsidiary bodies should not recommend the convening of working groups during sessions of a Committee without prior consultation by the Chair of the subsidiary body concerned with the Chair of that Committee.

5.5 A subsidiary body may request a contribution from another body, in which case the latter should be allowed sufficient time to prepare its contribution, taking into account its outputs.

5.6 The Committees should not, as a rule, permit any subsidiary body to commence work on the review or improvement of provisions already approved by it until sufficient experience has been gained from the application of such existing provisions.

5.7 Subsidiary bodies should focus their efforts on carrying out the technical work entrusted to them and should not normally, without good reason, reopen discussions on the need or the compelling need for an output, whether it is on their agenda or not.

5.8 With the aim of facilitating the technical work being carried out effectively and efficiently, the proponent(s) of proposals for new outputs should ensure that sufficient and relevant information, in line with the need or compelling need as determined by the Committee, is made available to the subsidiary body when embarking on its technical work.

5.9 Subsidiary bodies should not expand the scope of existing outputs unless directed or authorized to do so by a Committee. Subsidiary bodies should not develop amendments to, or interpretations of, any relevant IMO instrument without prior authorization from a Committee. However, in compliance with paragraph 4.9, when seeking a Committee's authorization to act as provided in the previous two sentences (or when spontaneously proposing an output for the current biennium or a new output to be accepted for inclusion in a Committee's post-biennial agenda), subsidiary bodies should ensure that their request complies with the provisions of paragraphs 4.3, 4.6 and 4.15, as appropriate. As subsidiary bodies may not have sufficient time to develop the required information, given that their biennial agendas are usually only discussed at the end of their sessions, interested delegations should, in consultation with the subsidiary body Chair and the Secretariat, prepare the information, which should accompany the proposal, necessary for the Committee to decide whether an output should be included in the subsidiary body's biennial agenda or in a Committee's post-biennial agenda.

5.10 Subsidiary bodies should not, as a rule, issue circulars, which are supposed to be issued only after approval by the Committees. However, in exceptional cases, subsidiary bodies may issue circulars within their area of competence, subject to endorsement of their action by the Committee or Committees concerned at their first subsequent session.

5.11 Subsidiary bodies should avoid developing unified interpretations of guidelines. In cases where the existing text of guidelines is vague and therefore needs modification, the subsidiary body concerned should amend the guidelines accordingly, in lieu of developing a unified interpretation.

5.12 When considering their outputs and/or their provisional agendas for the following session, subsidiary bodies should seek the advice of the Committees in the case of outputs for which no submissions have been received for two consecutive sessions.

Guidance on the selection of outputs for the provisional agenda

5.13 Subsidiary bodies should select outputs for their provisional agendas in a manner ensuring that proper consideration is given to important and urgent issues, taking into account:

- .1 the number of working days of each session; and
- .2 the number of working and drafting groups that the subsidiary body intends to establish.

5.14 Outputs should be selected first from the biennial agenda and, where the subsequent session will occur in the coming biennium, from the accepted outputs included in the Committee's post-biennial agenda.

5.15 The total number of selected outputs and the workload of the subsidiary bodies' provisional agendas should be kept at an appropriate and manageable level, ensuring high-quality output. Outputs selected from the Committees' post-biennial agendas should be included in the subsidiary bodies' agendas only when the outputs of the relevant biennial agenda are completed and the capacity of the subsidiary body allows the inclusion of additional outputs.

5.16 The remaining outputs not selected will be kept in abeyance and will be transferred to the provisional agendas of the subsidiary bodies as and when selected by them and endorsed by the Committee concerned, taking into account the overall workload of the subsidiary bodies responsible for the work.

Working, drafting, correspondence, intersessional working and other groups

Working groups

5.17 The Committees and their subsidiary bodies should keep the number of working groups formed during their sessions to a minimum; however, a maximum of three working groups may be established when necessary, bearing in mind the difficulties that small delegations experience in being represented in such groups and the fact that such groups work without interpretation. When a working group has completed its task and has been terminated, no other working group should be convened in its place during the same session. To that end, subsidiary bodies should endeavour to consider, as appropriate, items on their agenda in plenary, rather than establishing groups to deal with them.

5.18 Where more than three working groups are needed to deal with different subjects in one session, the Committees and subsidiary bodies should establish an order of priority for possible subject items and decide accordingly. Where more than three unrelated topics need to be covered by independent working groups over several sessions, arrangements may be made for groups concerned to meet at alternate sessions of the Committee and subsidiary body concerned, within the maximum of three working groups per session.

5.19 Working groups may start work on the first morning of a session under draft terms of reference presented by the Chair of the Committee or subsidiary body concerned, pending formal discussion of those terms of reference under the relevant agenda item. However, these measures should be an option and be decided at the meeting with caution. Whenever possible, terms of reference for working groups should be agreed at the previous sessions of the parent Committee or subsidiary bodies. Another option is for the draft terms of reference of working and drafting groups issued at the beginning of a session, in accordance with paragraph 5.36, to identify items on which groups may start working on the first morning of the session, without prior consideration of the related agenda items in plenary.

5.20 In principle, a working group should not have splinter groups. However, where it is necessary to establish one or more splinter groups to facilitate efficient work, the working group should do so by unanimous agreement and should consider and agree to the outcome of the splinter group's work before incorporating it in its report. Splinter groups, if established, should meet outside normal working hours, unless the working group decides otherwise to improve the efficiency of the work.

5.21 Subsidiary bodies' working groups, if circumstances and time constraints so dictate, may submit their reports directly to the Committees if authorized to do so by the parent body, following consultations between the Chair of the group, the Chair of the parent body and the Chairs of the Committees concerned.

5.22 When appropriate, working groups should make full use of the five working days of a session in submitting their reports to the next session of their parent body. When working group reports are to be prepared during a session, all efforts should be made to keep them as short as possible.

5.23 Permanent working groups should be avoided, however, if there is a need for such a group, a clear justification and appropriate terms of reference should be provided by the subsidiary body concerned.

Drafting groups

5.24 In addition to working groups, the Committees and their subsidiary bodies may form drafting groups. In no case should more than five groups (e.g. three working and two drafting groups) meet simultaneously during a session. If additional drafting groups are needed, they should meet outside normal working hours.

Other groups

5.25 In addition to working and drafting groups, the Committees and their subsidiary bodies may form other groups, such as technical or review groups, as required under relevant conventions. Depending on the necessity and urgency of the issue to be considered, such groups may meet in addition to or in lieu of working or drafting groups.

Correspondence groups

5.26 To facilitate the consideration of an issue, correspondence groups may be established by the Committees or subsidiary bodies and be instructed to work on a consolidated draft text prepared by a "lead country" or the Secretariat, provided that the Committee has agreed to consider the issue and has endorsed terms of reference for the group (see also paragraph 5.36). Thus, through consultation between interested delegations by correspondence, the volume of documents submitted and processed can be reduced.

5.27 Correspondence groups should utilize modern communications technology, such as the Internet, as much as possible.

5.28 The work of a correspondence group (e.g. the receipt and processing of comments and suggestions) should not pre-empt formal consideration of the relevant issue by the parent body concerned or the positions taken by Member States or international organizations participating in the group.

5.29 Normally, the Committees and subsidiary bodies should not establish more than three correspondence groups, although this number may be increased where the urgency of the matter under consideration so justifies. Sub-groups within a correspondence group should not be established. No official meetings of members of correspondence groups should be held without the prior approval of the Committee(s).

5.30 Participation in correspondence groups is open to all delegations (Member States and organizations) that can provide the necessary expertise on a timely basis or that have a particular interest in the issue under consideration. Any Member State or international organization can join in the work of a correspondence group once the group is established; and the group should accept contributions at any stage of its work.

5.31 When establishing a correspondence group, a "lead country", "lead organization" or the Secretariat should be designated to coordinate the group's work. Responsibilities of group coordinators include:

- .1 preparation, maintenance and circulation of the list of participants;
- .2 establishment of deadlines for the preparation of draft texts and receipt of comments and proposals concerning them;
- .3 preparation and circulation of draft texts and comments concerning them;
- .4 preparation and submission to the Secretariat of the report of the correspondence group, including any consolidated draft texts (see paragraph 5.35); and
- .5 introduction of the above-mentioned report and consolidated draft texts to the appropriate Committee or subsidiary body.

5.32 Responsibilities of participants include:

- .1 active participation in the work of the group;
- .2 compliance with the deadlines established for the submission of comments on draft texts, proposals, etc.; and
- .3 relaying to other group members copies of comments, proposals, etc. submitted to the group coordinator.

5.33 The responsibilities of the Secretariat, in cases where the Secretariat acts as a group coordinator, should be the same as those described in paragraph 5.31 above. The Secretariat may also be requested to circulate consolidated draft texts, etc. on behalf of the group coordinator.

5.34 The results of work carried out by correspondence groups should normally take the form of a consolidated draft text reflecting the information received from members of the group. Such texts should be accompanied by a succinct report summarizing the work and indicating which members have provided input to the process. Where it has not been possible to prepare an agreed consolidated draft document, the texts or issues on which there was disagreement should be clearly indicated in the draft document or the report, as appropriate.

5.35 Correspondence groups' reports should be submitted to the first session of the parent body after the conclusion of the groups' work, in time to meet the deadline established for consideration of substantive documents, in accordance with the provisions of paragraph 6.12. Normally the work of correspondence groups should not overlap with sessions of the parent Committee or subsidiary body. If the group has not finalized its work in time to meet the applicable deadline, a progress report should be made to the parent body.

Terms of reference of working, drafting and correspondence groups

5.36 When working, drafting and correspondence groups are to be formed, draft terms of reference should be prepared, following consultations between the Chair of the relevant Committee or subsidiary body and the Secretariat, for approval by plenary. In the case of working and drafting groups, these draft terms of reference should be issued by the Secretariat at the beginning of the session for agreement by plenary before the groups in question start their work. Thereafter, the agreed terms of reference should not be modified or extended without the parent body's prior consent.

Intersessional working groups

5.37 Subject to endorsement by the Council, intersessional meetings of working groups may be convened without interpretation services. Intersessional meetings should be held only if considered to be absolutely essential and after careful consideration of their necessity by the relevant Committee on a case-by-case basis, taking into account the priority and urgency of the specific matter that such meetings will be invited to address. Intersessional meetings of such groups should be held at IMO Headquarters immediately before or after a session of the parent body concerned. Other arrangements may be considered, however, no arrangements should be made in respect of an intersessional meeting until such a meeting has been approved by the Committee. Intersessional working groups and technical groups should not be held at the same time as committee or sub-committee meetings.

6 PROCEDURES FOR PREPARATION AND SUBMISSION OF DOCUMENTS

Preparation of documents

6.1 Documents should be prepared in single spacing and be as concise as possible so as to facilitate their timely processing. In order to enhance the clear understanding of documents, the following should be observed:

- .1 all documents should be preceded by a brief summary prepared in the form, and containing the information, indicated in the table below. Documents, especially proposals for the inclusion of an output, – should demonstrate, where feasible, the linkages to the Strategic Plan by including, in the summary, references to the related strategic direction(s) and output(s):

SUMMARY	
<i>Executive summary:</i>	This description should be brief, outlining the proposed objective (an amendment, an Assembly resolution, a circular, information only, etc.), and include information on whether a proposal will have any financial implications for the shipping industry or for the IMO budget.
<i>Strategic directions, if applicable:</i>	A reference should be made to one or more relevant strategic directions in the Organization's Strategic Plan.
<i>Output:</i>	A reference should be made to one or more corresponding outputs in the biennial's list of outputs. If there is no corresponding output, an appropriate descriptive text should be included.
<i>Action to be taken:</i>	A reference should be made to the paragraph of the document that states the action to be taken by the committee, sub-committee, etc.
<i>Related documents:</i>	Other key documents should be listed to the extent that they are known to the originator of the document.

- .2 substantive documents should conclude with a summary of the action the relevant body is invited to take; and
- .3 information documents should conclude with a summary of the information they contain.

6.2 To facilitate their processing, documents should be submitted in Microsoft Word, using Arial font size 11, by email to:

info@imo.org	–	for consideration by MSC or MEPC;
ccc@imo.org	–	for consideration by the CCC Sub-Committee;
htw@imo.org	–	for consideration by the HTW Sub-Committee;
iii@imo.org	–	for consideration by the III Sub-Committee;
ncsr@imo.org	–	for consideration by the NCSR Sub-Committee;
ppr@imo.org	–	for consideration by the PPR Sub-Committee;
sdcc@imo.org	–	for consideration by the SDC Sub-Committee;
sse@imo.org	–	for consideration by the SSE Sub-Committee;
etgroup@imo.org	–	for consideration by the E&T Group;
esph@imo.org	–	for consideration by the ESPH Working Group; and
fsa@imo.org	–	for consideration by the FSA Experts' Group.

Hard copies of documents may also be submitted or requested, to check that none of the text has been garbled during sending or conversion.

6.3 Documents made available at IMO, 13 weeks or more before a session, should not be introduced in the plenary unless the Chair decides that this is essential for the proper consideration of the matter concerned. Information documents and documents requiring no action by the Committees or their subsidiary bodies other than for their contents to be noted should not be introduced in the plenary.

6.4 To indicate the importance of documents containing proposed amendments to IMO instruments related to maritime safety, maritime security and protection of the marine environment which have been approved for adoption by MSC or MEPC, such documents will be identifiable on the IMO document website (IMODOCS) by background highlighting in pink.

6.5 Documents containing proposed amendments to mandatory instruments should be presented in a format that permits clear identification of the changes being introduced (e.g. use "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text).

6.6 Reports of the Committees and their subsidiary bodies should, in general, contain under each section only:

- .1 a summary of key documents and a list of other documents submitted by Member States, international organizations or the Secretariat;
- .2 a summary of the views expressed during consideration of an item that may have influenced the decision taken by the reporting body (but not allowing the reports to turn into summary records), with statements by delegations included only at their express request during the session; and
- .3 a record of the decisions taken.

6.7 In drafting recommendations, codes or guidelines, cross references should, whenever possible, be made to texts and terminology previously developed by IMO or other organizations. This will avoid unnecessary duplication and reduce the need for excessively detailed provisions and for subsequent harmonization.

6.8 The Chairs of subsidiary bodies should **not** introduce their reports to the Committees as these should be taken as read.

6.9 With respect to urgent matters emanating from sessions of subsidiary bodies or IMO bodies other than the Council and the Assembly, which have taken place less than 13 weeks before a session of a Committee, the Committee should consider only such urgent matters as may have been specified by it at a prior session. As a general rule, the Committee should not consider reports or matters emanating from any subsidiary body session which has taken place less than nine weeks prior to the Committee's session. In exceptional cases, a subsidiary body may invite the Committee to take action on a matter that the subsidiary body considers to be urgent and important emanating from a session that took place less than nine weeks prior to the Committee's session. In such cases, the subsidiary body Chair should consult the Committee Chair for approval of the contemplated action.

6.10 All concerned should be continuously aware of the financial and environmental impact of the volume of documentation generated by IMO meetings and should limit, to the greatest possible extent, the number of pages of documents submitted to such meetings. For information, the current arrangements in the Secretariat for the production of working papers during meetings are described in annex 4.

6.11 To encourage the action referred to in paragraph 6.10 above, documents other than information documents and reports from the Committees and subsidiary bodies, working, drafting, correspondence and other reporting groups and the Secretariat, which contain more than 20 pages, should not be translated in their entirety. They should include, for translation purposes, a summary of the document not longer than four pages, with the remaining content submitted as an annex in the language (e.g. English) that may be needed, for example, by working groups.

Submission of documents

6.12 To ensure that all documents are available at IMO Headquarters in all three working languages well in time for a session of a Committee or subsidiary body, so as to enable the timely study of documents and promote participation by all Members in the decision-making process of the Committees and their subsidiary bodies, the following provisions apply:

- .1 as a general rule, documents, other than information documents and reports of Committees and subsidiary bodies, working, drafting, correspondence and other reporting groups and the Secretariat, should not contain more than 50 pages. In the case of reports from working, drafting, correspondence or other reporting groups and in other exceptional circumstances, this number of pages may be exceeded, provided that the deadline for receipt of the document by the Secretariat, as specified in sub-paragraphs .2 and .3 below, is extended by one week for every 20 pages exceeding 50 pages;
- .2 documents containing proposals for inclusion of new outputs should be received by the Secretariat not later than 13 weeks before the opening of the relevant Committee session. They should be made available at IMO Headquarters and on the IMO document website, in the Organization's three working languages, not later than five weeks before the opening of the session;
- .3 documents (including information documents) containing more than six pages of text (bulky documents) should be received by the Secretariat no later than 13 weeks before the opening of the relevant session of a Committee or subsidiary body. However, bulky information documents submitted in electronic format may be accepted by the Secretariat if they are received no later than nine weeks before the session concerned. They should be made available at IMO Headquarters and on the IMO document website, in the Organization's three working languages, except for information documents (which should not be translated), not later than five weeks before the opening of the session;
- .4 non-bulky documents commenting on those referred to in sub-paragraphs .2 and .3 above, or on items already on the agenda, should be received by the Secretariat no later than nine weeks before the opening of the relevant session of a Committee or subsidiary body. They should be made available at IMO Headquarters and on the IMO document website, in the Organization's three working languages, not later than five weeks before the opening of the session;
- .5 notwithstanding the provisions of sub-paragraph .4 above, documents commenting on those referred to in sub-paragraphs .2, .3 and .4 above containing four pages or less should be processed if received by the Secretariat not later than seven weeks before the opening of the relevant session of a Committee or subsidiary body. These documents should start with a paragraph clearly indicating the document on which comments are made and stating that the document is submitted in accordance with the provisions of paragraph 6.12.5 of this document. They should be made available at IMO Headquarters and on the IMO document website, in the Organization's three working languages, not later than four weeks before the opening of the session;

- .6 non-bulky information documents should be received by the Secretariat not later than nine weeks before the opening of the relevant session of a Committee or subsidiary body. They should not be translated and should be made available at IMO Headquarters and on the IMO document website not later than five weeks before the opening of the session. No action will be taken on the basis of an information document only, other than to take note of it;
- .7 in addition and with reference to reports of subsidiary bodies on the basis of which a Committee is normally invited to take action, every possible effort should be made to ensure that such reports are made available at IMO Headquarters and on the IMO document website, in the Organization's three working languages, not later than five weeks before the opening of the session; and
- .8 in the case of basic documents submitted to a Committee reporting on urgent matters emanating from sessions of subsidiary bodies referred to in paragraph 6.9 which met less than 13 weeks before the Committee's session, such basic documents should include as an annex the text (e.g. draft Assembly resolutions, draft MSC circulars) on which the Committee will be invited to take action.

6.13 The Secretariat should make every effort to ensure the timely posting of documents on the IMO document website. Member States and international organizations should also endeavour to submit documents as early as possible and not just by the relevant deadlines.

6.14 The Secretariat should strictly apply the above provisions concerning the submission of documents and not accept late submissions from Member States or international organizations. Any exemption from these provisions should have the prior authorization of the Chair of the Committee concerned, following consultations with the Secretariat. In exceptional circumstances, requiring immediate action by the Committee, a relevant document to that end consisting of no more than four pages should be received by the Secretariat not later than nine weeks before the opening of the session of the body concerned and be made available at IMO Headquarters, in the Organization's three working languages, not later than five weeks before the opening of the session. The Committee would consider such a document only if it decides to do so at the opening of its session.

6.15 In the exceptional cases referred to in paragraph 6.9, when a subsidiary body invites a Committee to take action on urgent matters emanating from a session that took place less than nine weeks prior to the Committee's session, documents commenting on those urgent matters containing four pages or less should be processed if received by the Secretariat not later than seven weeks before the opening of any session of the Committee concerned. Such documents should start with a paragraph clearly indicating the document on which comments are made and stating that the document is submitted in accordance with the provisions of paragraph 6.15 of this document. They should be made available at IMO Headquarters, in the three working languages, not later than four weeks before the opening of the session.

7 OBSERVANCE OF THE DOCUMENT

This document shall be observed strictly. This will assist delegations in preparing adequately for each meeting and enhance their participation in the debate and decision-making process during meetings. It will also prevent delegations from experiencing difficulties when developing national positions on subjects on the agenda of the two Committees or their subsidiary bodies. In order to promote efficiency in the conduct of work overall, Committee members should

ensure that their colleagues attending sessions of other committees are fully informed of the outcome of the meeting that they have attended. Committee members should also ensure that their experts attending meetings of subsidiary bodies and working, drafting or correspondence groups are adequately informed and instructed with regard to any action necessary to give effect to decisions made by the Committees.

ANNEX 1

**INFORMATION REQUIRED IN SUBMISSIONS OF PROPOSALS
FOR INCLUSION OF AN OUTPUT**

- 1 **IMO's objectives:** Provide evidence whether and how the proposal:
 - .1 is within the scope of IMO's mission; and
 - .2 contributes to the implementation of the strategic directions established in the Strategic Plan, if applicable; outputs that are not directly related to the strategic directions can be accepted as "Other work".
- 2 **Need:** Demonstrate and document:
 - .1 the need for the proposed output in terms of the risks or hazards which are deemed necessary to be addressed; and
 - .2 the evidence to support the perceived need.
- 3 **Analysis of the issue:** Provide an analysis of the proposed measure, including an assessment of its practicability, feasibility and proportionality.
- 4 **Analysis of implications:** Provide an analysis of the implications of the proposal, addressing the cost to the maritime industry as well as the relevant legislative and administrative burdens (including the proposed method(s) of fulfilling any resulting administrative requirement).
- 5 **Benefits:** Provide evidence that the benefits vis-à-vis enhanced maritime safety, maritime security or protection of the marine environment expected to be derived from the inclusion of the new item justify the proposed action.
- 6 **Industry standards:** Provide information on whether adequate industry standards exist or are being developed and the intended relationship between such standards and the proposed output.
- 7 **Output:** Specify the intended output in SMART terms (specific, measurable, achievable, realistic, time-bound) including the scope of application. If work on an output is expected to go beyond one biennium, the expected deliverables for each biennium should be detailed.
- 8 **Human element:** Provide the completed checklist contained in MSC-MEPC.7/Circ.1 to demonstrate that the human element has been sufficiently addressed.
- 9 **Urgency:** Provide, with reference to the current Strategic Plan, evidence of:
 - .1 the urgency of the proposed output including any proposal to include the proposed output on the biennial agenda; and
 - .2 the date that the proposed output should be completed.
- 10 **Action required:** Specify the action required by the IMO organ.

ANNEX 2

PROCEDURES FOR ASSESSING THE IMPLICATIONS OF CAPACITY-BUILDING REQUIREMENTS WHEN DEVELOPING NEW, OR AMENDING EXISTING, MANDATORY INSTRUMENTS

1 INTRODUCTION

1.1 Assembly resolution A.998(25) on *Need for capacity-building for the development and implementation of new, and amendments to existing, instruments* cautions that, unless the Council, the Committees and their subsidiary bodies adopt a cradle-to-grave approach in relation to matters concerning capacity-building, technical cooperation and assistance, the chances of success in the ratification and effective implementation of IMO instruments may be reduced by the level of unpreparedness or lack of capacity that Member States, in particular small island developing States (SIDS) and least developed countries (LDCs), experience at the point when implementation of such instruments is urgently required. Therefore, the development of this procedure is in keeping with the provisions of that resolution.

1.2 The assessment of capacity-building implications for the implementation of new, and/or amendments to existing, instruments is an iterative process that begins with the acceptance of the preliminary proposal and runs in parallel up to the process of its implementation.

1.3 These procedures do not prevent States from taking additional actions in promoting the advancement of the objectives of capacity-building through technical assistance or cooperation.

2 DEFINITIONS

For the purpose of these procedures, the following definitions apply:

~~2.1 *Output* is as defined in paragraph 2.3 of the document on *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.1).~~

2.21 *Capacity-building* means sustainable social, economic or legal measures undertaken through various means for the purposes of a comprehensive transformation of the performance of an Administration or industry player so as to implement and therefore comply with new or amended instruments.

2.32 *Technical assistance* is a methodology for providing capacity-building through bilateral and/or multilateral exchange of technical knowledge, resources or expertise to a party which has requested such assistance in order to enhance its technical capability to implement existing, new or amended instruments.

2.43 *Technical cooperation* refers to a methodology for providing capacity-building, through a multilateral effort, to a group of cooperating countries of a particular region in the form of training and exchange of expertise, knowledge and information, in support of their efforts aimed at promoting the implementation of existing, new and/or amended instruments.

2.54 *Instruments* refers to IMO conventions and other treaties.

3 PURPOSE AND OBJECTIVES

3.1 The purpose of these procedures is to give effect to resolution A.998(25), aimed at enhancing efforts to promote universal implementation of IMO instruments.

3.2 These procedures are intended to assist in the identification and assessment of capacity-building implications in the following cases:

- .1 when a Committee ~~has accepted a proposal for an unplanned output and/or on approval by a Committee of a new instrument approved new instrument/amendments to existing instruments;~~
- .2 during implementation of new instruments or amended instruments; and
- .3 during the scheduling of capacity-building measures or activities.

3.3 These procedures apply to the Committees of the Organization and constitute a specific implementation response to resolution A.998(25).

3.4 These procedures aim at:

- .1 promoting universal ratification and compliance with newly adopted IMO instruments;
- .2 improving the level and quality of implementation of new and/or amended instruments; and
- .3 promoting, as far as possible, a balanced level of implementation of new instruments.

4 PROCEDURE

4.1 The Committees should conduct an assessment of capacity-building implications by following the procedure in the flow chart in appendix 1 of these procedures.

4.2 Assessments of capacity-building implications should be initiated ~~after the approval of a new instrument/amendment to existing instruments on the acceptance of a proposal for an unplanned output.~~

~~Preliminary assessment of capacity-building implications~~

~~4.3 In order to facilitate the assessment of capacity-building implications by a Committee, its Vice-Chair should, in consultation with the Chair and assisted by the Secretariat, undertake a preliminary assessment of capacity-building implications, using the checklist for assessing the need for capacity-building contained in appendix 2 of these procedures.~~

~~4.4 The outcome of the preliminary assessment should be submitted to the Committee concerned for consideration. This should contain the Vice-Chair's appraisal of whether there are or will be capacity-building implications or need for technical assistance; a list of possible implications; and recommendations on the way forward.~~

Assessment of capacity-building implications

4.5 ~~Following the preliminary assessment, the Committee should, if necessary, decide to convene the Ad hoc Capacity-building Needs Analysis Group (ACAG) to be chaired by the Vice-Chair of that Committee. The ACAG should consider the preliminary assessment, taking into account comments and any further submissions thereto and, if appropriate, conduct further assessment and present its report and recommendations to the Committee.~~

4.6 ~~The ACAG may refer a matter through the Committee for further consideration by another organ.~~

4.3 In order to facilitate the assessment of capacity-building implications, the Committee should, if necessary, at the adoption stage of the new instruments or amended instruments, instruct the Drafting Group on Amendments to Mandatory Instruments to undertake an assessment of capacity-building implications, using the checklist for assessing the need for capacity-building contained in appendix 1 of these procedures.

4.4 The Drafting Group should consider comments and any further submissions thereto and, if appropriate, conduct further assessment and present its report and recommendations to the Committee. The outcome of the preliminary assessment should be submitted to the Committee concerned for consideration. This should contain the Drafting Group's appraisal of whether there are or will be capacity-building implications or need for technical assistance; a list of possible implications; and recommendations on the way forward.

4.5 The Drafting Group may refer a matter through the Committee for further consideration by another organ.

Post-assessment of capacity-building implications for implementation of new measures

4.76 When new measures have been approved, the Committee may request the ACAG Drafting Group to:

- .1 conduct a post-assessment exercise using the criteria and mechanism contained in appendix 32 of these procedures to identify issues that require special focus when implementing technical cooperation and assistance activities; and
- .2 prepare, for the Committee's consideration, a draft circular describing the possible capacity-building implications and recommendations for a course of action, for consideration by the Organization, the membership and/or industry.

5 TERMS OF REFERENCE OF THE ACAG DRAFTING GROUP

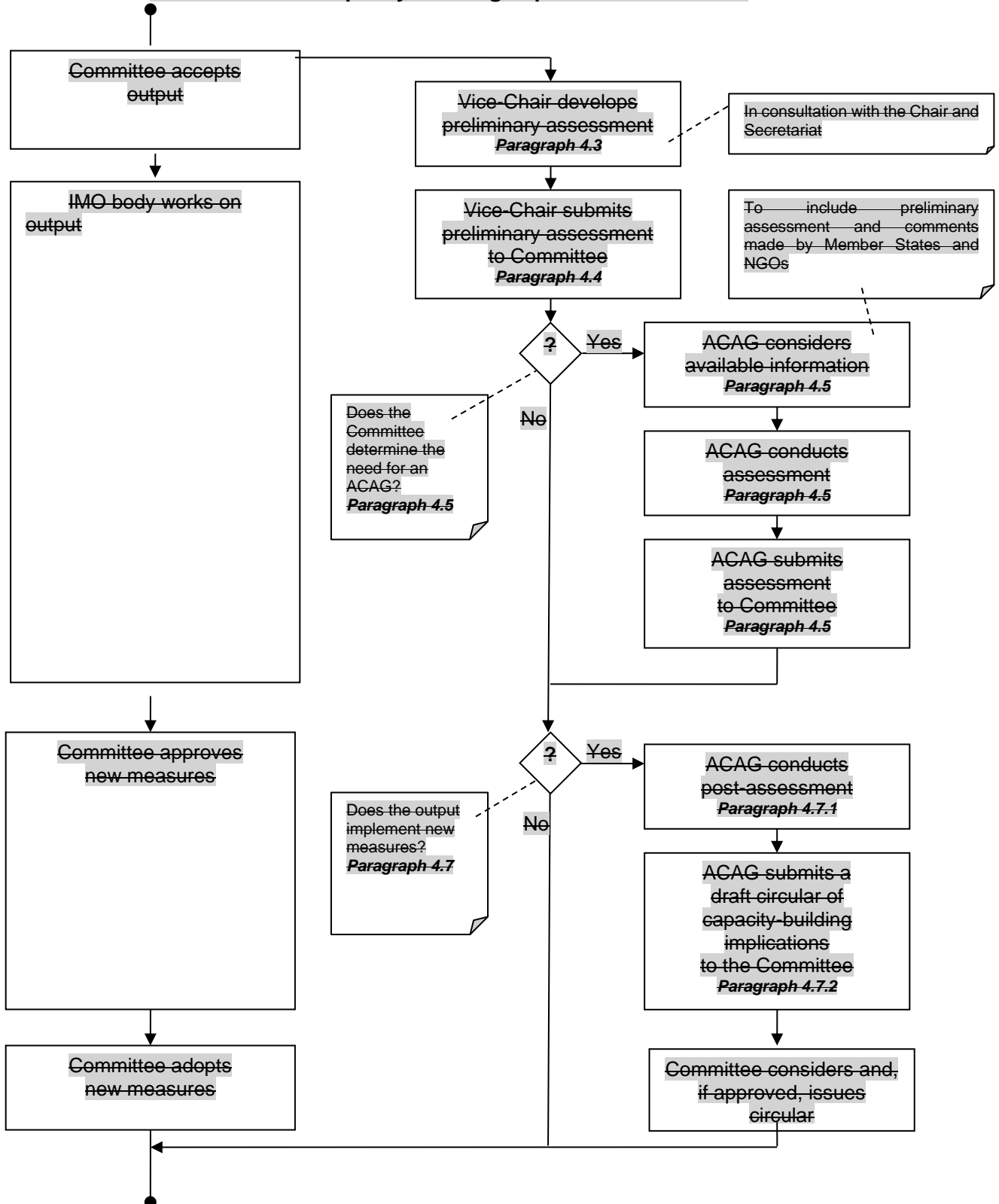
In conducting its assessment of capacity-building, the ACAG Drafting Group should be guided by the following terms of reference:

- .1 consider a preliminary assessment of capacity-building and technical assistance actions;
- .2 conduct an assessment and, when new measures have been approved, a post-assessment, of the capacity-building actions that may be included in the technical assistance or technical cooperation required by Administrations for the implementation of the instrument;

- .3 in consultation with the industry and non-governmental organizations, conduct an assessment, and on implementing new measures, a post-assessment, of the capacity-building actions that may be required or expected of the shipping industry for the implementation of the instrument; and
- .4 advise the Committee concerned of the implications for capacity-building relating to a new instrument or a proposed amendment to an existing instrument, whichever is being considered.

APPENDIX 1

Identification of capacity-building implications flow chart



APPENDIX 21

Checklist for the identification of capacity-building implications

1 For Administrations

- Is new legislation required?
- Is there a requirement for new equipment and/or systems?
 - Does equipment manufacturing capacity exist internationally?
 - Do equipment repair/servicing facilities exist internationally?
 - Is there capacity to develop new systems?
- Will the implementation require additional financial resources?
- Is there a need for additional human resources or new skills?
- Will there be a need to upgrade current infrastructure?
- Is there enough lead time towards implementation?
- Will a rapid implementation procedure be adopted?
- Is there a substantial modification of existing standards?
- Will a guide to implementation be needed?

2 For the industry

- Would the industry require new and/or enhancement of existing systems?
 - Does capacity exist internationally to develop new systems?
- Is there a need for additional training of seafarers?
 - Do related and validated training courses exist?
 - Are sufficient simulation training courses available internationally?
- Will there be a requirement for new equipment?
 - Does manufacturing capacity exist internationally?
 - Is there repair/servicing and/or retrofitting and does maintenance capacity exist internationally?

APPENDIX 32

Checklist of issues requiring special focus when developing capacity-building related to the implementation of new measures

Capacity-building Measures Form

Instrument _____

Measure number _____ of _____

Required for Administration
 Industry

Implementation Prior to adoption
 Once adopted
 Prior to entry into force
 Once ratified
 Phased in

Description of capacity-building activity needed for the implementation of new measures:

ANNEX 3

FORMAT 1: BIENNIAL STATUS REPORT

[Name of organ]									
Reference to SD, if applicable	Output number ^a	Description	Target completion year ^b	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1 ^c	Status of output for Year 2 ^c	References ^d
Notes:									
Notes:									

Notes:

- a When individual outputs contain multiple deliverables, the format should report on each individual deliverable.
- b The target completion year should be specified as a year, or indicate that the item is annual or continuous. This should not indicate a number of sessions.
- c The entries under the "Status of output" columns are to be classified as follows:
 - "completed" signifies that the output for the year in question has been duly finalized;
 - "in progress" signifies that work on the output has been progressed, and that finalization is expected in the target completion year;
 - "ongoing" signifies that the outputs relate to work of the respective IMO organs that is a permanent or continuous task;
 - "postponed" signifies that the respective IMO organ has decided to defer the production of relevant outputs to another time (for example, until the receipt of corresponding submissions) and accordingly that the output has been included on the post-biennial agenda;
 - "extended" signifies that further work is necessary and that the output will not be finalized as planned; and
 - due to the nature of annual outputs, the status can either be "completed" or "postponed".
- d References should be made to the relevant part of the organ's report on this item.

FORMAT 2: POST-BIENNIAL AGENDAS OF COMMITTEES

[NAME OF COMMITTEE]								
ACCEPTED POST-BIENNIAL OUTPUTS				Parent organ(s)	Associated organ(s)	Coordinating organ	Timescale	Reference
Number	Biennium ^e	Reference to strategic direction, if applicable	Description					

Notes:

^e Biennium when the output was placed on the post-biennial agenda.

ANNEX 4

CURRENT ARRANGEMENTS IN THE SECRETARIAT FOR THE PRODUCTION OF WORKING PAPERS DURING MEETINGS

1 The details of how to handle the preparation of working papers produced during meetings, which are agreed at a coordination meeting held between the Conference Division and the relevant technical division(s) during the week preceding each meeting, will be conveyed by the Secretary of the IMO body to the Chair of that body, as well as the Chairs of the working and drafting groups.

2 To ensure that all working papers, including the draft report, are available when needed in all three working languages, these documents should be as concise as possible, with a limited number of pages containing new text. The following provisions apply:

.1 Advance text

Whenever possible, for working/drafting group reports, advance text should be provided to the translation sections. This could be whole annexes or documents prior to the meeting, or parts thereof submitted as the work of the groups progresses.

.2 Final text

Final text should be delivered to the translation sections as early as possible in the course of the meeting week as follows:

.1 Working papers – these should be delivered no later than 9 a.m. on the day of the report night, so that they may be processed during the day shift.

.2 Draft report – the night shift is to be dedicated to the processing of the draft report and will end at 1 a.m. on the following day. In order to meet the established deadline, items for the draft report not delivered throughout the week should be sent to the translation sections as early as possible on the report night, with the last remaining item to be delivered no later than 11 p.m.

ANNEX 5

CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS

This checklist should be used when preparing the analysis of implications required in submissions of proposals for inclusion of outputs. For the purpose of this analysis, the term "administrative requirement" is defined in accordance with resolution A.1043(27), as an obligation arising from a mandatory IMO instrument to provide or retain information or data.

Instructions:

- (A) If the answer to any of the questions below is **YES**, the Member State proposing an output should provide supporting details on whether the requirements are likely to involve start-up and/or ongoing costs. The Member State should also give a brief description of the requirement and, if possible, provide recommendations for further work, e.g. would it be possible to combine the activity with an existing requirement?
- (B) If the proposal for the output does not contain such an activity, answer **NR** (Not required).
- (C) For any administrative requirement, full consideration should be given to electronic means of fulfilling the requirement in order to alleviate administrative burdens.

1. Notification and reporting? Reporting certain events before or after the event has taken place, e.g. notification of voyage, statistical reporting for IMO Members	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
2. Record-keeping? Keeping statutory documents up to date, e.g. records of accidents, records of cargo, records of inspections, records of education	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
3. Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
4. Permits or applications? Applying for and maintaining permission to operate, e.g. certificates, classification society costs	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
5. Other identified requirements?	NR	Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		

ANNEX 6

GUIDELINES FOR CONSIDERING AND REVIEWING THE OUTCOMES OF FSA STUDIES

Purpose

1 The purpose of these Guidelines is to assist the committees in considering and reviewing the outcomes (i.e. risk control options (RCOs) or other recommendations) of FSA studies. These Guidelines provide a bridge between the FSA Guidelines (MSC-MEPC.2/Circ.12/Rev.2) and the document on *Application of the Strategic Plan of the Organization* (resolution A.1111(30)).

Background

2 The Revised FSA Guidelines (MSC-MEPC.2/Circ.12/Rev.2) adequately cover the procedures to manage outcomes of an FSA study from initial submission to the committee through to the report of the FSA Experts Group to the committee.

3 The document on *Application of the Strategic Plan of the Organization* contains guidance on how the committees may consider placing new 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 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 an 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; or
- .2 request submission of a proposal for an 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.

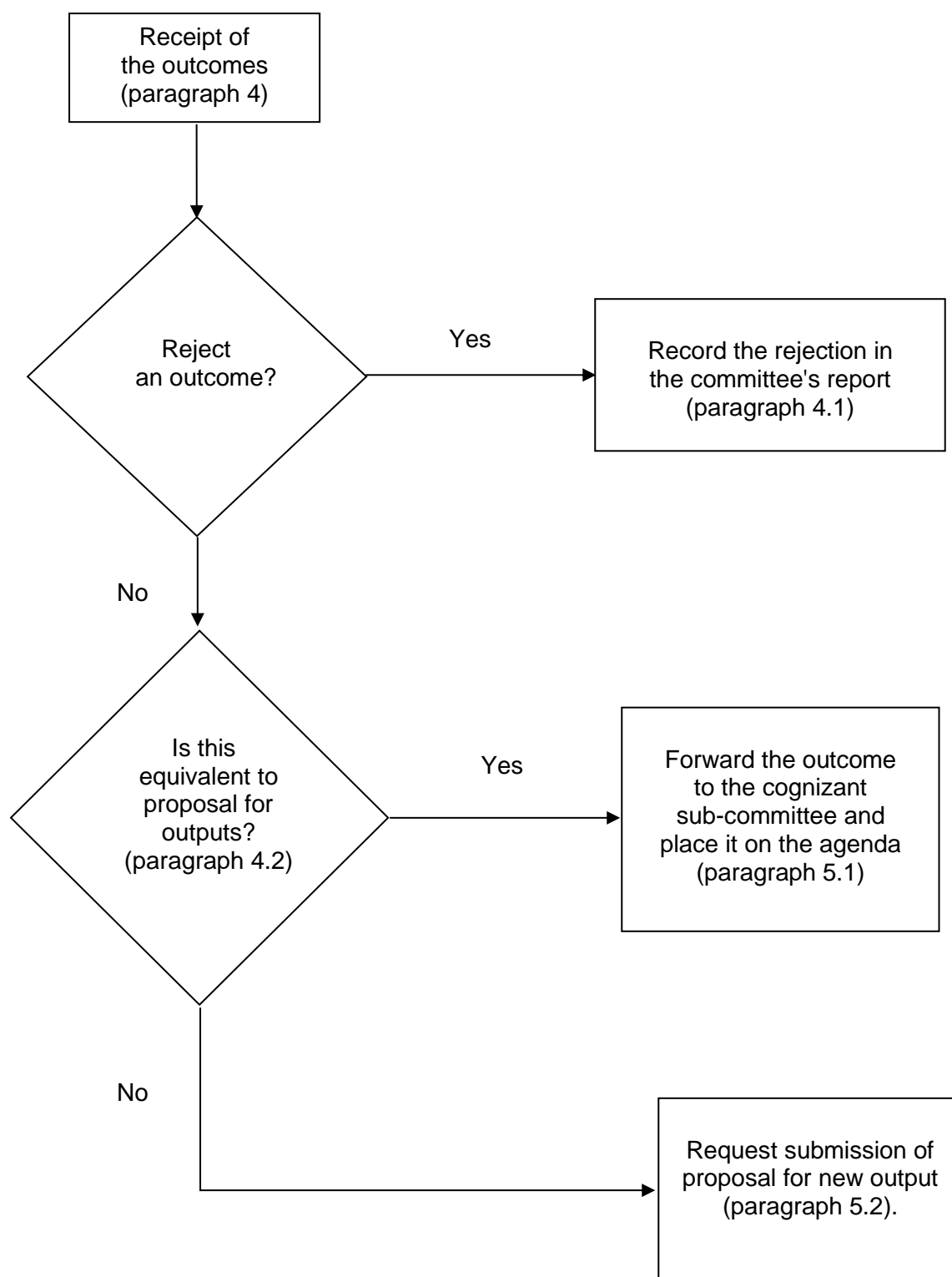


Figure 1 – Flowchart for committees' management of outcomes (i.e. RCOs or other recommendations from an FSA study)

ANNEX 30

WORK PLAN FOR DOMESTIC FERRY SAFETY

	Event	Action	Comments
1	Expert Group Meeting at United Nations ESCAP, Headquarters, Bangkok, for Asia and Pacific Region (First quarter 2020)	Conduct Expert Group meeting on domestic ferry safety for the Asia and the Pacific region	The meeting will be conducted at ESCAP Headquarters in collaboration with the Transport Division of ESCAP
2	MSC 102 (June 2020)	Submission of basic structure of draft model regulations on domestic ferry safety	The Secretariat following consultations with stakeholders would have completed the review of best practices and national legislation on domestic ferry safety
3	Expert Group Meeting (Third quarter 2020)	Conduct Expert Group meeting on domestic ferry safety for the Africa region	Venue to be confirmed
4	MSC 103 (December 2020)	Submission of expanded structure of draft model regulations on domestic ferry safety	The Secretariat, following consultations with stakeholders, will submit an expanded version of the structure of the draft model regulations on domestic ferry safety
5	MSC 104 (June 2021)	Submission of draft model regulations on domestic ferry safety	The Secretariat, following consultations with stakeholders, will submit draft model regulations on domestic ferry safety
6	MSC 105 (June 2022)	If required, submission of final set of model regulations on domestic ferry safety, which could be for information only	The Secretariat will submit the final set of model regulations on domestic ferry safety
7	...	Development of online training material on domestic ferry safety (2021-2022)	The Technical Cooperation Division will prepare or arrange the preparation of online training material to facilitate the implementation of the model regulations on domestic ferry safety

ANNEX 31

BIENNIAL STATUS REPORTS OF THE SUB-COMMITTEES

Sub-Committee on Carriage of Cargoes and Containers (CCC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW			MSC 100/20, paragraphs 10.3 to 10.6 and 17.28
1. Improve implementation	1.30	Revision of the Inspection programmes for cargo transport units carrying dangerous goods (MSC.1/Circ.1442, as amended by MSC.1/Circ.1521)	2020	MSC	CCC				MSC 100/20, paragraph 17.16
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW/PPR/SDC/SSE	CCC	In progress		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2; CCC 5/13, section 3

Sub-Committee on Carriage of Cargoes and Containers (CCC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC/MEPC	III/PPR/CCC/SDC /SSE/NCSR		Ongoing		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12; CCC 5/13, section 8
Notes: A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions.									
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC/MEPC	III/PPR/CCC/SDC /SSE/NCSR	HTW			MSC 89/25, paragraphs 10.10, 10.16 and 22.39 and annex 21
OW. Other work	OW 3	Amendments to the IMDG Code and supplements	Continuous	MSC	CCC		Ongoing		CCC 5/13, section 6
Notes: MSC 101 agreed to reassign the continuous outputs "Amendments to the IMDG Code and supplements" and "Amendments to the IMSBC Code and supplements" to SD 6 for the 2020-2021 biennium.									
OW. Other work	OW 9	Amendments to the IMSBC Code and supplements	Continuous	MSC	CCC		Ongoing		CCC 5/13, section 5
OW. Other work	OW 19	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC/MEPC	III	CCC			CCC 5/13, section 9

Sub-Committee on Carriage of Cargoes and Containers (CCC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 35	Amendments to the IGC and IGF Codes to include high manganese austenitic steel and related guidance for approving alternative metallic material for cryogenic service	2020	MSC	CCC		In progress		MSC 96/25 paragraph 23.4; MSC 98/23, annex 38; MSC 100/20 paragraph 17.21; CCC 5/13, section 4
OW. Other work	OW 42	Amendments to the CSS Code with regard to weather-dependent lashing	2019	MSC	CCC		In progress		MSC 98/23, paragraph 20.7; CCC 5/13, section 7

Sub-Committee on Human Element, Training and Watchkeeping (HTW)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW	Ongoing	Ongoing	MSC 100/20, paragraphs 10.3 to 10.6 and 17.28; HTW 6/13, section 3
1. Improve implementation	1.21	Guidance for STCW Code, section B-I/2	2018	MSC	HTW		Extended	Completed	MSC 98/23, paragraph 9.2; HTW 6/13, section 5
1. Improve implementation	1.22	Comprehensive review of the 1995 STCW-F Convention	2018	MSC	HTW		Extended	Extended	MSC 95/22, paragraph 19.3 and 19.4; MSC 96/25, paragraph 12.3; HTW 6/13, section 6
1. Improve implementation	1.23	Revision of the Guidelines on fatigue	2018	MSC	HTW		Completed		MSC 94/21, paragraph 18.8; MSC 95/22, paragraph 9.18; MSC 98/23, paragraphs 9.8 and 9.11; MSC 100/20, paragraphs 10.7 and 10.8; HTW 5/16, section 8

Sub-Committee on Human Element, Training and Watchkeeping (HTW)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.28	Development of amendments to the Revised guidelines for the development, review and validation of model courses (MSC-MEPC.2/Circ.15/Rev.1)	2020	MSC	HTW			In progress	MSC 100/20, paragraphs 17.7 and 17.8; HTW 6/13, section 8
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW/PPR /SDC/SSE	CCC	No work requested	Completed	MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2; HTW 6/13, section 12
5. Enhance global facilitation and security of international trade	5.13	Development of amendments to the STCW Convention and Code for the use of electronic certificates and documents of seafarers	2020	MSC	III	HTW		In progress	MSC 100/20, paragraph 17.12; HTW 6/13, section 9

Sub-Committee on Human Element, Training and Watchkeeping (HTW)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW	Ongoing	Ongoing	MSC 89/25, paragraphs 10.10, 10.16 and 22.39 and annex 21; HTW 6/13, section 7
OW. Other work	OW 10	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC/MEPC	HTW/PPR/NCSR	III	No work requested	Completed	MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3; HTW 6/13, section 12
Notes: MSC 101 agreed to reassign the continuous output "Measures to harmonize port State control (PSC) activities and procedures worldwide" to SD 1 for the 2020-2021 biennium.									
OW. Other work	OW 14	Reports on unlawful practices associated with certificates of competency	Annual	MSC	HTW		Completed	Completed	MSC 83/28, paragraph 12.2; HTW 6/13, section 4

Sub-Committee on Human Element, Training and Watchkeeping (HTW)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 36	Review of SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	2019	MSC	HTW/SDC	SSE	No work requested	Completed	MSC 97/22, paragraph 19.19; MSC 98/23, paragraph 12.42; HTW 6/13, section 12

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW			MSC 100/20, paragraphs 10.3 to 10.6 and 17.28
1. Improve implementation	1.4	Analysis of consolidated audit summary reports	Annual	Assembly	MSC/MEPC/LEG/TCC/III	Council	Completed		MEPC 61/24, paragraph 11.14.1; MSC 88/26, paragraph 10.8; C 120/D, paragraphs 7.1 and 7.2
1. Improve implementation	1.5	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; MSC 91/22, paragraph 10.30; MEPC 52/24, paragraph 10.15
1. Improve implementation	1.14	Revised guidance on ballast water sampling and analysis	2019	MEPC	PPR	III	No work requested		MEPC 68/21, paragraphs 7.14 and 17.26; MEPC 70/18, paragraph 4.47; MEPC 71/17, paragraph 4.45
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and consideration of amendments to SOLAS chapters II-1 and II-2, if necessary	2020	MSC	III/HTW/SDC	SSE	No work requested		MSC 98/23, paragraph 20.36

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
Notes: Description amended and HTW was added as associated organ.									
5. Enhance global facilitation and security of international trade	5.13	Development of amendments to the STCW Convention and Code for the use of electronic certificates and documents of seafarers	2020	MSC	III	HTW			MSC 100/20, paragraph 17.12
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR		No work requested		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12
Notes: A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions.									
6. Ensure regulatory effectiveness	6.4	Lessons learned and safety issues identified from the analysis of marine safety investigation reports	Annual	MSC/MEPC	III		Completed		MSC 92/26, paragraph 22.29
6. Ensure regulatory effectiveness	6.5	Identified issues relating to the implementation of IMO instruments from the analysis of PSC data	Annual	MSC/MEPC	III		Completed		MSC 96/25, paragraph 23.13; MEPC 69/21, paragraph 19.11
6. Ensure regulatory effectiveness	6.7	Consideration and analysis of reports on alleged inadequacy of port reception facilities	Annual	MEPC	III		Completed		MEPC 69/21, paragraph 19.11

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW	Ongoing		MSC 89/25, paragraphs 10.10, 10.16 and 22.39 and annex 21;
OW. Other work	OW 10	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC/MEPC	HTW/PPR/NCSR	III	Ongoing		MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3
Notes: MSC 101 agreed to reassign the continuous output "Measures to harmonize port State control (PSC) activities and procedures worldwide" to SD 1 for the 2020-2021 biennium.									
OW. Other work	OW 16	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC/MEPC	III		Completed		MEPC 68/21, paragraphs 14.5 and 14.6; FSI 12/22, paragraph 9.4; MSC 79/23, paragraphs 9.19 and 9.20
OW. Other work	OW 19	Consideration of reports of incidents involving dangerous goods or marine pollutants in	Annual	MSC/MEPC	III	CCC	No work requested		

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
		packaged form on board ships or in port areas							
OW. Other work	OW 30	Measures to protect the safety of persons rescued at sea	2019	MSC	III	NCSR	No work requested		MSC 98/23, paragraph 11.1
Notes: Noting that only two documents had been submitted by Member States and international organizations since the output was included in the agenda of the COMSAR Sub-Committee in 2009 and that the same kind of issues were considered under the output OW 44 "IMO's contribution to addressing unsafe mixed migration by sea", which was on the biennial agendas of the MSC and the FAL and LEG Committees, NCSR 6 agreed to invite the Committee to delete this output from the biennial agenda of the Sub-Committee.									
OW. Other work	OW 33	Finalization of a non-mandatory instrument on regulations for non-convention ships	2019	MSC	III		No work requested		MSC 96/25, paragraph 9.4
OW. Other work	OW 49	Review the Model Agreement for the authorization of recognized organizations acting on behalf of the Administration	2018	MSC/MEPC	III		Completed		MSC 97/22, paragraph 19.7; III 5/15, paragraph 11.15
Sub-Committee on Navigation, Communications and Search and Rescue (NCSR)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC / SDC/SSE/ NCSR	HTW			MSC 100/20, paragraphs 10.3 to 10.6 and 17.28
2. Integrate new and	2.1	Response to matters related to the	Annual	MSC	NCSR		Completed	Completed	MSC 99/22, paragraphs 12.11 to 12.15;

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
advancing technologies in the regulatory framework		Radiocommunication ITU-R Study Group and ITU World Radiocommunication Conference							MSC 101/24, paragraphs 11.19 and 11.20, and annex 23
2. Integrate new and advancing technologies in the regulatory framework	2.9	Application of the Indian Regional Navigation Satellite System (IRNSS) in the maritime field and development of performance standards for shipborne IRNSS receiver equipment	2020	MSC	NCSR		In progress	Extended	MSC 98/23, paragraphs 11.8 and 11.9; MSC 99/22, paragraph 12.7 and resolution MSC.449(99)
Notes: Recognizing that the evaluation of the Indian Regional Navigation Satellite System (IRNSS) had not been completed and that further work was required, MSC 101 agreed with the request of NCSR 6 to extend the target completion year for this output to 2020.									

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.10	Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments	2021	MSC	HTW/SSE	NCSR	In progress	In progress	MSC 98/23, paragraph 20.27
2. Integrate new and advancing technologies in the regulatory framework	2.11	Consideration of descriptions of Maritime Services in the context of e-navigation	2021	MSC	FAL/NCSR		In progress	Extended	FAL 43/20, paragraph 7.21; MSC 101/24, paragraphs 11.10 and 11.11; resolution MSC.467(101); MSC.1/Circ.1610
Notes:	Having completed the work on the development of guidance on definition and harmonization of the format and structure of Maritime Services within the context of e-navigation and recognizing the need for a continuous review process of maritime service descriptions and the harmonization of related services, MSC 101 agreed with the request of NCSR 6 to rename the output "Develop guidance on definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs)" as "Consideration of descriptions of Maritime Services in the context of e-navigation" with a target completion year of 2021. MSC 101 also noted the decision of FAL 43 to include the FAL Committee as an associated organ for this output (FAL 43/20, paragraphs 7.21 to 7.23).								
2. Integrate new and advancing technologies in the regulatory framework	2.12	Guidelines on standardized modes of operation, S mode	2019	MSC	NCSR		In progress	Completed	MSC 101/24, paragraphs 11.8 and 11.9; resolution MSC.466(101); MSC.1/Circ.1609; SN.1/Circ.243/Rev.2

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.15	Revised Performance Standards for EPIRBs operating on 406 MHz (resolution A.810(19)) to include Cospas-Sarsat MEOSAR and second generation beacons	2019	MSC	NCSR		In progress	Completed	MSC 101/24, paragraph 11.21; resolution MSC.471(101)
2. Integrate new and advancing technologies in the regulatory framework	2.16	Guidelines for the harmonized display of navigation information received via communications equipment	2018	MSC	NCSR		Completed		MSC 99/22, paragraph 12.8; MSC.1/Circ.1593
2. Integrate new and	2.20	Revised General requirements for	2020	MSC	NCSR		In progress	Completed	MSC 95/22, paragraph 19.12.4

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
advancing technologies in the regulatory framework		shipborne radio equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for electronic navigational aids (resolution A.694(17)) relating to Built-In Integrity Testing (BIIT) for navigation equipment							
Notes: No longer required. Superseded by events.									
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC/MEPC	III/PPR/CCC / SDC/SSE/ NCSR		No work requested	Ongoing	MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12
Notes: A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions.									
6. Ensure regulatory effectiveness	6.2	Developments in GMDSS satellite services	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 99/22, paragraphs 12.16 to 12.21; resolution MSC.450(99); resolution MSC.451(99)
OW. Other work	OW 1	Amendments to the IAMSAR Manual	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 99/22, paragraph 12.23; MSC.1/Circ.1594

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 4	Routeing measures and mandatory ship reporting systems	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 99/22, paragraphs 12.1 to 12.4; COLREG.2/Circ.71; SN.1/Circ.336; MSC 101/24, paragraphs 11.3 to 11.6; COLREG.2/Circ.74; SN.1/Circ.337; SN.1/Circ.232/Add.2; MSC.1/Circ.1608
OW. Other work	OW 5	Updates to the LRIT system	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 99/22, paragraphs 12.5 and 12.6; MSC.1/Circ.1376/Rev.3; MSC.1/Circ.1259/Rev.8; MSC.1/Circ.1294/Rev.6; MSC 101/24, paragraph 11.7; MSC.1/Circ.1376/Rev.4; MSC.1/Circ.1259/Rev.8; MSC.1/Circ.1412/Rev.2
OW. Other work	OW 6	Updating of the GMDSS Master Plan and guidelines on MSI (maritime safety information)	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 101/24, paragraphs 11.12 to 11.17, and 11.29 to 11.32; resolution MSC.468(101); resolution MSC.469(101); resolution MSC.470(101); MSC.1/Circ.1364/Rev.1/Corr.1; MSC.1/Circ.1611; MSC.1/Circ.1613
OW. Other work	OW 28	Further development of the provision of global maritime SAR services	2021	MSC	NCSR		In progress	Extended	

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
Notes: Recognizing the importance of considering further development of the Global SAR Plan and to provide an opportunity for further proposals, MSC 101 agreed with the request of NCSR 6 to extend the target completion year for this output to 2021.									
OW. Other work	OW 29	Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters	2021	MSC	NCSR		In progress	Extended	
Notes: Recognizing the importance of further consideration of the Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters and expecting proposals to be submitted, in particular by the ICAO/IMO Joint Working Group, MSC 101 agreed with the request of NCSR 6 to extend the target completion year for this output to 2021.									
OW. Other work	OW 30	Measures to protect the safety of persons rescued at sea	2019	MSC	III	NCSR	In progress	Completed	MSC 98/23, paragraph 11.1
Notes: Noting that only two documents had been submitted by Member States and international organizations since the output was included in the agenda of the COMSAR Sub-Committee in 2009 and that the same kind of issues were considered under the output OW 44 "IMO's contribution to addressing unsafe mixed migration by sea", which was on the biennial agendas of the MSC and the FAL and LEG Committees, MSC 101 agreed with the request of NCSR 6 to delete this output from the biennial agenda of the Sub-Committee.									
OW. Other work	OW 40	Safety measures for non-SOLAS ships operating in polar waters	2021	MSC	NCSR	SDC			MSC 98/23, paragraphs 10.29, 20.31.1 and 20.31.2, and annex 38; MSC 99/22, paragraphs 7.16 and 20.13.1; MSC 101/24, paragraphs 7.6 and 7.9; SDC 6/13, section 8
OW. Other work	OW 43	Consequential work related to the new International Code	2021	MSC	NCSR/SSE	SDC	In progress	Completed	MSC 93/22, paragraphs 10.44, 10.50 and 20.12; MSC 96/25, paragraph 3.77; MSC 97/22, paragraphs 8.32 and

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
		for Ships Operating in Polar Waters							19.25; MSC 101/24, paragraph 21.58
Notes: Extension of target completion year to 2021.									

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW			MSC 100/20, paragraphs 10.3 to 10.6 and 17.28
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW/PPR/SDC/SSE	CCC	No work requested		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.4	Mandatory instrument and/or provisions addressing safety standards for the carriage of more than 12 industrial personnel on board vessels engaged on international voyages	2020	MSC	SDC		In progress	In progress	MSC 95/22, paragraph 19.25; MSC 96/25, paragraphs 7.10 and 7.12; MSC 97/22, paragraphs 6.22 and 6.23; MSC 99/22, paragraphs 10.17 and 10.18; MSC 101/24, paragraphs 12.17 to 12.19; SDC 5/15, section 7; SDC 6/13, section 6
2. Integrate new and advancing technologies in the regulatory framework	2.6	Finalization of second generation intact stability criteria	2020	MSC	SDC		In progress	In progress	MSC 85/26, paragraphs 12.7 and 23.42; SDC 5/15, section 6; SDC 6/13, section 5

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR		Ongoing	Ongoing	MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12; SDC 5/15, section 9; SDC 6/13, section 9
Notes: A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions.									
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW	Ongoing	Ongoing	MSC 89/25, paragraphs 10.10, 10.16 and 22.39 and annex 21
OW. Other work	OW 2	Amendments to the ESP Code	Continuous	MSC	SDC		Ongoing	Ongoing	MSC 92/26, paragraph 13.31; SDC 5/15, section 8; SDC 6/13, section 7
OW. Other work	OW 31	Revised SOLAS regulation II-1/3-8 and	2019	MSC	HTW/SSE	SDC	In progress	Completed	MSC 95/22, paragraph

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
		associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships							19.22; MSC 101/24, paragraphs 12.2 to 12.9 SDC 5/15, section 10; SDC 6/13, section 3
OW. Other work	OW 32	Amendments to SOLAS regulation II-1/8-1 on the availability of passenger ships' electrical power supply in cases of flooding from side raking damage	2019	MSC	SDC		Completed		MSC 85/26, paragraph 23.35; MSC 93/22, paragraph 6.26.1; MSC 96/25, paragraph 11.9; MSC 98/23, paragraph 10.3; MSC 99/22, paragraphs 10.6 and 20.13.2
OW. Other work	OW 38	Guidelines for wing-in-ground craft	2019	MSC	SDC		Completed		MSC 88/26, paragraph 23.30; MSC 99/22, paragraph 10.21

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 40	Safety measures for non-SOLAS ships operating in polar waters	2021	MSC	NCSR	SDC	No work requested	In progress	MSC 98/23, paragraphs 10.29, 20.31.1 and 20.31.2, and annex 38; MSC 99/22, paragraphs 7.16 and 20.13.1; MSC 101/24, paragraphs 7.6 and 7.9; SDC 6/13, section 8
OW. Other work	OW 41	Review SOLAS chapter II-1, parts B-2 to B-4, to ensure consistency with parts B and B-1 with regard to watertight integrity	2020	MSC	SDC		In progress	In progress	MSC 96/25, paragraph 23.23; MSC 101/24, paragraph 12.12; SDC 5/15, section 5; SDC 6/13, section 4
Notes:	Renamed output title (former title: Review SOLAS chapter II-1, parts B-2 to B-4, to ensure consistency with parts B and B-1 with regard to watertight integrity") new output title "Amendments to the Explanatory Notes to SOLAS chapter II-1 subdivision and damage stability regulations (resolution MSC.429(98))".								

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 46	Computerized stability support for the master in case of flooding for existing passenger ships	2018	MSC	SDC		Completed		MSC 94/21, paragraph 18.20; MSC 99/22, paragraphs 3.12, 3.81.6, 10.7 and 10.8

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW	No work requested		MSC 100/20, paragraphs 10.3 to 10.6 and 17.28
1. Improve implementation	1.20	Uniform implementation of paragraph 6.1.1.3 of the LSA Code	2018	MSC	SSE		Completed		MSC 96/25, paragraph 23.28; MSC 98/23, paragraph 12.23; SSE 5/17, section 5; MSC 100/20, paragraphs 9.5 and 9.6; SSE 5/17, section 5
1. Improve implementation	1.27	Revision of the Standardized Life-Saving Appliance Evaluation and Test Report Forms (MSC/Circ.980 and addenda)	2020	MSC	SSE		In progress		MSC 99/22, paragraphs 20.29 and 20.32; SSE 6/18, section 14

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW/PPR/SDC /SSE	CCC	No work requested	Extended	MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2
2. Integrate new and advancing technologies in the regulatory framework	2.5	Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	2021	MSC	SSE		In progress	Extended	MSC 82/24, paragraph 3.92; MSC 98/23, annex 38; SSE 5/17, section 3; SSE 6/18, section 3
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and consideration of amendments to SOLAS chapters II-1 and II-2, if necessary	2020	MSC	III/HTW/SDC	SSE	In progress	In progress	MSC 98/23, paragraph 20.36; SSE 5/17, section 13; SSE 6/18, section 11
Notes: Description amended and HTW was added as associated organ.									

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.10	Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments	2021	MSC	HTW/SSE	NCSR	No work requested	In progress	MSC 98/23, paragraph 20.27; SSE 6/18, paragraph 17.8
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR		Ongoing	Ongoing	MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12; SSE 5/17, section 12; SSE 6/18, section 12
Notes: A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions.									
6. Ensure regulatory effectiveness	6.14	Amendments to paragraph 4.4.7.6.17 of the LSA Code concerning single fall and hook systems with on-load release capability	2021	MSC	SSE		In progress	Extended	MSC 99/22, paragraphs 20.24 and 20.32

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW		No work requested	MSC 89/25, paragraphs 10.10, 10.16 and 22.39 and annex 21; MSC 100/20, paragraph 17.28
OW. Other work	OW 27	Amendments to chapter 9 of the FSS Code for fault isolation requirements for cargo ships and passenger ship cabin balconies fitted with individually identifiable fire detector systems 2021	2020	MSC	SSE			In progress	MSC 98/23, paragraph 20.34; SSE 5/17, annex 7; SSE 6/18, section 8
Notes: MSC 98 agreed to include this output in the provisional agenda for SSE 6.									
OW. Other work	OW 34	Requirements for onboard lifting appliances and anchor handling winches	2019	MSC	HTW	SSE	In progress	Extended	MSC 89/25, paragraph 22.26; MSC 98/23, annex 38; SSE 5/17, section 10; SSE 6/18, paragraph 9.33

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 36	Review of SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	2021	MSC	HTW/SDC	SSE	In progress	Extended	MSC 97/22, paragraph 19.19; MSC 98/23, paragraph 12.42; SSE 5/17, section 7; SSE 6/18, section 6
OW. Other work	OW 37	Revised SOLAS regulations II-1/13 and II-1/13-1 and other related regulations for new ships	2019	MSC	SDC	SSE	In progress	Completed	MSC 95/22, paragraphs 19.20 and 19.32; MSC 98/23, annex 38; SSE 5/17, section 11; SSE 6/18, section 10
OW. Other work	OW 39	Amendments to Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk (MSC.1/Circ.1315)	2021	MSC	SSE		In progress	Extended	MSC 98/23, paragraph 20.37; SSE 5/17, section 9; SSE 6/18, section 7
OW. Other work	OW 43	Consequential work related to the new	2021	MSC	NCSR/SSE	SDC	In progress	Extended	MSC 93/22, paragraphs

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
		International Code for Ships Operating in Polar Waters							10.44, 10.50 and 20.12; MSC 96/25, paragraph 3.77; MSC 97/22, paragraphs 8.32 and 19.25; MSC 101/24, paragraph 21.58; SSE 5/17, section 6; SSE 6/18, section 5
OW. Other work	OW 47	New requirements for ventilation of survival craft	2021	MSC	SSE		In progress	Extended	MSC 97/22, paragraph 19.22; SSE 5/17, section 4; SSE 6/18, section 4

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 48	Amendments to the FSS Code for CO ₂ pipelines in under-deck passageways	2018	MSC	SSE		Completed		MSC 96/25, paragraph 23.26; MSC 98/23, annex 38; SSE 5/17, section 8; SSE 5/17, section 8

ANNEX 32

PROVISIONAL AGENDAS OF THE SUB-COMMITTEES

PROVISIONAL AGENDA FOR CCC 6

- 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 (2.3)
 - 4 Amendments to the IGC and IGF Codes to include high manganese austenitic steel and related guidance for approving alternative metallic material for cryogenic service (OW 35)
 - 5 Amendments to the IMSBC Code and supplements (OW 9)
 - 6 Amendments to the IMDG Code and supplements (OW 3)
 - 7 Amendments to the CSS Code with regard to weather-dependent lashing (OW 42)
 - 8 Unified interpretation of provisions of IMO safety, security, and environment-related conventions (6.1)
 - 9 Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas (OW 19)
 - 10 Revision of the *Inspection programmes for cargo transport units carrying dangerous goods* (MSC.1/Circ.1442, as amended by MSC.1/Circ.1521) (1.30)*
 - 11 Biennial status report and provisional agenda for CCC 7
 - 12 Election of Chair and Vice-Chair for 2020
 - 13 Any other business
 - 14 Report to the Committees

* Output number to be confirmed by the Council in due course.

PROVISIONAL AGENDA FOR HTW 7

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Validated model training courses (1.3)
 - 4 Role of the human element (6.15)
 - 5 Reports on unlawful practices associated with certificates of competency (OW 14)
 - 6 Implementation of the STCW Convention (1.32)
 - 7 Development of amendments to the Revised guidelines for the development, review and validation of model courses (MSC MEPC.2/Circ.15/Rev.1) (1.28)
 - 8 Comprehensive review of the 1995 STCW-F Convention (1.22)
 - 9 Development of amendments to the STCW Convention and Code for the use of electronic certificates and documents of seafarers (5.13)
 - 10 Development of measures to ensure quality of onboard training as part of the mandatory seagoing service required by the STCW Convention*
 - 11 Development of measures to facilitate mandatory seagoing service required under the STCW Convention*
 - 12 Biennial status report and provisional agenda for HTW 8
 - 13 Election of Chair and Vice-Chair for 2021
 - 14 Any other business
 - 15 Report to the Maritime Safety Committee

* Output number to be confirmed by the Council in due course.

PROVISIONAL AGENDA FOR III 6

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Consideration and analysis of reports on alleged inadequacy of port reception facilities (6.7)
 - 4 Lessons learned and safety issues identified from the analysis of marine safety investigation reports (6.4)
 - 5 Measures to harmonize port State control (PSC) activities and procedures worldwide (OW 10)
 - 6 Identified issues relating to the implementation of IMO instruments from the analysis of PSC data (6.5)
 - 7 Analysis of consolidated audit summary reports (1.4)
 - 8 Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC) (OW 16)
 - 9 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code) (1.5)
 - 10 Unified interpretation of provisions of IMO safety, security, and environment-related conventions (6.1)
 - 11 Finalization of a non-mandatory instrument on regulations for non-convention ships (OW 33)
 - 12 Biennial agenda and provisional agenda for III 7
 - 13 Election of Chairman and Vice-Chairman for 2020
 - 14 Any other business
 - 15 Report to the Committees

PROVISIONAL AGENDA FOR NCSR 7

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Routeing measures and mandatory ship reporting systems (OW 4)
 - 4 Updates to the LRIT system (OW 5)
 - 5 Application of the "Indian Regional Navigation Satellite System (IRNSS)" in the maritime field and development of performance standards for shipborne IRNSS receiver equipment (2.9)
 - 6 Recognition of the Japanese regional navigation satellite system Quasi-Zenith Satellite System (QZSS) and development of performance standards for shipborne satellite navigation system receiver equipment (2.[...])*
 - 7 Revision of the Guidelines for Vessel Traffic Services (resolution A.857(20)) (6.[...])*
 - 8 Consideration of descriptions of Maritime Services in the context of e-navigation (2.11)
 - 9 Updating of the GMDSS master plan and guidelines on Maritime Safety Information (MSI) (OW 6)
 - 10 Safety measures for non-SOLAS ships operating in polar waters (OW 40)
 - 11 Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments (2021) (2.10)
 - 12 Response to matters related to the Radiocommunication ITU R Study Group and ITU World Radiocommunication Conference (2.1)
 - 13 Revision of the Guidelines on places of refuge for ships in need of assistance (resolution A.949(23)) (1.[...])*
 - 14 Developments in GMDSS satellite services (6.2)
 - 15 Further development of the provision of global maritime SAR services (OW 28)
 - 16 Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters (OW 29)
 - 17 Amendments to the IAMSAR Manual (OW 1)
 - 18 Unified interpretation of provisions of IMO safety, security, and environment-related conventions (6.1)

* Output number to be confirmed by the Council in due course.

- 19 Validated model training courses (1.3)
- 20 Biennial status report and provisional agenda for NCSR 8
- 21 Election of Chair and Vice-Chair for 2021
- 22 Any other business
- 23 Report to the Maritime Safety Committee

PROVISIONAL AGENDA FOR SDC 7

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Amendments to the Explanatory Notes to SOLAS chapter II-1 subdivision and damage stability regulations (resolution MSC.429(98)) (OW 41)
 - 4 Safety measures for non-SOLAS ships operating in polar waters (OW 40)
 - 5 Finalization of second generation intact stability criteria (2.6)
 - 6 Mandatory instrument and/or provisions addressing safety standards for the carriage of more than 12 industrial personnel on board vessels engaged on international voyages (2.4)
 - 7 Development of amendments to SOLAS chapter II-1 to include requirements for water level detectors on non-bulk carrier cargo ships with multiple cargo holds*
 - 8 Mandatory application of the Performance standard for protective coatings for void spaces on bulk carriers and oil tankers*
 - 9 Performance standard for protective coatings for void spaces on all types of ships*
 - 10 Amendments to the 2011 ESP Code (OW 2)
 - 11 Unified interpretation to provisions of IMO safety, security, and environment-related conventions (6.1)
 - 12 Review of mandatory requirements in the SOLAS, MARPOL and Load Line Conventions and the IBC and IGC Codes regarding watertight doors on cargo ships*
 - 13 Biennial status report and provisional agenda for SDC 8
 - 14 Election of Chair and Vice-Chair for 2021
 - 15 Any other business
 - 16 Report to the Maritime Safety Committee

* Output number to be assigned by the Council in due course.

PROVISIONAL AGENDA FOR SSE 7

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 New requirements for ventilation of survival craft (OW 47)
 - 4 Consequential work related to the new International Code for Ships Operating in Polar Waters (OW 43)
 - 5 Revision of SOLAS chapter III and the LSA Code*
 - 6 Review of SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships (OW 36)
 - 7 Amendments to Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk (MSC.1/Circ.1315) (OW 39)
 - 8 Amendments to chapter 9 of the FSS Code for fault isolation requirements for cargo ships and passenger ship cabin balconies fitted with individually identifiable fire detector systems (OW 27)
 - 9 Requirements for onboard lifting appliances and anchor handling winches (OW 34)
 - 10 Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (2.5)
 - 11 Development of guidelines for cold ironing of ships and consideration of amendments to SOLAS chapters II-1 and II-2 (2.8)
 - 12 Amendments to paragraph 4.4.7.6.17 of the LSA Code concerning single fall and hook systems with on-load release capability (6.14)
 - 13 Revision of the Standardized Life-Saving Appliance Evaluation and Test Report Forms (MSC/Circ.980 and addenda) (1.27)
 - 14 Revision of the Code of safety for diving systems (resolution A.831(19)) and the Guidelines and specifications for hyperbaric evacuation systems (resolution A.692(17))*
 - 15 Amendments to SOLAS chapter III, LSA Code and resolution MSC.81(70) to remove the applicability of the requirements to launch free-fall lifeboats with the ship making headway at speeds up to 5 knots in calm water*
 - 16 Unified interpretation of provisions of IMO safety, security, and environment-related conventions (6.1)

* Output number to be confirmed by the Council in due course.

- 17 Revision of the Guidelines for the maintenance and inspections of fixed carbon dioxide fire-extinguishing systems (MSC.1/Circ.1318)*
- 18 Biennial status report and provisional agenda for SSE 8
- 19 Election of Chair and Vice-Chair for 2021
- 20 Any other business
- 21 Report to the Maritime Safety Committee

ANNEX 33

BIENNIAL STATUS REPORT OF THE MARITIME SAFETY COMMITTEE

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.2	Input on identifying emerging needs of developing countries, in particular SIDS and LDCs to be included in ITCP	Continuous	TCC	MSC/MEPC/FAL/LEG				
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW			MSC 100/20, paragraphs 10.3 to 10.6 and 17.28
1. Improve implementation	1.4	Analysis of consolidated audit summary reports	Annual	Assembly	MSC/MEPC/LEG/TCC/III	Council			MEPC 61/24, paragraph 11.14.1; MSC 88/26, paragraph 10.8; C 120/D, paragraphs 7.1 and 7.2
1. Improve implementation	1.5	Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)	Annual	MSC/MEPC	III				MEPC 64/23, paragraph 11.49; MSC 91/22, paragraph 10.30; MEPC 52/24, paragraph 10.15
1. Improve implementation	1.7	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)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.20	Uniform implementation of paragraph 6.1.1.3 of the LSA Code	2018	MSC	SSE		Completed		MSC 96/25, paragraph 23.28; MSC 98/23, paragraph 12.23; SSE 5/17, section 5; MSC 100/20, paragraphs 9.5 and 9.6
1. Improve implementation	1.21	Guidance for STCW Code, section B-I/2	2018	MSC	HTW		Extended		MSC 98/23, paragraph 9.2
1. Improve implementation	1.22	Comprehensive review of the 1995 STCW-F Convention	2018	MSC	HTW		Extended	Extended	MSC 95/22, paragraph 19.3 and 19.4; MSC 96/25, paragraph 12.3
1. Improve implementation	1.23	Revision of the Guidelines on fatigue	2018	MSC	HTW		Completed		MSC 94/21, paragraph 18.8; MSC 95/22, paragraph 9.18; MSC 98/23, paragraphs 9.8 and 9.11; MSC 100/20, paragraphs 10.7 and 10.8

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.27	Revision of the Standardized Life-Saving Appliance Evaluation and Test Report Forms (MSC/Circ.980 and addenda)	2020	MSC	SSE				MSC 99/22, paragraphs 20.29 and 20.32
1. Improve implementation	1.28 (New)	Development of amendments to the Revised guidelines for the development, review and validation of model courses (MSC-MEPC.2/Circ.15/Rev.1)	2020	MSC	HTW				MSC 100/20, paragraphs 17.7 and 17.8
1. Improve implementation	1.29 (New)	Development of further measures to enhance the safety of ships relating to the use of fuel oil	2021	MSC					MSC 100/20, paragraphs 8.13 and 8.14
1. Improve implementation	1.30 (New)	Revision of the Inspection programmes for cargo transport units carrying dangerous goods (MSC.1/Circ.1442, as amended by MSC.1/Circ.1521)	2020	MSC	CCC				MSC 100/20, paragraph 17.16
1. Improve implementation	1.32	Implementation of the STCW Convention	Continuous	MSC	HTW				
2. Integrate new and advancing technologies in the regulatory framework	2.1	Response to matters related to the Radiocommunication ITU-R Study Group and ITU World Radiocommunication Conference	Annual	MSC	NCSR		Completed	Completed	MSC 99/22, paragraphs 12.11 to 12.15; MSC 101/24, paragraphs 11.19 and 11.20, and annex 23

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW/PPR/SDC/SSE	CCC	In progress		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2
2. Integrate new and advancing technologies in the regulatory framework	2.4	Mandatory instrument and/or provisions addressing safety standards for the carriage of more than 12 industrial personnel on board vessels engaged on international voyages	2020	MSC	SDC		In progress		MSC 95/22, paragraph 19.25; MSC 96/25, paragraphs 7.10 and 7.12; MSC 97/22, paragraphs 6.22 and 6.23; MSC 99/22, paragraphs 10.17 and 10.18; MSC 101/24, paragraphs 12.17 to 12.19
2. Integrate new and advancing technologies in the regulatory framework	2.5	Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	2021	MSC	SSE				MSC 82/24, paragraph 3.92; MSC 98/23, annex 38

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.6	Finalization of second generation intact stability criteria	2020	MSC	SDC		In progress		MSC 85/26, paragraphs 12.7 and 23.42
2. Integrate new and advancing technologies in the regulatory framework	2.7	Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS)	2020	MSC	FAL				MSC 98/23, paragraph 20.2.11; FAL 43/20, paragraph 17.1
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and consideration of amendments to SOLAS chapters II-1 and II-2, if necessary	2020	MSC	III/HTW/SDC	SSE			MSC 98/23, paragraph 20.36
Notes: Description amended and HTW was added as associated organ.									
2. Integrate new and advancing technologies in the regulatory framework	2.9	Application of the Indian Regional Navigation Satellite System (IRNSS) in the maritime field and development of performance standards for shipborne IRNSS receiver equipment	2020	MSC	NCSR		In progress		MSC 98/23, paragraphs 11.8 and 11.9; MSC 99/22, paragraph 12.7; resolution MSC.449(99)
Notes: Recognizing that the evaluation of the Indian Regional Navigation Satellite System (IRNSS) had not been completed and that further work was required, NCSR 6 agreed to invite the Committee to extend the target completion year for this output to 2020.									

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.10	Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments	2021	MSC	HTW/SSE	NCSR	In progress		MSC 98/23, paragraph 20.27
2. Integrate new and advancing technologies in the regulatory framework	2.11	Consideration of descriptions of Maritime Services in the context of e-navigation	2021	MSC	FAL/NCSR		In progress		FAL 43/20, paragraph 7.21; MSC 101/24, paragraphs 11.10 and 11.11; resolution MSC.467(101); MSC.1/Circ.1610
<p>Notes: Having completed the work on the development of guidance on definition and harmonization of the format and structure of Maritime Services within the context of e-navigation and recognizing the need for a continuous review process of maritime service descriptions and the harmonization of related services, NCSR 6 agreed to invite the Committee to rename the output "Develop guidance on definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs)" as "Consideration of descriptions of Maritime Services in the context of e-navigation" with a target completion year of 2021. MSC agreed to replace the description of output 2.11 on "Develop guidance on definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs)" with "Consideration of descriptions of Maritime Services in the context of e-navigation", with a target completion year of 2021.</p>									
2. Integrate new and advancing technologies in the regulatory framework	2.12	Guidelines on standardized modes of operation, S mode	2019	MSC	NCSR		In progress	Completed	MSC 101/24, paragraphs 11.8 and 11.9; resolution MSC.466(101); MSC.1/Circ.1609; SN.1/Circ.243/Rev.2

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.15	Revised Performance Standards for EPIRBs operating on 406 MHz (resolution A.810(19)) to include Cospas-Sarsat MEOSAR and second generation beacons	2019	MSC	NCSR		Extended	Completed	MSC 101/24, paragraph 11.21; resolution MSC.471(101)
2. Integrate new and advancing technologies in the regulatory framework	2.16	Guidelines for the harmonized display of navigation information received via communications equipment	2018	MSC	NCSR		Completed		MSC 99/22, paragraph 12.8; MSC.1/Circ.1593
2. Integrate new and advancing technologies in the regulatory framework	2.17	Consideration of development of goal-based ship construction standards for all ship types	2021	MSC/MEPC			Extended	Extended	
2. Integrate new and advancing technologies in the regulatory framework	2.20	Revised General requirements for shipborne radio equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for electronic navigational aids (resolution A.694(17)) relating to Built-In Integrity Testing (BIIT) for navigation equipment	2020	MSC	NCSR			Completed	MSC 95/22, paragraph 19.12.4;
Notes: No longer required. Superseded by events.									

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
4. Engage in ocean governance	4.2	Input to ITCP on emerging issues relating to sustainable development and achievement of the SDGs	2019	TCC	MSC/MEPC/FAL/LEG				
5. Enhance global facilitation and security of international trade	5.2	Guidelines and guidance on the implementation and interpretation of SOLAS chapter XI-2 and the ISPS Code	Annual	MSC					
5. Enhance global facilitation and security of international trade	5.3	Consideration and analysis of reports on piracy and armed robbery against ships	Annual	MSC					
5. Enhance global facilitation and security of international trade	5.4	Revised guidance relating to the prevention of piracy and armed robbery to reflect emerging trends and behaviour patterns	Annual	MSC	LEG				
5. Enhance global facilitation and security of international trade	5.13 (New)	Development of amendments to the STCW Convention and Code for the use of electronic certificates and documents of seafarers	2020	MSC	III	HTW			MSC 100/20, paragraph 17.12

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR		Ongoing	Ongoing	MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12
Notes: A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions									
6. Ensure regulatory effectiveness	6.2	Developments in GMDSS satellite services	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 99/22, paragraphs 12.16 to 12.21; resolution MSC.450(99); resolution MSC.451(99)
6. Ensure regulatory effectiveness	6.4	Lessons learned and safety issues identified from the analysis of marine safety investigation reports	Annual	MSC/MEPC	III				MSC 92/26, paragraph 22.29
6. Ensure regulatory effectiveness	6.5	Identified issues relating to the implementation of IMO instruments from the analysis of PSC data	Annual	MSC/MEPC	III				MSC 96/25, paragraph 23.13; MEPC 69/21, paragraph 19.11
6. Ensure regulatory effectiveness	6.6	Consideration and analysis of reports and information on persons rescued at sea and stowaways	Annual	MSC/FAL					
6. Ensure regulatory effectiveness	6.14	Amendments to paragraph 4.4.7.6.17 of the LSA Code concerning single fall and hook systems with on-load release capability	2021	MSC	SSE			Extended	MSC 99/22, paragraphs 20.24 and 20.32

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW			MSC 89/25, paragraphs 10.10, 10.16 and 22.39 and annex 21;
7. Ensure organizational effectiveness	7.1	Endorsed proposals for the development, maintenance and enhancement of information systems and related guidance (GISIS, websites, etc.)	Continuous	Council	MSC/MEPC/FAL/LEG/TCC				
7. Ensure organizational effectiveness	7.9	Revised documents on organization and method of work, as appropriate	2019	Council	MSC/MEPC/FAL/LEG/TCC				
OW. Other work	OW 1	Amendments to the IAMSAR Manual	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 99/22, paragraph 12.23; MSC.1/Circ.1594
OW. Other work	OW 2	Amendments to the ESP Code	Continuous	MSC	SDC		Ongoing	Ongoing	MSC 92/26, paragraph 13.31
OW. Other work	OW 3	Amendments to the IMDG Code and supplements	Continuous	MSC	CCC		Ongoing		
Notes: MSC 101 agreed to reassign the continuous outputs "Amendments to the IMDG Code and supplements" and "Amendments to the IMSBC Code and supplements" to SD 6 for the 2020-2021 biennium.									

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 4	Routeing measures and mandatory ship reporting systems	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 99/22, paragraphs 12.1 to 12.4; COLREG.2/Circ.71 ; SN.1/Circ.336; MSC 101/24, paragraphs 11.3 to 11.6; COLREG.2/Circ.74 ; SN.1/Circ.337; SN.1/Circ.232/Add. 2; MSC.1/Circ.1608
OW. Other work	OW 5	Updates to the LRIT system	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 99/22, paragraphs 12.5 and 12.6; MSC.1/Circ.1376/ Rev.3; MSC.1/Circ.1259/ Rev.8; MSC.1/Circ.1294/ Rev.6; MSC 101/24, paragraph 11.7; MSC.1/Circ.1376/ Rev.4; MSC.1/Circ.1259/ Rev.8; MSC.1/Circ.1412/ Rev.2

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 6	Updating of the GMDSS Master Plan and guidelines on MSI (maritime safety information)	Continuous	MSC	NCSR		Ongoing	Ongoing	MSC 101/24, paragraphs 11.12 to 11.17, and 11.29 to 11.32; resolution MSC.468(101); resolution MSC.469(101); resolution MSC.470(101); MSC.1/Circ.1364/R ev.1/Corr.1; MSC.1/Circ.1611; MSC.1/Circ.1613
OW. Other work	OW 7	Verified goal-based new ship construction standards for tankers and bulk carriers	Continuous	MSC					
OW. Other work	OW 8	Review of FSA studies by the FSA Experts' Group	Continuous	MSC					
OW. Other work	OW 9	Amendments to the IMSBC Code and supplements	Continuous	MSC	CCC		Ongoing		
OW. Other work	OW 10	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC/ME PC	HTW/PPR/N CSR	III			MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
Notes: MSC 101 agreed to reassign the continuous output "Measures to harmonize port State control (PSC) activities and procedures worldwide" to SD 1 for the 2020-2021 biennium.									
OW. Other work	OW 13	Endorsed proposals for new outputs for the 2018-2019 biennium as accepted by the Committees	Annual	Council	MSC/MEPC/ FAL/LEG /TCC				
OW. Other work	OW 14	Reports on unlawful practices associated with certificates of competency	Annual	MSC	HTW				MSC 83/28, paragraph 12.2
OW. Other work	OW 15	Reports to the MSC on information communicated by STCW Parties	Annual	MSC					
OW. Other work	OW 16	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC/ MEPC	III				MEPC 68/21, paragraphs 14.5 and 14.6; FSI 12/22, paragraph 9.4; MSC 79/23, paragraphs 9.19 and 9.20
OW. Other work	OW 19	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC/ MEPC	III	CCC			

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 23	Cooperate with the United Nations on matters of mutual interest, as well as provide relevant input/guidance	2019	Assembly	MSC/MEPC/FAL/LEG/TCC	Council			C 120/D, paragraphs 17(a).1 to 17(a).5
OW. Other work	OW 24	Cooperate with other international bodies on matters of mutual interest, as well as provide relevant input/guidance	2019	Assembly	MSC/MEPC/FAL/LEG/TCC	Council			C 120/D, paragraphs 17(a).1 to 17(a).5
OW. Other work	OW 27	Amendments to chapter 9 of the FSS Code for fault isolation requirements for cargo ships and passenger ship cabin balconies fitted with individually identifiable fire detector systems 2021	2020	MSC	SSE				MSC 98/23, paragraph 20.34
Notes: MSC 98 agreed to include this output in the provisional agenda for SSE 6.									
OW. Other work	OW 28	Further development of the provision of global maritime SAR services	2019	MSC	NCSR		In progress	Extended	
Notes: Recognizing the importance of considering further development of the Global SAR Plan and to provide an opportunity for further proposals, NCSR 6 agreed to invite the Committee to extend the target completion year for this output to 2021.									

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 29	Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters	2019	MSC	NCSR		In progress	Extended	
Notes: Recognizing the importance of further consideration of the Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters and expecting proposals to be submitted, in particular by the ICAO/IMO Joint Working Group, NCSR 6 agreed to invite the Committee to extend the target completion year for this output to 2021.									
OW. Other work	OW 30	Measures to protect the safety of persons rescued at sea	2019	MSC	III	NCSR	In progress	Completed	MSC 98/23, paragraph 11.1
Notes: Noting that only two documents had been submitted by Member States and international organizations since the output was included in the agenda of the COMSAR Sub-Committee in 2009 and that the same kind of issues were considered under the output OW 44 "IMO's contribution to addressing unsafe mixed migration by sea", which was on the biennial agendas of the MSC and the FAL and LEG Committees, NCSR 6 agreed to invite the Committee to delete this output from the biennial agenda of the Sub-Committee.									
OW. Other work	OW 31	Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships	2019	MSC	HTW/SSE	SDC	In progress	Completed	MSC 95/22, paragraph 19.22; MSC 101/24, paragraphs 12.2 to 12.9

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 32	Amendments to SOLAS regulation II-1/8-1 on the availability of passenger ships' electrical power supply in cases of flooding from side raking damage	2019	MSC	SDC		Completed		MSC 85/26, paragraph 23.35; MSC 93/22, paragraph 6.26.1; MSC 96/25, paragraph 11.9; MSC 98/23, paragraph 10.3; MSC 99/22, paragraphs 10.6 and 20.13.2
OW. Other work	OW 33	Finalization of a non-mandatory instrument on regulations for non convention ships	2022	MSC	III			Extended	MSC 96/25, paragraph 9.4 MSC 101/24, paragraph 21.38
OW. Other work	OW 34	Requirements for onboard lifting appliances and anchor handling winches	2020	MSC	HTW	SSE		Extended	MSC 89/25, paragraph 22.26; MSC 98/23, annex 38
OW. Other work	OW 35	Amendments to the IGC and IGF Codes to include high manganese austenitic steel and related guidance for approving alternative metallic material for cryogenic service	2020	MSC	CCC				MSC 96/25 paragraph 23.4; MSC 98/23, annex 38; MSC 100/20, paragraph 17.21

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 36	Review of SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	2021	MSC	HTW/SDC	SSE		Extended	MSC 97/22, paragraph 19.19; MSC 98/23, paragraph 12.42
OW. Other work	OW 37	Revised SOLAS regulations II-1/13 and II-1/13-1 and other related regulations for new ships	2019	MSC	SDC	SSE		Completed	MSC 95/22, paragraphs 19.20 and 19.32; MSC 98/23, annex 38
OW. Other work	OW 38	Guidelines for wing-in-ground craft	2019	MSC	SDC		Completed		MSC 88/26, paragraph 23.30; MSC 99/22, paragraph 10.21
OW. Other work	OW 39	Amendments to Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk (MSC.1/Circ.1315)	2021	MSC	SSE			Extended	MSC 98/23, paragraph 20.37
OW. Other work	OW 40	Safety measures for non-SOLAS ships operating in polar waters	2021	MSC	NCSR	SDC	In progress	In progress	MSC 98/23, paragraphs 10.29, 20.31.1 and 20.31.2, and annex 38; MSC 99/22, paragraphs 7.16 and 20.13.1;

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
									MSC 101/24, paragraphs 7.6 and 7.9
OW. Other work	OW 41	Review SOLAS chapter II-1, parts B-2 to B-4, to ensure consistency with parts B and B-1 with regard to watertight integrity	2020	MSC	SDC		In progress	In progress	MSC 96/25, paragraph 23.23; MSC 101/24, paragraph 12.12
Notes: Renamed output title (former title: Review SOLAS chapter II-1, parts B-2 to B-4, to ensure consistency with parts B and B-1 with regard to watertight integrity") new output title "Amendments to the Explanatory Notes to SOLAS chapter II-1 subdivision and damage stability regulations (resolution MSC.429(98))".									
OW. Other work	OW 42	Amendments to the CSS Code with regard to weather-dependent lashing	2019	MSC	CCC				MSC 98/23, paragraph 20.7
OW. Other work	OW 43	Consequential work related to the new International Code for Ships Operating in Polar Waters	2021	MSC	NCSR/SSE	SDC	In progress	Extended	MSC 93/22, paragraphs 10.44, 10.50 and 20.12; MSC 96/25, paragraph 3.77; MSC 97/22, paragraphs 8.32 and 19.25; MSC 101/24, paragraph 21.58

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 44	IMO's contribution to addressing unsafe mixed migration by sea	2021	MSC/FAL/LEG				Extended	FAL 41/17, paragraph 7.15, MSC 98/23, paragraph 16.14; FAL 43, paragraph 10.7; MSC 101/24, paragraph 19.8
OW. Other work	OW 46	Computerized stability support for the master in case of flooding for existing passenger ships	2018	MSC	SDC		Completed		MSC 94/21, paragraph 18.20; MSC 99/22, paragraphs 3.12, 3.81.6, 10.7 and 10.8
OW. Other work	OW 47	New requirements for ventilation of survival craft	2021	MSC	SSE			Extended	MSC 97/22, paragraph 19.22
OW. Other work	OW 48	Amendments to the FSS Code for CO ₂ pipelines in under-deck passageways	2018	MSC	SSE		Completed		MSC 96/25, paragraph 23.26; MSC 98/23, annex 38; SSE 5/17, section 8
OW. Other work	OW 49	Review the Model Agreement for the authorization of recognized organizations acting on behalf of the Administration	2018	MSC/MEPC	III		Extended		MSC 97/22, paragraph 19.7

ANNEX 34

POST-BIENNIAL AGENDA OF THE MARITIME SAFETY COMMITTEE

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to Strategic Direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
172	2018-2019	1	Revision of the Criteria for the provision of mobile satellite communication services in the Global Maritime Distress and Safety System (GMDSS) (resolution A.1001(25))	MSC	NCSR		2	MSC 101/24, paragraph 21.33
145	2016-2017	2	Amendments to the IMDG Code related to portable tanks with shells made of Fibre Reinforced Plastics (FRP) for multimodal transportation of dangerous goods	MSC	CCC		2	MSC 98/23, paragraph 20.11
152	2016-2017	2	Guidelines for use of Fibre Reinforced Plastics (FRP) within ship structures	MSC	SDC		2	MSC 98/23, paragraph 10.22
170	2018-2019	2	Development of SOLAS amendments for mandatory carriage of electronic inclinometers on container ships and bulk carriers	MSC / NCSR	NCSR		1	MSC 101/24, paragraph 21.20

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to Strategic Direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
173	2018-2019	2	Development of amendments to VDR performance standards and carriage requirements	MSC	III	NCSR	2	MSC 101/24, paragraph 21.39
171	2018-2019	4	Development of provisions to prohibit the use of PFOS for fire-fighting onboard ships	MSC	SSE		1	MSC 101/24, paragraph 21.27
156	2018-2019	6	Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships	MSC	SSE		2	MSC 99/22, paragraph 20.15
158	2018-2019	6	Amendments to SOLAS chapter III and chapter IV of the LSA Code to require the carriage of self-righting or canopied reversible liferafts for new ships	MSC	SSE		2	MSC 99/22, paragraphs 20.22 and 20.23
164	2018-2019	6	Revision of ECDIS Guidance for good practice (MSC.1/Circ.1503/Rev.1)	MSC	III	NCSR	2	MSC 100/20, paragraph 17.9

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to Strategic Direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
169	2018-2019	6	Development of design and prototype test requirements for the arrangements used in the operational testing of free fall lifeboat release systems without launching the lifeboat	MSC	SSE		2	MSC 101/24, paragraph 21.15
9	2012-2013	OW	Revision of the provisions for helicopter facilities in SOLAS and the MODU Code	MSC	SSE		1	MSC 86/26, paragraph 23.39
163	2018-2019	OW	Guidance on the training on and operation of Emergency Personal Radio Devices in multiple casualty situations	MSC	NCSR		1	MSC 100/20, paragraph 17.5
166	2018-2019	OW	Development of amendments to SOLAS chapter II-2 and MSC.1/Circ.1456 addressing fire protection of control stations on cargo ships	MSC	SSE		2	MSC 101/24, paragraph 21.3
167	2018-2019	OW	Development of amendments to the LSA Code and resolution MSC.81(70) to address the in-water performance of SOLAS lifejackets	MSC	SSE		2	MSC 101/24, paragraph 21.6

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to Strategic Direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
168	2018-2019	OW	Development of amendments to paragraph 8.3.5 and annex 1 of the 1994 and 2000 HSC Codes	MSC	SSE		1	MSC 101/24, paragraph 21.9
42	2012-2013	OW	Review of the 2009 Code on Alerts and Indicators	MSC	NCSR	SSE	2	MSC 89/25, paragraph 22.25
65	2012-2013	OW	Application of amendments to SOLAS and related codes and guidelines	MSC			2	MSC 91/22, paragraphs 3.16 to 3.35
90	2014-2015	OW	Amendments to the LSA Code for thermal performance of immersion suits	MSC	SSE		2	MSC 92/26, paragraph 13.34

ANNEX 35

LIST OF OUTPUTS OF THE MARITIME SAFETY COMMITTEE FOR THE 2020-2021 BIENNIUM

Maritime Safety Committee (MSC)						
Reference to SD, applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
1. Improve implementation	1.2	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	
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC/MEPC	III/PPR/CCC/SDC/SSE/NCSR	HTW
1. Improve implementation	1.4	Analysis of consolidated audit summary reports	Annual	Assembly	MSC/MEPC/LEG/TCC/III	Council
1. Improve implementation	1.5	Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)	Annual	MSC/MEPC	III	
1. Improve implementation	1.7	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	
1. Improve implementation	1.22	Comprehensive review of the 1995 STCW-F Convention	2021	MSC	HTW	
1. Improve implementation	1.27	Revision of the Standardized Life-Saving Appliance Evaluation and Test Report Forms (MSC/Circ.980 and addenda)	2020	MSC		SSE
1. Improve implementation	1.28	Development of amendments to the Revised guidelines for the development, review and validation of model courses (MSC-MEPC.2/Circ.15/Rev.1)	2020	MSC	HTW	

Maritime Safety Committee (MSC)						
Reference to SD, applicable if	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
1. Improve implementation	1.29	Development of further measures to enhance the safety of ships relating to the use of fuel oil	2021	MSC		
1. Improve implementation	1.30	Revision of the Inspection programmes for cargo transport units carrying dangerous goods (MSC.1/Circ.1442, as amended by MSC.1/Circ.1521)	2020	MSC	CCC	
1. Improve implementation	1.32	Implementation of the STCW Convention	Continuous	MSC	HTW	
1. Improve implementation	[...] ¹	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC/MEPC	HTW/PPR/NCSR	III
Notes: MSC 101 agreed to reassign the continuous output "Measures to harmonize port State control (PSC) activities and procedures worldwide" to SD 1 for the 2020-2021 biennium						
1. Improve implementation	[...] ² NEW	Review of mandatory requirements in the SOLAS, MARPOL and Load Line Conventions and the IBC and IGC Codes regarding watertight doors on cargo ships	2021	MSC/MEPC	CCC	SDC
1. Improve implementation	[...] ³ NEW	Development of measures to facilitate mandatory seagoing service required under the STCW Convention	2021	MSC	III	HTW
1. Improve implementation	[...] ⁴	Revision of the Guidelines on places of refuge for ships in need of assistance (resolution A.949(23))	2021	MSC	NCSR	

¹ Number of the output to be assigned by C 122.

² Number of the output to be assigned by C 122.

³ Number of the output to be assigned by C 122.

⁴ Number of the output to be assigned by C 122.

Maritime Safety Committee (MSC)						
Reference to SD, applicable if	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
2. Integrate new and advancing technologies in the regulatory framework	2.1	Response to matters related to the Radiocommunication ITU-R Study Group and ITU World Radiocommunication Conference	Annual	MSC	NCSR	
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019 ⁵	MSC	HTW/PPR/SDC/SSE	CCC
2. Integrate new and advancing technologies in the regulatory framework	2.4	Mandatory instrument and/or provisions addressing safety standards for the carriage of more than 12 industrial personnel on board vessels engaged on international voyages	2020	MSC	SDC	
2. Integrate new and advancing technologies in the regulatory framework	2.5	Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	2021	MSC	SSE	
2. Integrate new and advancing technologies in the regulatory framework	2.6	Finalization of second generation intact stability criteria	2020	MSC	SDC	

⁵ Target completion date subject to the outcome of CCC 6.

Maritime Safety Committee (MSC)						
Reference to SD, applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
2. Integrate new and advancing technologies in the regulatory framework	2.7	Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS)	2020	MSC	FAL	
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and consideration of amendments to SOLAS chapters II-1 and II-2, if necessary	2020	MSC	III/HTW/SDC	SSE
Notes: Description amended and HTW was added as associated organ						
2. Integrate new and advancing technologies in the regulatory framework	2.9	Application of the Indian Regional Navigation Satellite System (IRNSS) in the maritime field and development of performance standards for shipborne IRNSS receiver equipment	2020	MSC	NCSR	
2. Integrate new and advancing technologies in the regulatory framework	2.10	Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments	2021	MSC	HTW/SSE	NCSR
2. Integrate new and advancing technologies in the regulatory framework	2.11	Consideration of descriptions of Maritime Services in the context of e-navigation	2021	MSC	FAL/NCSR	

Maritime Safety Committee (MSC)						
Reference to SD, applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
2. Integrate new and advancing technologies in the regulatory framework	2.17	Consideration of development of goal-based ship construction standards for all ship types	2021	MSC/MEPC		
2. Integrate new and advancing technologies in the regulatory framework	2.[...] ⁶	Recognition of the Japanese regional navigation satellite system Quasi-Zenith Satellite System (QZSS) and development of performance standards for shipborne satellite navigation system receiver equipment	2021	MSC	NCSR	
4. Engage in ocean governance	4.2	Input to ITCP on emerging issues relating to sustainable development and achievement of the SDGs	2021	TCC	MSC/MEPC/FAL/LEG	
5. Enhance global facilitation and security of international trade	5.2	Guidelines and guidance on the implementation and interpretation of SOLAS chapter XI-2 and the ISPS Code	Annual	MSC		
5. Enhance global facilitation and security of international trade	5.3	Consideration and analysis of reports on piracy and armed robbery against ships	Annual	MSC		

⁶ Number of the output to be assigned by C 122.

Maritime Safety Committee (MSC)						
Reference to SD, applicable if	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
5. Enhance global facilitation and security of international trade	5.4	Revised guidance relating to the prevention of piracy and armed robbery to reflect emerging trends and behaviour patterns	Annual	MSC	LEG	
5. Enhance global facilitation and security of international trade	5.13	Development of amendments to the STCW Convention and Code for the use of electronic certificates and documents of seafarers	2020	MSC	III	HTW
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC/MEPC	III/PPR/CCC/SDC /SSE/NCSR	
Notes:	A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions.					
6. Ensure regulatory effectiveness	6.2	Developments in GMDSS satellite services	Continuous	MSC	NCSR	
6. Ensure regulatory effectiveness	6.4	Lessons learned and safety issues identified from the analysis of marine safety investigation reports	Annual	MSC/MEPC	III	
6. Ensure regulatory effectiveness	6.5	Identified issues relating to the implementation of IMO instruments from the analysis of PSC data	Annual	MSC/MEPC	III	
6. Ensure regulatory effectiveness	6.6	Consideration and analysis of reports and information on persons rescued at sea and stowaways	Annual	MSC/FAL		

Maritime Safety Committee (MSC)						
Reference to SD, applicable if	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
6. Ensure regulatory effectiveness	6.14	Amendments to paragraph 4.4.7.6.17 of the LSA Code concerning single fall and hook systems with on-load release capability	2021	MSC	SSE	
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC/MEPC	III/PPR/CCC/SDC /SSE/NCSR	HTW
6. Ensure regulatory effectiveness	[...] ⁷	Amendments to the IMDG Code and supplements	Continuous	MSC	CCC	
Notes:		MSC 101 agreed to reassign the continuous outputs "Amendments to the IMDG Code and supplements" and "Amendments to the IMSBC Code and supplements" to SD 6 for the 2020-2021 biennium.				
6. Ensure regulatory effectiveness	[...] ⁸	Amendments to the IMSBC Code and supplements	Continuous	MSC	CCC	
Notes:		MSC 101 agreed to reassign the continuous outputs "Amendments to the IMDG Code and supplements" and "Amendments to the IMSBC Code and supplements" to SD 6 for the 2020-2021 biennium.				
6. Ensure regulatory effectiveness	[...] ⁹ NEW	Development of measures to ensure quality of onboard training as part of the mandatory seagoing service required by the STCW Convention	2020	MSC	HTW	
6. Ensure regulatory effectiveness	[...] ¹⁰ NEW	Revision of the Guidelines for the maintenance and inspections of fixed carbon dioxide fire-extinguishing systems	2020	MSC	SSE	

⁷ Number of the output to be assigned by C 122.

⁸ Number of the output to be assigned by C 122.

⁹ Number of the output to be assigned by C 122.

¹⁰ Number of the output to be assigned by C 122.

Maritime Safety Committee (MSC)						
Reference to SD, applicable if	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
6. Ensure regulatory effectiveness	[...]¹¹	Revision of the Guidelines for vessel traffic services (resolution A.857(20))	2020	MSC	NCSR	
7. Ensure organizational effectiveness	7.1	Endorsed proposals for the development, maintenance and enhancement of information systems and related guidance (GISIS, websites, etc.)	Continuous	Council	MSC/MEPC/FAL/LEG/TCC	
7. Ensure organizational effectiveness	7.9	Revised documents on organization and method of work, as appropriate	2021	Council	MSC/MEPC/FAL/LEG/TCC	
OW. Other work	OW 1	Amendments to the IAMSAR Manual	Continuous	MSC	NCSR	
OW. Other work	OW 4	Routeing measures and mandatory ship reporting systems	Continuous	MSC	NCSR	
OW. Other work	OW 5	Updates to the LRIT system	Continuous	MSC	NCSR	
OW. Other work	OW 6	Updating of the GMDSS Master Plan and guidelines on MSI (maritime safety information)	Continuous	MSC	NCSR	
OW. Other work	OW 7	Verified goal-based new ship construction standards for tankers and bulk carriers	Continuous	MSC		
OW. Other work	OW 8	Review of FSA studies by the FSA Experts' Group	Continuous	MSC		
OW. Other work	[...]¹²	Endorsed proposals for new outputs for the 2020-2021 biennium as accepted by the Committees	Annual	Council	MSC/MEPC/FAL/LEG/TCC	

¹¹ Number of the output to be assigned by C 122.

¹² Number of the output to be assigned by A 31.

Maritime Safety Committee (MSC)						
Reference to SD, applicable if	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
OW. Other work	OW 14	Reports on unlawful practices associated with certificates of competency	Annual	MSC	HTW	
OW. Other work	OW 15	Reports to the MSC on information communicated by STCW Parties	Annual	MSC		
OW. Other work	OW 16	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC/MEPC	III	
OW. Other work	OW 19	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC/MEPC	III	CCC
OW. Other work	[...] ¹³	Cooperate with the United Nations on matters of mutual interest, as well as provide relevant input/guidance	2021	Assembly	MSC/MEPC/FAL/LEG/TCC	Council
OW. Other work	[...] ¹⁴	Cooperate with other international bodies on matters of mutual interest, as well as provide relevant input/guidance	2021	Assembly	MSC/MEPC/FAL/LEG/TCC	Council
OW. Other work	OW 27	Amendments to chapter 9 of the FSS Code for fault isolation requirements for cargo ships and passenger ship cabin balconies fitted with individually identifiable fire detector systems	2020	MSC	SSE	SSE
OW. Other work	OW 28	Further development of the provision of global maritime SAR services	2021	MSC	NCSR	
OW. Other work	OW 29	Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters	2021	MSC	NCSR	
OW. Other work	OW 33	Finalization of a non-mandatory instrument on regulations for non convention ships	2022	MSC	III	

¹³ Number of the output to be assigned by A 31.

¹⁴ Number of the output to be assigned by A 31.

Maritime Safety Committee (MSC)						
Reference to SD, applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
OW. Other work	OW 34	Requirements for onboard lifting appliances and anchor handling winches	2020	MSC	HTW	SSE
OW. Other work	OW 35	Amendments to the IGC and IGF Codes to include high manganese austenitic steel and related guidance for approving alternative metallic material for cryogenic service	2020	MSC	CCC	
OW. Other work	OW 36	Review of SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	2021	MSC	HTW/SDC	SSE
OW. Other work	OW 39	Amendments to Guidelines for the approval of fixed dry chemical powder fire-extinguishing systems for the protection of ships carrying liquefied gases in bulk (MSC.1/Circ.1315) (OW 39)	2021	MSC	SSE	
OW. Other work	OW 40	Safety measures for non-SOLAS ships operating in polar waters	2021	MSC	NCSR	SDC
OW. Other work	OW 41	Amendments to the Explanatory Notes to SOLAS chapter II-1 subdivision and damage stability regulations (resolution MSC.429(98))	2020	MSC	SDC	
OW. Other work	OW 42	Amendments to the CSS Code with regard to weather-dependent lashing	2019 ¹⁵	MSC	CCC	
OW. Other work	OW 43	Consequential work related to the new International Code for Ships Operating in Polar Waters	2021	MSC	NCSR/SSE	SDC
OW. Other work	OW 44	IMO's contribution to addressing unsafe mixed migration by sea	2021	MSC/FAL/LEG		
OW. Other work	OW 47	New requirements for ventilation of survival craft	2021	MSC	SSE	

¹⁵ Target completion date subject to the outcome of CCC 6.

Maritime Safety Committee (MSC)						
Reference to SD, applicable	if Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
OW. Other work	OW 49	Review the Model Agreement for the authorization of recognized organizations acting on behalf of the Administration	2019 ¹⁶	MSC/MEPC	III	
OW. Other work	[...] ¹⁷ NEW	Revision of the Revised recommendations for entering enclosed spaces aboard ships (resolution A.1050(27))	2020	MSC	CCC	
OW. Other work	[...] ¹⁸ NEW	Amendments to the International Code for the Safe Carriage of Grain in Bulk (resolution MSC.23(59)) to introduce a new class of loading conditions for special compartments	2021	MSC	CCC	
OW. Other work	[...] ¹⁹	Amendments to SOLAS chapter III, LSA Code and resolution MSC.81(70) to remove the applicability of the requirements to launch free-fall lifeboats with the ship making headway at speeds up to 5 knots in calm water	2020	MSC	SSE	
OW. Other work	[...] ²⁰	Revision of the Code of safety for diving systems (resolution A.831(19)) and the Guidelines and specifications for hyperbaric evacuation systems (resolution A.692(17))	2021	MSC	SSE	
OW. Other work	[...] ²¹	Revision of SOLAS chapter III and the LSA Code	2024	MSC	SSE	

¹⁶ Target completion date subject to the outcome of III 6.

¹⁷ Number of the output to be assigned by C 122.

¹⁸ Number of the output to be assigned by C 122.

¹⁹ Number of the output to be assigned by C 122.

²⁰ Number of the output to be assigned by C 122.

²¹ Number of the output to be assigned by C 122.

Maritime Safety Committee (MSC)						
Reference to SD, applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ
Note	The description of the post-biennial output number 150 was shortened. To remove gaps, inconsistencies and ambiguities based on the safety objectives, functional requirements and expected performance for SOLAS chapter III.					
OW. Other work	[...]²²	Development of amendments to SOLAS chapter II-1 to include requirements for water level detectors on non-bulk carrier cargo ships with multiple cargo holds	2021	MSC	SSE	SDC
OW. Other work	[...]²³	Mandatory application of the Performance standard for protective coatings for void spaces on bulk carriers and oil tankers	2021	MSC	SDC	
OW. Other work	[...]²⁴	Performance standard for protective coatings for void spaces on all types of ships	2021	MSC	SDC	
OW. Other work	[...]²⁵	Recommendations related to navigational sonar on crude oil tankers	2020	MSC/MEPC	SDC	

²² Number of the output to be assigned by C 122.

²³ Number of the output to be assigned by C 122.

²⁴ Number of the output to be assigned by C 122.

²⁵ Number of the output to be assigned by C 122.

ANNEX 36

SUBSTANTIVE ITEMS FOR INCLUSION IN THE AGENDAS FOR MSC 102 AND MSC 103

102nd session of the Committee (13 to 22 May 2020)

Decisions of other IMO bodies

Consideration and adoption of amendments to mandatory instruments

Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS)

Measures to improve domestic ferry safety

Development of further measures to enhance the safety of ships relating to the use of fuel oil

Goal-based new ship construction standards

Human element, training and watchkeeping (report of the sixth session of the Sub-Committee)

Implementation of IMO instruments (report of the sixth session of the Sub-Committee)

Carriage of cargoes and containers (report of the sixth session of the Sub-Committee)

Navigation, communications and search and rescue (report of the seventh session of the Sub-Committee)

Ship design and construction (report of the seventh session of the Sub-Committee)

Pollution prevention and response (matters emanating from the seventh session of the Sub-Committee)

Ship systems and equipment (urgent matters emanating from the seventh session of the Sub-Committee)

Capacity-building for the implementation of new measures

Measures to enhance maritime security

Piracy and armed robbery against ships

Unsafe mixed migration by sea

Formal safety assessment

Application of the Committee's method of work

Work programme

Any other business

103rd session of the Committee (November 2020)

Decisions of other IMO bodies

Consideration and adoption of amendments to mandatory instruments

Measures to improve domestic ferry safety

Development of further measures to enhance the safety of ships relating to the use of fuel oil

Goal-based new ship construction standards

Ship systems and equipment (report of the seventh session of the Sub-Committee)

Human element, training and watchkeeping (report of the seventh session of the Sub-Committee)

Implementation of IMO instruments (report of the seventh session of the Sub-Committee)

Capacity-building for the implementation of new measures

Measures to enhance maritime security

Piracy and armed robbery against ships

Unsafe mixed migration by sea

Formal safety assessment

Application of the Committee's method of work

Work programme

Election of Chair and Vice-Chair for 2021

Any other business

ANNEX 37

SAFETY AND SECURITY RELATED THEMATIC PRIORITIES FOR THE ITCP COVERING THE 2020-2021 BIENNIUM*

1 Fostering the effective implementation of conventions and other mandatory instruments, with emphasis on the SAR and STCW Conventions, in particular, providing assistance and training to developing countries to effectively implement the STCW Convention, including the 2010 Manila amendments thereto, and the ISM Code.

2 Promoting SOLAS chapter XI-2 and the ISPS Code, the continued establishment and strengthening of effective ship and port facility security measures, including support to LRIT implementation, the enhancement of safety and security of the ship/port interface, in accordance with the relevant IMO standards and recommendations and promoting and enhancing maritime security aspects relating to piracy and armed robbery against ships, including facilitation and effective implementation of resolution A.1025(26) on *Code of Practice for the Investigation of Crimes of Piracy and Armed Robbery against Ships*.

3 Supporting maritime administrations to strengthen their human resource capabilities in the discharge of their responsibilities as flag, port and coastal States, in particular with regard to the implementation of the *IMO Instruments Implementation Code*, the *Casualty Investigation Code* and the *Code for Recognized Organizations*, while promoting the global harmonization of port State control.

4 Supporting IMO Member States to strengthen their services dedicated to safety of navigation, monitoring of maritime traffic, and implementation of effective ships' routing measures, ship reporting systems and search and rescue.

5 Supporting maritime administrations through capacity-building to strengthen their capabilities to implement the provisions of the IMDG and IMSBC Codes, which will enable them to improve implementation as well as to promote good practice when dealing with these mandatory instruments.

6 Promoting the acceptance and implementation of IMO instruments with particular emphasis on the 2012 Cape Town Agreement and the 1995 STCW-F Convention as well as proactive safety measures relating to fishing vessels and their personnel. Promoting and enhancing maritime safety aspects relating to small fishing vessels, with emphasis on the *Implementation Guidelines on safety of small fishing vessels*.

7 Promoting and enhancing maritime safety aspects relating to ships not covered by SOLAS chapter I (so called non-convention ships).

* Taking into consideration the information provided by Member States through the Country Maritime Profiles (CMPs) and also addressing the special needs of least developed countries (LDCs) and small island developing States (SIDS).

ANNEX 38

STATEMENTS BY DELEGATIONS AND OBSERVERS¹

AGENDA ITEM 1

Statement by the delegation of the Marshall Islands

"As you and the members of your Committee are aware, on 31 March 2017, the Marshall Islands registered very large ore carrier **Stellar Daisy**, with a crew of 24 sank in the South Atlantic. Regrettably 22 remain missing at sea. The Marshall Islands again expresses its deepest condolences to the families of the missing 22 crewmembers of the **Stellar Daisy**. Two crewmembers were rescued, and the Marshall Islands remains grateful to all who were involved in the search and rescue operation.

The Marshall Islands has completed the marine safety investigation of the loss of **Stellar Daisy** and has submitted the marine safety investigation report to the Organization. The report is available to the public through GISIS. The incident reference number is C0010620.

The Marshall Islands is preparing to make appropriate proposals to MSC 102 addressing the recommendations in the report that are related to IMO instruments. A paper has been submitted to III 6 (III 6/4/3) making that Sub-Committee aware of the planned submission to MSC 102 and inviting it to include the review of the marine safety investigation report on the loss of the **Stellar Daisy** in the Terms of Reference for the Working Group on Analysis of Marine Safety Investigation Reports.

Lastly Mr. Chair, the Marshall Islands would like to take this opportunity to thank the marine safety investigation authorities from the Republic of Korea, the Philippines and Brazil for their good cooperation as substantially interested states."

Statement by the delegation of Uruguay

"El pasado 5 de junio, en el primer día de sesión de este comité, se manifestó por parte de una delegación que el siniestro del STELLAR DAISY el 31 de marzo de 2017, habría dejado de manifiesto la falta de medios SAR en el Atlántico Sur.

Como es sabido, en el momento del siniestro, el STELLAR DAISY navegaba a más de 1700 millas de la costa uruguaya.

Uruguay, como responsable SAR del área de búsqueda y salvamento en la que el buque se hundió, respondió en tiempo y forma, realizando los máximos esfuerzos posibles con todos los medios disponibles en la zona, recurriendo incluso a la ayuda de Argentina, Brasil y Estados Unidos entre otros países.

Todo este esfuerzo fue reconocido por todos los países afectados: Islas Marshall (Estado de Bandera), Corea, Filipinas e incluso la OMI.

Por tal motivo, Uruguay desea reafirmar su compromiso con la salvaguarda de la vida humana en el mar, y que en caso de que se entienda pertinente la revisión del sistema, el mismo debe realizarse formal y seriamente, presentando los documentos que correspondiere para que se

¹ Statements have been included in this annex in the order in which they are listed in the report, sorted by agenda items, and in the language of submission (including translation into any other language if such translation was provided).

inicie una revisión del sistema a nivel mundial que genere una sinergia tendiendo a la mejora del mismo."

Statement by the delegation of China

"The Chinese delegation comments on the statement made by the Philippines. First of all, this delegation clarifies that China has sovereignty over the Nansha Qundao, and that Chinese fishermen were, at the moment of the occurrence of the incident, engaged in normal fishing operations in the area concerned.

Secondly, this delegation would like to recount what actually happened. The following is the outcome of the investigation by the Chinese side.

At 2400 hours 9th June, Chinese fishing vessel Yuemaobinyu 42212 was anchored at a fishing position in Liyue Tan (116°40'E, 11°35'N) of Nansha Qundao, engaging in light Seining operation and then was besieged by 7 to 8 Philippine fishing vessels.

When the Chinese vessel evacuated the region, due to the lack of time available for maneuverability, the steel wire on the light frame on the port side got hooked onto the bridge of one of the Philippine fishing vessel. The Philippine vessel heeled and the stern part of the vessel submerged in the water.

The skipper of the Chinese vessel wanted to provide rescue, but being afraid of being besieged again by the rest of the Philippine vessels, he sailed the vessel off the scene after witnessing the rescue of the Philippine fishermen on the vessel involved in the accident.

Finally, this delegation would like to reiterate that China attaches great importance to the safety of life at sea and will continue to do its work on life at sea. China and the Philippines are maintaining communication through diplomatic channels and properly handling this matter. The delegation calls on all parties to enhance maritime dialogue and cooperation to avoid accidental collisions and to safeguard life and property."

Statement by the delegation of the Philippines

"On 9 June 2019, a Philippine fishing vessel which was anchored in recto bank in Palawan, sank after an incident with a Chinese vessel. The incident's location is at an area that is within the exclusive economic zone of the Philippines.

The twenty-two (22) distressed Filipino crew were callously abandoned to the elements of the rough seas and would have perished were it not for the timely assistance provided by a Vietnamese vessel. We sincerely thank our ASEAN neighbour and strategic partner, Vietnam, for rescuing them.

In this regard Mr. chairman, we would like to highlight the importance of rendering assistance to persons in distress at sea. The obligation of states to do so is explicitly provided under the un convention on the law of the sea; the IMO international convention for the safety of life at sea, as amended, and the IMO convention on maritime search and rescue.

It is the obligation of every responsible member state of the un and the IMO, to implement these conventions and related codes concerning maritime safety and security, rather than just paying lip service to them. It is also our moral obligation to save a human life, whenever and wherever we can do so. We hope there will be no similar incidents of this kind in the future.

Mr. Chair, may we request for this statement to be included in the final report of the committee."

AGENDA ITEM 4

Joint Statement by the delegations of Norway, Saudi Arabia and the United Arab Emirates

"We would like to refer to the following:

- The United Arab Emirates' general statement annexed to the report of the 74th session of the Marine Environment Protection Committee (MEPC).
- The International Maritime Organization Circular Letter No.3980 dated 4 June 2019. As a commitment to keep IMO and its members informed of the results of the investigations, we would like to share with the preliminary findings of the investigation into the coordinated attacks on four oil tankers (2 Saudi Arabia-flagged, 1 Norwegian-flagged and 1 UAE-flagged) that took place on the morning of 12 May 2019, within UAE territorial waters less than 12 nautical miles from UAE coastline, in the anchorage area off the port of Fujairah.

The three affected States stressed, through IMO Circular Letter No.3890, that the attacks posed a threat to safety and security of international shipping and navigation, world maritime trade, the security of global energy supplies, and international peace and security.

- On 12 May 2019, the day of the attacks, there were approximately 185 large vessels, and many tugboats, fishing boats, and other civilian boats, present in the anchorage area. A series of four explosions occurred in the early morning, damaging four vessels. At the time of the explosions, three of the four vessels that were attacked were carrying a cargo of oil. The three non-Emirati vessels were at anchor. The Saudi-flagged Amjad, located in the North channel of the anchorage area, was the first tanker to be struck by an explosion, at 6:02am, local time. The location of the explosion on the Amjad was below the waterline, at the structure of the engine room of the vessel.
- The Saudi-flagged Al Marzoqah, located in the South channel of the anchorage area, was struck by an explosion below the waterline, at the structure of the engine room, at 6:22am local time.
- The UAE-flagged A Michel, located in the South channel, was then struck by an explosion at 6:40am, below the waterline at the structure of engine room.
- The Norwegian-flagged Andrea Victory, located in the South channel of the anchorage area, was struck at 6:55am. The explosion occurred at or just below the waterline, at the structure of the engine room.

Following the attacks, UAE authorities carried out thorough investigations. In addition, we invited technical teams from several countries to participate and independently verify our findings.

Our investigations to date have involved the deployment of divers and a remotely operated underwater drone to inspect the attacked vessels and collect foreign debris from the vessels. We have conducted chemical analysis in specialized government laboratories in the UAE; this is being verified by partner countries in their own laboratories. Additionally, approximately fifty interviews were conducted with members of the ships' crews, and the voyage data recorders and logs of the ships were reviewed.

The assessment of the location of the explosion below or at the waterline of the four vessels, the nature and extent of the damage to the four vessels, the sequencing of the attacks, and

the examination and chemical analysis of the foreign debris recovered at all four attack sites revealed it is highly likely limpet mines were used in the attacks on the four vessels. Based on the location of the explosions and the nature of the explosive device used, supported by an evaluation of data from the voyage data recorders, it appears most likely that the mines were placed on the vessels by divers deployed from fast boats.

While investigations are still ongoing, there are strong indications that the four attacks were part of a sophisticated and coordinated operation carried out by an actor with a significant operational capacity, most likely a State actor. This is supported by the following conclusions, based on the evidence gathered:

- The attacks required intelligence capabilities for the deliberate selection of four oil tankers from among almost 185 vessels of all types that lay at anchor off Fujairah at the time of the attacks. One of the targets was at the opposite end of the anchorage area from the other vessels, which indicates that these were deliberate, rather than random targets.
- The attacks likely required the positive identification of these pre-selected targets by the operatives carrying out the attacks.
- The attacks required high skill and well-trained divers; the mines were placed with a high degree of precision below or at the waterline at the engine chamber, in ways that were designed to incapacitate the vessels without sinking them or detonating their cargo indicating the precise knowledge of the design of the targeted vessels.
- The attacks required a high degree of coordination among, what is most likely, several teams of operatives. This included the timed detonation of all four mines sequenced within less than an hour.
- The attacks required operatives with experience in navigation and handling fast boats, with an understanding of the geographic area.

As a commitment, we will keep IMO and its members updated on this matter. Finally, the United Arab Emirates is going to continue to take the necessary steps and measures to ensure the highest levels of maritime safety, maritime security, and facilitation of maritime trade."

Statement by the delegation of the Islamic Republic of Iran

"This delegation would like to express its concern over the recent worrying incident and sabotage against the oil tankers in the vicinity of the Persian Gulf as they can undermine maritime security.

The Persian Gulf and Gulf of Oman are considered among the most sensitive and strategic waterways of the world, due to the existence of huge oil and gas reserves, and the extensive maritime traffic therein. It is obvious that any threat or malicious action against shipping will not only jeopardize maritime safety and security in the region, but will also compromise the economic and commercial flow of the regional States through this efficient mode of transport. We are certain that the cooperation and harmony of all countries in the region will prevent the recurrence of such unfortunate events."

Statement by the delegation of Oman

مداخلة السلطنة على بيان دولة الإمارات العربية المتحدة"

إن سلطنة عمان تدين الأعمال التخريبية التي تعرضت لها السفن التجارية قبالة سواحل دولة الإمارات العربية المتحدة الشقيقة. وتعرب عن أسفها البالغ لتلك الحوادث. كما تؤكد السلطنة في هذا الجانب على أهمية تضافر الجهود الإقليمية والدولية للحفاظ على سلامة الملاحة البحرية في المنطقة. وترغب السلطنة في أن ترفق هذه المداخلة في التقرير النهائي لهذا الاجتماع.

"وشكراً"

Statement by the ISSA observer

"I am Spencer Eade here today to represent the International Shippers & Services Association (ISSA) and to introduce to you Document 101/4/2.

This Document highlights the problems that ship suppliers around the world are continuing to experience in accessing Ports in order legitimately to deliver stores to vessels.

This is not a new problem and ISSA has drawn the matter to your attention before. However the problems faced by ship suppliers globally are increasing not decreasing.

It seems to us that this is caused by the simple mis-interpretation of the ISPS Code. When this excellent legislation was proposed we took a very active part in ensuring ship supply operations were clearly spelt out. Thereafter we produced a detailed booklet highlighting where ship supply was mentioned in the code and explaining how ship suppliers would implement the security requirements detailed within the Code Copies of this booklet are available to all Delegates on the publications table outside this plenary hall. What seems to have happened is that a number of Ports' managements have taken it upon themselves to impose eye-wateringly high fees on ship suppliers simply to enter the Port. Their excuse is that it costs their Port money to staff the security aspects of their operations and this has to be paid for by those who use such facilities. We can understand that argument but not the high scale of fees charged nor, in particular, the absurd waiting times imposed on ship supply delivery vehicles which, very often, results in a ship's departure being delayed. All of this is spelt out in the Document before you and we have taken the trouble to detail examples of what we describe as unfair practices.

What we would like to do is to re-set the relationship between bona fide ship suppliers and Port Operations globally whereby a partnership is created between the Port Authority and the individual ship suppliers. You will see from our booklet that we recognise as much as anyone the need for the security measures set out in the ISPS Code and we conform to these willingly. After all this great piece of legislation has kept Ports, people and ships safe for many years now.

By engaging with your Ports' ship suppliers other benefits will flow. For example the suppliers' staff become extra eyes to spot anything untoward going on in the Port and additionally can be used as an intelligence source should efforts be made by those who would harm to use supply as a conduit for such activity. We would therefore like respectfully to request the Committee to consider what we have detailed in Document MSC 101/4/2 and between us inform and educate Members States' Ports Managements the better to stream-line ship supply globally and reduce or eradicate the high fees charged for Port entry that we see at the moment.

Finally Mr Chairman would you allow me a moment to bid farewell to the Organisation as this will be my last attendance here before my retirement on 30th June. It has been an honour and

a privilege for me for more than 21 years to represent the global ship supply industry here and I would like to thank all Delegates, the Secretary-General and the IMO Secretariat for their kindness, support and friendship to me and to ISSA and wish you all every success in the vital work you do going forward."

AGENDA ITEM 5

Statement by the delegation of Argentina

"La Argentina apoya decididamente la creación de un marco normativo internacional en todos los foros internacionales competentes para regular la actividad de plataformas no-tripuladas o con tripulaciones que no están a cargo de su operación, como por ejemplo los grados de autonomía 3 y 4 identificados en el anexo 2 del documento MSC 100/20/add.1. En tal sentido, desea señalar que toda actividad que involucre dichas plataformas en todos los espacios marítimos bajo la jurisdicción de la República Argentina sólo están permitidas en los casos en que ha mediado autorización previa y expresa de las autoridades argentinas.

Por lo tanto, en relación con el párrafo 1.2.3. de las Draft Interim Guidelines for MASS Trials, la República Argentina señala que la operación en prueba de dichas plataformas en los espacios marítimos argentinos requiere en todos los casos de un permiso previo y expreso de las autoridades nacionales argentinas.

Al mismo tiempo, nuestra delegación propondrá oportunamente la adecuada consideración del ámbito espacial de las pruebas con MASS en el ámbito del Comité jurídico de esta Organización."

AGENDA ITEM 11

Statement by the delegation of France

"Alors que le MSC 101 aborde ce matin le rapport du NCSR et donc les questions SAR, la France doit faire part au Comité d'un tragique événement qui s'est déroulé vendredi dernier. La côte atlantique française était alors balayée par la violente tempête Miguel, avec des vents à 130 km/h et surtout une très forte houle en provenance du golfe de Gascogne.

En fin de matinée, au plus fort de la tempête, le MRCC français en charge de la zone SRR (Search and Rescue Region) du Golfe de Gascogne a été averti du déclenchement d'une balise de détresse. Il s'agissait de la balise d'un petit navire de pêche, d'une longueur de 11 m, le **Carrera**. La balise était localisée à environ 1 mile des côtes.

Sous la coordination du MRCC, la vedette de la société nationale de sauvetage en mer (SNSM) du port des Sables-d'Olonne ainsi qu'un hélicoptère de la sécurité civile ont été engagés dans cette opération SAR.

La sortie du port des Sables-d'Olonne était balayée par de très fortes vagues déferlantes. La vedette de sauvetage de 18 m, armée par sept sauveteurs bénévoles expérimentés, a été prise par ces vagues déferlantes. Une vague a cassé les vitres du cockpit du canot, provoquant probablement des problèmes électriques et sans doute un arrêt du moteur. Il semble que le canot ait fait plusieurs tours sur lui-même et se soit retourné, à moins d'un kilomètre de la côte. Quatre sauveteurs ont pu rejoindre la côte à la nage, alors que trois sont restés prisonniers de la vedette et sont décédés. Le navire de pêche a, quant à lui, sombré et le marin qui était parti seul en mer est à cette heure porté disparu. Une enquête judiciaire a été ouverte pour identifier les circonstances exactes de l'accident.

L'ensemble de la communauté maritime française est en deuil.

Les pensées de la France sont toute particulièrement tournées vers les familles des victimes. Les autorités françaises saluent également le courage et le dévouement de ces hommes et de ces femmes bénévoles qui acceptent de prendre tous les risques pour se porter au secours des personnes en difficultés en mer. La société nationale de sauvetage en mer est composée de près de 8 000 sauveteurs bénévoles, répartis sur 218 stations qui bordent le littoral. Ils assurent de très nombreuses opérations SAR sous la coordination des 9 MRCC français.

Le gouvernement français a également rappelé l'importance des consignes de prudence diffusée dans le cadre des Renseignements de Sécurité Maritime.
Je vous remercie de votre attention."

Statement by the delegation of Indonesia

"This is an opportune moment to express through you our gratitude for the meeting to support and endorse our two proposed TSSs in the Straits of Sunda and Lombok. Our gratitude also goes to the Chair of NSCR and the Chair of the Expert Group for the way they conducted the meeting.

The adoption of the two TSS is a new milestone for Indonesia in ensuring safety and security in our water. As an archipelagic state whereby 70% of its territory is composed of waters, we have continuously invested in the area of safety and security of our waters. The two TSSs will contribute towards that aim. Indonesia under President Joko Widodo has also invested billions of dollars in improving our maritime infrastructure from port building to supply chain and logistic management.

Mr. Chair,

Indonesia is and will always commit itself in ensuring that our waters are safe and secured for the passage of international and national oceangoing ships. It is our fervent believe that this is our contribution in providing international public goods whereby transportation of goods and people can be conducted in an efficient and effective manner whilst preserving our environment. As a member of the international community, we are duty bound to do so and the two TSSs are part of our way to fulfil our duty.

Indonesia spares no efforts in ensuring that the two TSSs will efficiently function by June 2020. My minister has given specific instruction that I convey this message of assurance to members of IMO and the shipping industry.

Indonesia is currently investing in improving the necessary infrastructure for the two TSSs can function as stipulated by Rule 10. Since the last NCSR meeting in January, we have been redoubled our efforts in training our human resources in handling the four VTS that lie in the vicinity of the two Straits. We have also conducted awareness raising campaign to fishery and local community that operate in the vicinity.

We will update you on a regular basis the progress made so far. We are open to suggestion and cooperation. We believe that there is always room for improvement through concrete cooperation in the form of new technology improvement or improving human resources.

In conclusion, Mr. Chair, safety, security, and protection of environment in our waters receive our outmost attention and efforts. The adoption of the two TSSs will give further impetus to our efforts. We wish to express once again our gratitude for your supports.

In the end, let me quote from Antoine de Saint Exupery: "if you want to build a ship, don't drum up people to collect wood and don't assign tasks and work, but rather teach them to long for

the endless immensity of the sea." We all long for a safe and secured sea where the international community can work and grow together."

Statement by the IMSO observer

"IMSO would like to point out that, as well as the move towards a multi-satellite service provider environment providing benefits in terms of choice and competition in the provision of services, the new PSA structure would allow service providers to withdraw from providing GMDSS services with fewer constraints than at present. Since a hypothetical situation could arise, where all service providers decided to withdraw one by one, the Organization might wish to give some thought to introducing provisions to ensure that a default provider would always remain in operation, noting that similar universal service obligations have been applied in the provision of national telecommunication services."

AGENDA ITEM 12

Statement by the delegation of the United States

"The United States views that the agenda item has expanded from developing requirements for the safe carriage of industrial personnel (IP) to asking the Ship Design and Construction (SDC) sub-committee to determine training requirements for special personnel (SP). Currently, a SOLAS cargo ship can carry special personnel without any special training requirements, because the SPS Code is not mandatory. By supporting the view that special personnel on a ship certificated to the IP Code should meet the minimum training requirements of industrial personnel, we are layering on mandatory requirements for the carriage of special personnel that have not existed before. If the Committee makes such a decision, we need to understand that we are fundamentally changing a premise or basis that has existed since the first consideration of cargo ships carrying special personnel, since we have only recommended, and not previously required, any specific training for special personnel."

AGENDA ITEM 14

Statement by the CESA observer

"CESA would like to thank CLIA for highlighting one example that the reverse engineering process of SOLAS Ch. III and LSA Code safety standards was not fully successful, in this case from a more legal perspective.

On the other CESA would like to reiterate that we fully support the decision to improve the habitability of totally enclosed lifeboats by improved ventilation standards regardless of size and it is our position that this decision should be expanded to all type of survival crafts as soon as possible.

The use of an amended MSC.1/Circ.1212 before entry into force of the new LSA ventilation standards would in fact constitute an early implementation for oversized lifeboats. But since the clear majority has no doubts that this an adequate habitability standard, this is something that would be promoted anyhow.

However, I am not a legal architect but just a humble naval architect. Therefore we would recommend to reconsider this issue at SSE 7 along with all other problems associated with other inconsistencies of the draft amendments to MSC.1/Circ.1212."

AGENDA ITEM 15

Statement by the delegation of Malaysia

"We wish to thank the secretariat for their paper on the communication of Article Vi as well as information as prescribed under the auspices of Regulation 1/7 and Regulation 1/8 of the STCW Code as amended. We believe that many countries are given true and complete effect to their international obligations; however sir, we believe that the rigors of reporting and effective transfer of information is important; this is so because the communication of information is very format centric and each data set has its own expiry date; for example independent evaluation should within the previous 6 months. Similarly, criteria for evaluation under the auspices of Regulation 1/8 must be correctly articulated. This delegation is pleased to inform this committee that Malaysia will be hosting a 1 day workshop at the IMO between the secretariat, competent persons and independent evaluators in order to facilitate the exchange of information as prescribed under the STCW Convention. Member States will be notified through an appropriate circular letter."

AGENDA ITEM 18

Statement by the delegation of France

"La France remercie l'Inde pour son document MSC 101/18/3. Elle salue l'intérêt que l'Inde porte à la sécurité maritime dans le Golfe de Guinée.

La France réitère son inquiétude et sa vive condamnation des attaques qui sont commises à l'encontre des navires et des équipages navigant dans le golfe de Guinée;

Comme le rappelle le document indien, le processus de Yaoundé a été mis en place par les Chefs d'Etats de la région en 2013. Il a vocation à coordonner l'action des Etats côtiers.

Afin d'appuyer la mise en œuvre et l'opérationnalisation de ce processus, le groupe G7++ des Amis du Golfe de Guinée a été créé en 2013. Le G7++ regroupe, outre les pays du G7, la Belgique, le Brésil (observateur), la Corée du Sud, le Danemark, l'Espagne, la Norvège, les Pays-Bas, le Portugal, la Suisse, l'Union Européenne, l'ONUDC et Interpol;

L'Inde propose, dans son document, la création d'un groupe de contact sur la lutte contre la piraterie dans le Golfe de Guinée.

Dresser un parallèle entre la piraterie dans le Golfe de Guinée et dans la corne de l'Afrique n'apparaît cependant pas pertinent. Contrairement à la Somalie, il convient de relever que les Etats du Golfe de Guinée disposent de tous les attributs de la souveraineté, ainsi que de moyens pour contrôler leurs espaces maritimes;

Par ailleurs, les incidents dans le Golfe de Guinée se déroulent majoritairement dans les eaux territoriales des Etats côtiers concernés;

Enfin, les modalités de navigation maritime sont très différentes entre les deux zones : Dans la corne de l'Afrique, le trafic commercial utilise des routes bien définies. Ce qui facilite, par exemple, la constitution de convois.

Dans le golfe de Guinée, les voies de transit se répartissent sur l'ensemble de cet espace géographique, rendant de fait difficile la surveillance des navires marchands.

Qui plus est, la piraterie n'est malheureusement qu'un des enjeux pesant sur la sécurité maritime dans la zone : la pêche illégale, non déclarée et non réglementée (INN), le trafic de

stupéfiants par voie maritime, les trafics d'armes, d'êtres humains et de matières premières constituent autant de menaces pesant sur le développement des pays riverains;

C'est pourquoi le G7++ FoGG a adopté une approche globale des menaces envers la sécurité maritime et soutient le développement durable basé sur les principes de l'économie bleue. Permettez-moi d'apporter ici quelques précisions sur le G7++:

- Le rôle de groupe de contact joué par le G7++ des amis du golfe de Guinée (FoGG) sera renforcé cette année, à l'occasion de la coprésidence franco-ghanéenne du G7++.
- L'industrie maritime est invitée à participer activement aux débats. La réunion intermédiaire du 2 juillet à Bruxelles où plusieurs représentants sont invités² doit précisément servir à rétablir cette connexion entre l'industrie maritime et le G7++FoGG.
- par ailleurs, on relèvera que la succession des présidences française, américaine et britannique du G7++ offre une dynamique favorable. Nous souhaitons lier ces trois présidences à une feuille de route commune.
- La création de groupes de travail virtuels est envisagée, afin de rassembler les différents acteurs autour de la recherche de solutions aux grands enjeux de sécurité maritime dans le golfe de Guinée.³

Enfin, la France, qui assure la présidence du G7++ Amis du GG en 2019 avec le Ghana, invite l'Inde et les pays intéressés à rejoindre ce forum afin d'œuvrer de concert pour une meilleure sécurité maritime dans le Golfe de Guinée.

En revanche, la proposition indienne conduirait à une duplication des efforts entrepris actuellement dans le cadre du G7++ qui regroupe déjà l'ensemble des partenaires agissant dans la zone.

C'est pourquoi la France n'est pas en mesure de soutenir la création du groupe de contact proposé dans le document MSC 101/18/3."

Statement by the delegation of Ghana

"May we first thank India and the ICS et al for their documents.

The Government of Ghana shares the concerns and the condemnation of others before us, we view piracy, armed robbery and other illicit activities as a canker that threatens to destroy the global maritime industry. As a country whose economy depends on the export of raw materials among others, we are cognizant that our fortunes depend largely on maritime trade and recognize the need to ensure safety and security for the industry.

We wish to indicate the strong commitment of the Government of Ghana with other states in the region to effective action to eradicate illicit activity (activities) in particular the scourge of piracy and armed robbery in parts of the Gulf of Guinea. Ghana's focus has been on deterrence and response and in that regard, we have taken key positive steps that have ensured a minimal number of incidents occurring off the coast of Ghana.

These consist of onshore measures which includes administrative and legislative measures and Offshore measures which consist of electronic surveillance and physical patrols. As part of the offshore measures Ghana has established an integrated electronic system to enhance the Maritime Domain Awareness in the form of a **Vessel Traffic Management Information**

² OCIMF, BIMCO, Intertanko, Armateurs de France, ENI, BP, Shell, MAERSK, Total.

³ MDA, Financements, legal finish, économie bleue, formation.

System (VTMIS) for a comprehensive and continuous surveillance of Ghana's maritime domain.

The Government of Ghana has invested in enhanced sea patrols and we have gradually built up our Naval Assets and capacity since the early 2000s, also re-establishing the Marine Police Unit to improve response and arrest capability.

These efforts are supported by a National Maritime Security Committee made up of relevant agencies to enhance coordination, efficient ISPS implementation to enhance security in the ports and tight controls on all vessels including licencing, registration and permits to operate. We are in the process of developing a Maritime Security Strategy having received very valuable assistance from the IMO to initiate the process for which we express our appreciation. Ghana has a strong commitment to regional action via the Yaounde Code of Conduct and its architecture for the Implementation of the Regional Strategy for Maritime Safety and Security in Central and West Africa and the Inter-regional Coordination Centre (ICC).

We would also highlight the many achievements of the ICC and the sub regional and zonal centres for west and central Africa in spite of limited resources that include the framework for regional cooperation, regional Naval cooperation and collaboration, naval exercises, harmonization of training and support for legislative reform across the two relevant economic communities in West and Central Africa i.e. ECOWAS and ECCAS

Ghana has a strong long-standing belief in partnerships and collaboration with the international community. In that regard we would highlight the efforts of the IMO, G7++FOGG and emphasise the need to avoid the proliferation of initiatives and actions within the international community.

In the wake of the UN resolutions. – Uncoordinated interventions in the initial stages led to the establishment of the G7++Friends of the GoG mechanism. Since then the mechanism has been instrumental in coordinating international action and collaboration in the GoG in respect of Illicit activity. Ghana co-chairs the G7++ with France and this year's summit will be held in Brussels.

The key question is – How does the contact Group proposed by India differ from the aforementioned existing mechanisms? What interventions will the contact group proposed introduce that are not already in place?

We submit that all the considerations put forward by India are being addressed or have the scope to be addressed within the FOGG framework.

Perhaps communication has not been at its optimum and it has become apparent with the two papers under consideration that there is limited knowledge/ communication about the FOGG mechanism and the Yaounde architecture and the other effective interventions within the region at national and regional levels.

The FOGG is not a closed group we would urge interested parties such as India and the industry to come to the table to participate in the concerted action of the littoral states, the ICC and the FOGG, in the repression of piracy and armed robbery.

We agree that lessons can be learned from combating piracy in East Africa, however it is important to note that the dynamics in the Gulf of Guinea are not the same as those that existed on the Eastern part of the continent at the relevant time. We speak for Ghana but we suspect that the same is true for other states in the region - We do not need encouragement to see the benefit of international cooperation as suggested by ICS et al. We already have a commitment to international cooperation as we indicated earlier and are party to many multilateral and bi-lateral efforts such as our collaborative cooperation with the Danish government on maritime

matters There are other related interventions such as GOGIN - a project co-funded by the European Union (EU) and the Government of Denmark and implemented by Expertise France to improve safety and maritime security in the Gulf of Guinea and to support peace, stability and economic and human development throughout West and Central Africa among others."

Statement by the delegation of Nigeria

"We wish to thank the proponents of Doc MSC 101/18/3 and the efforts put into coming up with the document.

Nigeria acknowledges the incessant security incidences ranging from piracy to robbery at sea at the Gulf of Guinea, which is indeed a great cause of concern not only to Nigeria, but to other states in the Gulf of Guinea and other concerned stakeholders as it relates to safety of life, rise in freight rates, insurance cost, domestic cost of goods and services, etc.

While Nigeria appreciates the document, it should be noted that it is a ten (10) year review (2009–2018). It should be noted that considerable measures have been put in place by Nigeria and members of the Gulf of Guinea states. This can be attested by the recent report of the analysis of the first quarter 2019 by ICC Commercial crime services, in a report captioned "Gains in Nigeria, but caution urged". Nigeria has been a hotspot for piracy incidents over the past decade. However, in the first quarter of 2019, Nigeria experienced a decrease in reported piracy incidents

(<https://www.icc-ccs.org/index.php/1268-maritime-piracy-incidents-down-in-q1-2019-but-kidnapping-risk-in-gulf-of-guinea-persists>)

Information available for the two months (January to February 2019) on the GISIS portal, reported 18 incidences. 13 piracy attempts in Nigeria, 12 of which were unsuccessful. However, one casualty was recorded in one of the many failed incidences. Recorded incidences in the GISIS indicates that there has been, yet more reductions, while 7 incidents were recorded in West Africa in the month of March 2019, 4 was in Nigeria. 6 incidents in the month April 2019 West Africa, with 4 in Nigeria, and in the month of May, 6 incidents were recorded in West Africa, 2 was in Nigeria. Thus, indicates progress in addressing this menace. The following measures are being taken by Nigeria to address the menace.

1 ESTABLISHMENT OF A LEGAL FRAMEWORK

A bill for the Suppression of Piracy and other Maritime Offences Bill, otherwise known as the Antipiracy Bill aims to provide for the suppression of piracy and other maritime offences and also give effect to some of the provisions of the United Nations Convention on the Law of the Sea (UNCLOS) 1982, the Convention for the Suppression of Unlawful acts against the Safety of Maritime Navigation (SUA) 1988 and its protocols has been forwarded to the Nigerian National Assembly to be passed into law.

2 ESTABLISHMENT OF AN INTEGRATED NATIONAL SURVEILLANCE AND WATER PROTECTION INFRASTRUCTURE (DEEP BLUE PROJECT/ NIGERIAN NAVY)

In 2017, the Nigerian Federal Government launched a deep blue contract for the provision of integrated maritime security architecture to enable compliance and enforcement action in the Exclusive Economic Zone. The highlights of the deliverables under the project are listed as follows:

Command and Control Center which would see to the deployment of Satellite AIS (Automatic Identification System).

SAR (Synthetic Aperture Radar), implementation of Coastal Radar, Maritime Intelligence Software, Enhanced Surveillance Capability. Hence, the acquisition of a national Maritime Domain Awareness network comprising the Regional Maritime Awareness Capability facility and an over the horizon FALCON EYE System which provides proactive and timely anticipation of criminal intent, ensures visibility of all vessels in our territorial water whether fitted with AIS or not.

Acquisition of patrolling assets for intelligence gathering with communication to the main Command Centre. The earmarked assets include Special Mission Aircraft, Special Mission Vessels, Unmanned Air Vessels, Armoured Carriers, Interceptor Vessels and Air patrol helicopters.

Capacity building for enforcement/intervention teams which comprises training of Special Forces to tackle maritime crime and piracy. Some of the recently executed training on Intelligence and Intervention are as follows:

- i. C4I (Command Control Communication Computers and Intelligence) Operations undertaken from 8th January 2019 to 6th February 2019.
- ii. Intelligence Course undertaken from 18th February 2019 to 1st March 2019.
- iii. Supervisor training which is currently ongoing.
- iv. Graduation Infantry training undertaken from 15th February 2019 to 19th March 2019; and
- v. Special Intervention Training which is also ongoing.

The Administration's collaboration with Nigerian Navy entails areas of intelligence, surveillance, reconnaissance, search-and-rescue operations, tactical sea-based assistance and enforcement actions against piracy, sea robbery, smuggling, illegal bunkering and illegal fishing. This strategic collaboration has yielded results as seen in:

- The birth of Maritime Guard Command - A detachment of the Nigerian Navy Civil Defense and other arms carrying security operatives are permanently on attachment with the Agency under the command of a high-ranking Naval Officer.
- Choke point management and control operation - This operation involves deployment of house boats and gun boats to form naval security stations along identified points in the creeks to deny access to crude oil thieves. It is noteworthy that since the introduction of the Choke Point Control Regime, drastic reduction has been recorded in traffic of barges and other vessels used for conveying stolen crude oil and illegally refined petroleum products.
- Establishment of Naval Task Group - A special operation codenamed OP TSARE TEKU designed to contain threats of piracy and related attacks on shipping and oil and gas installations (OGI's), has seen drastic reduction in incidents of attacks on vessels and FPSOs by pirates/sea robbers.
- Standardization of Procedures in tackling maritime crimes - The partnership between NIMASA and NN facilitated the production of a Harmonized Standard Operating Procedures (HSOP) on Arrest, Detention and Prosecution of vessels and persons in the Nigerian maritime environment. This lofty initiative has added impetus to aggregate measures geared towards ensuring peace and order at sea.

Furthermore, the Nigerian Navy (NN) has undergone force restructuring in order to maintain presence at sea and in the creeks, not just for deterrence, but also for prompt responses as required. In this regard, new Forward Operating Bases (FOBs), Naval Outposts, Coastal Observation Posts and flying units have been established and equipped. The Nigerian

Navy Special Boat Section (SBS) (akin to the Special Forces) has also been re-invigorated to deal with more complex threats posed by criminals in the maritime environment. Similarly, the NN ship recapitalization drive has resulted in the indigenous construction of 2 Seaward Defense Boats (SDBs), an oceangoing Tug as well as acquisition of other mix of ships, helicopters and support facilities to enforce its statutory responsibilities. These assets are strategically located to cover the entire spectrum of the maritime territory of Nigeria They provide extensive reach, quick response and limit time on task. It also covers action of backwaters -Prevention of illegal activities in the backwaters, inland water ways and the creeks in order to make for safe navigation

3. REGIONAL AND INTERNATIONAL COOPERATION WITH AND AMONG WEST AFRICAN MARITIME ADMINISTRATIONS

Nigeria has been involved in the establishment of the ECOWAS Integrated Maritime Security Strategy (EIMS); the Inter-Regional Coordination Center (ICC) in Yaoundé, Cameroon, an initiative of ECOWAS/ECCAS/GoG Commission; and the African Integrated Maritime Security Strategy (AIMS).

She also leads ZONE E multinational maritime security outfit in Cotonou (4 nations standing maritime security outfit); and is also active in Cote d'Ivoire based Maritime Organization of West and Central Africa (MOWCA); coordinating Heads of Navies of the region; and housing one of the five designated Regional Maritime Rescue Coordination Centers in Africa (RMRCC). It is worthy to also note that Nigeria presently leads the Association of African Maritime Administration (AAMA) which is the coordinating body for Maritime Administrations in Africa. She is also a member of Group 7++ Friends of The Gulf of Guinea (G-7 ++ FoGG) - a lofty European Union initiative geared towards stamping out piracy, armed robbery at sea and other illegal maritime activities in the GoG. Additionally, peer review partnerships with United Kingdom International Maritime Security Operations Team (IMSOT), International Maritime Organization (IMO) and International Labor Organization (ILO) in the area of capacity building have enhanced the operational efficiency of the Nigerian Maritime Administration. Also, partnering with the Danish, Norwegian and the Japanese governments.

In addition, the Nigerian Navy participates in EX OBANGAME/SAHARA EXPRESS, which is a multinational training exercise organized annually by the USA Africa Command (US AFRICOM) under the auspices of the African Partnership Station (APS) to provide training support and capacity building for navies of the Gulf of Guinea Countries. Other regional exercises include EX NEMO, EX Corymbre by the French Navy and recently EX JUNCTION RAIN. These exercises were geared towards regional cooperation and enhanced operation ability amongst the nations of the Gulf of Guinea.

4. CHALLENGES

- I. Harmonization of collaboration between the Gulf of Guinea member states towards a common goal, moving beyond policy statements and taking collective actions arising from various memorandum like Yaoundé Code of conduct
- II. Collaboration among African Union (AU) Assembly and Heads of Governments of the Inter-regional Coordination Center (ICC).
- III. Harmonization and coordination of information sharing between maritime agencies, national, regional and the industry.
- IV. Carrying money on board vessels which becomes a motivation for pirates
- V. National legislation on maritime crimes in the Gulf of Guinea
- VI. Numerous creeks in the Gulf of Guinea particularly in Nigeria
- VII. Pending anti piracy bill and capacity building for Nigerian Judiciary on Maritime offences.
- VIII. Lack of Maritime security strategy by member states

5. TECHNICAL COOPORATION/ASSISTANCE FROM IMO

- IMO to engage the leaders and Heads of Government of African Union, ECOWAS, ECCAS and GGC. This can happen through a round table fora to develop a workable mechanism for containing the current maritime security situation in the Gulf of Guinea, an excellent forum would be the Global Maritime.
- Security Conference coming up in Nigeria in October 2019.
- IMO to take a lead in the harmonization and coordination of information sharing between maritime agencies, national, regional and the industry.
- Guidance on how best to deploy existing maritime security assets and intelligence.
- Enhancement on the effective operability of search and Rescue Coordination centre on information exchange in cubing potential piracy attacks.
- Enhancement of the GISIS to reflect more details and understanding of reported incidents.
- Partnering in raising maritime security awareness in the Gulf of Guinea from the IMO.
- Assisting in the development of a functional maritime security strategy on a national, regional and continental level.

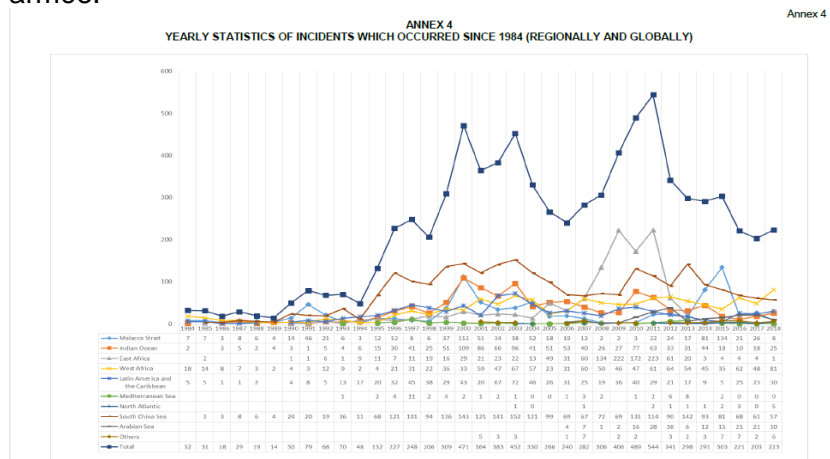
In further realization of this menace, Nigeria intends to host a Global Conference on maritime security from 4th - 20th October, 2019 to address the growing insecurity concerns in the Gulf of Guinea (GOG) area. The conference to be held in Abuja is expected to attract over three thousand (3000) participants from member states from the Gulf of Guinea, International Organizations, Civil Societies, The Navies and Private Sector engaged in maritime shipping activities. The conference is by no means meant to diminish the ICC and other mechanism's already in place, but to enhance their capabilities. It would be a forum to clearly define the issues at hand and chart a road map out of the woods. Every member nation of the Yaoundé Code of Conduct and indeed partners should make a commitment on what they can do i.e. crafting enabling laws, acquisition of hardware's, equipment's and infrastructures to be in place. International partners could provide the requisite Trainings and capacity building in information gathering and transmission, intelligence gathering and surveillance to mention but a few. You are all invited.

Distinguished delegates, Nigeria has put in place concerted efforts towards addressing some of the challenges highlighted by India in document MSC 101/18/3, and the proponents of the other documents under agenda 18 of MSC 101. We have demonstrated willingness to partner with well-meaning stakeholders to put a stop to this menace. Hence, cannot accept the proposal in item 16 of Doc.MSC 101/18/3 for the formation of a Contact Group on Piracy in the Gulf of Guinea (CGPGG) as a mechanism for dialogue, exchanges and coordination of all States, international and regional organizations and non-state actors involved in addressing piracy off the coast of Gulf of Guinea, because the ICC is already established by the regional government to perform the same function as that being proposed, all it needs is the dialogue and partnership in rejuvenating the ICC and the Yaoundé code of conduct which is a comprehensive maritime security architecture.

<https://www.icc-ccs.org/index.php/1268-maritime-piracy-incidents-down-in-q1-2019-but-kidnapping-risk-in-gulf-of-guinea-persists>"

Statement by the delegation of Cameroon

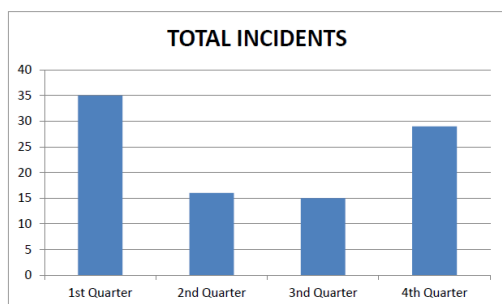
"La délégation du Cameroun remercie l'Inde pour le document MSC 101/18/3 qui présente des statistiques sur 10 ans. Pourtant l'Annexe 4 de la Circulaire MSC.4-Circ.263 ci-dessous indique qu'avant le pic de 2018 en Afrique de l'Ouest et du Centre, le dernier chiffre le plus alarmant avait été observé en 2003 et se situait à 67 actes de pirateries et de vols à main armée.



Depuis lors, la menace a été plus ou moins maîtrisée et l'on observe une tendance baissière. Tel est le cas du Cameroun qui a enregistré pendant la période 4 attaques (Voir le rapport trimestriel sur la sécurité et la sûreté maritime dans le Golfe de Guinée). Son désir d'abriter le Siège de plusieurs instances de lutte contre la piraterie traduit sa volonté d'éradiquer complètement le phénomène. En effet, suite à son inauguration le 11 septembre 2014 et son opérationnalisation subséquente le 22 février 2017, le Cameroun abrite et soutient le fonctionnement du Centre Interrégional de Coordination pour la mise en œuvre de la stratégie régionale de sûreté et sécurité maritimes de l'Afrique Centrale et de l'Afrique l'Ouest qui est la tête de proue du dispositif sous-régional en matière de sécurité maritime, tout comme il accueille le Centre Multilatéral de Coordination (CMC) pour la zone D dans le cadre du CRESMAC issu du protocole sur la stratégie de sécurisation des intérêts vitaux en mer, de même que le siège de la force multilatérale en attente de l'Union Africaine est domicilié par le Cameroun. Dans le cadre de la coopération militaire avec ses partenaires, le Cameroun accueille de nombreux exercices en mer à l'instar de l'exercice OBANGAME avec les Etats Unis d'Amérique. Ces résultats témoignent s'il fallait encore le démontrer la volonté du Cameroun, d'en découdre avec l'insécurité dans le Golfe de Guinée.

Le document 101/18/3 mentionne en son paragraphe 6 que la tendance observée au premier trimestre 2019 est tout aussi inquiétante, pourtant selon le rapport trimestriel du CIC ci-dessus, le premier trimestre de l'année 2018 était tout aussi inquiétant, mais la courbe a évolué de manière décroissante sur le reste de l'année.

7- TREND THROUGH THE YEAR 2018



Plutôt que de vouloir créer un nouveau cadre de coopération pour la lutte contre les actes de piraterie et de vols à main armée qui risquerait déboucher sur une confusion de rôles, il vaut mieux s'appuyer sur les instances existantes pour éviter la dispersion des ressources et la confusion des rôles. Il serait souhaitable tout comme cela a été fait avec le Groupe du G7 des Amis du Golfe de Guinée (G7++FOGG) constitué de l'Allemagne, du Canada, des Etats Unis, de l'Italie, du Japon, du Royaume-Uni, de la France, de la Belgique, du Brésil, de la Corée du Sud, du Danemark, de l'Espagne, de la Norvège, des Pays Bas, du Portugal, de la Suisse, de l'Union Européenne, de l'ONUDC et d'Interpol.

Le paragraphe 9 du document MSC 101/18/3 précise que l'Assemblée avait prié instamment les gouvernements d'aider les Etats du Golfe de Guinée à développer leurs capacités nationales et régionales pour améliorer la gouvernance maritime dans leurs zones.

Fort de ce qui précède, la délégation du Cameroun ne saurait soutenir la création d'un groupe de contact sur la lutte contre la piraterie dans le Golfe de Guinée. Elle est plutôt en faveur d'un renforcement des capacités des structures déjà existantes et d'une assistance technique consistante pour l'appui de leurs activités."

Statement by the delegation of Oman

بيان السلطنة حول القرصنة البحرية
سعادة الأمين العام
سعادة رئيس لجنة السلامة البحرية
بداية نوجه الشكر لمقدمي ورقة العمل 1 / 18 / 101
وفي هذا الصدد،

أود بإسم وفد بلادي، سلطنة عمان، أن أتقدم لكم ولسائر الدول الشقيقة والصديقة وللمنظمة البحرية الدولية ولجميع الهيئات والمؤسسات البحرية بالشكر والتقدير على الدعم الذي لقيه طلب سلطنة عمان لرفع جزء من بحر العرب في المنطقة المحاذية لشواطئ سلطنة عمان الممتدة من رأس الحد وحتى رأس صوقرة من قائمة المناطق عالية الخطورة إعتباراً من الأول من مايو 2019م. لا تفوتني الفرصة هنا أن أشيد بالتعاون المثمر مع هيئة غرفة الشحن الدولية (ICS) وهيئة صناع السفن (BIMCO)، وهيئة والغرفة الدولية للتأمين البحري (INTERTANKO)، ونخص بالشكر لممثل (ICS) الذي أتاح الوصول الى الموافقة على طلب السلطنة اثناء إنعقاد اجتماعات مجموعة العمل "شيد" التي عقدت في مملكة البحرين الشقيقة. كما أن سلطنة عمان تتطلع أن يتم إعادة النظر في الجزء المتبقي من بحر العرب الذي لا يزال واقعاً ضمن نطاق المناطق عالية الخطورة في المنظور القريب وبما يعكس الواقع المتمثل في خلو هذه المنطقة كاملة ولسنوات عديدة من أية عمليات قرصنة أو مخاطر على الملاحة البحرية الدولية.

شكراً،

Statement by the RECAAP observer

"1. ReCAAP ISC has participated in some of the discussions of Informal Working Group. Considering these discussions, I would like to make some comments on the Paper MSC101/18/2.

2. If it is necessary to review the Circulars 1333 and 1334, we think the review should base on what is sustaining success on the ground and maintain what is relevant in the current Circulars.

3. (1) Firstly, concerning the revision of Circular 1333, the Paper MSC 101/18/2 proposes a "global incident reporting flow and action" comprising two different reporting frameworks: one is the existing framework with coastal States, and the other one is a new framework with regional incident reporting centres. If it is necessary to include a new framework, it should not dilute the importance of the existing framework with coastal States as the primary structure.

(2) The current Circular 1333 gives the primary role to the coastal State for receiving incident reporting and providing response. This framework ensures the close linkage between

incident reporting and response. Primarily, it is the coastal States which deploy their assets to assist victim ships.

(3) The role of coastal State of the current Circular has been fully implemented in Asia, particularly by ReCAAP. And it has produced very positive results in reducing piracy and sea robbery. For example, in 2018, the incidents in Asia have decreased by 25% compared to 2017 and it was the lowest number in the last 12 years. Concerning the information sharing incidents in Asia are verified and reported to the IMO and shared with all stakeholders.

(4) The positive result in Asia has been possible in the existing framework of the Circular 1333, without regional incident reporting centre.

(5) On the other hand, a regional reporting centre introduced by the Paper is relevant when it is closely linked with effective response, like the case of UKMTO in the Gulf of Aden, which is closely linked with the response by international navies.

(6) While the relevance of reporting and response framework depends on the conditions of each region, the primary role of coastal States should remain the same with or without regional reporting centre.

(7) From this viewpoint, we think that the Paper does not make clear distinction of procedures between the two frameworks, making confusion in whom to report to and who should respond. A separate and clearer explanation of these two frameworks in the text and in the Appendix of the Circular is necessary.

In this regard, the current Appendix 1 and 2 of the Circular 1333 which explain clearly the reporting and response procedures of coastal State should be retained as they are. If appropriate, a new framework of regional reporting centres can be considered as a separate Appendix.

(8) If the proposal of co-sponsors concerns mainly the reporting system, there is no confusion of reporting in Asia. I suppose there is no confusion in the Gulf of Aden. If there is confusion of reporting and under-reporting in the Gulf of Guinea as mentioned by the Paper, it should be addressed regionally. There is no use in globalising a regional problem.

4. Secondly, with regard to the Circular 1334, the Paper MSC 101/18/2 proposes to replace the current Circular by the Circular 1601 which is the "Revised Industry Counter Piracy Guidance". If the Circular 1601 is to replace the Circular 1334, it should be more comprehensive and not limited to the industry's guidance. We propose, therefore, to include, at least, other existing guidance such as the Regional Guidance for Asia, in addition to the three Industry Guidance attached to the Circular 1601. We also think it necessary to include the reporting and response frameworks that I mentioned for the Circular 1333.

5. In conclusion, we consider it necessary to have further discussions and careful consideration if the Circulars 1333 and 1334 are to be revised. We also consider it important that the current Circulars will be the basis of consideration. We hope that the future discussion will be conducted in a transparent and inclusive way to reflect the views of all stakeholders. May I request this statement to be recorded."

AGENDA ITEM 19

Statement by the delegation of the United States

"Regarding the Global Compact on Refugees, the United States supports much of what is included in the compact as it provides a basis for predictable response and greater burden-sharing among UN member states and other stakeholders.

The United States withdrew from the UN process to develop a Global Compact on Migration (GCM). We neither recognize the GCM nor do we support efforts to implement its activities, outcomes, or commitments. The United States would not support efforts by the IMO to reorient or realign any of its efforts to support the GCM. However, we do not object to the IMO supporting Members that voluntarily seek and fund its technical and policy assistance in implementing GCM objectives in their national context. The United States cannot allow its financial support to be used for IMO activities undertaken with the specific purpose of fulfilling or advancing GCM objectives or outcomes."

Statement by the IOM observer

"It is an honour to represent the UN Migration Agency here at the 101st session of IMO's Maritime Safety Committee. I would like to start by reconfirming the IOM views expressed at previous MSCs as well as the inter-agency meeting with the maritime industry on mixed migration kindly hosted by IMO in October 2017.

IOM wishes to contribute to the focus of discussion under agenda item 19 on "Unsafe mixed migration by sea" by first highlighting some of the risks taken by migrants in crossing some of the most dangerous seas including the Mediterranean, and secondly providing an update on the Global Compact for Safe, Orderly and Regular Migration, which was endorsed by the UN General Assembly since the last MSC.

Just two weeks ago, on June 2nd 2019 IOM doctors operating on the Libyan coast assisted 38 survivors, among them 9 children, rescued from a capsized boat. 73 migrants were rescued, two bodies retrieved and an estimated 22 migrants are still missing. This tragedy contributes to the 543 deaths recorded in the Mediterranean since the start of this year.

The proportion of deaths versus attempted crossings of the Mediterranean Sea has increased from 1.1% in 2018 to 1.5% in 2019, implying that while fewer people are crossing the Mediterranean compared to 2018, more people are dying in their attempts to do so. The Central Mediterranean Migration Route in particular has become increasingly unsafe and accounts for 63% of fatalities along the Mediterranean between January and June 2019, followed by the Western and Eastern routes which make up 31% and 6% of deaths respectively. The Central Mediterranean Route, which traverses the Sahel region and reaches the Mediterranean through countries such as Algeria and Libya, remains the most hazardous migration route in the world right now, and with search and rescue operations in the Mediterranean largely put on hold, other dangerous sea crossings along the Western and Eastern routes continue to put migrants at considerable risk. IOM reasserts the primacy of saving lives at sea and has asserted the need for an increased presence of rescue ships in the Mediterranean.

In addition to tracking deaths on some of the most dangerous sea crossings, IOM is also gathering data and conducting research to better understand the risks undertaken by migrants at key locations across various land routes through tools such as IOM's Displacement Tracking Matrix (DTM). This information is then used to enhance the safety of migration journeys. The Safety, Support and Solutions in the Central Mediterranean Route programme focuses on

migrant vulnerabilities along the route and seeks to better protect migrants from harm through increased access to solutions, such as direct protection, reintegration initiatives and capacity building of key actors to ensure that better protection systems along the route are in place.

In Libya, despite renewed conflict in Tripoli, IOM has continued to work on community programmes to provide alternatives to detention for some of the most vulnerable migrants who face the risk of serious abuse and detention with often no time limit to their confinement. So far in 2019 IOM has reached 26 detention centres and the initiative has enabled 179 detained migrants to be released and live safely with trained host families in the community. IOM has further provided medical assistance to over 2,500 internally displaced persons and migrants inside and outside detention centres as well as disembarkation points across the east, west and south of Libya.

In Niger, a higher number of migrants abandoned by smugglers continues to put migrants at great risk of exploitation and harm. In response IOM in close cooperation with the Government of Niger, started conducting search and rescue operations in the desert in 2016. Since the beginning of 2019 alone over 4,700 migrants have been assisted through these operations illustrating that the dangers associated with migration in the Mediterranean have their onset long before migrants reach the shores of North Africa.

The effectiveness of the protection initiatives outlined relies on multilateral cooperation amongst states, UN agencies and civil society. In 2016, IOM's move closer to the UN system has coincided with a set of broader reforms, including the establishment of resident coordinators, while the Global Compact for Migration sets out a series of objectives for the international community to pursue.

The Global Compact for Safe, Orderly and Regular Migration was adopted by Member States in Marrakesh on 10 December 2018 and endorsed by the UN General Assembly on 19 December 2018. Steered by its guiding principles and 23 objectives, States will save lives, improve living conditions, better integrate communities, and increase prosperity in a manner that fully complements the 2030 Agenda and Sustainable Development Goals.

Of the 23 objectives in the document, highly relevant to this session's discussion are GCM Objective 8 "Save lives and establish coordinated international efforts on missing migrants" and Objective 9 "Strengthen the transnational response to smuggling of migrants". Both of these objectives aim to save lives and protect human rights through states' commitments to international cooperation.

The development and adoption of the Compact, while a major milestone, is not the end of the road. The ultimate test for its success will be in the results it facilitates on the ground, both in improving the ability of states to effectively manage migration and in providing better outcomes for migrants. The United Nations system is committed to supporting the implementation, follow-up and review of the Global Compact and has established a Network on Migration to ensure effective, timely and coordinated system-wide support to Member States. As coordinator and secretariat of the UN Network on Migration, IOM stands ready to support implementation of the Global Compact at all levels together with other UN agencies, and looks forward to the first stage of follow-up and review of the Global Compact at the International Migration Review Forum in 2022, the first milestone in a four-yearly Global Compact review cycle.

Member State follow up of the Global Compact could include a number of steps such as a benchmark review based on Global Compact objectives; the development of national plans of action for Global Compact implementation and voluntary reporting at the regional level every four years beginning in 2020, as well as globally at the International Migration Review Forum (IMRF) to take place every four years beginning in 2022.

IOM, as Coordinator of the Network, is ready to help bring the full expertise of the 38 United Nations participating entities, including the International Maritime Organization (IMO), to ensure effective, timely, coordinated UN system-wide support to Member States in their implementation, follow-up and review of the Global Compact.

The principles of additionality, complementarity and non-duplication will inform how the Network operates, with emphasis on collective action by the Network on those issues where a common UN system approach would add value.

Equally, a whole-of-society approach will be key to ensuring that implementation of the Global Compact is inclusive. National plans of action will benefit from consulting and integrating the viewpoints of migrants, diasporas, local communities, civil society, the private sector, academia, parliamentarians, trade unions, national human rights institutions and others. For instance, these constituencies can add significant value in priority setting as well as the follow-up and review of implementation at the national level. Invariably, national implementation will be influenced by how well the Global Compact is implemented at the regional and sub-national levels (within cities).

IOM is committed to its two distinct roles: 1) as the Coordinator and Secretariat of the UN Network on Migration in a spirit of partnership and cooperation with its fellow UN agencies; and 2) as a UN agency member of the Network so as to maintain and strengthen its efforts both at the central and field level.

IOM remains committed to keeping Member States and other relevant stakeholders – such as IMO - well-informed on the activities of the Network and to regularly seeking their views and suggestions.

I thank IMO for its hospitality and look forward to our continued exchanges in this and other fora.

Please add this statement to the minutes of the meeting."

Statement by the UNHCR observer

"Thank you for the opportunity to address this Committee on behalf of the UN High Commissioner for Refugees.

Dangerous sea crossings involving refugees and migrants continue to take place in many parts of the world. For instance, our colleagues at IOM have recorded more than 55,000 arrivals by sea to Yemen so far in 2019 (as at end April). Though currently on a smaller scale, UNHCR remains concerned, in particular, by the situation in the Mediterranean Sea along all routes used by refugees and migrants.

Although recent years have seen an overall decline in numbers of people crossing the Mediterranean, serious concerns persist, not least of which being the unacceptable loss of life we continue to witness. Over 500 people have died or gone missing attempting to reach Europe already in the first five months of this year.

As UNHCR indicated before the Maritime Safety Committee in December last year, and on many previous occasions, efforts to reinforce the SAR capacity of coastal States are a necessary and welcome part of collective responses, but cannot be the sum total of those responses.

UNHCR continues to consider that, as the UN Secretary General recalled during his visit to Tripoli earlier this year, disembarkation in Libya following rescue cannot be considered to be delivery to a place of safety. Shipmasters should not be instructed to do so. Nor should shipmasters ever be penalized for seeking in good faith to comply with international law.

At the same time, we are fully cognizant that the situation prevailing in the Mediterranean has the potential to place shipmasters in very difficult positions, as borne out by a number of recent incidents.

Such incidents point all the more strongly to the urgent need not only to harness all available rescue capacity, including where appropriate that provided by civil society rescue organizations, but also to put in place predictable, cooperative disembarkation and responsibility-sharing arrangements, consistent with the existing legal framework, along the lines put forward last year by UNHCR and IOM in the joint Proposal for a regional cooperative arrangement ensuring predictable disembarkation and subsequent processing of persons rescued at sea, ensuring timely disembarkation in a genuine place of safety and requisite certainty and relief for shipmasters called upon to assist—beyond ad hoc 'ship- by-ship' approaches. Further, additional state-operated rescue capacity—operating on a basis that respects the letter and spirit of international refugee law, in the context of such cooperative disembarkation arrangements—remains sorely needed along key routes.

Beyond the immediate and pressing questions of lifesaving search-and-rescue activities, safe and timely disembarkation, and solutions for rescued people, it is clear that much remains to be done to address both the root causes of refugee displacement and the drivers of unsafe migratory movements, as well as to promote safe and regular alternatives to dangerous journeys by land and sea, to reinforce access to asylum in the countries through which refugees travel and in a wider range of third countries, to address the impunity enjoyed by criminal networks which exploit the desperation of refugees and migrants, to protect the fundamental human rights of all people on the move, and—for those who do not require international protection or have some other legal entitlement or compelling humanitarian need to remain or continue their journey—to promote and support safe, dignified and sustainable options to return home.

In this connection, UNHCR would like to highlight that, as indicated in the Secretariat's note in document MSC 101/19, the Global Compact on Refugees was affirmed by member states of the UN General Assembly on 17 December 2018, in its annual Resolution on the work of UNHCR, following a two-year period of extensive consultations led by UNHCR with UN member states, international organizations, experts, civil society and refugees. The Refugee Compact does not directly consider unsafe mixed movements at sea or search and-rescue issues per se, but puts in place an architecture for international cooperation to meet the needs of refugees and host communities which may offer alternatives for some who would otherwise feel compelled to take to the sea."

Statement by the EC observer (EUNAVFOR MED operation SOPHIA)

"Committee, ladies and gentlemen, thank you for giving me the opportunity to share some thoughts with you on a topic of increasing importance such as unsafe mixed migration by sea and share some reflections from the European Union's Naval Force in the Mediterranean – so called Operation Sophia of which I am Deputy Commander.

As in other parts of the world, migration across the Mediterranean is a multifaceted phenomenon. Firstly, in the countries of origin, protracted conflicts, economic underdevelopment, weak institutions, resource scarcity, and social fragmentation, are pre-conditions for migration.

Secondly, globalisation has dramatically intensified global interconnectedness and facilitated migration flows. In this regard, the impact of information – and misinformation - cannot be overstated. Misperceptions around the danger involved in the migratory route, should be better addressed.

Thirdly, conditions in transit countries, such as Libya, are conducive to enabling or encouraging migration across the Mediterranean. Porous borders, illegitimate institutions, clan based networks have allowed human smugglers and traffickers to exploit desperate migrants. It was in April 2015, when a major shipwreck off the coast of Libya cost the lives of 800 migrants, that the Europe felt compelled to act.

Operation Sophia was launched as the European Union's response to the humanitarian emergency in the Central Mediterranean Region. The intent was to identify, capture and dispose of vessels used or suspected of being used by migrant smugglers. Progressively, it has been completed with fights against other trafficking such as arms smuggling and information gathering on oil trafficking which are indeed connected. Then, the operation has become part of the EU's comprehensive approach to help better manage irregular migration and support Libyan stability.

The operation's approach is based on values similar to those set out in the global compact.

The end state of the operation is "the business model of smugglers and traffickers is disrupted and the numbers of irregular migrants is reduced to a level manageable without the presence of Operation Sophia". This is critical in ensuring a sustainable solution. That's the reason why training, capacity building and monitoring of Libyan and Navy Coast Guard (LNCG) has become of outmost importance. It has delivered significant progress in enabling Libya to take ownership and responsibility in guaranteeing its own security.

With regard to non-discrimination and human rights, Operation Sophia has partnered with the UNHCR and the IOM to ensure these values are promoted and upheld. This includes the delivery of human rights and gender lectures to LNCG during the training sessions.

With regards to a cooperative approach, three principles drive our efforts: comprehensive approach, inter-agency cooperation, and networking. There are too many partners and stakeholders to mention but I would particularly highlight the collaboration with other CSPD entities and EU agencies, particularly FRONTEX and EUROPOL, but also with the United Nations or the International Chamber of Shipping. When the issue is as complex and multifaceted as sea based migration, it is vital for all relevant actors to cooperate toward a necessarily holistic response.

Thus far in 2019, approximately 3700 migrants have attempted to cross the Central Mediterranean Sea. This is a decrease of almost 90% compared with the same period of 2018, and a decrease of nearly 97% compared to 2017. Even though Operation Sophia has never been a search and rescue mission, since its inception, Sophia assets have rescued 45.000 migrants at sea in more than 300 Search and Rescue operations. It is important to highlight that this figure correspond only to 10% of the total amount of lives rescued at sea in the same period of time.

However, we must not become complacent and efforts must continue. The deteriorating security situation in Libya is challenging and could lead to an increase of departures. In the last four years, Sophia has gained significant international recognition tackling migration issue and fighting organised crimes. To come to a conclusion I should say that external partnerships, information exchange, networking efforts, inter-agency cooperation, demonstrated the value of a multidimensional response to unsafe mixed migration by sea.

Thank you once again for the opportunity to address you and for your attention."

Statement by the BIMCO observer

"We would like to draw the attention of the committee to the challenges faced by the shipping industry in connection with large-scale rescue at sea, and the return of the rescued people to a place of safety.

One particular problem arises when ships are instructed by authorities to return rescued persons to Libya, which by many accounts including by UN Agencies is not regarded as a place of safety in accordance with the terminology used in the SAR Convention. to comply with such instructions could potentially be seen as a violation of the principle of non-refoulement, and therefore potentially constitute breach of international law.

BIMCO would kindly ask the Committee to request Member States to issue clear and unambiguous instructions to masters on ships flying their flag on how to act under different circumstances, if directed by authorities to return rescued persons to Libya."

AGENDA ITEM 21

Statement by the IFSMA observer

"Chair, IFSMA thanks the co-sponsors for their Paper. IFSMA is extremely concerned about the proposed escalation in use of AIS as a collision tool. Paragraph 1 of the background in their Paper provides for an early example of our concerns in stating. – "... inaccurate interpretation of available data ..."

All Mariners are continually advised to beware of making decisions based on scanty information. The vessel vector produced on the various displays on the bridge from the AIS information is a ground track, based on the GPS position information which is a fundamental fault with collision assessment. Professional mariners all know the importance of observing the vessels aspect, a key factor in collision avoidance decision.

Let me list some of the problems with AIS as a collision avoidance tool:

- Mandatory carriage requirements are in general for vessels over 300 GT. In other words at any time many of the vessels in a particular area will not necessarily be displaying AIS information.
- The voyage information is a manual input and as such may not be correct. (Very often Port of destination is not updated).
- Draft is a manual input which can lead to a false assumption regarding a vessel's passage.
- Heading vectors are ground based.
- The AIS Transceiver can be turned off by the transmitting vessel.
- Displayed information on the receiving vessel can be filtered – are all watch keepers aware of this?
- Information overload is an issue already for AIS targets – an example which IFSMA has highlighted previously is the inappropriate use of AIS on fishing buoys.

In IFSMA's opinion, the emphasis for collision avoidance has to be on reiterating STCW training requirements. Whilst decision support mechanisms will continue to grow, they must be balanced against core watch keeping skills where visual spatial awareness ensuring decisions are NOT made using scanty information, prevail.

AIS data is Scanty at best.

The performance standards listed in Annex 1 Paragraph 1 make use of a dangerous combination of AIS and radar data and not measuring like for like, whilst the Additional Functions listed in Paragraph 2, when turned around to look at the negatives they are equally concerning when considering a system to provide collision advice.

In examining collisions and close quarter situations over recent years it is a fact that many have been caused by an inappropriate reliance on technology and hence reducing what might be considered a close passing distance because the computer says it is OK.

Chair, in Summary, I believe the proposals seriously underestimate the failings of the Automatic Identification System as a collision avoidance tool and recommend that this proposed new output should not be supported as from a Mariners perspective the use of AIS as a collision avoidance tool is fundamentally flawed and will certainly not improve safety at sea. I have forward this to statement for inclusion in the Report of the Committee."

Statement by the Chair of the CCC Sub-Committee

"I have been trying to think of something light to say about bulk cargoes but all I can say is it has been weighing heavily on my mind!

Sir, noting that this would have a fundamental impact on the IMSBC code, and recalling that CCC 4 decided to follow a similar approach to that of IMDG Code, namely a consolidated version possibly every 4 years.

I have two requests for your committee:

Firstly, in considering of the numbering system, CCC be allowed to consider other proposals together with the solutions provided by Germany in MSC 101/21/15, thank you Germany.

Secondly, CCC has the flexibility to defer the introduction of the new system to the next consolidated version of the Code, if necessary."

AGENDA ITEM 23

Statement by the delegation of Spain

"España agradece a la secretaria la información presentada en el documento MSC 101/23/6. Como ya tuvieron la ocasión de comprobar el pasado viernes durante la presentación realizada por nuestro embajador, España junto a la OMI y con la colaboración de la FAO y la ONG PEW está trabajando activamente en los preparativos de la Conferencia Ministerial de Torremolinos que se celebrará el próximo mes de octubre.

Para España es especialmente importante que los miembros de este comité sean conscientes de la oportunidad que ofrece dicha conferencia ministerial, como marco idóneo para favorecer un enfoque conjunto entre los organismos de Naciones Unidas y otras partes interesadas, con el objeto de incrementar la seguridad de los buques pesqueros y prevenir y la pesca ilegal, no declarada y no reglamentada.

En lo que a preparativos del viaje se refiere, nos gustaría recordarles que el anexo 4 de la carta circular 3932, contiene información útil en cuanto a las directrices para la entrada de visitantes a España, requisitos de inmigración y visado, alojamiento y demás cuestiones relacionadas con la asistencia a la Conferencia.

No duden en contactar con nuestra delegación caso de necesitar más información. Por ultimo expresarles nuestro deseo de recibirles en Torremolinos el próximo mes de octubre."

Statement by the delegation of the Russian Federation

"В связи с документом, представленным Украиной, хотели бы еще раз повторить то, что неоднократно говорили в этих стенах, а именно то, что вопрос, поднимаемый в этом документе, носит исключительно политизированный характер.

Напомню всем присутствующим, что Комитет неоднократно высказывался по этому поводу. В ходе своей 96 и 97 сессий Комитет решил, что навязываемая Украинской стороной дискуссия выходит за пределы компетенции ИМО. Подчеркну, не компетенции Комитета, а ИМО в целом.

Украинские коллеги любят цитировать документы. Со своей стороны не стану этого делать, лишь попрошу Вас, г-н Председатель, заглянуть в пункт 19.7 отчета Комитета по итогам 100-й сессии.

Такая формулировка решения означает, что решению наряду с Комитетом должны следовать все подкомитеты и другие его вспомогательные органы. Данное решение подтверждалось на всех последующих сессиях, что говорит о неизменности позиции Комитета по этому вопросу.

В этой связи призыв украинских коллег к ИМО с просьбой подключиться к решению этого вопроса является некорректным и необоснованным. Обсуждаться этот вопрос должен на других площадках.

В этой связи делегация Российской Федерации не намерена комментировать по существу представленный Украиной документ. Призываем остальных делегатов также четко следовать решению Комитета и воздержаться от комментариев.

Все необходимые разъяснения были даны Российской стороной на предыдущих сессиях, а также в российской ноте, распространённой циркулярным письмом Секретариата ИМО № 3801 от 19 декабря 2017 г. Поскольку от сессии к сессии содержание украинских документов практически не меняется, все данные разъяснения и комментарии Российской стороны по-прежнему сохраняют актуальность».

English translation of the statement provided by the Russian Federation

"With respect to the document submitted by Ukraine, we would like to reiterate what has been said many times in this room. The document before us is of purely politicized nature.

I would remind those present that the Committee has already expressed its position on this matter a number of times. During MSC 96 and MSC 97 the Committee decided that discussion being forced upon us by Ukraine goes beyond the competence of IMO. I would stress not the competence of the Committee alone, but IMO as a whole.

Our Ukrainian colleague likes to quote everything. I am not going to do the same. I would like just to invite you, Mr. Chair, to look at paragraph 19.7 of the last session's report.

The wording of the decision means that all subcommittees and other subsidiary bodies of the Committee should follow this decision.

The fact that the Committee has reaffirmed this position in all subsequent sessions reflects the consistency of the Committee on that matter.

Therefore, an appeal of the Ukrainian colleague to involve IMO in one way or another in consideration of this matter is incorrect and unwarranted.

This question has to be discussed in other fora.

In this connection, the delegation of the Russian Federation does not intend to comment on substance of the document submitted by Ukraine. We also call on other delegations to follow the decision and refrain from comments.

The Russian Federation has already made all requisite comments at previous sessions and in a Note Verbal of the Mission of the Russian Federation to IMO distributed by Circular Letter No.3801 dated 19 December 2017. These comments remain as relevant as ever, since the content of the Ukrainian documents remains almost unchanged from one session to another".

Statement by the delegation of Georgia

"Georgia fully supports the Document MSC 101/23/10 submitted by Ukraine and aligns itself with the statements made by

We strongly condemn all illegal actions hampering safety and security of navigation on the Black sea and wider region.

The Russian occupation authorities' attempts to implement the IMO conventions with respect to the maritime areas appertaining to the Crimean Peninsula, impermissibly infringe on Ukraine's rights as the coastal State for those areas, and thus, are unlawful and invalid.

We share Ukraine's concerns regarding the unlawful practices of seafarers' certification and the unlawful registration of ships in the occupied Crimea. Georgia is taking all necessary precautions to treat any documents issued by the Russian authorities in Crimea with the principle of non-recognition, invoked in the United Nations General Assembly's resolutions on Crimea.

Having said this, based on the UN GA resolution 73/194 of December 2018, we urge the Russian Federation to refrain from further impeding the lawful exercise of navigational rights and freedoms, in accordance with the applicable international law, in particular provisions of UNCLOS.

We deem it important that the Committee agrees to continue monitoring this situation.

May I kindly request to include this statement to the final report of this session."

Statement by the delegation of Romania (on behalf of the EU)

"Five years on from the illegal annexation of the Autonomous Republic of Crimea and the city of Sevastopol by the Russian Federation, the European Union remains steadfast in its commitment to Ukraine's sovereignty and territorial integrity.

The European Union reiterates that it does not recognise and continues to condemn this violation of international law. It remains a direct challenge to international security, with grave implications for the international legal order that protects the unity and sovereignty of all states. The Russian Federation's violations of international law have led to a dangerous increase in tensions at the Kerch Strait and the Sea of Azov. The unjustified use of force by Russia against Ukraine on 25 November 2018 is a reminder of the negative effects of the illegal annexation of the Crimean Peninsula on regional stability.

The European Union reiterates its call on Russia to release the illegally captured Ukrainian crewmembers, vessels and equipment unconditionally and without further delay. Pending their release, Russia should respect their rights to legal representation and access by consular authorities, and to provide the injured crewmen with appropriate medical treatment.

The European Union remains committed to fully implementing its non-recognition policy, including through restrictive measures. The EU calls again on UN Member States to consider similar non-recognition measures in line with the United Nations General Assembly Resolution 68/262.

I would ask for this statement to be included in the report of the Committee."

Statement by the delegation of Ukraine

"The safety and security situation in the Black Sea, the Sea of Azov and the Kerch Strait has deteriorated sharply as a consequence of Russia's actions in the region, with effect from early 2018. This has resulted in an economic and transport blockade of Mariupol and Berdiansk, Ukraine's major sea ports on the north coast of the Sea of Azov. The situation reached a crisis point on 25 November 2018 when Russian forces attacked three Ukrainian ships in the Black Sea during their return from the Kerch Strait area to the port of Odesa.

In this unprovoked and unlawful attack, Ukraine's vessels were seized and 24 Ukrainian servicemen were captured and further detained in violation of the customary international law and the United Nations Convention on the Law of the Sea, namely Russia disregarded the basic principle of the immunity of warships and servicemen onboard.

By adopting on 17 December 2018 the United Nations General Assembly Resolution 73/194 on Crimea, the international community expressed its utmost concern about unjustified use of force by the Russian Federation against the naval vessels of Ukraine in the Black Sea and called on the Russian Federation to release without delay the vessels and their personnel.

On 25 May 2019, the International Tribunal for the Law of the Sea (ITLOS) issued an order, that prescribed provisional measures ordering the Russian Federation to immediately release the Ukrainian naval vessels and the 24 detained Ukrainian servicemen: "1) the Russian Federation shall immediately release the Ukrainian naval vessels Berdyansk, Nikopol and Yani Kapu, and return them to the custody of Ukraine; 2) the Russian Federation shall immediately release the 24 detained Ukrainian servicemen and allow them to return to Ukraine".

The Ukrainian side is pleased that the Tribunal has ordered the provisional measures requested by Ukraine. This order sends a strong message to Russia that it cannot violate international law with impunity.

As the Tribunal stated, the actions taken by the Russian Federation create a real and ongoing risk of irreparable prejudice to the rights claimed by Ukraine to the immunity of its naval vessels and the servicemen on board.

We now expect Russia to comply promptly and in full with the Tribunal's order.

Mr Chair, The Russian Federation continues to disregard not only norms and principles of international law but the IMO instruments and decisions taken by this Organization.

Specifically, as Ukraine informed IMO Member States on multiple occasions, starting from 12 October 2015 the Russian Federation stopped providing the State Hydrographic Service of Ukraine with any navigation warnings to be broadcasted by Berdiansk NAVTEX station to the Sea of Azov and the Kerch Strait. Such unilateral actions of the Russian Federation are inconsistent with the responsibilities of a national coordinator as defined by section 3.6 of the Joint IHO/IMO/WMO Manual on MSI. It also has negative repercussions for the safety of navigation in the Black Sea, the Sea of Azov and the Kerch Strait.

In this regard, Ukraine appreciates the IMO NAVTEX Coordinating Panel's efforts to facilitate the transfer of MSI between Ukraine and Russian Federation.

On the other hand, we must draw the Committee's attention to the fact that the existing agreements, brokered by the IMO NAVTEX Coordinating Panel in 2018, are violated by the Russian Federation on a regular basis.

For instance, on 25 November 2018 the Russian Federation had declared suspension for the innocent passage of vessels through the Kerch Strait unilaterally and actually ex post facto. Moreover, the Russian Federation has never provided the required information to Ukraine in a proper manner for further promulgation via the Berdiansk NAVTEX station of Ukraine for the Sea of Azov and the Kerch Strait.

One more incident has occurred on 13 March 2019, when the bulk carrier MARYLAND, flying the flag of Liberia, ran aground in the Kerch Strait. The maritime rescue operation for getting off the bulk carrier MARYLAND has lasted till 27 March 2019. Ukraine has received no information whatsoever about the incident neither from the Russian Federation, nor from the NAVAREA III Coordinator until now.

In addition, we have to draw your attention to the new incident of the critical broadcasting overlapping caused by the Russian Novorossiysk NAVTEX station on 28 February 2019, when the transmission period came up to 30 min. 21 sec. In other words, the Ukrainian Odesa NAVTEX station's time slot allocated by the IMO NAVTEX Coordinating Panel was almost entirely overlapped by the Novorossiysk station.

On top of that, in October 2018, Ukraine expressed its protest to the Russian Federation in connection with the unauthorized expansion by the Novorossiysk NAVTEX station of its service area into the Sea of Azov and the Kerch Strait.

Specifically, the Russian Federation claimed in document MSC 100/19/11, paragraph 8, that "the Novorossiysk NAVTEX station carries out transmission of navigational warnings for the Sea of Azov and the Kerch Strait".

But in reality only the Berdiansk NAVTEX station of Ukraine has full responsibility for broadcasting MSI into the Sea of Azov and the Kerch Strait.

Moreover, the Ukrainians side has recently found another evidence of NAVTEX transmissions from Novorossiysk NAVTEX station for outside of their designated service area, which is the National report of the Russian Federation presented at the 20th Conference of Mediterranean and Black Seas Hydrographic Commission on 6 July 2017 in Montenegro.

I'd like to quote a paragraph on page 25 of the report: "Owing to changes of the interstate relations in 2014, Russian Federation Hydrographic office **faced need to change borders of a zone of responsibility** for providing seafarers by information on change of a navigation situation, **by expansion of its borders from the former PRIP Novorossiysk region of up to the 32nd meridian to the west and to the most part of the Sea of Azov in the north**".

The Russian Federation cannot unilaterally claim a particular area as its service area and must conform to the Revised NAVTEX Manual.

Moreover, my delegation recalls that the first discussion on this subject took place 3 years ago at NCSR 3. The delegation of the Russian Federation provided information on its intention to establish a NAVTEX station on 518 kHz in the area of Taganrog port for the Sea of Azov, but the IMO NAVTEX Coordinating Panel recommended that the Russia should implement a National 490 kHz NAVTEX station only.

Instead, the Russian Federation decided unilaterally to carry out transmission of navigational warnings into the Sea of Azov and the Kerch Strait from the Novorossiysk NAVTEX station by changing its service area without any discussions with the NAVAREA III, METAREA III Coordinators, neighbouring Administrations and authorization of the IMO NAVTEX Coordinating Panel.

Mr Chair,

In conclusion, I'd like to recall a recent statement made by the distinguished delegation of the Bahamas at FAL 43 with regard to Crimea, expressing its grave concern and asking the Secretariat and Member States to seek mediation to solve issues related to instruments of the Organization.

In this connection, Ukraine believes that such mediation could be fruitful and could potentially bring added value to the process of implementation of the relevant UN General Assembly's resolutions on Crimea.

Therefore, the delegation of Ukraine would like to join the distinguished delegation of the Bahamas in requesting the Secretary-General to provide his good offices to solve issues related to instruments of the Organization, in particular concerning the exchange of MSI between Ukraine and Russian Federation for NAVTEX transmissions as well as the status of MSI coverage in the Black and Azov Seas and the Kerch Strait.

Distinguished delegates,

Given the significant uncertainty of the present situation and its considerable implications for the safety and security of navigation, the Committee is invited to note the information provided in document MSC 101/23/10 and to request Member States and interested parties to continue monitoring the situation and to notify the Organization of any threats to the safety and security of navigation in the northern part of the Black Sea, the Sea of Azov and the Kerch Strait for circulation in accordance with IMO procedures."

Statement by the delegation of the United States

"The United States thanks the distinguished delegation of Ukraine for its paper MSC 101/23/10, and we note the concerns it raises regarding Russia's unlawful actions in and around occupied Crimea, including the maritime areas adjacent to Crimea.

Russia's occupation of Crimea remains an unprecedented challenge to European and Trans-Atlantic security, necessitating deeper and increased security cooperation. Russia's actions have considerable implications for the safety and security of navigation in the sea areas in and around Crimea and the safety and competence of seafarers.

Russia demonstrated its disregard for international norms with its unjustified attack on Ukrainian naval vessels on November 25, 2018. We reiterate our call for Russia to immediately return Ukraine's naval vessels and personnel seized in the attack, and to cease their unlawful efforts to restrict access to the Kerch Strait and Sea of Azov. Russia must respect Ukraine's sovereignty and territorial integrity within its internationally recognized borders, including its territorial waters.

The United States condemns Russia's construction and partial opening of the Kerch Strait Bridge between Russia and occupied Crimea, built without the permission of the government of Ukraine. The bridge represents not only an attempt by Russia to solidify its unlawful seizure and its occupation of Crimea, but also impedes navigation by limiting the size of ships that can transit the Kerch Strait, the only path to reach Ukraine's territorial waters in the Sea of Azov. We call on Russia not to impede this shipping.

The United States joins the international community again to reaffirm that Crimea is part of Ukraine. The United States continues to condemn Russia's occupation of Crimea. The United States does not – and will never – recognize Russia's purported annexation of Crimea. The United States remains committed to upholding the sovereignty and territorial integrity of Ukraine within its internationally recognized borders."
