C C S Technical Information

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To: Relevant shipowners, ship management companies, shipyards and designers, product manufacturer, related departments of the Headquarters of CCS, the Society's surveyors, Plan Approval Centers

Notice on list of IMO requirements which will enter into force in 2024

There are 28 IMO requirements which will enter into force in 2024 (from 1 Jan. to 31 Dec. 2024), which are important requirements. For details, please see attached Table 1.

CCS had been authorized by the Governments of 60 countries or regions to perform statutory surveys for the ships flying their flags at present. CCS will implement the resolutions in Table 1 taking into account instructions from the 60 countries or regions.

The English version of the resolutions in Table 1 can be downloaded using the hyper-link.
Should you have any question during the implementation of the Circulars, please contact: Technology & Information Dept. of the Headquarters (email: ti@ccs.org.cn.).

Table 1 List of IMO requirements which will enter into force in 2024

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
1	Amendments to the International Convention for the Safety of Life at Sea, 1974, as Amended	MSC.456(101)	Yes	2024.1.1	Passenger ships and cargo ships	Cargos ships with GT≥500	All dates	A footnote “delete as appropriate” is added to item 8.1 “Rudder, propeller, thrust, pitch and operational mode indicator” in Forms C, E of Record of Equipment for Cargo Ship Safety and Form P of Record of Equipment for Passenger Ship Safety respectively in SOLAS convention.
2	Amendments to the International Code for Fire Safety Systems (FSS Code)	MSC.457(101)	Yes	2024.1.1	All types	All sizes	All dates	The words “forward of the non-return devices” are replaced by “downstream of the non-return devices” in paragraphs 2.2.3.2.1, 2.2.3.2.6 and 2.2.4.2.1 of Chapter 15 of the FSS Code.
3	Amendments to the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code)	MSC.458(101)	Yes	2024.1.1	Cargo ships of 500 GT and above and passenger ships using gases or other low-flashpoint	All passenger ships and cargos ships with GT≥500	C≥2024.1.1 or K≥2024.7.1 or D≥2028.1.1	（1）Adding a definition of ship construction date; （2）For “on or after 1 January 2024”, it is defined in three sub-paragraphs; （3）Revising the requirements for leakage detection of secondary enclosures around pipes in paragraph 9.5.6; （4）Revising fuel tank loading limit in paragraph 6.8.3; （5）Revising gas consumers in paragraph 10.3.1 and the class of fire-resisting divisions in paragraph 11.3.3.

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
					fuels, except for ships under the IGC Code			
4	Amendments to the International Life-Saving Appliance (LSA) Code (LSA Code)	MSC.459(101)	Yes	2024.1.1	All types	All ships	All dates	（1） Revising paragraph 4.4.8.1 of the LSA Code to the effect that a lifeboat equipped with two independent propulsion systems need not comply with the original paragraph 4.4.8.1; （2） Revising paragraph 6.1.1.3, for a rescue boat 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.
5	Amendments to the International Convention for the Safety of Life at Sea, 1974, as Amended	MSC.474(102)	Yes	2024.01.01	All ships	Cargo ships with GT≥500 and all passenger ships	C≥2024.01.01; or K≥2024.07.01; or D≥2027.01.01	(1) Revising SOLAS Regulation II-1/3-8 – Towing and mooring equipment to add requirements for mooring arrangements and mooring lines; (2) Harmonized revisions of some regulations in parts B, B-1, B-2 and B-4 regarding watertight intact stability and damage stability, among which the factor si is to be taken as zero if weathertight openings are immersed at intermediate stage of flooding of passenger ships; (3) The valve fitted on the pipe piercing the collision bulkhead shall be a remotely controlled valve, irrespective of passenger ship or cargo ship. (4) Updating references in emergency source of electrical power in passenger ships of Part D.
6	Amendments to the International Code of Safety	MSC.475(102)	Yes	2024.01.01	Ships using gases or	Cargo ships with GT≥500 and all passenger	K≥2024.01.01	(1) Delete “Tank cofferdams” in paragraph 6.7.1.1, which are not required to be provided with a suitable pressure relief system required for fuel storage hold spaces, interbarrier spaces and tank connection spaces. (2) Adding 11.8 regarding regulation for fuel preparation room fire-extinguishing

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
	for Ships using Gases or other Low-flashpoint Fuels (IGF Code)				other low-flashpoint fuels, except for ships under the frame work of the IGC Code	ships		systems. (3) Editorial revision of 16.3.3.5.1, for cross-weld tensile strength of 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.
7	Amendments to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)	MSC.476(102)	Yes	2024.01.01	Liquefied gas carriers	All sizes	K≥2024.01.01	Editorial revision of 6.5.3.5.1, for cross-weld tensile strength of materials such as aluminium alloys, reference shall be made to 4.18.1.3 with regard to the regulations for weld metal strength of under-matched welds.
8	Revised explanatory	MSC.429(98)/ REV.1	Yes	Date of issuance 2020.11.11	All ships	Cargo ships with GT≥500 and all	2009.01.01≤K＜ 2024.01.01	Further revision to resolution MSC.429(98) on Revised explanatory notes to the SOLAS chapter II-1 subdivision and damage stability regulations, mainly covering explanatory notes of regulation 17.1.

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
	notes to the SOLAS chapter II-1 subdivision and damage stability regulations (effective until 31 December 2023)					passenger ships		Applicable to newbuildings under the SOLAS convention.
9	Amendments to the International Convention for the Safety of Life at Sea, 1974	MSC.482(103)	es	Effective on 2024.1.1	Cargo ships	(1) Cargo ships with GT≥500 (2) Cargo ships with GT≥20,000	B≥2024.01.01	(1) Adding SOLAS regulation II-1/25-1 to require that multiple hold cargo ships other than bulk carriers and tankers shall be fitted with water level detectors in each cargo hold, with reference to the Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers (resolution MSC.188(79)), as may be amended by means of a footnote. The water level detector at a height of not less than 0.3 m may be replaced by the detector of bilge system. (2) Revising SOLAS regulation III/33.2 to require that on cargo ships of 20,000 gross tonnage and upwards, davit-launched lifeboats shall be capable of being launched, utilizing painters where necessary, with the ship making headway at speeds up to 5 knots in calm water.

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
10	Amendments to the International Code for Fire Safety Systems	MSC.484(103)	Yes	Effective on 2024.1.1	All ships	All passenger ships or cargo ships with GT ⩾500	K≥2024.01.01	A new paragraph 2.1.8 is inserted in Chapter 9 Fixed Fire Detection and Fire Alarm Systems of the FSS code: In cargo ships and on passenger ship cabin balconies, where an individually identifiable system is fitted, notwithstanding the provisions in paragraph 2.1.6.1, isolator modules need not be provided at each fire detector if the system is arranged in such a way that the number and location of individually identifiable fire detectors rendered ineffective due to a fault would not be larger than an equivalent section in a section identifiable system, arranged in accordance with paragraph 2.4.1.
11	Amendments to the International Life-Saving Appliance (LSA) Code	MSC.485(103)	Yes	Effective on 2024.1.1	All ships	All sizes	K≥2024.1.1	Paragraph 4.4.1.3.2 of the LSA Code is revised to specify that lifeboats, except for free-fall lifeboats, shall be capable of being launched and towed when the ship is making headway at speeds up to 5 knots in calm water.
12	Amendments to the Protocol of 1988 relating to the	MSC.491(104)	Yes	Adopted on 2021.10.8 Effective on 2024.01.01	All ships	Ships with L≥24m	Any date	Harmonization with technical requirements for watertight doors of SOLAS, i.e. hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea, hinged watertight doors that are permanently closed at sea may be

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
	International Convention on Load Lines, 1966							below the final waterline at the final stage of damage stability
13	Amendments to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk	MSC.492(104)	Yes	Adopted on 2021.10.8 Effective on 2024.01.01	Ship carrying liquefied gases in bulk	All ships	Ships constructed on or after 2016.07.01	Harmonization with technical requirements for watertight doors of SOLAS, i.e. hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea, hinged watertight doors that are permanently closed at sea may be below the final waterline at the final stage of damage stability
14	Amendments to the International Convention for the Safety of Life at Sea, 1974	MSC.496(105)	Yes	2024.01.01	Any type	Cargo ships with GT≥300 and all passenger ships	Any date	The definition of “sea area A3” is changed from “an Inmarsat geostationary satellite” to “a recognized mobile satellite service supported by the ship earth station carried on board”; The provision of radiocommunications is in accordance with the sea area in which the ship operates, instead of the sequence of superposition of sea areas; Deleting the footnote in "Maintenance Requirements", which is determined by the flag State; Deleting relevant requirements for NBDP; Since the radio requirements of SOLAS Chapter III are relocated under Chapter IV,

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
								the SOLAS Cargo Ship Safety Equipment Certificate, Cargo Ship Safety Certificate, Passenger Ship Safety Certificate and Cargo Ship Safety Radio Certificate (including equipment records) are harmonized and revised, and relevant requirements for radiocommunications involved in life-saving appliance are deleted.
15	Amendments to the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974	MSC.497(105)	Yes	2024.01.1	Any type	Any size	Any date	Considering that the radio requirements for life-saving appliances in SOLAS Chapter III are relocated under Chapter IV, the SOLAS Cargo Ship Safety Equipment Certificate, Cargo Ship Safety Certificate, Passenger Ship Safety Certificate and Cargo Ship Safety Radio Certificate (including equipment records) are harmonized and revised, and relevant requirements for radiocommunications involved in life-saving appliance are deleted.
16	Amendments to the International Code of Safety for High-Speed Craft, 1994	MSC.498(105)	Yes	2024.01.01	HSC	Cargo ships with GT≥500 and all passenger ships	1996.1.1≤K＜2002.7.1	1. Deleting the provisions related to two-way VHF radiotelephone apparatus and search and rescue locating devices in Chapter 8 of HSC1994; 2. Chapter 14 of HSC1994 directly refers to revised Chapter 14 of HSC2000; High-Speed Craft Safety Certificate and its Record of Equipment are harmonized and revised.
17	Amendments to the International Code of Safety	MSC.499(105)	Yes	2024.01.01	HSC	Cargo ships with GT≥500 and all passenger	K≥2002.7.1	The provisions related to two-way VHF radiotelephone apparatus and search and rescue locating devices in Chapter 8 of HSC2000 are deleted and relocated to Chapter 14; Chapter 14 of HSC2000 is comprehensively revised in accordance with

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
	for High-Speed Craft, 2000					ships		amendments to SOLAS chapter IV in resolution MSC.496(105); 3.High-Speed Craft Safety Certificate and its Record of Equipment are harmonized and revised.
18	Amendments to the International Maritime Dangerous Goods (IMDG) Code	MSC.501(105)	Yes	2024.01.01 (Contracting Governments to SOLAS may apply the aforementioned amendments on a voluntary basis as from 1 January 2023)	Ships carrying dangerous goods	Any size	Any date	1. Revising “Pressure receptacle shell” and other new definitions in paragraph 1.2.1 of the IMDG code; 2. Introducing Marking of refillable UN pressure receptacles and Provisions for the design, construction, inspection and testing of portable tanks with shells made of fibre-reinforced plastics (FRP) materials; 3. Deleting the entry for "Iron powder, see" in the index; 4. Adding testing requirements for low dispersible radioactive material.
19	Amendments to MARPOL Annex I (Watertight doors)	MEPC.343(78)	Yes	2024.1.1/2022.6.10	Oil tankers	Ships of 150GT and above	Any date	The provision “…hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea, hinged watertight doors that are permanently closed at sea,” is added in the requirements regarding watertight doors for openings through which progressive flooding is not considered in the final equilibrium stage for damage stability.

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
20	Amendments to IBC Code (Watertight doors)	MEPC.345(78)	Yes	2024.7.1/2022.6.10	IBC ships	All sizes	All dates	In 2.9.2.1, the provision "…hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea, hinged watertight doors that are permanently closed at sea," is added regarding watertight doors for openings through which progressive flooding is not considered in the final equilibrium stage for damage stability.
21	Amendments to the International Convention for the Safety of Life at Sea, 1974(Chapter XV)	MSC.521(106)	Yes	enter into force on 2024.07.01	Cargo Ship and High-speed Cargo Craft which carry more than	GT≥500	Chapter XV-Safety measures for ships carrying industrial personnel has been added, make reference to mandatory IP Code. The relevant definitions, scope of application and basic principle requirements are stipulated.	Amendments to the International Convention for the Safety of Life at Sea, 1974(Chapter XV)

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
					12 industrial personnel			
22	Amendments to 2011 ESP Code	MSC.525(106)	Yes	enter into force on 2024.07.01	Bulk carrier and oil tanker	GT≥500	1. The coating condition criteria of ballast tanks, excluding double-bottom tanks, of bulk carriers were strengthened from "POOR" to "less than GOOD", which are used for the tank examination at annual intervals. 2. For void spaces bounding cargo holds of	Amendments to 2011 ESP Code

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
							double-side skin bulk carriers exceeding 20 years of age and of 150m in length and upwards, it is required that the spaces in question should be examined at annual intervals where a hard protective coating is found to be in POOR condition. 3. It was clarified that oil tankers carrying oil in independent tanks which did not form part of the	

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
							ship's hull were outside the scope of the ESP Code. 4. Timing of tank pressure testing for oil tankers at renewal survey was clarified.	
23	Amendments to IBC Code	MSC.526(106)	Yes	enter into force on 2024.07.01	Ships carrying dangerous chemicals in bulk	which IBC Code apply	Amendments to IBC Code were adopted, in order to allow submersion of some hinged watertight doors considered for stability criteria at any stage of flooding, as well as the amendments to IGC Code which have been adopted	Amendments to IBC Code

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
							at MSC 104.	
24	International Code of Safety for Ships Carrying Industrial Personnel (IP Code)	MSC.527(106)	Yes	enter into force on 2024.07.01	Cargo Ship and High-speed Cargo Craft which carry more than 12 industrial personnel	GT≥500	As a mandatory Code referenced in SOLAS Chapter XV, it stipulates the relevant definitions and survey the certification requirements; the objectives and functional requirements of the Code; The relevant requirements of training, qualification and personnel transfer of industrial personnel are stipulated; For the ships certified in	International Code of Safety for Ships Carrying Industrial Personnel (IP Code)

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
							SOLAS Chapter I and Chapter X, technical regulations have been made on subdivision and stability, mechanical installation, electrical equipment, periodic unmanned engine room, fire fighting, lifesaving, dangerous goods and so on.	
25	Amendments to MARPOL Annexes I, II and IV (Regional reception facilities	MEPC.359(79)	Yes	Adopted on 2022.12.16 Effective on 2024.5.1	Any type	Any size	Any date	(1) Revising the regulation on reception facilities under MARPOL Annexes I, II and IV to the effect that States the coastline of which borders on Arctic waters may satisfy Convention requirements for reception facilities through regional arrangements covering ports within Arctic waters in the same way as “small island States”. (2) Corresponding revisions to the title of section 5 (construction) of Form B of the

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
	within Arctic waters and Form of IOPP Certificate and Supplements)							IOPP certificate.
26	Amendments to MARPOL Annex V (Regional reception facilities within Arctic waters and Garbage Record Book)	MEPC.360(79)	Yes	Adopted on 2022.12.16 Effective on 2024.5.1	Any type	Any size For garbage record book, gross tonnage ≥100 GT	Any date	(1) States the coastline of which borders on Arctic waters may satisfy Convention requirements for reception facilities through regional arrangements. (2) The minimum gross tonnage of ships required to hold a Garbage Record Book in Regulation 10 of Annex V is adjusted from 400 to 100.
27	Amendments to MARPOL Annex VI (Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter)	MEPC.361(79)	Yes	Adopted on 2022.12.16 Effective on 2024.5.1	Any type	Any size	Any date	Adding a new paragraph in regulation 14.3 stating that Mediterranean Sea Emission Control Area means the area described by the coordinates provided in Appendix VII and inserting a new paragraph in Appendix VII regarding the specific coordinate area.

NO.	Provision	Relevant document	Mandatory	Effective/approval date	Ship type	Ship size	Ship date	Summary of IMO requirements
28	Amendments to MARPOL Annex VI (Regional reception facilities within Arctic waters, information to be included in the bunker delivery note (BDN) and information to be submitted to the IMO Ship Fuel Oil Consumption Database)	MEPC.362(79)	Yes	Adopted on 2022.12.16 Effective on 2024.5.1	Any type	Any size	Any date	(1) States the coastline of which borders on Arctic waters are included in the regional arrangements of port reception facilities in the same way as small island developing State. (2) Information on the flashpoint of fuel oil is included in the bunker delivery note under MARPOL Annex VI. (3) Revising DCS data collection form.

Notes: In column “Mandatory”, “Yes”=mandatory, “No”= instructional;

In columns “Ship size” and “Ship date”, “L”=load line length, “LBP”=length between perpendiculars;

In column “Ship date”, “Any date”=applicable to the ship which was built at any date, “K”=date of keel laying, “B”=date of construction, “D”=date of delivery, “C”=date of contract for construction.

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]	……

"

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."

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."

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."

RESOLUTION MSC.429(98)/Rev.1
(adopted on 11 November 2020)

REVISED EXPLANATORY NOTES TO THE SOLAS CHAPTER II-1 SUBDIVISION AND DAMAGE STABILITY REGULATIONS

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO that, by resolution MSC.216(82), it adopted the regulations on subdivision and damage stability as contained in SOLAS chapter II-1 which are based on the probabilistic concept, using the probability of survival after collision as a measure of ships' safety in a damaged condition,

NOTING that, at the eighty-second session, it approved *Interim explanatory notes to the SOLAS chapter II-1 subdivision and damage stability regulations* (MSC.1/Circ.1226), to assist Administrations in the uniform interpretation and application of the aforementioned subdivision and damage stability regulations,

NOTING ALSO that, at the eighty-fifth session, it adopted the *Explanatory notes to the SOLAS chapter II-1 subdivision and damage stability regulations* (resolution MSC.281(85)),

NOTING FURTHER that, by resolution MSC.421(98), it adopted amendments to regulations on subdivision and damage stability, as contained in SOLAS chapter II-1,

RECOGNIZING that the Revised Explanatory Notes should be adopted in conjunction with the adoption of the aforementioned amendments to subdivision and damage stability regulations (resolution MSC.421(98)),

RECOGNIZING ALSO that the appropriate application of the Revised Explanatory Notes is essential for ensuring the uniform application of the SOLAS chapter II-1 subdivision and damage stability regulations,

RECALLING that, having considered, at its ninety-eighth session (7 to 16 June 2017), the recommendations made by the Sub-Committee on Ship Design and Construction at its fourth session, it adopted, by resolution MSC.429(98), the *Revised explanatory notes to the SOLAS chapter II-1 subdivision and damage stability regulations*,

HAVING CONSIDERED, at its 102nd session, minor amendments to paragraph 4 of the Explanatory Note to SOLAS regulation 17 (Internal watertight integrity of passenger ships above the bulkhead deck),

1 ADOPTS the *Revised explanatory notes to the SOLAS chapter II-1 subdivision and damage stability regulations* set out in the annex to the present resolution;

2 URGES Contracting Governments and all parties concerned to utilize the Revised Explanatory Notes when applying the SOLAS chapter II-1 subdivision and damage stability regulations adopted by resolution MSC.216(82), as amended;

3 INVITES Contracting Governments to note that these Revised Explanatory Notes take effect on ships as defined in SOLAS regulation II-1/1.1.1, as adopted by resolution MSC.421(98).

4 REVOKES resolution MSC.429(98).

ANNEX

REVISED EXPLANATORY NOTES TO THE SOLAS CHAPTER II-1 SUBDIVISION AND DAMAGE STABILITY REGULATIONS

Contents

PART A

INTRODUCTION

1 The harmonized SOLAS regulations on subdivision and damage stability, as contained in SOLAS chapter II-1, are based on a probabilistic concept which uses the probability of survival after collision as a measure of ships' safety in a damaged condition. This probability is referred to as the "attained subdivision index *A*" in the regulations. It can be considered an objective measure of ships' safety and, ideally, there would be no need to supplement this index by any deterministic requirements.

2 The philosophy behind the probabilistic concept is that two different ships with the same attained index are of equal safety and, therefore, there is no need for special treatment of specific parts of the ship, even if they are able to survive different damages. The only areas which are given special attention in the regulations are the forward and bottom regions, which are dealt with by special subdivision rules provided for cases of ramming and grounding.

3 Only a few deterministic elements, which were necessary to make the concept practicable, have been included. It was also necessary to include a deterministic "minor damage" on top of the probabilistic regulations for passenger ships to avoid ships being designed with what might be perceived as unacceptably vulnerable spots in some part of their length.

4 It is easily recognized that there are many factors that will affect the final consequences of hull damage to a ship. These factors are random and their influence is different for ships with different characteristics. For example, it would seem obvious that in ships of similar size carrying different amounts of cargo, damages of similar extents may lead to different results because of differences in the range of permeability and draught during service. The mass and velocity of the ramming ship is obviously another random variable.

5 Owing to this, the effect of a three-dimensional damage to a ship with given watertight subdivision depends on the following circumstances:

.1 which particular space or group of adjacent spaces is flooded;

.2 the draught, trim and intact metacentric height at the time of damage;

.3 the permeability of affected spaces at the time of damage;

.4 the sea state at the time of damage; and

.5 other factors such as possible heeling moments owing to unsymmetrical weights.

6 Some of these circumstances are interdependent and the relationship between them and their effects may vary in different cases. Additionally, the effect of hull strength on penetration will obviously have some effect on the results for a given ship. Since the location and size of the damage is random, it is not possible to state which part of the ship becomes flooded. However, the probability of flooding a given space can be determined if the probability of occurrence of certain damages is known from experience, that is, damage statistics. The probability of flooding a space is then equal to the probability of occurrence of all such damages which just open the considered space to the sea.

7 For these reasons and because of mathematical complexity as well as insufficient data, it would not be practicable to make an exact or direct assessment of their effect on the probability that a particular ship will survive a random damage if it occurs. However, accepting some approximations or qualitative judgments, a logical treatment may be achieved by using the probability approach as the basis for a comparative method for the assessment and regulation of ship safety.

8 It may be demonstrated by means of probability theory that the probability of ship survival should be calculated as the sum of probabilities of its survival after flooding each single compartment, each group of two, three, etc., adjacent compartments multiplied, respectively, by the probabilities of occurrence of such damages leading to the flooding of the corresponding compartment or group of compartments.

9 If the probability of occurrence for each of the damage scenarios the ship could be subjected to is calculated and then combined with the probability of surviving each of these damages with the ship loaded in the most probable loading conditions, the attained index *A* as a measure for the ship's ability to sustain a collision damage can be determined.

10 It follows that the probability that a ship will remain afloat without sinking or capsizing as a result of an arbitrary collision in a given longitudinal position can be broken down to:

.1 the probability that the longitudinal centre of damage occurs in just the region of the ship under consideration;

.2 the probability that this damage has a longitudinal extent that only includes spaces between the transverse watertight bulkheads found in this region;

.3 the probability that the damage has a vertical extent that will flood only the spaces below a given horizontal boundary, such as a watertight deck;

.4 the probability that the damage has a transverse penetration not greater than the distance to a given longitudinal boundary; and

.5 the probability that the watertight integrity and the stability throughout the flooding sequence is sufficient to avoid capsizing or sinking.

11 The first three of these factors are solely dependent on the watertight arrangement of the ship, while the last two depend on the ship's shape. The last factor also depends on the actual loading condition. By grouping these probabilities, calculations of the probability of survival, or attained index *A*, have been formulated to include the following probabilities:

.1 the probability of flooding each single compartment and each possible group of two or more adjacent compartments; and

.2 the probability that the stability after flooding a compartment or a group of two or more adjacent compartments will be sufficient to prevent capsizing or dangerous heeling due to loss of stability or to heeling moments in intermediate or final stages of flooding.

12 This concept allows a rule requirement to be applied by requiring a minimum value of *A* for a particular ship. This minimum value is referred to as the "required subdivision index *R*" in the present regulations and can be made dependent on ship size, number of passengers or other factors legislators might consider important.

13 Evidence of compliance with the rules then simply becomes:

$$A \geq R$$

13.1 As explained above, the attained subdivision index *A* is determined by a formula for the entire probability as the sum of the products for each compartment or group of compartments of the probability that a space is flooded, multiplied by the probability that the ship will not capsize or sink due to flooding of the considered space. In other words, the general formula for the attained index can be given in the form:

$$A = \Sigma p_i s_i$$

13.2 Subscript "*i*" represents the damage zone (group of compartments) under consideration within the watertight subdivision of the ship. The subdivision is viewed in the longitudinal direction, starting with the aftmost zone/compartment.

13.3 The value of "p_i" represents the probability that only the zone "*i*" under consideration will be flooded, disregarding any horizontal subdivision, but taking transverse subdivision into account. Longitudinal subdivision within the zone will result in additional flooding scenarios, each with its own probability of occurrence.

13.4 The value of "s_i" represents the probability of survival after flooding the zone "*i*" under consideration.

14 Although the ideas outlined above are very simple, their practical application in an exact manner would give rise to several difficulties if a mathematically perfect method were to be developed. As pointed out above, an extensive but still incomplete description of the damage will include its longitudinal and vertical location as well as its longitudinal, vertical and transverse extent. Apart from the difficulties in handling such a five-dimensional random variable, it is impossible to determine its probability distribution very accurately with the presently available damage statistics. Similar limitations are true for the variables and physical relationships involved in the calculation of the probability that a ship will not capsize or sink during intermediate stages or in the final stage of flooding.

15 A close approximation of the available statistics would result in extremely numerous and complicated computations. In order to make the concept practicable, extensive simplifications are necessary. Although it is not possible to calculate the exact probability of survival on such a simplified basis, it has still been possible to develop a useful comparative measure of the merits of the longitudinal, transverse and horizontal subdivision of a ship.

PART B

GUIDANCE ON INDIVIDUAL SOLAS CHAPTER II-1 SUBDIVISION AND DAMAGE STABILITY REGULATIONS

REGULATION 1 – APPLICATION

Regulation 1.3

1 If a passenger ship built before 1 January 2009 undergoes alterations or modifications of major character, it may still remain under the damage stability regulations applicable to ships built before 1 January 2009.

2 If a passenger ship constructed on or after 1 January 2009 but before the applicable dates in regulation 1.1.1.1[1] undergoes alterations or modifications of major character that do not impact the watertight subdivision of the ship, or only have a minor impact, it may still remain under the damage stability regulations that were applicable when it was constructed. However, if alterations or modifications of major character significantly impact the watertight subdivision of the ship, it should comply with the damage stability regulations in part B-1 applicable when the alterations or modifications of major character are carried out unless the Administration determines that this is not reasonable and practicable, in which case the attained subdivision index *A* should be raised above the original construction required subdivision index *R* as much as practical.

3 Application of MSC.1/Circ.1246 is limited to cargo ships constructed before 1 January 2009.

4 A cargo ship constructed on or after 1 January 2009 of less than 80 m in length that is later lengthened beyond that limit should fully comply with the damage stability regulations according to its type and length.

5 If a passenger ship that has been in domestic service only and never been issued a SOLAS Passenger Ship Safety Certificate is converted to international service, for purposes of the stability requirements in parts B, B-1, B-2, B-3 and B-4 it should be treated as a passenger ship constructed on the date on which such a conversion commences.

REGULATION 2 – DEFINITIONS

Regulation 2.1

Subdivision length (L_s) – Different examples of L_s showing the buoyant hull and the reserve buoyancy are provided in the figures below. The limiting deck for the reserve buoyancy may be partially watertight.

The maximum possible vertical extent of damage above the baseline is d_s + 12.5 metres.

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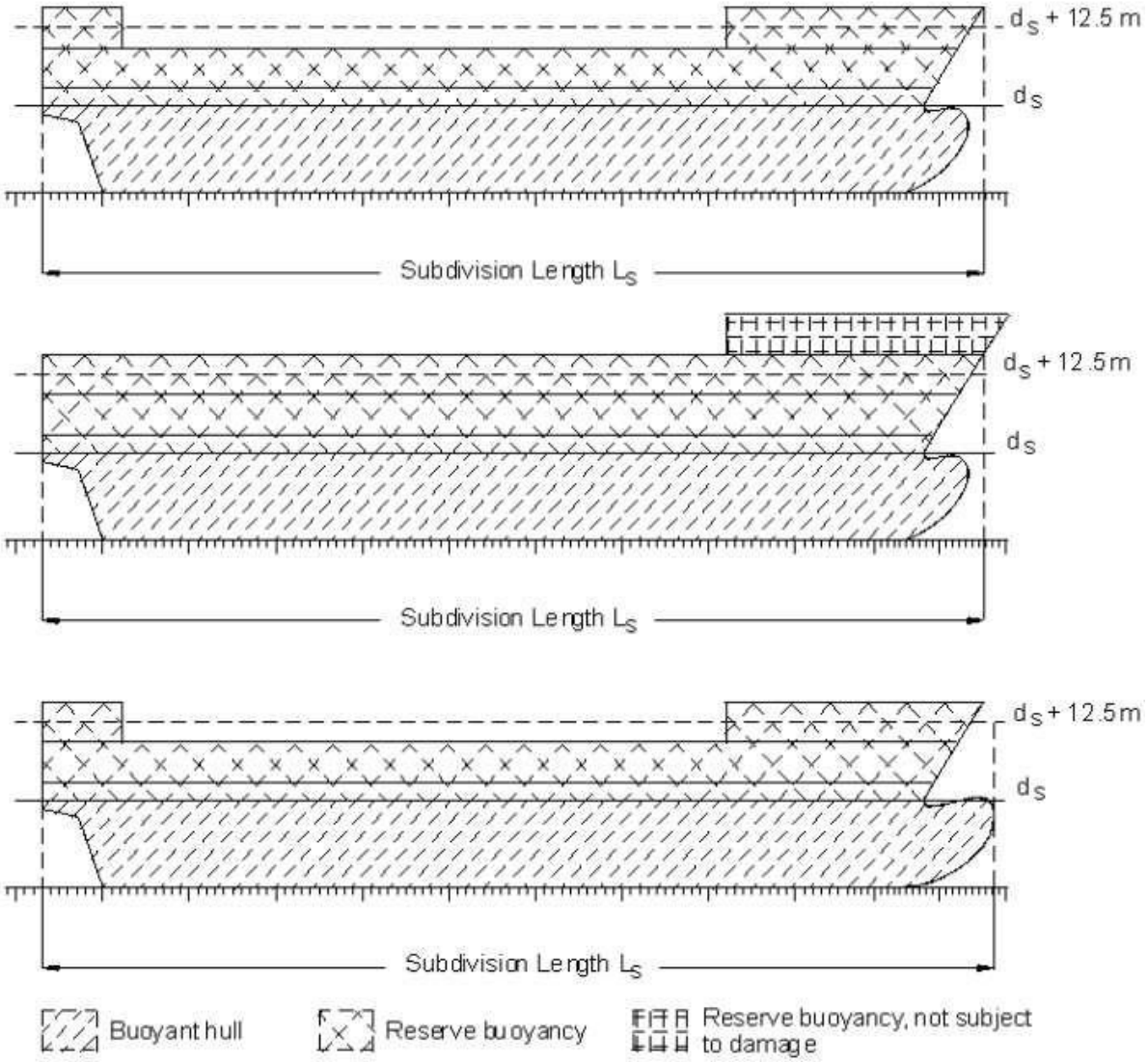
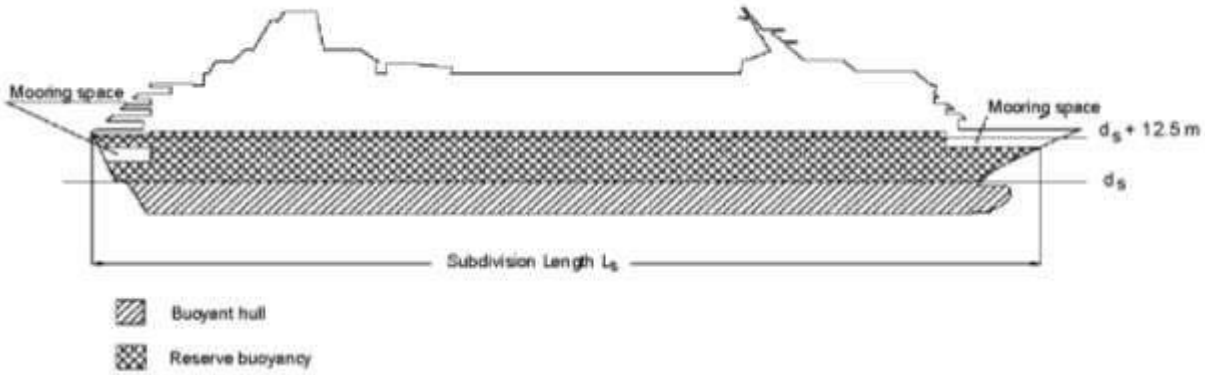
[1] References to regulations in this Guidance are to regulations of SOLAS chapter II-1, unless expressly provided otherwise.





Regulation 2.6

Freeboard deck – See explanatory notes for regulation 13-1 for the treatment of a stepped freeboard deck with regard to watertightness and construction requirements.

Regulation 2.11

Light service draught (d_l) – The light service draught (d_l) corresponds, in general, to the ballast arrival condition with 10% consumables for cargo ships. For passenger ships it corresponds, in general, to the arrival condition with 10% consumables, a full complement of passengers and crew and their effects, and ballast as necessary for stability and trim. Any temporary ballast water exchange conditions for compliance with the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 or any non-service conditions, such as dry-docking, should not be taken as d_l.

Regulation 2.19

Bulkhead deck – See explanatory notes for regulation 13 for the treatment of a stepped bulkhead deck with regard to watertightness and construction requirements.

REGULATION 4 – GENERAL

Regulation 4.5

See explanatory notes for regulation 7-2.2, for information and guidance related to these provisions.

REGULATION 5 – INTACT STABILITY

Regulation 5.2

1 For the purpose of this regulation, a sister ship means a cargo ship built by the same shipyard from the same plans.

2 For any new sister ship with known differences from the lead sister ship that do not exceed the lightship displacement and longitudinal centre of gravity deviation limits specified in regulation 5.2, a detailed weights and centres of gravity calculation to adjust the lead sister ship's lightship properties should be carried out. These adjusted lead sister ship lightship properties are then used for comparison to the new sister ship's lightweight survey results. However, in cases when the known differences from the lead sister ship exceed lightship displacement or longitudinal centre of gravity deviation limits specified in regulation 5.2, the ship should be inclined.

3 When the lightweight survey results do not exceed the specified deviation limits, the lightship displacement and the longitudinal and transverse centres of gravity obtained from the lightweight survey should be used in conjunction with the higher of either the lead sister ship's vertical centre of gravity or the calculated, adjusted value.

4 Regulation 5.2 may be applied to the SPS Code ships certified to carry less than 240 persons.

Regulation 5.4

1 When alterations are made to a ship in service that result in calculable differences in the lightship properties, a detailed weights and centres of gravity calculation to adjust the lightship properties should be carried out. If the adjusted lightship displacement or longitudinal centre of gravity, when compared to the approved values, exceeds one of the deviation limits specified in regulation 5.5, the ship should be re-inclined. In addition, if the adjusted lightship vertical centre of gravity, when compared to the approved value, exceeds 1%, the ship should be re-inclined. The lightship transverse centre of gravity is not subject to a deviation limit.

2 When a ship does not exceed the deviation limits specified in explanatory note 1 above, amended stability information should be provided to the master using the new calculated lightship properties if any of the following deviations from the approved values are exceeded:

.1 1% of the lightship displacement; or

.2 0.5% of L for the longitudinal centre of gravity; or

.3 0.5% of the vertical centre of gravity.

2.1 However, in cases when these deviation limits are not exceeded, it is not necessary to amend the stability information supplied to the master.

3 When multiple alterations are made to a ship in service over a period of time and each alteration is within the deviation limits specified above, the cumulative total changes to the lightship properties from the most recent inclining also should not exceed the deviation limits specified above or the ship should be re-inclined.

Regulation 5.5

When the lightweight survey results do not exceed the specified deviation limits, the lightship displacement and the longitudinal and transverse centres of gravity obtained from the lightweight survey should be used in conjunction with the vertical centre of gravity derived from the most recent inclining in all subsequent stability information supplied to the master.

REGULATION 5-1 – STABILITY INFORMATION TO BE SUPPLIED TO THE MASTER

Regulation 5-1.3

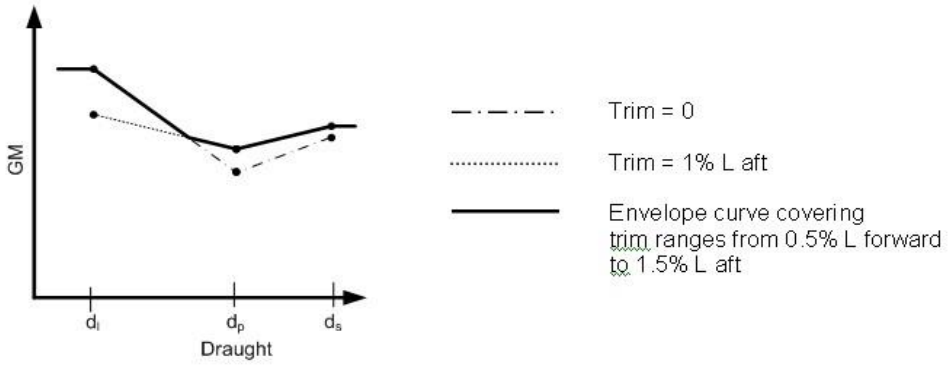
The requirement that applied trim values shall coincide in all stability information intended for use on board is intended to address initial stability calculations as well as those that may be necessary during the service life of the ship.

Regulation 5-1.4 (see also regulation 7.2)

1 Linear interpolation of the limiting values between the draughts d_s, d_p and d_l is only applicable to minimum *GM* values. If it is intended to develop curves of maximum permissible *KG*, a sufficient number of KM_T values for intermediate draughts should be calculated to ensure that the resulting maximum *KG* curves correspond with a linear variation of *GM*. When light service draught is not with the same trim as other draughts, KM_T for draughts between partial and light service draught should be calculated for trims interpolated between trim at partial draught and trim at light service draught.

2 In cases where the operational trim range is intended to exceed ±0.5% of *L*, the original *GM* limit line should be designed in the usual manner with the deepest subdivision draught and partial subdivision draught calculated at level trim and estimated service trim used for the light service draught. Then additional sets of *GM* limit lines should be constructed on the basis of the operational range of trims which is covered by loading conditions for each of the three draughts d_s, d_p and d_l ensuring that intervals of 1% *L* are not exceeded. The sets of *GM* limit lines are combined to give a single envelope limiting *GM* curve. The effective trim range of the curve should be clearly stated.

3 If multiple *GM* limiting curves are obtained from damage stability calculations of differing trims in accordance with regulation 7, an envelope curve covering all calculated trim values should be developed. Calculations covering different trim values should be carried out in steps not exceeding 1% of *L*. The whole range including intermediate trims should be covered by the damage stability calculations. Refer to the example showing an envelope curve obtained from calculations of 0 trim and 1% of *L*.

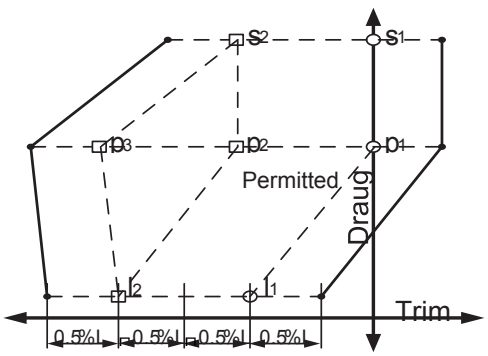


4 Temporary loading conditions may occur with a draught less than the light service draught d_l due to ballast water exchange requirements, etc. In these cases, for draughts below d_l, the *GM* limit value at d_l is to be used.

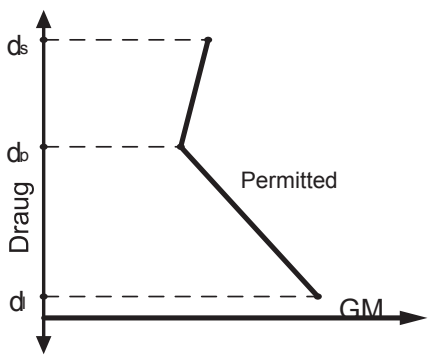
5 Ships may be permitted to sail at draughts above the deepest subdivision draught d_s according to the International Convention on Load Lines, e.g. using the tropical freeboard. In these cases, for draughts above d_s the *GM* limit value at d_s is to be used.

Regulation 5-1.5

There could be cases where it is desirable to expand the trim range, for instance around d_p. This approach is based on the principle that it is not necessary that the same number of trims be used when the *GM* is the same throughout a draught and when the steps between trims do not exceed 1% of *L*. In these cases there will be three *A* values based on draughts s_1, p_1, l_1 and s_2, p_2, l_2 and s_2, p_3, l_2. The lowest value of each partial index A_s, A_p and A_l across these trims should be used in the summation of the attained subdivision index *A*.



Trim limit diagram



GM limit curve

Regulation 5-1.6

This provision is intended to address cases where an Administration approves an alternative means of verification.

REGULATION 6 – REQUIRED SUBDIVISION INDEX *R*

Regulation 6.1

To demonstrate compliance with these provisions, see the *Guidelines for the preparation of subdivision and damage stability calculations*, set out in the appendix, regarding the presentation of damage stability calculation results.

REGULATION 7 – ATTAINED SUBDIVISION INDEX *A*

Regulation 7.1

1 The probability of surviving after collision damage to the ship's hull is expressed by the index *A*. Producing an index *A* requires calculation of various damage scenarios defined by the extent of damage and the initial loading conditions of the ship before damage. Three loading conditions should be considered and the result weighted as follows:

$$A = 0.4A_s + 0.4A_p + 0.2A_l$$

where the indices *s*, *p* and *l* represent the three loading conditions and the factor to be multiplied to the index indicates how the index *A* from each loading condition is weighted.

2 The method of calculating *A* for a loading condition is expressed by the formula:

$$A_c = \sum_{i=1}^{i=t} p_i [v_i s_i]$$

2.1 The index *c* represents one of the three loading conditions, the index *i* represents each investigated damage or group of damages and *t* is the number of damages to be investigated to calculate A_c for the particular loading condition.

2.2 To obtain a maximum index *A* for a given subdivision, *t* has to be equal to *T*, the total number of damages.

3 In practice, the damage combinations to be considered are limited either by significantly reduced contributions to *A* (i.e. flooding of substantially larger volumes) or by exceeding the maximum possible damage length.

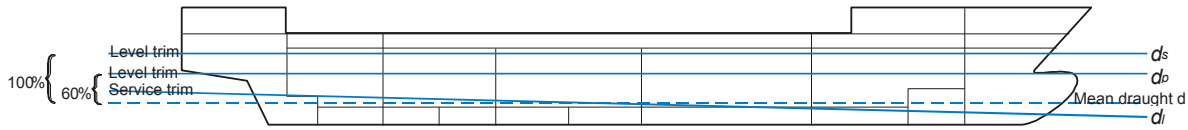
4 The index *A* is divided into partial factors as follows:

p_i The *p* factor is solely dependent on the geometry of the watertight arrangement of the ship.

v_i The *v* factor is dependent on the geometry of the watertight arrangement (decks) of the ship and the draught of the initial loading condition. It represents the probability that the spaces above the horizontal subdivision will not be flooded.

s_i The *s* factor is dependent on the calculated survivability of the ship after the considered damage for a specific initial condition.

5 Three initial loading conditions should be used for calculating each index *A.* The loading conditions are defined by their mean draught *d,* trim and *GM (*or *KG).* The mean draught and trim are illustrated in the figure below.



6 The *GM* (or *KG*) values for the three loading conditions could, as a first attempt, be taken from the intact stability *GM* (or *KG*) limit curve. If the required index *R* is not obtained, the *GM* (or *KG*) values may be increased (or reduced), implying that the intact loading conditions from the intact stability book must now meet the *GM* (or *KG*) limit curve from the damage stability calculations derived by linear interpolation between the three *GM*s.

7 For a series of new passenger or cargo ships built from the same plans each of which have the same draughts d_s, d_p and d_l as well as the same *GM* and trim limits, the attained subdivision index *A* calculated for the lead ship may be used for the other ships. In addition, small differences in the draught d_l (and the subsequent change in the draught d_p) are acceptable if they are due to small differences in the lightship characteristics that do not exceed the deviation limits specified in regulation 5.2. For cases where these conditions are not met, a new attained subdivision index *A* should be calculated.

"Built from the same plans" means that the watertight and weathertight aspects of the hull, bulkheads, openings and other parts of a ship that impact the attained subdivision index *A* calculation remain exactly the same.

8 For a passenger or cargo ship in service which undergoes alterations that materially affect the stability information supplied to the master and require it to be re-inclined in accordance with regulation 5.4, a new attained subdivision index *A* should be calculated. However, for alteration cases where a re-inclining is not required and the alterations do not change the watertight and weathertight arrangements of the ship that impact the attained subdivision index *A*, if d_s and the *GM* and trim limits remain the same then a new attained subdivision index *A* is not required.

9 For passenger ships subject to lightweight surveys every 5 years, if the lightweight survey results are within the limits specified in regulation 5.5, and d_s and the *GM* and trim limits remain the same, a new attained subdivision index *A* is not required. However, if the lightweight survey results exceed either limit specified in regulation 5.5, a new attained subdivision index *A* should be calculated.

10 For any new passenger or cargo ship for which the deviation in lightship characteristics between the preliminary and the as built values are within the limits specified in regulation 5.2 and d_s is unchanged, then the preliminary attained subdivision index *A* calculation may be approved as the final attained subdivision index *A* calculation. However, for cases where these conditions are not met, then a new attained subdivision index *A* should be calculated.

Regulation 7.2

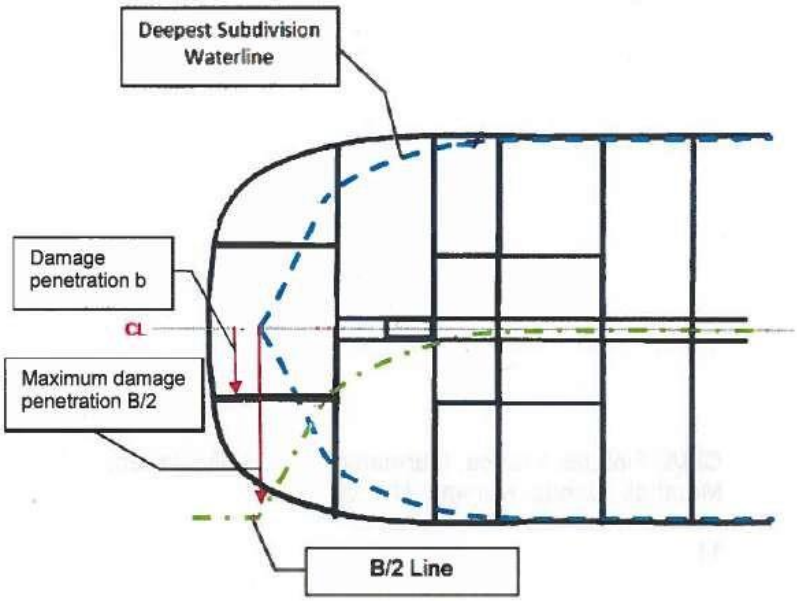
When additional calculations of *A* are performed for different trims, for a given set of calculations the difference between trim values for d_s, d_p and d_l may not exceed 1% *L*.

Regulation 7.5

1 With the same intent as wing tanks, the summation of the attained index *A* should reflect effects caused by all watertight bulkheads and flooding boundaries within the damaged zone. It is not correct to assume damage only to one half of the ship's breadth *B* and ignore changes in subdivision that would reflect lesser contributions.

2 In the forward and aft ends of the ship where the sectional breadth is less than the ship's breadth *B*, transverse damage penetration can extend beyond the centreline bulkhead. This application of the transverse extent of damage is consistent with the methodology to account for the localized statistics which are normalized on the greatest moulded breadth *B* rather than the local breadth.

3 Where, at the extreme ends of the ship, the subdivision exceeds the waterline at the deepest subdivision draught, the damage penetration *b* or *B*/2 is to be taken from centreline. The figure below illustrates the shape of the *B*/2 line.



4 Where longitudinal corrugated bulkheads are fitted in wing compartments or on the centreline, they may be treated as equivalent plane bulkheads provided the corrugation depth is of the same order as the stiffening structure. The same principle may also be applied to transverse corrugated bulkheads.

Regulation 7.6

Refer to the explanatory notes for regulation 7-2.2 for the treatment of free surfaces during all stages of flooding.

Regulation 7.7

1 Pipes and valves directly adjacent or situated as close as practicable to a bulkhead or to a deck can be considered to be part of the bulkhead or deck, provided the separation distance on either side of the bulkhead or deck is of the same order as the bulkhead or deck stiffening structure. The same applies for small recesses, drain wells, etc.

2 For ships up to L = 150 m the provision for allowing "minor progressive flooding" should be limited to pipes penetrating a watertight subdivision with a total cross-sectional area of not more than 710 mm^2 between any two watertight compartments. For ships of L = 150 m and upwards the total cross-sectional area of pipes should not exceed the cross-sectional area of one pipe with a diameter of L/5000 m.

REGULATION 7-1 – CALCULATION OF THE FACTOR p_i

General

1 The definitions below are intended to be used for the application of part B-1 only.

2 In regulation 7-1, the words "compartment" and "group of compartments" should be understood to mean "zone" and "adjacent zones".

3 Zone – a longitudinal interval of the ship within the subdivision length.

4 Room – a part of the ship, limited by bulkheads and decks, having a specific permeability.

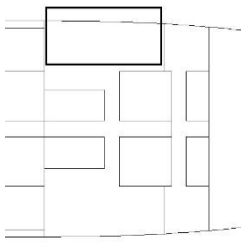
5 Space – a combination of rooms.

6 Compartment – a space within watertight boundaries.

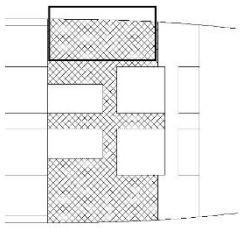
7 Damage – the three-dimensional extent of the breach in the ship.

8 For the calculation of p, v, r and b only the damage should be considered, for the calculation of the s-value the flooded space should be considered. The figures below illustrate the difference.

Damage shown as the bold square:



Flooded space shown below:



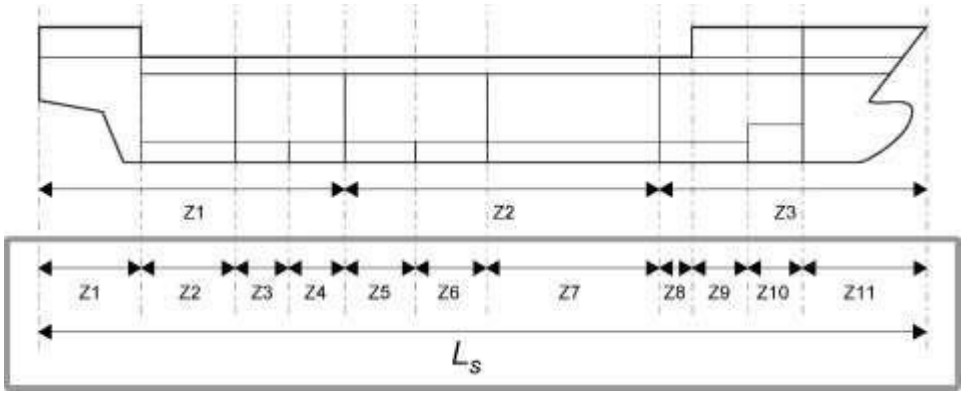
Regulation 7-1.1.1

1 The coefficients b_{11}, b_{12}, b_{21} and b_{22} are coefficients in the bi-linear probability density function on normalized damage length (J). The coefficient b_{12} is dependent on whether L_s is greater or less than L^* (i.e. 260 m); the other coefficients are valid irrespective of L_s.

1. Longitudinal subdivision

2 In order to prepare for the calculation of index A, the ship's subdivision length L_s is divided into a fixed discrete number of damage zones. These damage zones will determine the damage stability investigation in the way of specific damages to be calculated.

3 There are no specific rules for longitudinally subdividing the ship, except that the length L_s defines the extremities of the zones. Zone boundaries need not coincide with physical watertight boundaries. However, it is important to consider a strategy carefully to obtain a good result (that is a large attained index A). All zones and combination of adjacent zones may contribute to the index A. In general it is expected that the more zone boundaries the ship is divided into the higher the attained index will be, but this benefit should be balanced against extra computing time. The figure below shows different longitudinal zone divisions of the length L_s.



4 The first example is a very rough division into three zones of approximately the same size with limits where longitudinal subdivision is established. The probability that the ship will survive a damage in one of the three zones is expected to be low (i.e. the s-factor is low or zero) and, therefore, the total attained index A will be correspondingly low.

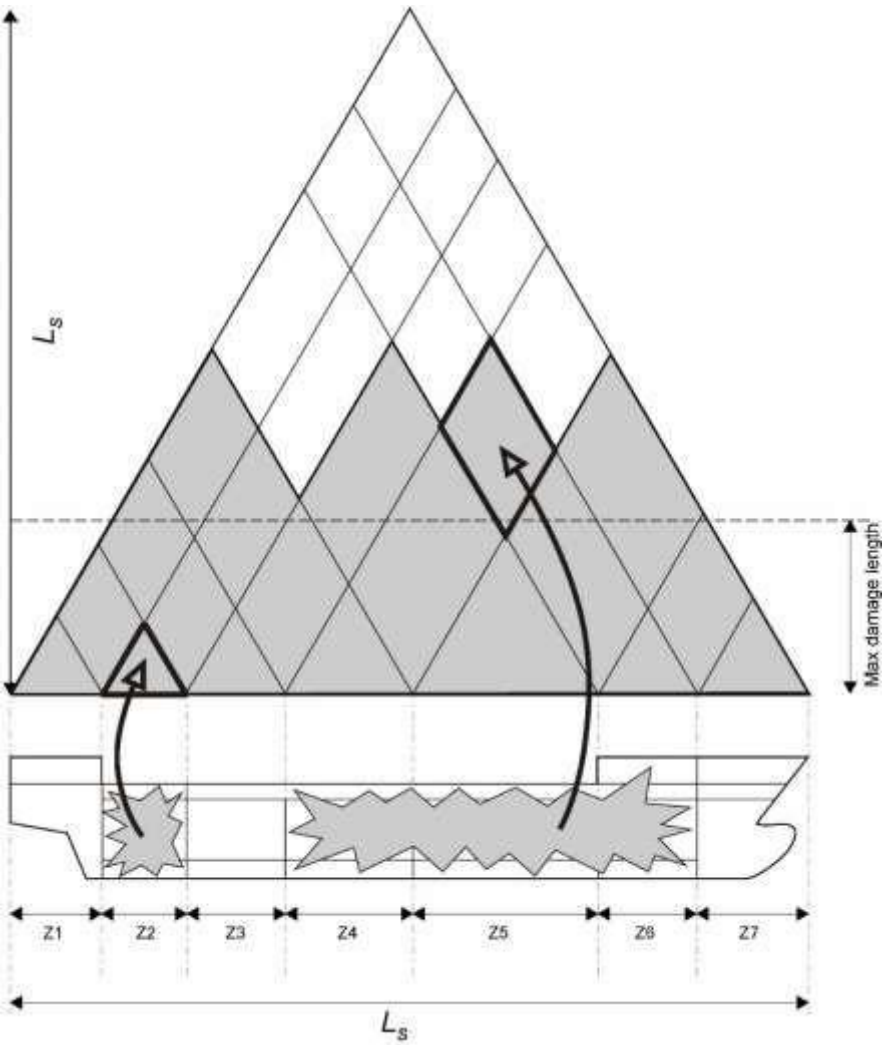
5 In the second example the zones have been placed in accordance with the watertight arrangement, including minor subdivision (as in double bottom, etc.). In this case there is a much better chance of obtaining higher s-factors.

6 Where transverse corrugated bulkheads are fitted, they may be treated as equivalent plane bulkheads, provided the corrugation depth is of the same order as the stiffening structure.

7 Pipes and valves directly adjacent or situated as close as practicable to a transverse bulkhead can be considered to be part of the bulkhead, provided the separation distance on either side of the bulkhead is of the same order as the bulkhead stiffening structure. The same applies for small recesses, drain wells, etc.

8 For cases where the pipes and valves cannot be considered as being part of the transverse bulkhead, when they present a risk of progressive flooding to other watertight compartments that will have influence on the overall attained index *A*, they should be handled either by introducing a new damage zone and accounting for the progressive flooding to associated compartments or by introducing a gap.

9 The triangle in the figure below illustrates the possible single and multiple zone damages in a ship with a watertight arrangement suitable for a seven-zone division. The triangles at the bottom line indicate single zone damages and the parallelograms indicate adjacent zones damages.



10 As an example, the triangle illustrates a damage opening the rooms in zone 2 to the sea and the parallelogram illustrates a damage where rooms in zones 4, 5 and 6 are flooded simultaneously.

11 The shaded area illustrates the effect of the maximum absolute damage length. The *p*-factor for a combination of three or more adjacent zones equals zero if the length of the combined adjacent damage zones minus the length of the foremost and the aft most damage zones in the combined damage zone is greater than the maximum damage length. Having this in mind when subdividing L_s could limit the number of zones defined to maximize the attained index *A*.

12 As the *p*-factor is related to the watertight arrangement by the longitudinal limits of damage zones and the transverse distance from the ship side to any longitudinal barrier in the zone, the following indices are introduced:

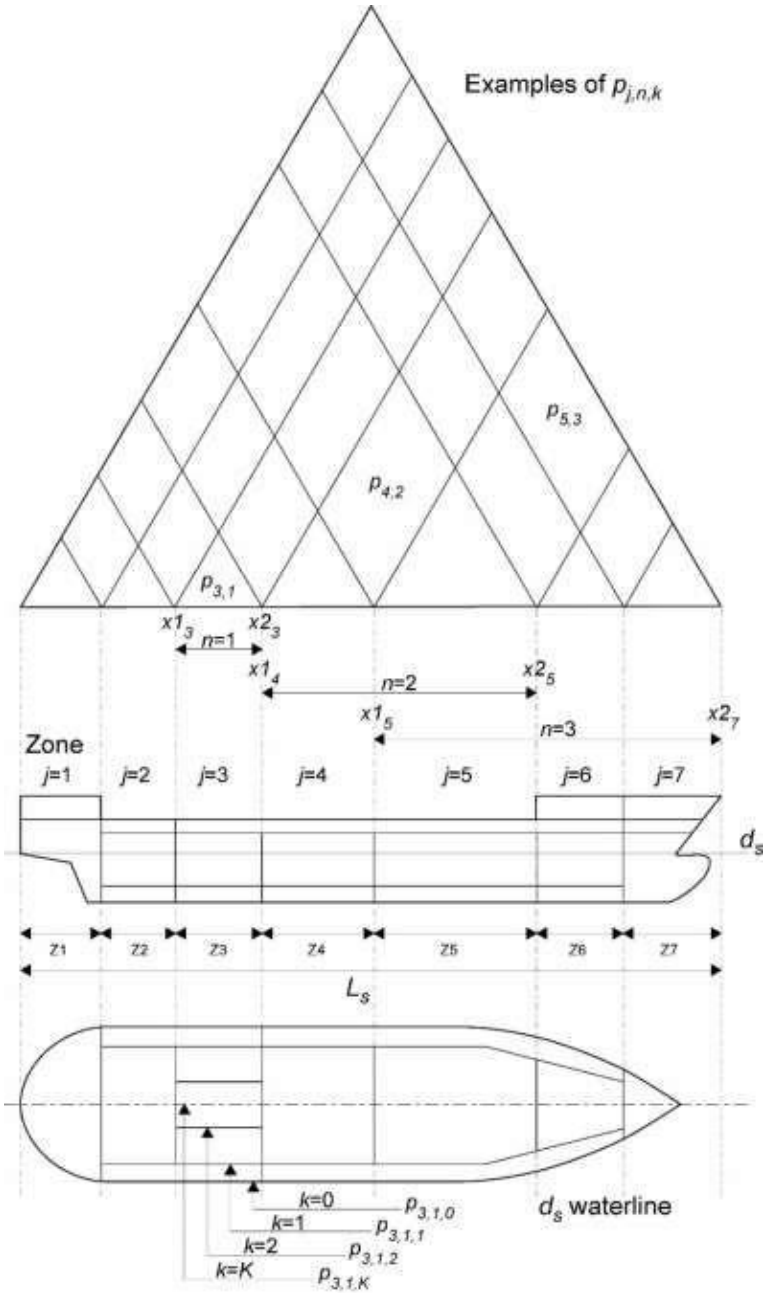
j: the damage zone number starting with No.1 at the stern;

n: the number of adjacent damage zones in question where *j* is the aft zone;

k: the number of a particular longitudinal bulkhead as a barrier for transverse penetration in a damage zone counted from shell towards the centreline. The shell has No. 0;

K: total number of transverse penetration boundaries;

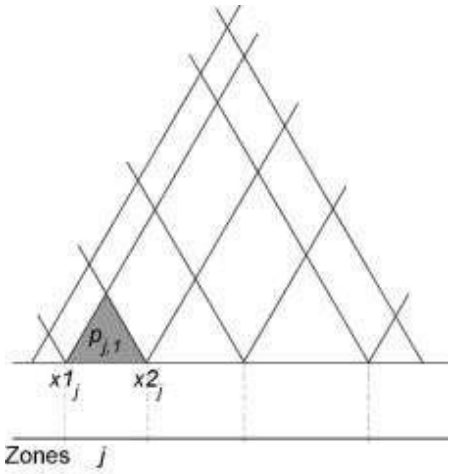
$p_{j,n,k}$: the *p*-factor for a damage in zone *j* and next (*n*-1) zones forward of *j* damaged to the longitudinal bulkhead *k*.



Pure longitudinal subdivision

Single damage zone, pure longitudinal subdivision:

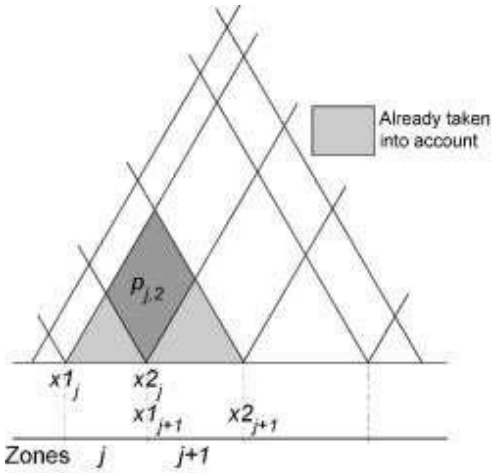
$p_{j,1} = p(x1_j, x2_j)$



n=1: damage to 1 Zone

Two adjacent zones, pure longitudinal subdivision:

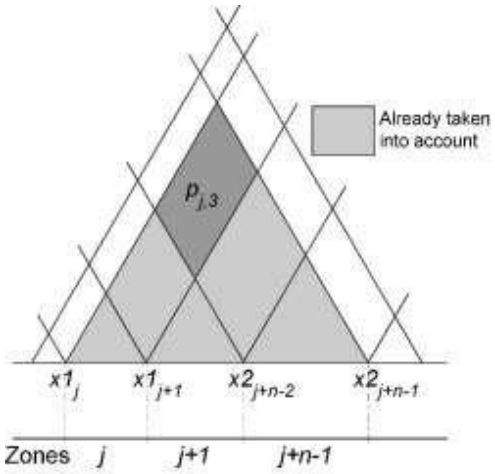
$p_{j,2} = p(x1_j, x2_{j+1}) - p(x1_j, x2_j) - p(x1_{j+1}, x2_{j+1})$



n=2: damage to 2 Zones

Three or more adjacent zones, pure longitudinal subdivision:

$p_{j,n} = p(x1_j, x2_{j+n-1}) - p(x1_j, x2_{j+n-2}) - p(x1_{j+1}, x2_{j+n-1}) + p(x1_{j+1}, x2_{j+n-2})$



n=3: damage to 3 Zones

Regulation 7-1.1.2

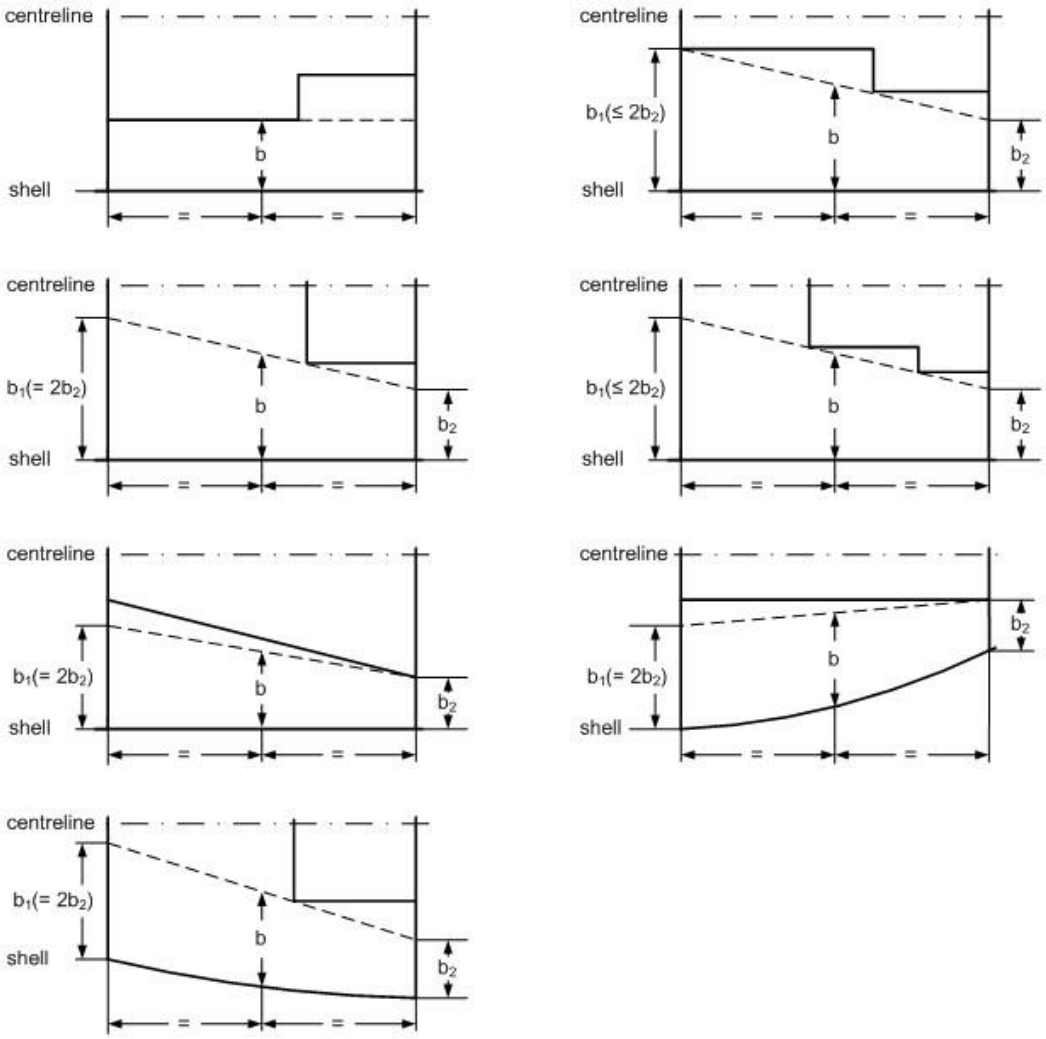
Transverse subdivision in a damage zone

1 Damage to the hull in a specific damage zone may just penetrate the ship's watertight hull or penetrate further towards the centreline. To describe the probability of penetrating only a wing compartment, a probability factor *r* is used, based mainly on the penetration depth *b*. The value of *r* is equal to 1, if the penetration depth is *B/2* where *B* is the maximum breadth of the ship at the deepest subdivision draught d_s, and $r = 0$ if $b = 0$.

2 The penetration depth *b* is measured at level deepest subdivision draught d_s as a transverse distance from the ship side right-angled to the centreline to a longitudinal barrier.

3 Where the actual watertight bulkhead is not a plane parallel to the shell, *b* should be determined by means of an assumed line, dividing the zone to the shell in a relationship b_1/b_2 with $1/2 \leq b_1/b_2 \leq 2$.

4 Examples of such assumed division lines are illustrated in the figure below. Each sketch represents a single damage zone at a water line plane level d_s and the longitudinal bulkhead represents the outermost bulkhead position below d_s + 12.5 m.



4.1 If a transverse subdivision intercepts the deepest subdivision draught waterline within the extent of the zone, *b* is equal to zero in that zone for that transverse subdivision [see figure 1]. A non-zero *b* can be obtained by including an additional zone, see figure 2.

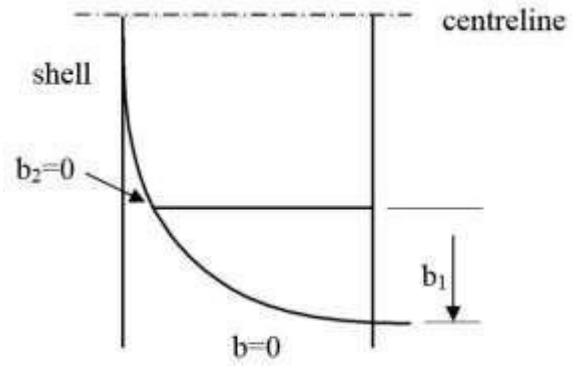


Figure 1

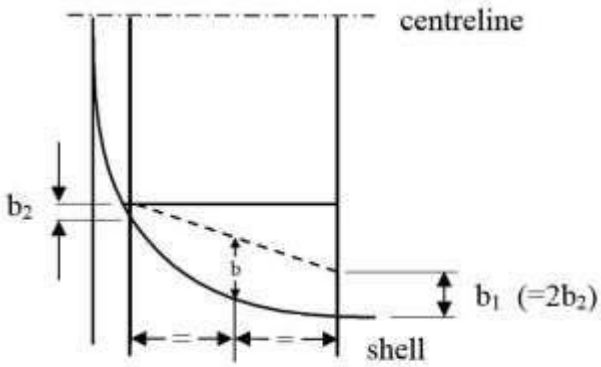


Figure 2

4.2 If the deepest subdivision draught waterline on the side of a single hull ship includes a part where multiple transverse (y) coordinates occur for a longitudinal (x) location, a straightened reference waterline can be used for the calculation of *b*. If this approach is chosen, the original waterline is replaced by an envelope curve including straight parts perpendicular to the centreline where multiple transverse coordinates occur [see figures 1 to 4]. The maximum transverse damage extent *B/2* should then be calculated from waterline or the reference waterline, if applicable, at the deepest subdivision draught.

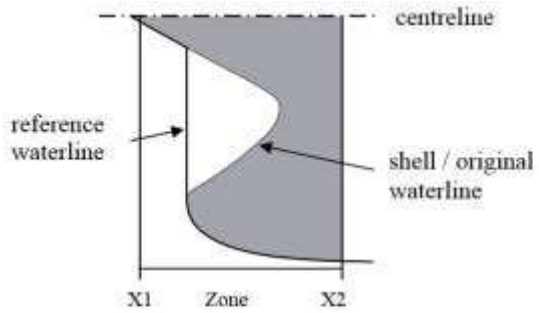


Figure 1

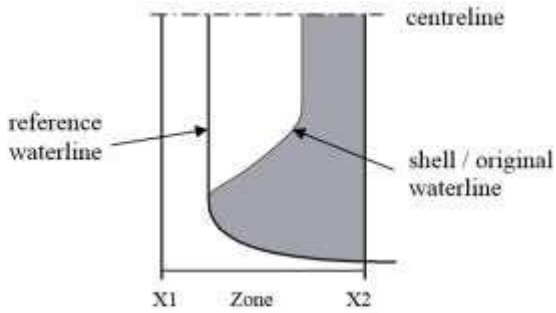


Figure 2

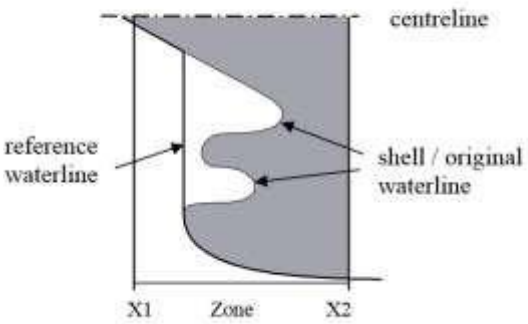


Figure 3

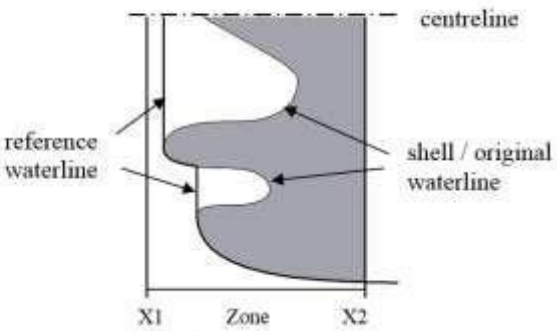


Figure 4

5 In calculating *r*-values for a group of two or more adjacent compartments, the *b*-value is common for all compartments in that group, and equal to the smallest *b*-value in that group:

$b = min\{b_1, b_2, \ldots, b_n\}$

where: $n=$ number of wing compartments in that group;

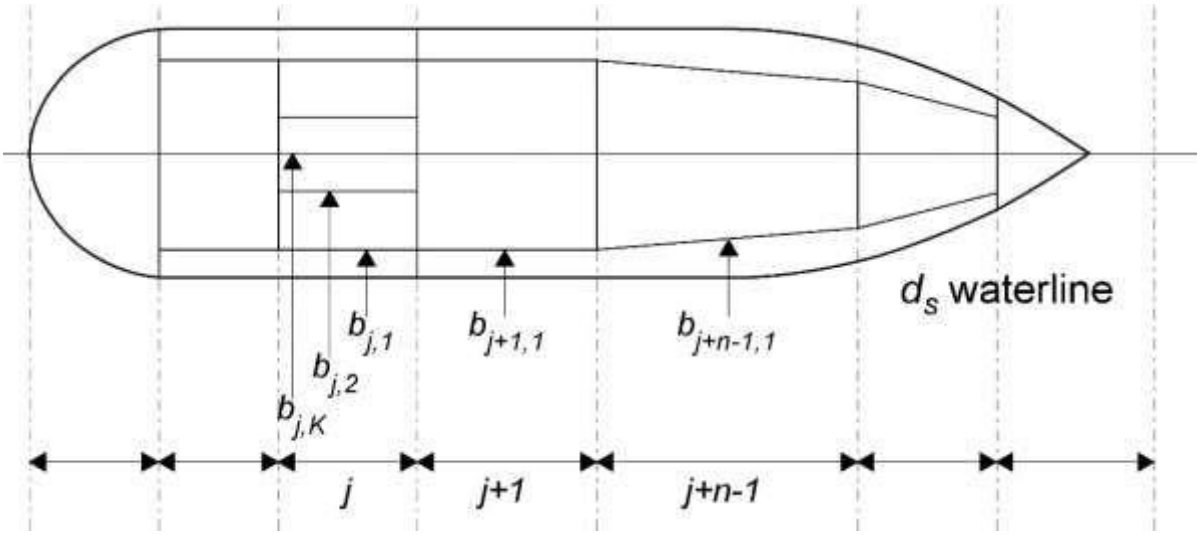
$b_1 b_2, \ldots, b_n =$ mean values of *b* for individual wing compartments contained in the group.

Accumulating p

6 The accumulated value of *p* for one zone or a group of adjacent zones is determined by:

$$p_{j,n} = \sum_{k=1}^{k=K_{j,n}} p_{j,n,k}$$

where $K_{j,n} = \sum_{j}^{j+n-1} K_j$ the total number of b_k's for the adjacent zones in question.



7 The figure above illustrates *b*'s for adjacent zones. The zone *j* has two penetration limits and one to the centre, the zone *j+1* has one *b* and the zone *j+n-1* has one value for *b*. The multiple zones will have (2+1+1) four values of *b*, and sorted in increasing order they are:

$(b_{j,1}\,;\ b_{j+1,1}\,;\ b_{j+n-1,1}\,;\ b_{j,2}\,;\ b_K)$

8 Because of the expression for *r(x1, x2, b)* only one b_K should be considered. To minimize the number of calculations, *b*'s of the same value may be deleted.

As $b_{j,1} = b_{j+1,1}$ the final *b*'s will be $(b_{j,1}\,;\ b_{j+n-1,1}\,;\ b_{j,2}\,;\ b_K)$

Examples of multiple zones having a different b

9 Examples of combined damage zones and damage definitions are given in the figures below. Compartments are identified by R10, R12, etc.

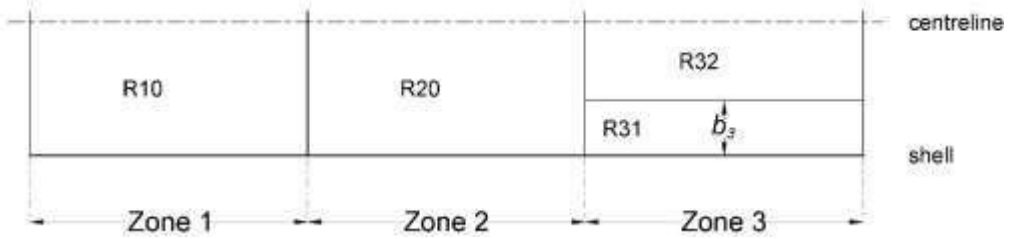


Figure: Combined damage of zones 1 + 2 + 3 includes a limited penetration to b_3, taken into account generating two damages:

1) to b_3 with R10, R20 and R31 damaged;
2) to *B/2* with R10, R20, R31 and R32 damaged.

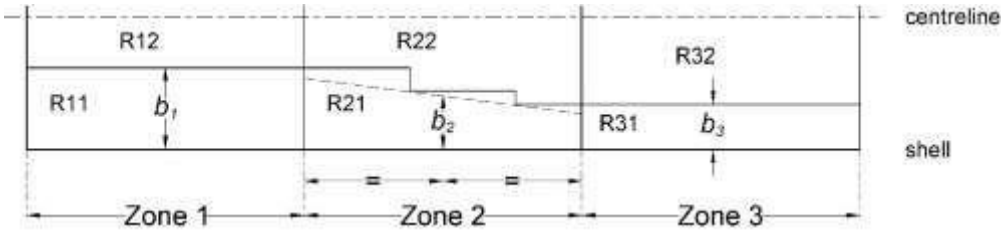


Figure: Combined damage of zones 1 + 2 + 3 includes 3 different limited damage penetrations generating four damages:

1) to b_3 with R11, R21 and R31 damaged;
2) to b_2 with R11, R21, R31 and R32 damaged;
3) to b_1 with R11, R21, R31, R32, and R22 damaged;
4) to *B/2* with R11, R21, R31, R32, R22 and R12 damaged.

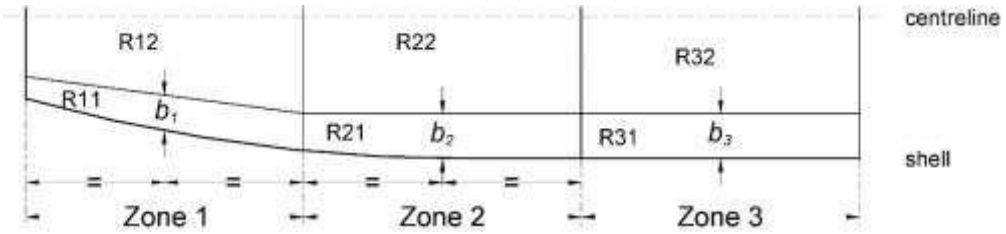
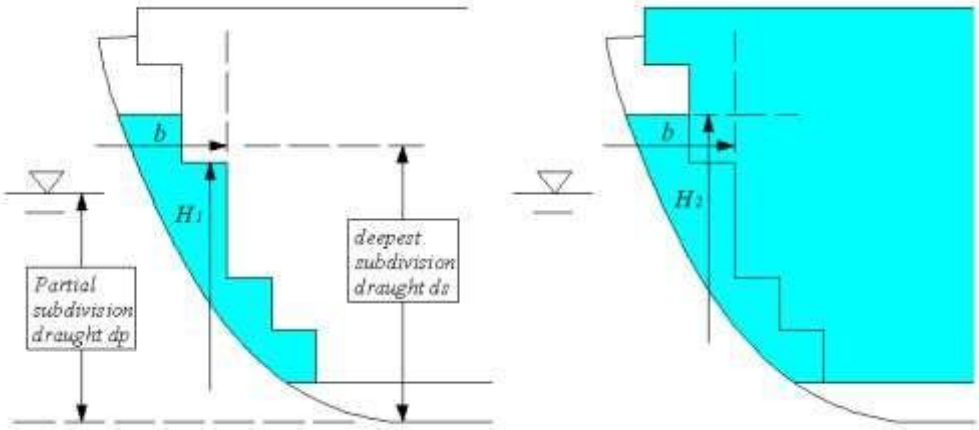


Figure: Combined damage of zone 1 + 2 + 3 including 2 different limited damage penetrations ($b_1 < b_2 = b_3$) generating three damages:

1) to b_1 with R11, R21 and R31 damaged;
2) to b_2 with R11, R21, R31 and R12 damaged;
3) to *B/2* with R11, R21, R31, R12, R22 and R32 damaged.

10 A damage having a transverse extent b and a vertical extent H_2 leads to the flooding of both wing compartment and hold; for b and H_1 only the wing compartment is flooded. The figure below illustrates a partial subdivision draught d_p damage.



11 The same is valid if b-values are calculated for arrangements with sloped walls.

12 Pipes and valves directly adjacent or situated as close as practicable to a longitudinal bulkhead can be considered to be part of the bulkhead, provided the separation distance on either side of the bulkhead is of the same order as the bulkhead stiffening structure. The same applies for small recesses, drain wells, etc.

REGULATION 7-2 – CALCULATION OF THE FACTOR s_i

General

1 Initial condition – an intact loading condition to be considered in the damage analysis described by the mean draught, vertical centre of gravity and the trim; or alternative parameters from where the same may be determined (e.g. displacement, *GM* and trim). There are three initial conditions corresponding to the three draughts d_s, d_p and d_l.

2 Immersion limits – immersion limits are an array of points that are not to be immersed at various stages of flooding as indicated in regulations 7-2.5.2 and 7-2.5.3.

3 Openings – all openings need to be defined: both weathertight and unprotected. Openings are the most critical factor to preventing an inaccurate index *A*. If the final waterline immerses the lower edge of any opening through which progressive flooding takes place, the factor "*s*" may be recalculated taking such flooding into account. However, in this case the *s* value should also be calculated without taking into account progressive flooding and corresponding opening. The smallest *s* value should be retained for the contribution to the attained index.

Regulation 7-2.1

1 In cases where the *GZ* curve may include more than one "range" of positive righting levers for a specific stage of flooding, only one continuous positive "range" of the *GZ* curve may be used within the allowable range/heel limits for calculation purposes. Different stages of flooding may not be combined in a single *GZ* curve.

Figure 1

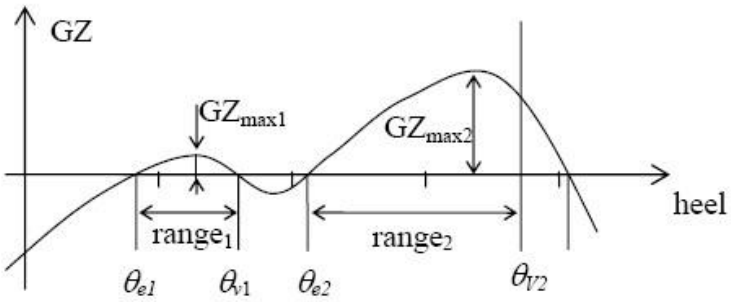
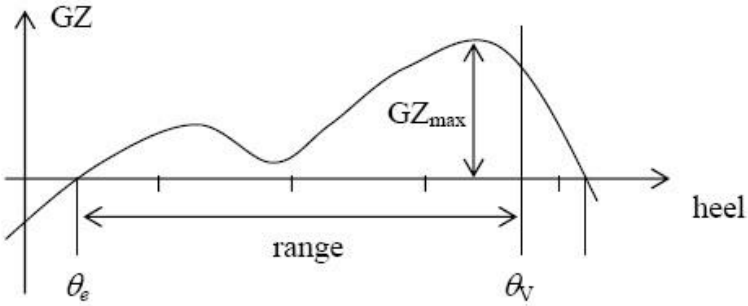


Figure 2



2 In figure 1, the *s*-factor may be calculated from the heel angle, range and corresponding GZ_{max} of the first or second "range" of positive righting levers. In figure 2, only one *s*-factor can be calculated.

Regulation 7-2.2

Intermediate stages of flooding

1 The case of instantaneous flooding in unrestricted spaces in way of the damage zone does not require intermediate stage flooding calculations. Where intermediate stages of flooding calculations are necessary in connection with progressive flooding, flooding through non-watertight boundaries or cross-flooding, they should reflect the sequence of filling as well as filling level phases. Calculations for intermediate stages of flooding should be performed whenever equalization is not instantaneous, i.e. equalization is of a duration greater than 60 s. Such calculations consider the progress through one or more floodable (non-watertight) spaces, or cross-flooded spaces. Bulkheads surrounding refrigerated spaces, incinerator rooms and longitudinal bulkheads fitted with non-watertight doors are typical examples of structures that may significantly slow down the equalization of main compartments.

Flooding boundaries

2 If a compartment contains decks, inner bulkheads, structural elements and doors of sufficient tightness and strength to seriously restrict the flow of water, for intermediate stage flooding calculation purposes it should be divided into corresponding non-watertight spaces. It is assumed that the non-watertight divisions considered in the calculations are limited to "A" class fire-rated bulkheads and decks, and do not apply to "B" class fire-rated bulkheads normally used in accommodation areas (e.g. cabins and corridors). This guidance also relates to regulation 4.5. For spaces in the double bottom, in general, only main longitudinal structures with a limited number of openings have to be considered as flooding boundaries.

Sequential flooding computation

3 For each damage scenario, the damage extent and location determine the initial stage of flooding. Calculations should be performed in stages, each stage comprising at least two intermediate filling phases in addition to the full phase per flooded space. Unrestricted spaces in way of damage should be considered as flooded immediately. Every subsequent stage involves all connected spaces being flooded simultaneously until an impermeable boundary or final equilibrium is reached. Unless the flooding process is simulated using time-domain methods, when a flooding stage leads to both a self-acting cross-flooding device and a non-watertight boundary, the self-acting cross-flooding device is assumed to act immediately and occur before the non-watertight boundary is breached. If due to the configuration of the subdivision in the ship it is expected that other intermediate stages of flooding are more onerous, then those should be investigated.

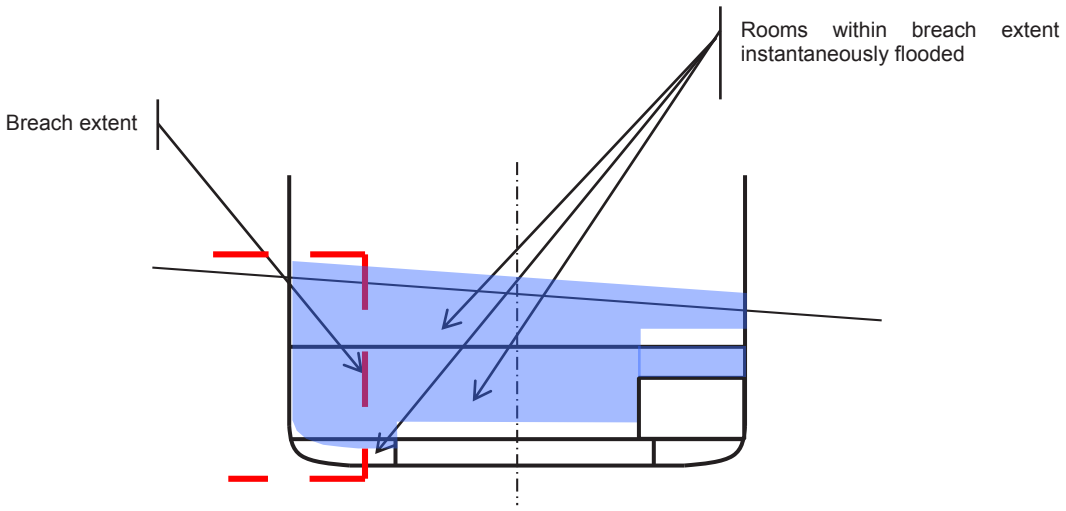
3.1 For each phase of a flooding stage (except the final full phase), the instantaneous transverse moment of this floodwater is calculated by assuming a constant volume of water at each heeling angle. The *GZ* curve is calculated with a constant intact displacement at all stages of flooding. Only one free surface needs to be assumed for water in spaces flooded during the current stage.

3.2 In the final full phase of each stage, the water level in rooms flooded during this stage reaches the outside sea level, so the lost buoyancy method can be used. The same method applies for every successive stage (added volume of water with a constant intact displacement for all phases before the final full phase of the stage in consideration), while each of the previous stages at the final full phase can be calculated with the lost buoyancy method.

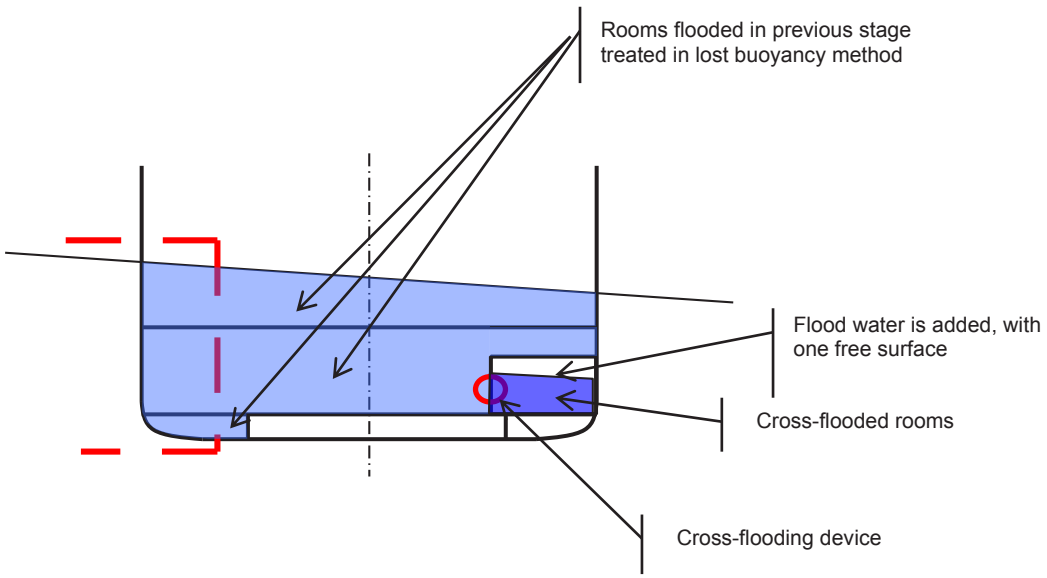
3.3 The examples below present a simplified, sequential approach to intermediate stage down-flooding and cross-flooding. Because simultaneous down-flooding and cross-flooding is not accounted for, any time-to-flood calculated with this sequential approach should be conservative. Alternative approaches, such as time-domain flooding simulation, are also acceptable.

Example 1: Major damage with cross-flooding device

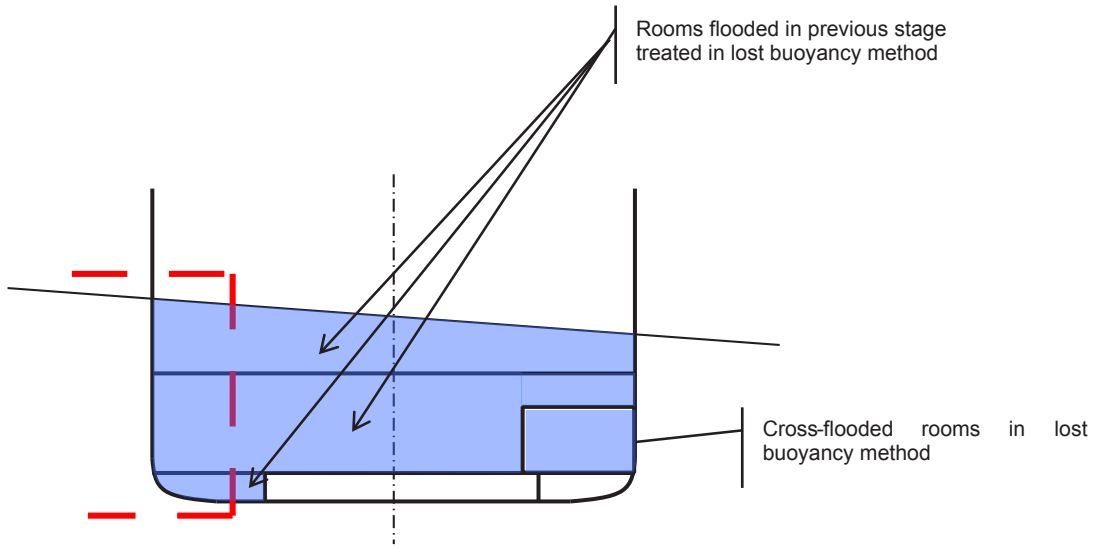
Stage 0: Unrestricted spaces in way of damage should be considered as flooded immediately (intermediate phases are not considered). The lost buoyancy method is applied as this is a full (final) phase. Provided the ship does not capsize and remains at a floating position from which cross-flooding can proceed, stage 0 need not be taken into account for the s_{factor} calculation as the first intermediate stage to be calculated is after 60 s. See cross-flooding/equalization explanatory note 5 below.



Stage 1: Cross-flooding of opposite room



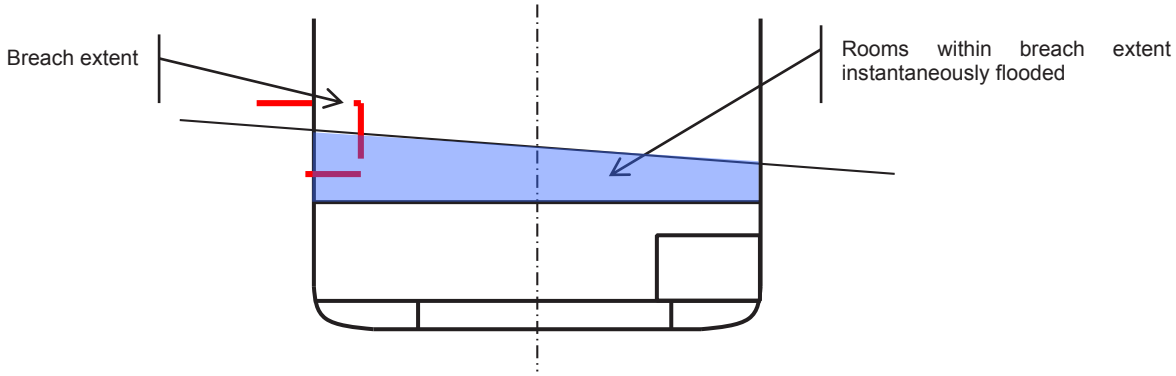
An intermediate phase



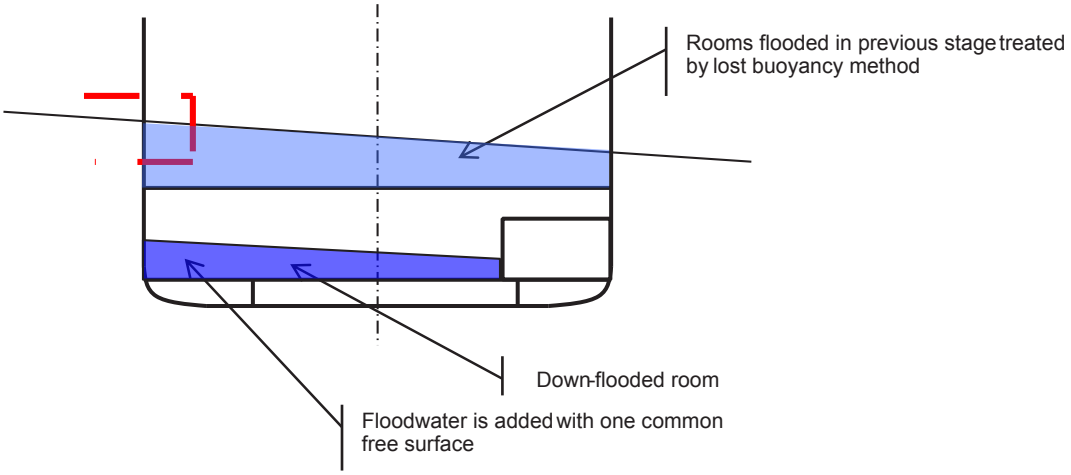
Full (final) phase of flooding stage 1

Example 2: Minor damage with down-flooding and cross-flooding

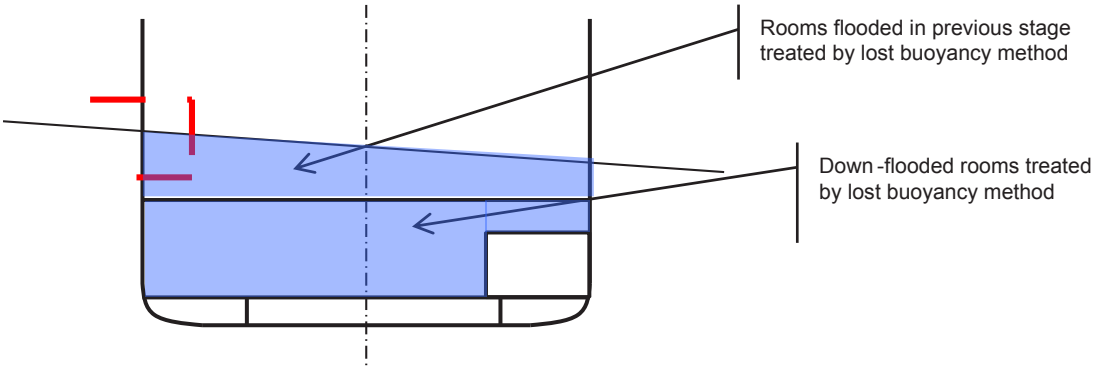
Stage 0: Unrestricted spaces in way of damage should be considered as flooded immediately (intermediate phases are not considered). The lost buoyancy method is applied as this is a full (final) phase. Provided the ship does not capsize and remains at a floating position from which cross-flooding can proceed, stage 0 need not be taken into account for the s_{factor} calculation as the first intermediate stage to be calculated is after 60 s. See cross-flooding/equalization explanatory note 5 below.



STAGE 1: DOWN-FLOODING THROUGH NON-WATERTIGHT DECK

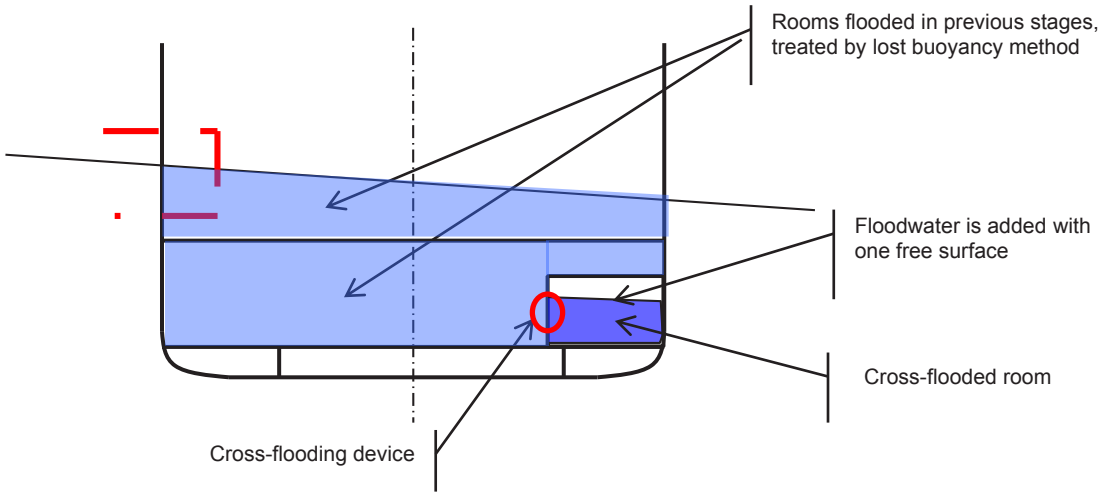


An intermediate phase

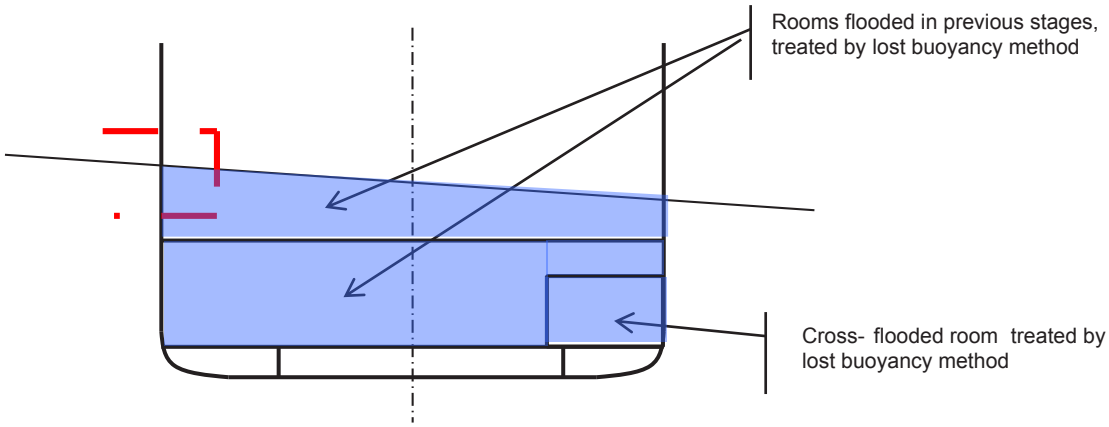


Final (full) phase of stage 1

STAGE 2: CROSS-FLOODING



An intermediate phase



Full (final) phase of stage 2

Cross-flooding/equalization

4 In general, cross-flooding is flooding of an undamaged space of the ship to reduce the heel in the final equilibrium condition.

5 The cross-flooding time should be calculated in accordance with the *Revised recommendation on a standard method for evaluating cross-flooding arrangements* (resolution MSC.362(92)). If complete fluid equalization occurs in 60 s or less, it should be treated as instantaneous and no further calculations need to be carried out. Additionally, in cases where s_{final} = 1 is achieved in 60 s or less, but equalization is not complete, instantaneous flooding may also be assumed if s_{final} will not become reduced. In any cases where complete fluid equalization exceeds 60 s, the value of $s_{intermediate}$ after 60 s is the first intermediate stage to be considered. Only self-acting open cross-flooding arrangements without valves should be considered effective for instantaneous flooding cases.

6 Provided that the ship has a *GZ* greater than 0 and remains in a position from which cross-flooding can proceed, stage 0 need not be taken into account for the s_{factor} calculation as the first intermediate stage to be calculated is after 60 s.

7 Only cross-flooding devices which are sufficiently submerged below the external waterline at stage 0 are to be used in the calculation for cross-flooding according to resolution MSC.362(92).

8 If complete fluid equalization can be finalized in 10 min or less, the assessment of survivability is carried out using the formula in regulation 7-2.1.1 (i.e. as the smallest value of $s_{intermediate}$ or $s_{final} \cdot s_{mom}$)

9 In case the equalization time is longer than 10 min, s_{final} is calculated for the floating position achieved after 10 min of equalization. This floating position is computed by calculating the amount of flood water according to resolution MSC.362(92) using interpolation, where the equalization time is set to 10 min, i.e. the interpolation of the flood water volume is made between the case before equalization (T=0) and the total calculated equalization time. For damage cases involving different cross-flooding devices serving different spaces, when the interpolation between the case before equalization ($T=0$) and the total calculated equalization time is needed for flood water volume calculation after 60 s or 10 min, the total equalization time is to be calculated separately for each cross-flooding device.

10 In any cases where complete fluid equalization exceeds 10 min, the value of s_{final} used in the formula in regulation 7-2.1.1 should be the minimum of s_{final} at 10 min or at final equalization.

11 The factor $s_{intermediate,i}$ may be used for cross-flooding stages if they are intermediate stages which are followed by other subsequent flooding stages (e.g. the flooding stages of non-watertight compartments).

Alternatives

12 As an alternative to the procedure described above in the explanatory notes for regulation 7-2.2, direct calculation using computational fluid dynamics (CFD), time-domain flooding simulations or model testing may be used to analyse intermediate stages of flooding and determine the time for equalization.

Regulation 7-2.3

1 The formulation of $s_{final,i}$ is based on target values for *GZ* and *Range* to achieve s = 1. These values are defined as TGZ_{max} and *TRange*.

2 If ro-ro spaces are damaged there might be the possibility of water accumulation on these deck spaces. To account for this, in any damage case where the ro-ro space is damaged the higher values for TGZ_{max} and *TRange* are to be applied for the calculation of s_i.

Regulation 7-2.4.1.2

The parameter *A* (projected lateral area) used in this paragraph does not refer to the attained subdivision index.

Regulation 7-2.5.2.1

Unprotected openings

1 The flooding angle will be limited by immersion of such an opening. It is not necessary to define a criterion for non-immersion of unprotected openings at equilibrium, because if it is immersed, the range of positive *GZ* limited to flooding angle will be zero so "*s*" will be equal to zero.

2 An unprotected opening connects two rooms or one room and the outside. An unprotected opening will not be taken into account if the two connected rooms are flooded or none of these rooms are flooded. If the opening is connected to the outside, it will not be taken into account if the connected compartment is flooded. An unprotected opening does not need to be taken into account if it connects a flooded room or the outside to an undamaged room, if this room will be considered as flooded in a subsequent stage.

Openings fitted with a weathertight means of closing ("weathertight openings")

3 The survival "*s*" factor will be "0" if any such point is submerged at a stage which is considered as "final". Such points may be submerged during a stage or phase which is considered as "intermediate", or within the range beyond equilibrium.

4 If an opening fitted with a weathertight means of closure is submerged at equilibrium during a stage considered as intermediate, it should be demonstrated that this weathertight means of closure can sustain the corresponding head of water and that the leakage rate is negligible.

5 These points are also defined as connecting two rooms or one room and the outside, and the same principle as for unprotected openings is applied to take them into account or not. If several stages have to be considered as "final", a "weathertight opening" does not need to be taken into account if it connects a flooded room or the outside to an undamaged room if this room will be considered as flooded in a successive "final" stage.

Regulation 7-2.5.2.2

1 Partial immersion of the bulkhead deck may be accepted at final equilibrium. This provision is intended to ensure that evacuation along the bulkhead deck to the vertical escapes will not be impeded by water on that deck. A "horizontal evacuation route" in the context of this regulation means a route on the bulkhead deck connecting spaces located on and under this deck with the vertical escapes from the bulkhead deck required for compliance with SOLAS chapter II-2.

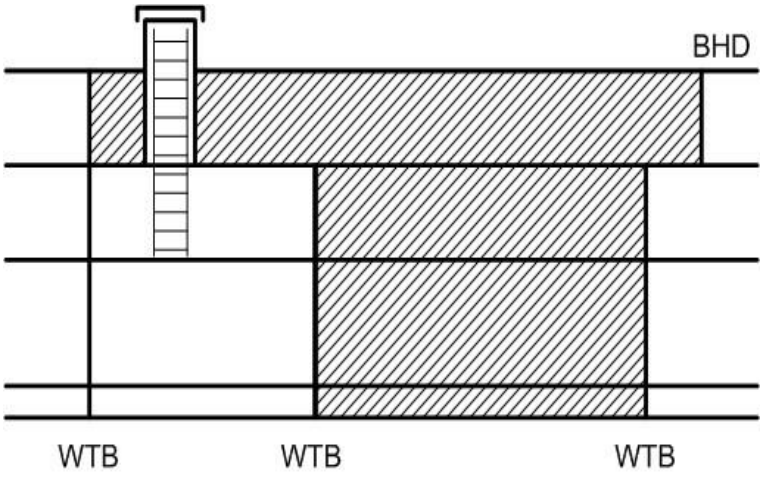
2 Horizontal evacuation routes on the bulkhead deck include only escape routes (designated as category 2 stairway spaces according to SOLAS regulation II-2/9.2.2.3 or as category 4 stairway spaces according to SOLAS regulation II-2/9.2.2.4 for passenger ships carrying not more than 36 passengers) used for the evacuation of undamaged spaces. Horizontal evacuation routes do not include corridors (designated as category 3 corridor spaces according to SOLAS regulation II-2/9.2.2.3 or as category 2 corridor spaces according to SOLAS regulation II-2/9.2.2.4 for passenger ships carrying not more than 36 passengers) or escape routes within a damaged zone. No part of a horizontal evacuation route serving undamaged spaces should be immersed.

3 s_i = 0 where it is not possible to access a stair leading up to the embarkation deck from an undamaged space as a result of flooding to the "stairway" or "horizontal stairway" on the bulkhead deck.

Regulation 7-2.5.3.1

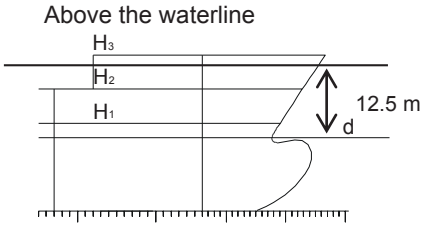
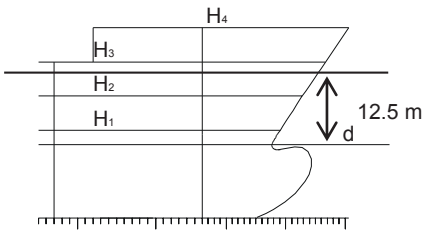
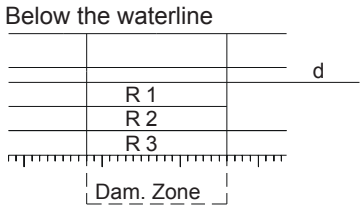
1 The purpose of this paragraph is to provide an incentive to ensure that evacuation through a vertical escape will not be obstructed by water from above. The paragraph is intended for smaller emergency escapes, typically hatches, where fitting of a watertight or weathertight means of closure would otherwise exclude them from being considered as flooding points.

2 Since the probabilistic regulations do not require that the watertight bulkheads be carried continuously up to the bulkhead deck, care should be taken to ensure that evacuation from intact spaces through flooded spaces below the bulkhead deck will remain possible, for instance by means of a watertight trunk.



Regulation 7-2.6

The sketches in the figure illustrate the connection between position of watertight decks in the reserve buoyancy area and the use of factor *v* for damages below these decks.

	In this example, there are 3 horizontal subdivisions to be taken into account as the vertical extent of damage. The example shows the maximum possible vertical extent of damage *d* + 12.5 m is positioned between H_2 and H_3. H_1 with factor v_1, H_2 with factor $v_2 > v_1$ but $v_2 < 1$ and H_3 with factor $v_3 = 1$.
	The factors v_1 and v_2 are the same as above. The reserve buoyancy above H_3 should be taken undamaged in all damage cases.
	The combination of damages into the rooms R1, R2 and R3 positioned below the initial water line should be chosen so that the damage with the lowest *s*-factor is taken into account. That often results in the definition of alternative damages to be calculated and compared. If the deck taken as lower limit of damage is not watertight, down flooding should be considered.

Regulation 7-2.6.1

The parameters x_1 and x_2 are the same as parameters *x1* and *x2* used in regulation 7-1.

REGULATION 7-3 – PERMEABILITY

Regulation 7-3.2

1 The following additional cargo permeabilities may be used:

Spaces	Permeability at draught d_s	Permeability at draught d_p	Permeability at draught d_l
Timber cargo in holds	0.35	0.7	0.95
Wood chip cargo	0.6	0.7	0.95

2 Reference is made to MSC/Circ.998 (*IACS unified interpretation regarding timber deck cargo in the context of damage stability requirements*) regarding timber deck cargo.

Regulation 7-3.3

1 Concerning the use of other figures for permeability "if substantiated by calculations", such permeabilities should reflect the general conditions of the ship throughout its service life rather than specific loading conditions.

2 This paragraph allows for the recalculation of permeabilities. This should only be considered in cases where it is evident that there is a major discrepancy between the values shown in the regulation and the real values. It is not designed for improving the attained value of a deficient ship of regular type by the modification of chosen spaces in the ship that are known to provide significantly onerous results. All proposals should be considered on a case-by-case basis by the Administration and should be justified with adequate calculations and arguments.

REGULATION 8 – SPECIAL REQUIREMENTS CONCERNING PASSENGER SHIP STABILITY

Regulation 8.1

This regulation is intended to ensure a sufficient safety level if a large compartment is located aft of the collision bulkhead.

REGULATION 8-1 – SYSTEM CAPABILITIES AND OPERATIONAL INFORMATION AFTER A FLOODING CASUALTY ON PASSENGER SHIPS

Regulation 8-1.2

1 In the context of this regulation, "compartment" has the same meaning as defined under regulation 7-1 of these Explanatory Notes (i.e. an onboard space within watertight boundaries).

2 The purpose of the paragraph is to prevent any flooding of limited extent from immobilizing the ship. This principle should be applied regardless of how the flooding might occur. Only flooding below the bulkhead deck need be considered.

REGULATION 9 – DOUBLE BOTTOMS IN PASSENGER SHIPS AND CARGO SHIPS OTHER THAN TANKERS

Regulation 9.1

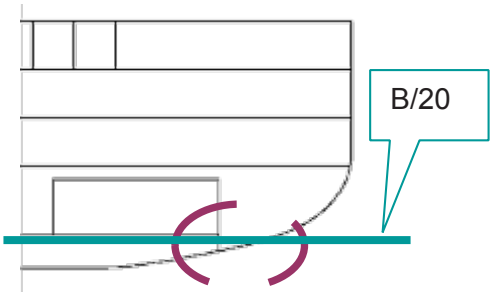
1 This regulation is intended to minimize the impact of flooding from a minor grounding. Special attention should be paid to the vulnerable area at the turn of the bilge. When justifying a deviation from fitting an inner bottom an assessment of the consequences of allowing a more extensive flooding than reflected in the regulation should be provided.

2 The determination regarding the requirement to fit a double bottom "as far as this is practicable and compatible with the design and proper working of the ship" is made, or should be accepted by, the Administration or a recognized organization acting on its behalf.

3 Compliance with the damage stability requirement in regulation 9.8 should not be considered as an equivalent optional requirement to the fitting of a dimensionally compliant double bottom. This is because a flooded watertight compartment, such as an engine-room, that complies with the damage stability requirement in regulation 9.8 is not equivalent to a flooded double bottom below that compartment. Compliance with the damage stability requirement in regulation 9.8 is intended to provide a minimum level of safety in cases when the fitting of a double bottom is not practicable or compatible with the design and proper working of the ship.

Regulation 9.2

1 Except as provided in regulations 9.3 and 9.4, parts of the double bottom not extended for the full width of the ship as required by regulation 9.2 should be considered an unusual arrangement for the purpose of this regulation and should be handled in accordance with regulation 9.7. An example is provided below.



2 If an inner bottom is located higher than the partial subdivision draught d_p, this should be considered an unusual arrangement and is to be handled in accordance with regulation 9.7.

Regulations 9.3.2.2, 9.6 and 9.7

For cargo ships of less than 80 m in length (L), the alternative arrangements to provide a level of safety satisfactory to the Administration should be limited to compartments not having a double bottom, having an unusual bottom arrangement, or having an "other well" extending below the required double bottom height that is greater than the $h/2$ or 500 mm limit indicated in regulation 9.3.2.1. In these cases compliance with the bottom damage standard

in regulation 9.8 should be demonstrated assuming that the damage will only occur between the transverse watertight bulkheads in compartments not having a double bottom, having an unusual bottom arrangement, or having an "other well" extending below the required double bottom height that is greater than the *h*/2 or 500 mm limit indicated in regulation 9.3.2.1.

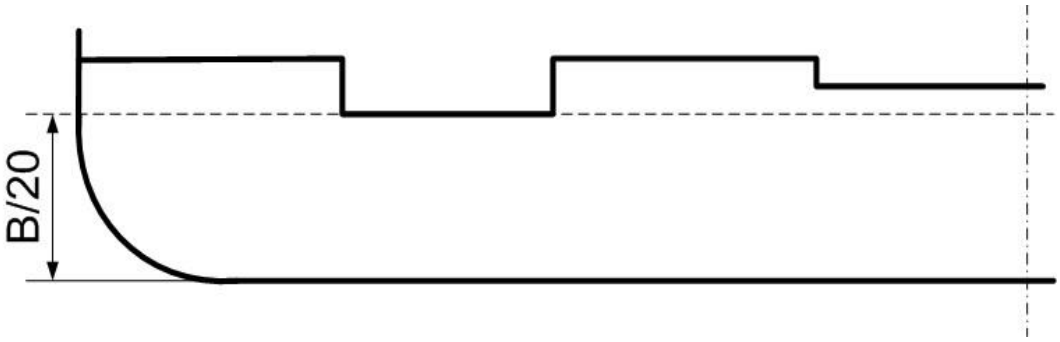
Regulation 9.6

1 Any part of a passenger ship or a cargo ship of 80 m in length (*L*) and upwards where a double bottom is omitted in accordance with regulation 9.1, 9.4 or 9.5 shall be capable of withstanding bottom damages, as specified in regulation 9.8. The intent of this provision is to specify the circumstances under which the Administration should require calculations, which damage extents to assume and what survival criteria to apply when double bottoms are not fitted.

2 The definition of "watertight" in regulation 2.17 implies that the strength of inner bottoms and other boundaries assumed to be watertight should be verified if they are to be considered effective in this context.

Regulation 9.7

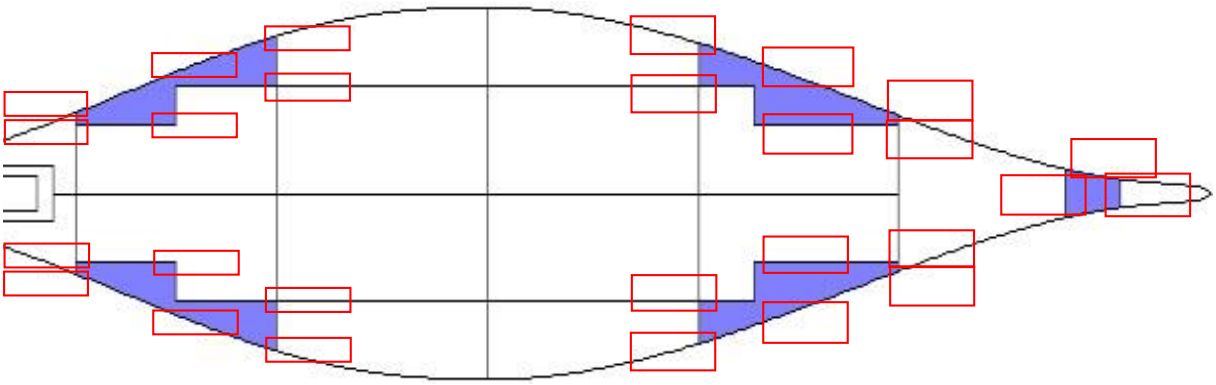
The reference to a "plane" in regulation 9.2 does not imply that the surface of the inner bottom may not be stepped in the vertical direction. Minor steps and recesses need not be considered unusual arrangements for the purpose of this paragraph as long as no part of the inner bottom is located below the reference plane. Discontinuities in way of wing tanks are covered by regulation 9.4.



Regulation 9.8

1 For ships to which the probabilistic damage stability requirements of part B-1 apply, the term "all service conditions" used in this paragraph means the three loading conditions with all trims used to calculate the attained subdivision index *A*. For ships not subject to the probabilistic damage stability requirements in part B-1, such as cargo ships that comply with the subdivision and damage stability requirements of other instruments as allowed by regulation II-1/4.2.1.2 and cargo ships of less than 80 m in length (*L*), "all service conditions" means that the limit curves or tables required by regulation 5-1.2.1 should include values calculated for the same draught and trim range(s) as for the other applicable stability requirements.

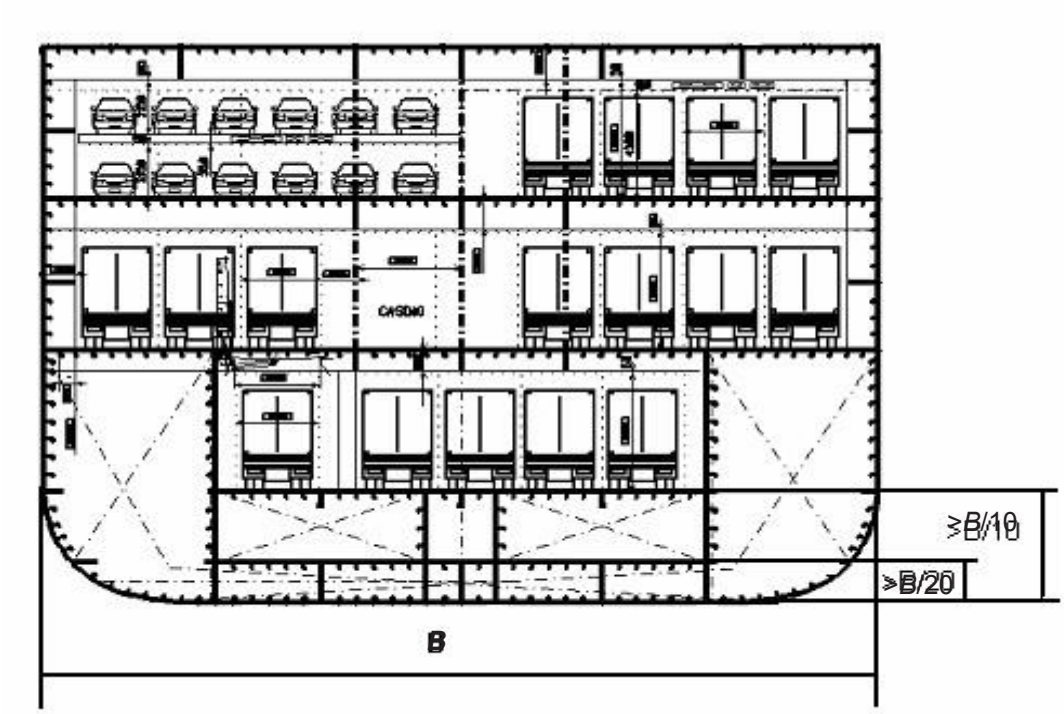
2 The damage extents specified in this paragraph should be applied to all parts of the ship where no double bottom is fitted, as permitted by regulations 9.1, 9.4 or 9.5, and include any adjacent spaces located within the extent of damage. Small wells in accordance with regulation 9.3.1 do not need to be considered damaged even if within the extent of the damage. Possible positions of the damages are shown in an example below (parts of the ship not fitted with a double bottom are shaded; the damages to be assumed are indicated by boxes).



Regulation 9.9

1 For the purpose of identifying "large lower holds", horizontal surfaces having a continuous deck area greater than approximately 30% in comparison with the waterplane area at subdivision draught should be taken to be located anywhere in the affected area of the ship. For the alternative bottom damage calculation, a vertical extent of *B*/10 or 3 m, whichever is less, should be assumed.

2 The increased minimum double bottom height of not more than *B*/10 or 3 m, whichever is less, for passenger ships with large lower holds, is applicable to holds in direct contact with the double bottom. Typical arrangements of ro-ro passenger ships may include a large lower hold with additional tanks between the double bottom and the lower hold, as shown in the figure below. In such cases, the vertical position of the double bottom required to be *B*/10 or 3 m, whichever is less, should be applied to the lower hold deck, maintaining the required double bottom height of *B*/20 or 2 m, whichever is less (but not less than 760 mm). The figure below shows a typical arrangement of a modern ro-ro passenger ferry.



REGULATION 10 – CONSTRUCTION OF WATERTIGHT BULKHEADS

Regulation 10.1

For the treatment of steps in the bulkhead deck of passenger ships see explanatory notes for regulation 13. For the treatment of steps in the freeboard deck of cargo ships see explanatory notes for regulation 13-1.

REGULATION 12 – PEAK AND MACHINERY SPACE BULKHEADS, SHAFT TUNNELS, ETC.

Regulation 12.6.1

For cargo ships, the following figures show examples of suitable butterfly valve arrangements:

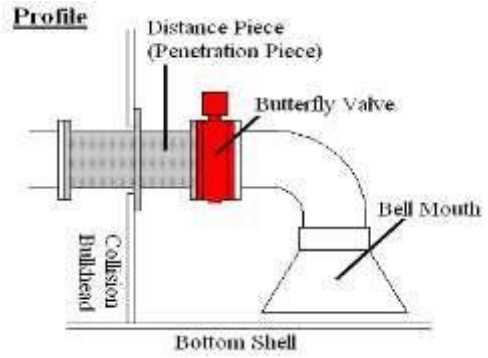


Figure 1

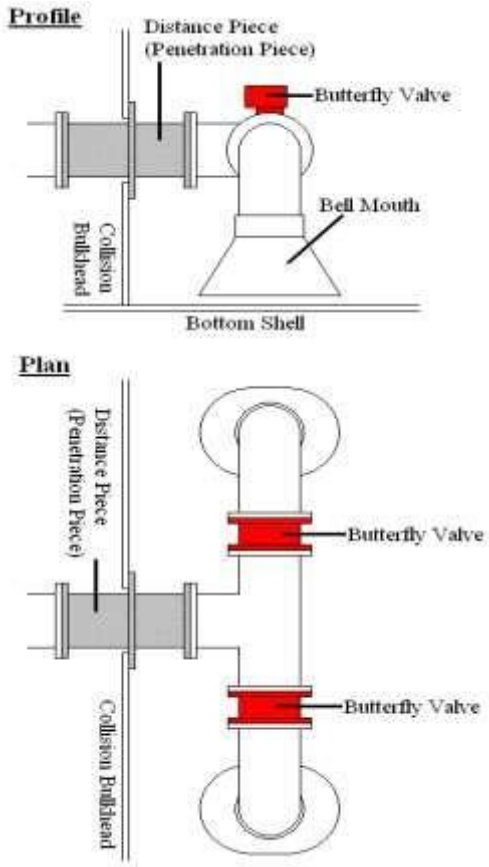


Figure 2

As butterfly valves must be capable of being remotely operated the following shall apply:

.1 the actuator shall be of a double acting type;

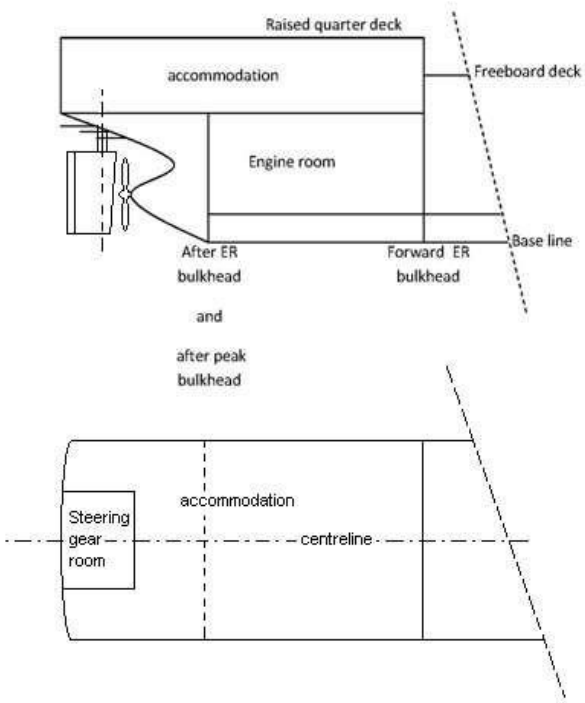
.2 when subject to loss of power, the actuator shall remain in its current position; and

.3 when subject to loss of power, the valve shall be able to be manually operated.

Regulation 12.10

1 In cargo ships the after engine-room bulkhead can be regarded as the afterpeak bulkhead provided that the after peak adjoins the engine-room.

2 In cargo ships with a raised quarter deck, it may be impracticable to extend the afterpeak bulkhead to the freeboard deck as the freeboard deck does not extend to the aft perpendicular. Provided that the afterpeak bulkhead extends above the deepest load line, and that all rudderstock bearings are housed in a watertight compartment without open connection to spaces located in front of the afterpeak bulkhead, termination of the afterpeak bulkhead on a watertight deck lower than the freeboard deck can be accepted by the Administration.



Regulation 12.11

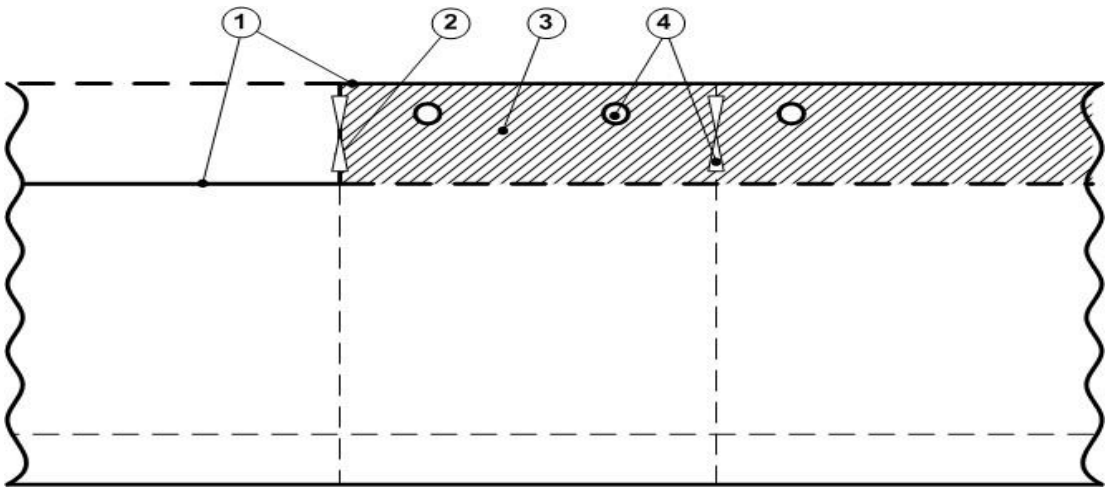
In cargo ships a stern tube enclosed in a watertight space of moderate volume, such as an afterpeak tank, where the inboard end of the stern tube extends through the afterpeak/engine-room watertight bulkhead into the engine-room, is considered to be an acceptable solution satisfying the requirement of this regulation, provided the inboard end of the stern tube is effectively sealed at the afterpeak/engine-room bulkhead by means of an approved watertight/oiltight gland system.

REGULATION 13 – OPENINGS IN WATERTIGHT BULKHEADS BELOW THE BULKHEAD DECK IN PASSENGER SHIPS

General – Steps in the bulkhead deck

1 If the transverse watertight bulkheads in a region of the ship are carried to a higher deck which forms a vertical step in the bulkhead deck, openings located in the bulkhead at the step may be considered as being located above the bulkhead deck. Such openings should then comply with regulation 17 and should be taken into account when applying regulation 7-2.

2 All openings in the shell plating below the upper deck throughout that region of the ship should be treated as being below the bulkhead deck and the provisions of regulation 15 should be applied. See figure below.



1 Bulkhead deck 2 Considered as located above the bulkhead deck
3 Ship's side 4 Considered as located below the bulkhead deck

Regulation 13.2.3

1 For closed piping systems compliance with this regulation is achieved if approved pipe penetrations are fitted at the crossing of watertight bulkheads to ensure that heat-sensitive pipes outside the space affected by the fire remain intact, so that any flooding of the fire affected space does not cause progressive flooding through the piping or pipe penetration.

1.1 For open piping systems compliance with this regulation is achieved if approved pipe penetrations are fitted at the crossing of watertight bulkheads as are required for closed piping systems, and additionally each pipe connection to a watertight compartment is fitted with an isolation or non-return valve, as appropriate, to prevent progressive flooding through the piping system after a fire. As an alternative to fitting an isolation or non-return valve, pipes may be routed above the damaged waterline in such a way that progressive flooding is prevented, taking into account the dynamic movements of the ship in a damaged condition.

1.2 However, progressive flooding may be taken into account in accordance with SOLAS regulation 7-2.5.4 instead.

2 For the purpose of this explanatory note the following definitions apply:

A *closed piping system* is a piping system without openings in multiple watertight compartments.

An *open piping system* is a piping system with openings in multiple watertight compartments.

3 Materials used in systems which penetrate watertight bulkheads should be of sufficient strength after exposure to heat or be considered as part of an open piping system.

3.1 Closing devices using intumescent material (swelling when exposed to heat) for open piping systems should not be considered equivalent to the fitting of a valve, since the fire might be located too far from the device to create a watertight seal.

4 Approval of pipe penetrations fitted to ensure the watertight integrity of a bulkhead or deck where heat-sensitive materials are used should include a prototype test of watertightness after having undergone the standard fire test appropriate for the location in which the penetrations are to be installed[2].

4.1 The fire tested pipe penetration should then be tested to a test pressure of not less than 1.5 times the design pressure as defined in regulation 2.18. The pressure should be applied to the same side of the division as the fire test.

4.2 The fire tested pipe penetration should be tested for a period of at least 30 min under hydraulic pressure equal to the test pressure, but minimum 1.0 bar. There should be no leakage during this test.

4.3 The fire tested pipe penetration should continue to be tested for a further 30 min with the test pressure. The quantity of water leakage is not to exceed a total of 1 litre.

4.4 The prototype test should be considered valid only for the pipe typology (e.g. thermoplastic and multilayer), pressure classes, the maximum/minimum dimensions tested, and the type and fire rating of the division tested.

5 The pressure test need not be carried out on the hot penetration arrangement. Ample time may be given to prepare for the pressure test, i.e. dismantling the fire testing equipment and rigging the pressure test equipment.

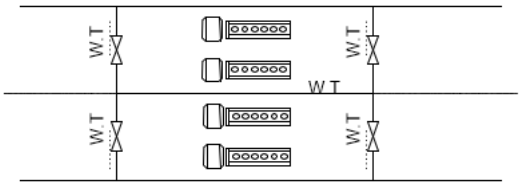
5.1 The pressure test should be carried out with the pipe section used in the fire test still in place.

5.2 Any pipe insulation fitted for the purpose of the fire test may be removed before the pressure test.

5.3 Prototype testing need not be carried out if the pipe penetration is made of steel or equivalent material having a thickness of 3 mm or greater and a length of not less than 900 mm (preferably 450 mm on each side of the division), and there are no openings. Such penetrations shall be suitably insulated by extension of the insulation at the same level of the division. See also regulation II-2/9.3.1 with respect to piping. However, the penetration must still comply with the watertight integrity requirement in regulation 2.17.

Regulation 13.4

In cases where main and auxiliary propulsion machinery spaces, including boilers serving the needs for propulsion, are divided by watertight longitudinal bulkheads in order to comply with redundancy requirements (e.g. according to regulation 8-1.2), one watertight door in each watertight bulkhead may be permitted, as shown in the figure below.



[2] Refer to the requirements for A-class division set out in part 3 of annex 1 to the 2010 FTP Code.

REGULATION 13-1 – OPENINGS IN WATERTIGHT BULKHEADS AND INTERNAL DECKS IN CARGO SHIPS

Regulation 13-1.1

1 If the transverse watertight bulkheads in a region of the ship are carried to a higher deck than in the remainder of the ship, openings located in the bulkhead at the step may be considered as being located above the freeboard deck.

2 All openings in the shell plating below the upper deck throughout that region of the ship should be treated as being below the freeboard deck, similar to the bulkhead deck for passenger ships (see relevant figure under regulation 13 above), and the provisions of regulation 15 should be applied.

REGULATION 15 – OPENINGS IN THE SHELL PLATING BELOW THE BULKHEAD DECK OF PASSENGER SHIPS AND THE FREEBOARD DECK OF CARGO SHIPS

General – Steps in the bulkhead deck and freeboard deck

For the treatment of steps in the bulkhead deck of passenger ships see explanatory notes for regulation 13. For the treatment of steps in the freeboard deck of cargo ships see explanatory notes for regulation 13-1.

REGULATION 15-1 – EXTERNAL OPENINGS IN CARGO SHIPS

Regulations 15-1.1 to 15-1.3 apply to cargo ships which are subject to the damage stability analysis required in part B-1 or other IMO instruments.

Regulation 15-1.1

With regard to air-pipe closing devices, they should be considered weathertight closing devices (not watertight). This is consistent with their treatment in regulation 7-2.5.2.1. However, in the context of regulation 15-1, "external openings" are not intended to include air-pipe openings.

REGULATION 16 – CONSTRUCTION AND INITIAL TESTS OF WATERTIGHT CLOSURES

General

These requirements are only to establish a general design standard for watertight closures. They are not intended to require any non-watertight hatches to be watertight, nor do they override the requirements of the International Convention on Load Lines.

Regulation 16.2

Large doors, hatches or ramps on passenger and cargo ships, of a design and size that would make pressure testing impracticable, may be exempted from regulation 16.2, provided it is demonstrated by calculations that the doors, hatches or ramps maintain watertightness at design pressure with a proper margin of resistance. Where such doors utilize gasket seals, a prototype pressure test to confirm that the compression of the gasket material is capable of accommodating any deflection, revealed by the structural analysis, should be carried out. After installation every such door, hatch or ramp should be tested by means of a hose test or equivalent.

Note: See explanatory notes for regulation 13 for additional information regarding the treatment of steps in the bulkhead deck of passenger ships. See explanatory notes for regulation 13-1 for additional information regarding the treatment of steps in the freeboard deck of cargo ships.

REGULATION 17 – INTERNAL WATERTIGHT INTEGRITY OF PASSENGER SHIPS ABOVE THE BULKHEAD DECK

General – Steps in the bulkhead deck

For the treatment of steps in the bulkhead deck of passenger ships see explanatory notes for regulation 13.

Regulation 17.1

1 Sliding watertight doors with a reduced pressure head that are located above the bulkhead deck and which are immersed in the final or during any intermediate stage of flooding should comply fully with the requirements of regulation 13. These types of sliding watertight doors tested with reduced pressure head must not be immersed at any stage of flooding by a head of water higher than the tested pressure head. See figure 1 below. These sliding watertight doors shall be kept closed during navigation in compliance with the requirements of regulation 22 and this should be clearly indicated in the damage control information required by regulation 19.

2 If watertight doors are located above the worst final and above the worst intermediate waterline in damage cases contributing to the attained subdivision index *A*, but within the area where the door becomes intermittently immersed (fully or partly) at angles of heel in the required range of positive stability beyond the equilibrium position, such doors are to be power-operated and remotely controlled sliding semi-watertight doors complying with the requirements of regulation 13, except that the scantlings and sealing requirements could be reduced to the maximum head of water caused by the waterline being intermittently immersed (see figure 1 below). These doors should be closed in case of damage and this should be clearly indicated in the damage control information required by regulation 19.

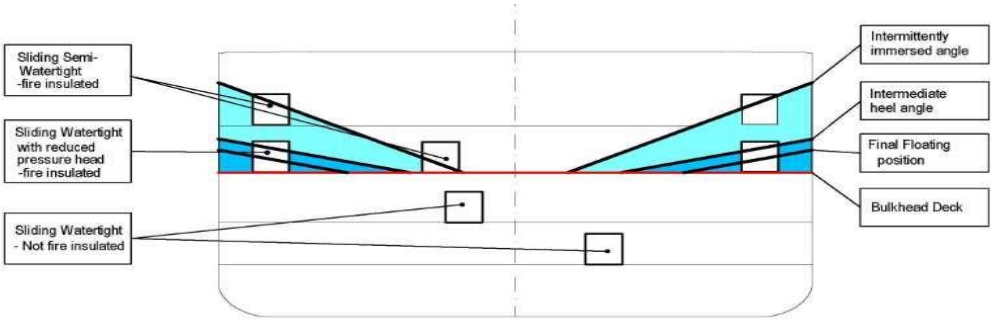


Figure 1

3 The use of watertight sliding doors above the bulkhead deck affects the escape provisions of regulation II-2/13. When such doors are used above the bulkhead deck, there should be at least two means of escape from each main vertical zone or similarly restricted space or group of spaces, at least one of which should be independent of watertight doors and at least one of which should give access to a stairway forming a vertical escape. Sliding watertight doors that will be used frequently by passengers must not create a tripping hazard.

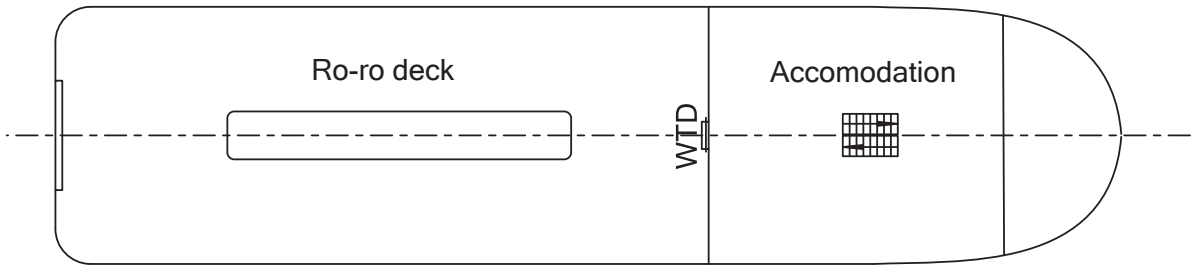
4 Doors fitted above the bulkhead deck which are required to meet both fire protection and watertight requirements should comply with the fire requirements in regulation II-2/9.4.1.1 and the watertight requirements in paragraphs 1 and 2 above. Notwithstanding the ultimate sentence of regulation II-2/9.4.1.1.2, watertight doors fitted above the bulkhead deck should be insulated to the standard required by table 9.1 and regulation II-2/9.2.2.1.1.1 or by table 9.3 and regulation II-2/9.2.2.1.1.2 as appropriate. The door must be capable of operation using both the remote fire door control circuit and the remote watertight door control circuit. If two doors are fitted, they must be capable of independent operation. The operation of either door separately must not preclude closing of the other door. Both doors must be capable of being operated from either side of the bulkhead.

Regulation 17.3

This paragraph is intended to ensure that progressive flooding through air pipes of volumes located above a horizontal division in the superstructure, which is considered as a watertight boundary when applying regulation 7-2.6.1.1, will be taken into consideration if a side or bottom damage would cause flooding via tanks or spaces located below the waterline.

REGULATION 17-1 – INTEGRITY OF THE HULL AND SUPERSTRUCTURE, DAMAGE PREVENTION AND CONTROL ON RO-RO PASSENGER SHIPS

Regulations 17-1.1.1 and 17-1.1.3 apply only to direct accesses from a ro-ro space to spaces located below the bulkhead deck. The operation of doors in bulkheads separating a ro-ro space and other spaces should be limited to compliance with regulation 23.3.



REGULATION 22 – PREVENTION AND CONTROL OF WATER INGRESS, ETC.

The word "port" used in this regulation includes all berths and sheltered locations where loading and/or discharging may take place.

APPENDIX

GUIDELINES FOR THE PREPARATION OF SUBDIVISION AND DAMAGE STABILITY CALCULATIONS

GENERAL

1.1 Purpose of the Guidelines

1.1.1 These Guidelines serve the purpose of simplifying the process of the damage stability analysis, as experience has shown that a systematic and complete presentation of the particulars results in considerable saving of time during the approval process.

1.1.2 A damage stability analysis serves the purpose of providing proof of the damage stability standard required for the respective ship type. At present, two different calculation methods, the deterministic concept and the probabilistic concept are applied.

1.2 Scope of analysis and documentation on board

1.2.1 The scope of subdivision and damage stability analysis is determined by the required damage stability standard and aims at providing the ship's master with clear intact stability requirements. In general, this is achieved by determining *KG*-respective *GM*-limit curves, containing the admissible stability values for the draught range to be covered.

1.2.2 Within the scope of the analysis thus defined, all potential or necessary damage conditions will be determined, taking into account the damage stability criteria, in order to obtain the required damage stability standard. Depending on the type and size of ship, this may involve a considerable amount of analyses.

1.2.3 Referring to SOLAS chapter II-1, regulation 19, the necessity to provide the crew with the relevant information regarding the subdivision of the ship is expressed, therefore plans should be provided and permanently exhibited for the guidance of the officer in charge. These plans should clearly show for each deck and hold the boundaries of the watertight compartments, the openings therein with means of closure and position of any controls thereof, and the arrangements for the correction of any list due to flooding. In addition, Damage Control Booklets containing the aforementioned information should be available.

DOCUMENTS FOR SUBMISSION

2.1 Presentation of documents

The documentation should begin with the following details: principal dimensions, ship type, designation of intact conditions, designation of damage conditions and pertinent damaged compartments, *KG*-respective *GM*-limit curve.

2.2 General documents

For the checking of the input data, the following should be submitted:

.1 main dimensions;

.2 lines plan, plotted or numerical;

.3 hydrostatic data and cross curves of stability (including drawing of the buoyant hull);

.4 definition of sub-compartments with moulded volumes, centres of gravity and permeability;

.5 layout plan (watertight integrity plan) for the sub-compartments with all internal and external opening points including their connected sub-compartments, and particulars used in measuring the spaces, such as general arrangement plan and tank plan. The subdivision limits, longitudinal, transverse and vertical, should be included;

.6 light service condition;

.7 load line draught;

.8 coordinates of opening points with their level of tightness (e.g. weathertight, unprotected);

.9 watertight door location with pressure calculation;

.10 side contour and wind profile;

.11 cross and down flooding devices and the calculations thereof according to resolution MSC.362(92) with information about diameter, valves, pipe lengths and coordinates of inlet/outlet;

.12 pipes in damaged area when the destruction of these pipes results in progressive flooding; and

.13 damage extensions and definition of damage cases.

2.3 Special documents

The following documentation of results should be submitted.

2.3.1 Documentation

2.3.1.1 Initial data:

.1 subdivision length L_s;

.2 initial draughts and the corresponding *GM*-values;

.3 required subdivision index *R*; and

.4 attained subdivision index *A* with a summary table for all contributions for all damaged zones.

2.3.1.2 Results for each damage case which contributes to the index *A*:

.1 draught, trim, heel, *GM* in damaged condition;

.2 dimension of the damage with probabilistic values *p*, *v* and *r*;

.3 righting lever curve (including GZ_{max} and range) with factor of survivability *s*;

.4 critical weathertight and unprotected openings with their angle of immersion; and

.5 details of sub-compartments with amount of in-flooded water/lost buoyancy with their centres of gravity.

2.3.1.3 In addition to the requirements in paragraph 2.3.1.2, particulars of non-contributing damages (s_i = 0 and p_i > 0.00) should also be submitted for passenger ships and ro-ro ships fitted with long lower holds including full details of the calculated factors.

2.3.2 Special consideration

For intermediate conditions, as stages before cross-flooding or before progressive flooding, an appropriate scope of the documentation covering the aforementioned items is needed in addition.

RESOLUTION MSC.474(102)
(adopted on 11 November 2020)

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

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO article VIII(b) of the International Convention for the Safety of Life at Sea, 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 102nd 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

CHAPTER II-1
CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Part A
General

Regulation 1 – Application

1 The existing paragraph 1.3 is replaced by 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 ships:

.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.

.3 the expression *all ships* means ships constructed before, on or after 1 January 2009;

.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 Regulation 3-8 is replaced by the following:

"1 Paragraphs 4 to 6 of this regulation apply to ships constructed on or after 1 January 2007.

2 Paragraphs 7 and 8 of this regulation only apply to ships:

.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 is at a similar stage of construction on or after 1 July 2024; or

.3 the delivery of which is on or after 1 January 2027.

3 This regulation does not apply to towing arrangements provided in accordance with regulation 3-4.

4 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.

5 Arrangements, equipment and fittings provided in accordance with paragraph 4 above shall meet the appropriate requirements of the Administration or an organization recognized by the Administration under regulation I/6.*

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* 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 1 January 2024 and the *Guidance on shipboard towing and mooring equipment* (MSC.1/Circ.1175/Rev.1) for ships constructed on or after 1 January 2024.

6 Each fitting or item of equipment provided under this regulation shall be clearly marked with any limitations associated with its safe operation, taking into account the strength of 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.‡

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† 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.1619).

‡ Refer to towing and mooring arrangement plan in the *Guidelines on the design of mooring arrangements and the selection of appropriate mooring equipment and fittings for safe mooring (*MSC.1/Circ.1619).

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 a suitable condition for their intended purposes.§

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§ Refer to the *Guidelines for inspection and maintenance of mooring equipment including lines* (MSC.1/Circ.1620.

Part B-1
Stability

Regulation 7-2 – Calculation of the factor s_i

3 Paragraphs 5.2, 5.3 and 5.5 are replaced by the following:

"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;

.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 during navigation in accordance with regulations 22 to 24 need not be considered."

Part B-2
Subdivision, watertight and weathertight integrity

Regulation 12 – Peak and machinery space bulkheads, shaft tunnels, etc.

4 At the beginning of paragraph 6.1, the text "For ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024," is added; the word "Except" is replaced by "except"; and the reference to "paragraph 6.2" is replaced by "paragraph 6.3".

5 A new paragraph 6.2 is inserted after existing paragraph 6.1 and the subsequent paragraph is renumbered accordingly:

"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."

Regulation 13 – Openings in watertight bulkheads below the bulkhead deck in passenger ships

6 Regulation 13, including its title, is replaced by the following:

"Regulation 13 – Openings in watertight boundaries below the bulkhead deck in passenger ships

1 The number of openings in watertight 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 boundaries, arrangements shall be made to ensure the watertight integrity of the boundaries.

2.2 Valves not forming part of a piping system shall not be permitted in watertight boundaries.

2.3 Lead or other heat sensitive materials shall not be used in systems which penetrate watertight boundaries, where deterioration of such systems in the event of fire would impair the watertight integrity of the 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 8.1 and in regulation 14.

4 Subject to paragraph 9, 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 8.1 or regulation 14, shall be power-operated sliding doors complying with the requirements of paragraph 6.

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.

6.1 Each power-operated sliding watertight door:

.1 shall have a vertical or horizontal motion;

.2 shall, subject to paragraph 9, 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:

.1 special consideration shall be given to the strength of the door and its closing appliances in order to prevent leakages; and

.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) 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.

6.2 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.

6.3 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 15º. 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) 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) 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 6.3.1, 6.3.2 and 6.3.3, provision should be made as follows: Power systems for power-operated sliding watertight 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.

6.4 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.

6.5 As far as practicable, electrical equipment and components for watertight doors shall be situated above the bulkhead deck and outside hazardous areas and spaces.

6.6 The enclosures of electrical components necessarily situated below the bulkhead deck shall provide suitable protection against the ingress of water.*

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* 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.

6.7 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.

6.8 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 6.3. Loss of any such power supply should activate an audible and visual alarm at the central operating console(s) required by paragraph 7.1.

7.1 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) 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 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.

7.2 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.

7.4 It shall not be possible to remotely open any door from the central operating console.

8.1 If the Administration is satisfied that such doors are essential, watertight doors of satisfactory construction may be fitted in watertight bulkheads dividing cargo 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.

8.2 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.

9 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 larger than those specified in paragraph 6.1.2 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 6.1.4 regarding complete closure by hand-operated gear in 90 s.

10.1 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. Such trunkways or tunnels shall not extend through the first subdivision bulkhead abaft the collision bulkhead.

10.2 Where it is proposed to fit tunnels piercing watertight bulkheads, these shall receive the special consideration of the Administration.

10.3 Where trunkways in connection with refrigerated cargo and ventilation or forced draught trunks are carried through more than one watertight bulkhead, the means of closure at such openings shall be operated by power and be capable of being closed from a central position situated above the bulkhead deck."

Regulation 15 – Openings in the shell plating below the bulkhead deck of passenger ships and the freeboard deck of cargo ships

7 Paragraph 9 is replaced by the following:

"9 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 watertight and in no case be so fitted as to have their lowest point below the deepest subdivision draught."

8 The following new paragraph 10 is inserted after new paragraph 9 and existing paragraphs 10.1 and 10.2 are deleted.

"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."

Regulation 16 – Construction and initial tests of watertight closures

9 Paragraph 1.1 is replaced by the following:

"1.1 The design, materials and construction of all watertight closures such as doors, hatches, sidescuttles, gangway and cargo ports, valves and pipes referred to in these regulations shall be to the satisfaction of the Administration."

Regulation 17 – Internal watertight integrity of passenger ships above the bulkhead deck

10 Paragraph 1 is replaced by the following:

"1 For passenger ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, 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.*"

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* 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).

11 The following new paragraphs 2 and 3 are inserted after new paragraph 1 and the subsequent paragraphs are renumbered accordingly:

"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."

Regulation 17-1 – Integrity of the hull and superstructure, damage prevention and control on ro-ro passenger ships

12 Paragraphs 1.1 to 1.3 are replaced by the following:

"1.1 All access from the ro-ro deck that leads 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 of 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 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, 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, fitted with alarms and open/close indicators on the navigation bridge."

Part B-4
Stability management

Regulation 19 – Damage control information*

* Refer to the *Guidelines for damage control plans and information to the master* (MSC.1/Circ.1245), as amended by MSC.1/Circ.1570 and to the *Guidelines for verification of damage stability requirements for tankers* (MSC.1/Circ.1461).

13 The following new paragraph 5 is inserted after existing paragraph 4:

"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."

Regulation 21 – Periodical operation and inspection of watertight doors, etc., in passenger ships

14 Paragraph 1 is replaced by the following:

"1 Operational tests of watertight doors, sidescuttles, valves and closing mechanisms of scuppers 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."

Regulation 22 – Prevention and control of water ingress, etc.

15 In paragraphs 1 and 4, existing reference to "regulation 13.10" is replaced by the reference to "regulation 13.9".

16 Paragraphs 5 and 6 are replaced by the following:

"5 Watertight doors fitted in watertight bulkheads dividing cargo spaces on tween decks in accordance with regulation 13.8.1 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 logbook 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."

17 A new paragraph 7 is inserted after existing paragraph 6 and the subsequent paragraphs are renumbered accordingly:

"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."

18 In the renumbered paragraph 8.2, existing reference to "paragraph 7.1" is replaced by reference to "paragraph 8.1".

19 In the renumbered paragraph 8.4, existing text "paragraphs 7.1 to 7.3 " is replaced by "paragraphs 8.1 to 8.3".

20 In the renumbered paragraph 10, existing text "paragraphs 7.1 and 7.4" is replaced by "paragraphs 8.1 and 8.4".

21 In the renumbered paragraph 11, existing reference to "paragraph 7" is replaced by reference to "paragraph 8".

22 In the renumbered paragraph 12, existing reference to "paragraph 12" is replaced by reference to "paragraph 13" and the existing reference to "paragraph 13" is replaced by reference to "paragraph 14".

23 Renumbered paragraph 14.2 is replaced by:

".2 For any ship that has one or more sidescuttles so placed that the requirements of paragraph 14 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. In tropical zones as defined in the International Convention on Load Lines, 1966 in force, this limiting draught may be increased by 0.3 m."

24 Renumbered paragraph 17 is deleted.

Regulation 23 – Special requirements for ro-ro passenger ships

25 In paragraph 5, existing reference to "regulation 22.12" is replaced by reference to "regulation 22.13".

Part D
Electrical installations

Regulation 42 – Emergency source of electrical power in passenger ships

26 In paragraph 4.2, existing reference to "regulation 13.7.3.3" is replaced by reference to "regulation 13.6.3.3" and existing reference to "regulation 13.7.2" is replaced by reference to "regulation 13.6.2".

RESOLUTION MSC.475(102)
(adopted on 11 November 2020)

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 functions 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, 1974 ("the Convention"),

RECALLING FURTHER article VIII(b) and regulation II-1/2.28 of the Convention concerning the procedure for amending the IGF Code,

HAVING CONSIDERED, at its 102nd 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, 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

DRAFT AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR SHIPS USING GASES OR OTHER LOW-FLASHPOINT FUELS (IGF CODE)

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 replaced by the following:

"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, 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 The following new regulation 11.8 is added after existing regulation 11.7:

"**11.8 Regulation for fuel preparation room fire-extinguishing systems**

For ships constructed on or after 1 January 2024, 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 regulation 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 Regulation 16.3.3.5.1 is replaced by the following:

".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;"

RESOLUTION MSC.476(102)
(adopted on 11 November 2020)

AMENDMENTS TO THE INTERNATIONAL CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN BULK (IGC CODE)

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution MSC.5(48), by which it adopted the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk ("the IGC Code"), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation VII/11.1 of the Convention concerning the procedure for amending the IGC Code,

HAVING CONSIDERED, at its 102nd session, amendments to the IGC 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 IGC 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, 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

DRAFT AMENDMENTS TO THE INTERNATIONAL CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN BULK (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

1 Paragraph 6.5.3.5.1 is replaced by the following:

".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;"

RESOLUTION MSC.482(103)
(adopted on 13 May 2021)

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

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 103rd 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)(aa) 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 (SOLAS 1974)

CHAPTER II-1
CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Part B-4
Stability management

1 The following new regulation 25-1 is added after existing regulation 25 with the associated footnotes:

"Regulation 25-1

Water level detectors on multiple hold cargo ships other than bulk carriers and tankers

1 Multiple hold cargo ships other than bulk carriers and tankers constructed on or after 1 January 2024 shall be fitted with water level detectors* in each cargo hold intended for dry cargoes. Water level detectors are not required for cargo holds located entirely above the freeboard deck.

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* Refer to the *Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers* (resolution MSC.188(79)), as may be amended.

2 The water level detectors required by paragraph 1 shall:

.1 give audible and visual alarms at the navigation bridge, one when the water level above the bottom of the cargo hold reaches a height of not less than 0.3 m, and another at a height not less than 15% of the depth of the cargo hold but not more than 2 m; and

.2 be fitted at the aft end of the cargo holds. For cargo holds which are occasionally used for water ballast, an alarm overriding device may be installed. The visual alarms shall clearly discriminate between the two different water levels detected in each hold.

3 As an alternative to the water level detector at a height of not less than 0.3 m as per sub-paragraph 2.1, a bilge level sensor* serving the bilge pumping arrangements required by regulation 35-1 and installed in the cargo hold bilge wells or other suitable location is considered acceptable, subject to:

.1 the fitting of the bilge level sensor at a height of not less than 0.3 m at the aft end of the cargo hold; and

.2 the bilge level sensor giving audible and visual alarm at the navigation bridge which is clearly distinctive from the alarm given by the other water level detector fitted in the cargo hold.

* Refer to the *Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers* (resolution MSC.188(79)), as may be amended."

CHAPTER III
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Part B
Requirements for ships and life-saving appliances

Regulation 33 – Survival craft embarkation and launching arrangements

1 Paragraph 33.2 is replaced by the following:

"2 On cargo ships of 20,000 gross tonnage and upwards, davit-launched lifeboats shall be capable of being launched, utilizing painters where necessary, with the ship making headway at speeds up to 5 knots in calm water."

RESOLUTION MSC.484(103)
(adopted on 13 May 2021)

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, 1974 ("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 103rd 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)(aa) 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 9
FIXED FIRE DETECTION AND FIRE ALARM SYSTEMS

2 Engineering specifications

2.1 General requirements

1 The following new paragraph 2.1.8 is inserted after existing paragraph 2.1.7:

"2.1.8 In cargo ships and on passenger ship cabin balconies, where an individually identifiable system is fitted, notwithstanding the provisions in paragraph 2.1.6.1, isolator modules need not be provided at each fire detector if the system is arranged in such a way that the number and location of individually identifiable fire detectors rendered ineffective due to a fault would not be larger than an equivalent section in a section identifiable system, arranged in accordance with paragraph 2.4.1."

RESOLUTION MSC.485(103)
(adopted on 13 May 2021)

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.48(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, 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 103rd 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)(aa) 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 LIFE-SAVING APPLIANCES CODE (LSA CODE)

CHAPTER IV
SURVIVAL CRAFT

4.4 General requirements for lifeboats

1 Paragraph 4.4.1.3.2 is replaced by the following:

".2 except for free-fall lifeboats, be capable of being launched and towed when the ship is making headway at speeds up to 5 knots in calm water."

ANNEX 1

RESOLUTION MSC.491(104)
(adopted on 8 October 2021)

AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION ON LOAD LINES, 1966 (1988 LOAD LINES PROTOCOL)

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 VI of the Protocol of 1988 relating to the International Convention on Load Lines, 1966 ("1988 Load Lines Protocol") concerning amendment procedures,

HAVING CONSIDERED, at its 104th session, amendments to the 1988 Load Lines Protocol proposed and circulated in accordance with article VI(2)(a) thereof,

1 ADOPTS, in accordance with article VI(2)(d) of the 1988 Load Lines Protocol, amendments to the 1988 Load Lines Protocol, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VI(2)(f)(ii)(bb) of the 1988 Load Lines Protocol, 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 Parties to the 1988 Load Lines Protocol, or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of all the merchant fleets of all Parties, have notified their objections to the amendments;

3 INVITES the Parties concerned to note that, in accordance with article VI(2)(g)(ii) of the 1988 Load Lines Protocol, 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 VI(2)(e) of the 1988 Load Lines Protocol, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to the 1988 Load Lines Protocol;

5 REQUESTS ALSO the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Parties to the 1988 Load Lines Protocol.

ANNEX

AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION ON LOAD LINES, 1966 (1988 LOAD LINES PROTOCOL)

Annex B
ANNEXES TO THE CONVENTION AS MODIFIED BY THE PROTOCOL OF 1988 RELATING THERETO

Annex I
Regulations for determining load lines

Chapter II
Conditions of assignment of freeboard

Regulation 22
Scuppers, inlets and discharges

1 Regulation 22(1)(g) is replaced with the following:

"(g) Table 22.1 provides the acceptable arrangements of scuppers and discharges."

Chapter III
Freeboards

Regulation 27
Types of ships

2 Regulation 27(13)(a) is replaced with the following:

"(13) The condition of equilibrium after flooding shall be regarded as satisfactory provided:

(a) The final waterline after flooding, taking into account sinkage, heel and trim, is below the lower edge of any opening through which progressive downflooding may take place. Such openings shall include air pipes, ventilators (even if they comply with regulation 19(4)) and openings which are closed by means of weathertight doors (even if they comply with regulation 12) or hatch covers (even if they comply with regulation 16(1) through (5)), and may exclude those openings closed by means of manhole covers and flush scuttles (which comply with regulation 18), cargo hatch covers of the type described in regulation 27(2), remotely operated sliding watertight doors, hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea, hinged watertight doors that are permanently closed at sea, and sidescuttles of the non-opening type (which comply with regulation 23). In the case of doors separating a main machinery space from a steering gear compartment, watertight doors may be of a hinged, quick-acting type kept closed at sea whilst not in use, provided also that the lower sill of such doors is above the summer load waterline."

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ANNEX 2

RESOLUTION MSC.492(104)
(adopted on 8 October 2021)

AMENDMENTS TO THE INTERNATIONAL CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN BULK (IGC CODE)

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution MSC.5(48), by which it adopted the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk ("the IGC Code"), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation VII/11.1 of the Convention concerning the procedure for amending the IGC Code,

HAVING CONSIDERED, at its 104th session, amendments to the IGC 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 IGC 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 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 note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2024 upon its acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purpose 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 CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN BULK (IGC CODE)

CHAPTER 2
SHIP SURVIVAL CAPABILITY AND LOCATION OF CARGO TANKS

2.7 Survival requirements

1 The existing text of paragraph 2.7.1.1 is replaced with the following:

2.7.1 In any stage of flooding:

".1 the waterline, taking into account sinkage, heel and trim, shall be below the lower edge of any opening through which progressive flooding or downflooding may take place. Such openings shall include air pipes and openings that are closed by means of weathertight doors or hatch covers and may exclude those openings closed by means of watertight manhole covers and watertight flush scuttles, small watertight cargo tank hatch covers that maintain the high integrity of the deck, remotely operated sliding watertight doors, hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea, hinged watertight doors that are permanently closed at sea, and sidescuttles of the non-opening type;"

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ANNEX 3

RESOLUTION MSC.496(105)
(adopted on 28 April 2022)

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

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 105th 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 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

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

CHAPTER II-1
CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Part D
Electrical installations

Regulation 42 – Emergency source of electrical power in passenger ships

1 Paragraph 2.2.2.3 is replaced by the following:

".3 the MF/HF radio installation required by regulations IV/11.1.1 and IV/11.1.2."

Regulation 43 – Emergency source of electrical power in cargo ships

2 Paragraph 2.3.2.3 is replaced by the following:

".3 the MF/HF radio installation required by regulations IV/11.1.1 and IV/11.1.2."

CHAPTER III
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Part B
Requirements for ships and life-saving appliances

Regulation 6 – Communications

3 Paragraphs 1, 2, 2.1, 2.1.1, 2.1.2 and 2.2 are replaced by the following:

"1 [Reserved*]

2 [Reserved*]

* The provisions related to two-way VHF radiotelephone apparatus and search and rescue locating devices have been relocated under chapter IV (refer to resolution MSC.496(105)). Paragraphs 1 and 2 were intentionally left blank to avoid renumbering of existing regulations."

CHAPTER IV
RADIOCOMMUNICATIONS

4 The text of chapter IV is replaced by the following:

"Part A
General

Regulation 1 – Application

1 Unless expressly provided otherwise, this chapter applies to all ships to which the present regulations apply and to cargo ships of 300 gross tonnage and upwards.

2 This chapter does not apply to ships to which the present regulations would otherwise apply while such ships are being navigated within the Great Lakes of North America and their connecting and tributary waters as far east as the lower exit of the St Lambert Lock at Montreal in the Province of Quebec, Canada.[1]

3 No provision in this chapter shall prevent the use by any ship, survival craft or person in distress, of any means at their disposal to attract attention, make known their position and obtain help.

[1] Such ships are subject to special requirements relative to radio for safety purposes, as contained in the relevant agreement between Canada and the United States of America.

Regulation 2 – Terms and definitions

1 For the purpose of this chapter, the following terms shall have the meanings defined below:

.1 *AIS-SART* means an automatic identification system search and rescue transmitter capable of operating on frequencies dedicated for AIS (161.975 MHz (AIS1) and 162.025 MHz (AIS2)).

.2 *Bridge-to-bridge communications* means safety radiocommunications between ships from the position from which the ships are normally navigated.

.3 *Continuous radio watch* means that the radio and listening watch concerned shall not be interrupted other than for brief intervals when the ship's receiving capability is impaired or blocked by its own communications or when the facilities are under periodical maintenance or checks.

.4 *Digital selective calling (DSC)* means a technique using digital codes which enables a radio station to establish contact with, and transfer information to, another station or group of stations, and complying with the relevant recommendations of the International Telecommunication Union Radiocommunication Sector (ITU-R).

.5 *Emergency position-indicating radio beacon (EPIRB)* means a transmitter operating in the frequency band 406.0-406.1 MHz capable of transmitting a distress alert via satellite to a rescue coordination centre and transmitting signals for on-scene locating.

.6 *General radiocommunications* means communications other than distress, urgency and safety communications.

.7 *Global Maritime Distress and Safety System (GMDSS)* means a system that performs the functions set out in regulation 4.1.1.

.8 *GMDSS identities* means information which may be transmitted to uniquely identify the ship or its associated rescue boats and survival craft. These identities are the ship's call sign, Maritime Mobile Service Identity (MMSI), EPIRB hexadecimal identity, recognized mobile satellite service identities and equipment serial numbers.

.9 *Locating* means the finding of ships, aircraft, survival craft or persons in distress.

.10 *Maritime safety information (MSI)*[2] means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.

.11 *Radar SART* means a search and rescue transponder operating on radar frequencies in the frequency band 9.2-9.5 GHz.

.12 *Radio Regulations* means the Radio Regulations complementing the Constitution and Convention of the International Telecommunication Union which is in force at any given time.

.13 *Recognized mobile satellite service* means any service which operates through a satellite system and is recognized by the Organization, for use in GMDSS.

.14 *Satellite service on 406 MHz* means a service operating through a satellite system having global availability designed to detect EPIRBs transmitting in the frequency band 406.0-406.1 MHz.

.15 *Sea area A1* means an area within the radiotelephone coverage of at least one very high frequency (VHF) coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government.[3]

.16 *Sea area A2* means an area, excluding sea area A1, within the radiotelephone coverage of at least one medium frequency (MF) coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government.[3]

.17 *Sea area A3* means an area, excluding sea areas A1 and A2, within the coverage of a recognized mobile satellite service supported by the ship earth station carried on board, in which continuous alerting is available.

.18 *Sea area A4* means an area outside of sea areas A1, A2 and A3.

2 All other terms and abbreviations which are used in this chapter and which are defined in the Radio Regulations and in the International Convention on Maritime Search and Rescue, 1979, as may be amended, shall have the meanings as defined in those Regulations and the SAR Convention.

[2] Refer to *Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI)* (MSC.1/Circ.1310, as revised).

[3] Refer to *Provision of radio services for the Global Maritime Distress and Safety System (GMDSS)* (resolution MSC.509(105)).

Regulation 3 – Exemptions

1 The Contracting Governments consider it highly desirable not to deviate from the requirements of this chapter; nevertheless, the Administration may grant partial or conditional exemptions to individual ships from the requirements of regulations 7 to 11 provided:

.1 such ships comply with the functional requirements of regulation 4; and

.2 the Administration has taken into account the effect such exemptions may have upon the general efficiency of the service for the safety of all ships.

2 An exemption may be granted under paragraph 1 only:

.1 if the conditions affecting safety are such as to render the full application of regulations 7 to 11 unreasonable or unnecessary; or

.2 in exceptional circumstances, for a single voyage outside the sea area or sea areas for which the ship is equipped.

3 Each Administration shall report to the Organization on all exemptions granted under paragraphs 1 and 2 giving the reasons for granting such exemptions.[4]

[4] Exemptions should be reported through the Organization's Global Integrated Shipping Information System (GISIS) with reference to *Issue of Exemption Certificates under the 1974 SOLAS Convention and Amendments thereto* (SLS.14/Circ.115, as amended).

Regulation 4 – Functional requirements[5]

1 Every ship, while at sea, shall be capable of:

.1 performing the GMDSS functions, which are as follows:

.1 transmitting ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service;

.2 receiving shore-to-ship distress alert relays;

.3 transmitting and receiving ship-to-ship distress alerts;

.4 transmitting and receiving search and rescue coordinating communications;

.5 transmitting and receiving on-scene communications;

.6 transmitting and receiving signals for locating;[6]

.7 receiving MSI;[7]

.8 transmitting and receiving urgency and safety communications; and

.9 transmitting and receiving bridge-to-bridge communications; and

.2 transmitting and receiving general radiocommunications.

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5 It should be noted that ships performing GMDSS functions should use *Guidelines for the avoidance of false distress alerts* (resolution MSC.514(105)).

6 Refer also to regulations V/19.2.3.2 and V/19.2.4, as appropriate.

7 It should be noted that ships may have a need for reception of certain maritime safety information while in port.

Regulation 4-1 – GMDSS satellite providers

The Maritime Safety Committee shall determine the criteria, procedures and arrangements for the evaluation, recognition, review and oversight of the provision of recognized mobile satellite services in the GMDSS pursuant to the provisions of this chapter.[8]

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8 Refer to *Criteria for the provision of mobile satellite communication systems in the Global Maritime Distress and Safety System (GMDSS)* (resolution A.1001(25)) and *Guidance to prospective GMDSS satellite service providers* (MSC.1/Circ.1414).

Part B
Undertakings by Contracting Governments[9]

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9 1 Each Contracting Government is not required to provide all radiocommunication services.

2 Provision No. 48.1 of the Radio Regulations applies to the operation of coast stations and coast earth stations.

Regulation 5 – Provision of radiocommunication services

1 Each Contracting Government undertakes to make available, as it deems practical and necessary, either individually or in cooperation with other Contracting Governments, appropriate shore-based facilities for the mobile satellite service and maritime mobile service having due regard to the recommendations of the Organization.[10] These services are:

.1 recognized mobile satellite services;

.2 a satellite service on 406 MHz;

.3 the maritime mobile service in the bands between 156 MHz and 174 MHz;

.4 the maritime mobile service in the bands between 4 000 kHz and 27 500 kHz; and

.5 the maritime mobile service in the bands between 415 kHz and 535 kHz[11] and between 1 605 kHz and 4 000 kHz.

2 Each Contracting Government undertakes to provide the Organization with pertinent information concerning the shore-based facilities in the mobile satellite service and maritime mobile service, established for sea areas which it has designated off its coasts.[12] Each Contracting Government also undertakes to provide the Organization with timely and adequate notice prior to the planned withdrawal of any of these services or any particular shore-based facilities.

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[10] Refer to *Provision of radio services for the Global Maritime Distress and Safety System (GMDSS)* (resolution MSC.509(105)).

[11] Refer to *Implementation of the NAVTEX system as a component of the World-Wide Navigational Warning Service* (resolution A.617(15)).

[12] Information communicated by Contracting Governments is made available through GISIS.

Regulation 5-1 – GMDSS identities

1 This regulation applies to all ships on all voyages.

2 Each Contracting Government undertakes to ensure that suitable arrangements are made for registering GMDSS identities and for making information on these identities available to rescue coordination centres on a 24-hour basis. Where appropriate, international organizations maintaining a registry of these identities, such as the ITU Maritime Mobile Access and Retrieval System (MARS), shall be notified by the Contracting Government of these identity assignments.

Part C
Ship requirements

Regulation 6 – Radio installations

1 Every ship shall be provided with radio installations capable of complying with the functional requirements prescribed by regulation 4 throughout its intended voyage and, unless exempted under regulation 3, complying with the requirements of regulation 7 and, as appropriate for the sea area or areas through which it will pass during its intended voyage, the requirements of either regulation 8, 9, 10 or 11.

2 Every radio installation shall be:

.1 located in such a way that no harmful interference of mechanical, electrical or other origin affects its proper use, and that electromagnetic compatibility is ensured and harmful interaction avoided with other equipment and systems;

.2 so located as to ensure the greatest possible degree of safety and operational availability;

.3 protected against harmful effects of water, extremes of temperature and other adverse environmental conditions;

.4 provided with reliable, permanently arranged electrical lighting, independent of the main and emergency sources of electrical power, for the adequate illumination of the radio controls for operating the radio installation; and

.5 clearly marked with the GMDSS identities, as applicable, for use by the radio installation operator.

3 Control of the VHF radiotelephone channels, required for navigational safety, shall be immediately available on the navigation bridge convenient to the conning position and, where necessary, facilities should be available to permit radiocommunications from the wings of the navigation bridge. Portable VHF equipment may be used to meet the latter provision.

4 In passenger ships, a distress panel shall be installed at the conning position, which shall:

.1 contain either one single button which, when pressed, initiates a distress alert using all radio installations required on board for that purpose or one button for each individual installation;

.2 clearly and visually indicate whenever any button or buttons have been pressed; and

.3 be provided with means to prevent inadvertent activation of the button or buttons referred to in paragraphs 4.1 and 4.2.

5 In passenger ships, if an EPIRB is used as the secondary means of distress alerting and is not remotely activated from the distress panel, it shall be acceptable to have an additional EPIRB installed in the wheelhouse near the conning position.

6 In passenger ships, a distress alarm panel shall be installed at the conning position, which:

.1 shall provide visual and aural indication of any distress alert or alerts received on board;

.2 shall indicate through which radiocommunication service the distress alerts have been received; and

.3 may be combined with the distress panel referred to in paragraph 4.

Regulation 7 – Radio equipment: General

1 Every ship shall be provided with:

.1 a VHF radio installation capable of transmitting and receiving, for distress, urgency and safety communications purposes:

.1 DSC on the frequency 156.525 MHz (channel 70). It shall be possible to initiate the transmission of distress alerts on channel 70 from the position from which the ship is normally navigated; and

.2 radiotelephony on the frequencies 156.300 MHz (channel 6), 156.650 MHz (channel 13) and 156.800 MHz (channel 16);

.2 a radio installation capable of maintaining a continuous DSC watch on VHF channel 70 which may be separate from, or combined with, that required by paragraph 1.1;

.3 a radar SART or an AIS-SART, which:

.1 shall be so stowed that it can be easily utilized; and

.2 may be one of those required by paragraphs 2.1 or 3.1;

.4 a receiver or receivers capable of receiving MSI and search and rescue related information throughout the entire voyage in which the ship is engaged;[13]

.5 an EPIRB[14] which shall be:

.1 installed in an easily accessible position;

.2 ready to be manually released and capable of being carried by one person into a survival craft;

.3 capable of floating free if the ship sinks and of being automatically activated when afloat; and

.4 capable of being activated manually; and

.6 a radio installation capable of transmitting and receiving general radiocommunications operating on working frequencies in the band between 156 MHz and 174 MHz. This requirement may be fulfilled by the addition of this capability in the equipment required by paragraph 1.1.

2 Every cargo ship of 300 gross tonnage and upwards but less than 500 gross tonnage shall be provided with at least:

.1 one radar SART or AIS-SART; and

.2 two two-way VHF radiotelephone apparatuses.

3 Every passenger ship and every cargo ship of 500 gross tonnage and upwards shall be provided with at least:

.1 one radar SART or AIS-SART on each side of the ship; and

.2 three two-way VHF radiotelephone apparatuses.

4 The two-way VHF radiotelephone apparatuses required by paragraphs 2.2 and 3.2 may be portable or fitted in survival craft. The portable apparatus may be stored on the bridge.

5 The radar SARTs or AIS-SARTs required by paragraphs 2.1 or 3.1 shall be stowed in such locations that they can be rapidly placed in any survival craft other than a liferaft required by regulation III/31.1.4. Alternatively, one radar SART or AIS-SART shall be stowed in each survival craft other than a liferaft required by regulation III/31.1.4. On ships carrying at least two radar SARTs or AIS-SARTs and equipped with free-fall lifeboats, one of the radar SARTs or AIS-SARTs shall be stowed in a free-fall lifeboat and the other shall be located in the immediate vicinity of the navigating bridge so that it can be utilized on board and ready for transfer to any of the other survival craft, other than a liferaft required by regulation III/31.1.4.

6 Every passenger ship shall be provided with means for two-way on-scene radiocommunications for search and rescue purposes using the aeronautical frequencies 121.5 MHz and 123.1 MHz from the position from which the ship is normally navigated. These means may be portable.

[13] Refer to *Guidance for the reception of maritime safety information and search and rescue related information as required in the Global Maritime Distress and Safety System (GMDSS)* (MSC.1/Circ.1645).

[14] Refer to *Search and rescue homing capability* (resolution A.616(15)).

Regulation 8 – Radio equipment: Sea area A1

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages in sea area A1 shall be provided with a radio installation capable of initiating the transmission of ship-to-shore distress alerts from the position from which the ship is normally navigated, operating either:

.1 through the satellite service on 406 MHz; or

.2 if the ship is engaged on voyages within coverage of MF coast stations equipped with DSC, on MF using DSC; or

.3 on high frequency (HF) using DSC; or

.4 through a recognized mobile satellite service ship earth station.

2 The requirement in paragraph 1.1 may be fulfilled by installing:

.1 the EPIRB required by regulation 7.1.5 close to the position from which the ship is normally navigated, but in a location whereby it can still float free of the ship in an emergency; or

.2 the EPIRB required by regulation 7.1.5 elsewhere on the ship, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or

.3 a second EPIRB near the position from which the ship is normally navigated.

Regulation 9 – Radio equipment: Sea area A2

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages within sea area A2 shall be provided with:

.1 an MF radio installation capable of transmitting and receiving, for distress, urgency and safety communications purposes, on the frequencies:

.1 2 187.5 kHz using DSC; and

.2 2 182 kHz using radiotelephony;

.2 a radio installation capable of maintaining a continuous DSC watch on the frequency 2 187.5 kHz which may be separate from, or combined with, that required by paragraph 1.1; and

.3 a secondary means of initiating the transmission of ship-to-shore distress alerts by a radio service other than MF operating either:

.1 through the satellite service on 406 MHz; or

.2 on HF using DSC; or

.3 through a recognized mobile satellite service ship earth station.

2 It shall be possible to initiate transmission of distress alerts by the radio installations specified in paragraphs 1.1 and 1.3 from the position from which the ship is normally navigated.

3 The requirement in paragraph 1.3.1 may be fulfilled by installing:

.1 the EPIRB required by regulation 7.1.5 close to the position from which the ship is normally navigated, but in a location whereby it can still float free of the ship in an emergency; or

.2 the EPIRB required by regulation 7.1.5 elsewhere on the ship, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or

.3 a second EPIRB near the position from which the ship is normally navigated.

4 The ship shall, in addition, be capable of transmitting and receiving general radiocommunications by either:

.1 a radio installation operating on working frequencies in the bands between 1 605 kHz and 4 000 kHz or between 4 000 kHz and 27 500 kHz. This requirement may be fulfilled by the addition of this capability in the equipment required by paragraph 1.1; or

.2 a recognized mobile satellite service ship earth station.

Regulation 10 – Radio equipment: Sea area A3

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages within sea area A3 shall be provided with:

.1 a recognized mobile satellite service ship earth station capable of:

.1 transmitting and receiving distress, urgency and safety communications;

.2 initiating and receiving distress priority calls; and

.3 maintaining watch for shore-to-ship distress alert relays, including those directed to specifically defined geographical areas;

.2 an MF radio installation capable of transmitting and receiving, for distress, urgency and safety communications purposes, on the frequencies:

.1 2 187.5 kHz using DSC; and

.2 2 182 kHz using radiotelephony;

.3 a radio installation capable of maintaining a continuous DSC watch on the frequency 2 187.5 kHz which may be separate from, or combined with, that required by paragraph 1.2; and

.4 a secondary means of initiating the transmission of ship-to-shore distress alerts by a radio service operating either:

.1 through the satellite service on 406 MHz; or

.2 on HF using DSC; or

.3 through any recognized mobile satellite service on an additional ship earth station.

2 It shall be possible to initiate transmission of distress alerts by the radio installations specified in paragraphs 1.1, 1.2 and 1.4 from the position from which the ship is normally navigated.

3 The requirement in paragraph 1.4.1 may be fulfilled by installing:

.1 the EPIRB required by regulation 7.1.5 close to the position from which the ship is normally navigated, but in a location whereby it can still float free of the ship in an emergency; or

.2 the EPIRB required by regulation 7.1.5 elsewhere on the ship, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or

.3 a second EPIRB near the position from which the ship is normally navigated.

4 The ship shall, in addition, be capable of transmitting and receiving general radiocommunications by either:

.1 a recognized mobile satellite service ship earth station; or

.2 a radio installation operating on working frequencies in the bands between 1 605 kHz and 4 000 kHz or between 4 000 kHz and 27 500 kHz.

5 The requirements in paragraphs 4.1 and 4.2 may be fulfilled by the addition of this capability in the equipment required by paragraph 1.1 or 1.2, respectively.

Regulation 11 – Radio equipment: Sea area A4

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages within sea area A4 shall be provided with:

.1 an MF/HF radio installation capable of transmitting and receiving, for distress, urgency and safety communications purposes, on all distress, urgency and safety frequencies in the bands between 1 605 kHz and 4 000 kHz and between 4 000 kHz and 27 500 kHz:

.1 using DSC; and

.2 using radiotelephony;

.2 equipment capable of maintaining DSC watch on 2 187.5 kHz, 8 414.5 kHz and on at least one of the DSC frequencies 4 207.5 kHz, 6 312 kHz, 12 577 kHz or 16 804.5 kHz; it shall be possible at any time to select any of these DSC frequencies for distress, urgency and safety communications purposes. This equipment may be separate from, or combined with, the equipment required by paragraph 1.1; and

.3 a secondary means of initiating the transmission of ship-to-shore distress alerts through the satellite service on 406 MHz.

2 The ship shall, in addition, be capable of transmitting and receiving general radiocommunications by a radio installation operating on working frequencies in the bands between 1 605 kHz and 4 000 kHz and between 4 000 kHz and 27 500 kHz. This requirement may be fulfilled by the addition of this capability in the equipment required by paragraph 1.1.

3 It shall be possible to initiate transmission of distress alerts by the radio installations specified in paragraphs 1.1 and 1.3 from the position from which the ship is normally navigated.

4 The requirement in paragraph 1.3 may be fulfilled by installing:

.1 the EPIRB required by regulation 7.1.5 close to the position from which the ship is normally navigated, but in a location whereby it can still float free of the ship in an emergency; or

.2 the EPIRB required by regulation 7.1.5 elsewhere on the ship, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or

.3 a second EPIRB near the position from which the ship is normally navigated.

Regulation 12 – Watches

1 Every ship, while at sea, shall maintain a continuous radio watch for distress, urgency and safety communications purposes:

.1 on VHF DSC channel 70;

.2 on DSC frequency 2 187.5 kHz, if the ship, in accordance with the requirements of regulation 9.1.1 or 10.1.2, is fitted with an MF radio installation;

.3 on DSC frequencies 2 187.5 kHz and 8 414.5 kHz and also on at least one of the DSC frequencies 4 207.5 kHz, 6 312 kHz, 12 577 kHz or 16 804.5 kHz, appropriate to the time of day and the geographical position of the ship, if the ship, in accordance with the requirements of regulation 11.1.2, is fitted with an MF/HF radio installation. This watch may be kept by means of a scanning receiver; and

.4 for satellite shore-to-ship distress alert relays, if the ship, in accordance with the requirements of regulation 10.1.1, is fitted with a recognized mobile satellite service ship earth station.

2 Every ship, while at sea, shall maintain a radio watch for broadcasts of MSI and search and rescue related information on the appropriate frequency or frequencies on which such information is broadcast for the area in which the ship is navigating.

3 Every ship, while at sea, shall maintain, when practicable, a continuous listening watch, which shall be kept at the position from which the ship is normally navigated, on:

.1 VHF channel 16; and

.2 other appropriate frequencies for urgency and safety communications for the area in which the ship is navigating.

Regulation 13 – Sources of energy

1 While the ship is at sea, a supply of electrical energy shall be available at all times sufficient to operate the radio installations and to charge any batteries used as part of a reserve source or sources of energy for the radio installations.

2 A reserve source or sources of energy shall be provided on every ship, to supply radio installations, for the purpose of conducting distress, urgency and safety communications, in the event of failure of the ship's main and emergency sources of electrical power. The reserve source or sources of energy shall be capable of simultaneously operating the VHF radio installation required by regulation 7.1.1 and, as appropriate for the sea area or sea areas for which the ship is equipped, either the MF radio installation required by regulation 9.1.1 or 10.1.2, the MF/HF radio installation required by regulation 11.1.1, or the ship earth station required by regulation 10.1.1 and any of the additional loads mentioned in paragraphs 4, 5 and 8 for a period of at least:

.1 one hour on ships provided with an emergency source of electrical power, if such source of power complies fully with all relevant provisions of regulation II-1/42 or 43, including the supply of such power to the radio installations; and

.2 six hours on ships not provided with an emergency source of electrical power complying fully with all relevant provisions of regulation II-1/42 or 43, including the supply of such power to the radio installations.[15]

The reserve source or sources of energy need not supply independent HF and MF radio installations at the same time.

3 The reserve source or sources of energy shall be independent of the propelling power of the ship and the ship's electrical system.

4 Where, in addition to the VHF radio installation, two or more of the other radio installations referred to in paragraph 2 can be connected to the reserve source or sources of energy, they shall be capable of simultaneously supplying, for the period specified, as appropriate, in paragraph 2.1 or 2.2, the VHF radio installation and:

.1 all other radio installations which can be connected to the reserve source or sources of energy at the same time; or

.2 whichever of the other radio installations will consume the most power, if only one of the other radio installations can be connected to the reserve source or sources of energy at the same time as the VHF radio installation.

5 The reserve source or sources of energy may be used to supply the electrical lighting required by regulation 6.2.4.

6 Where a reserve source of energy consists of a rechargeable accumulator battery or batteries:

.1 a means of automatically charging such batteries shall be provided which shall be capable of recharging them to minimum capacity requirements within 10 hours; and

.2 the capacity of the battery or batteries shall be checked, using an appropriate method,[16] at intervals not exceeding 12 months, when the ship is not at sea.

7 The siting and installation of accumulator batteries which provide a reserve source of energy shall be such as to ensure:

.1 the highest degree of service;

.2 a reasonable lifetime;

.3 reasonable safety;

.4 that battery temperatures remain within the manufacturer's specifications whether under charge or idle; and

.5 that when fully charged, the batteries will provide at least the minimum required hours of operation under all weather conditions.

8 If an uninterrupted input of information from the ship's navigational or other equipment to a radio installation required by this chapter, including the navigation receiver referred to in regulation 18, is needed to ensure its proper performance, means shall be provided to ensure the continuous supply of such information in the event of failure of the ship's main or emergency source of electrical power.

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[15] For guidance, the following formula is recommended for determining the electrical load to be supplied by the reserve source of energy for each radio installation required for distress conditions: 1/2 of the current consumption necessary for transmission + the current consumption necessary for reception + the current consumption of any additional loads.

[16] One method of checking the capacity of an accumulator battery is to fully discharge and recharge the battery, using normal operating current and period. Assessment of the charge condition can be made at any time, but it should be done without significant discharge of the battery when the ship is at sea.

Regulation 14 – Performance standards

All equipment to which this chapter applies shall be of a type approved by the Administration. Such equipment shall conform to appropriate performance standards not inferior to those adopted by the Organization.[17]

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[17] Refer to the following resolutions adopted by the Organization:

General requirements

.1 *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));

.2 *Performance standards for the presentation of navigation-related information on shipborne navigational displays* (resolution MSC.191(79), as amended);

.3 *Performance standards for bridge alert management* (resolution MSC.302(87));

VHF equipment

.4 *Performance standards for shipborne VHF radio installations capable of voice communication and digital selective calling* (resolution MSC.511(105));

.5 *Performance standards for survival craft portable two-way VHF radiotelephone apparatus* (resolution MSC.515(105));

.6 *Recommendation on Performance standards for on-scene (aeronautical) portable two-way VHF radiotelephone apparatus* (annex 1 to resolution MSC.80(70), as amended);

MF and HF equipment

.7 *System performance standard for the promulgation and coordination of maritime safety information using high-frequency narrow-band direct-printing* (resolution MSC.507(105));

.8 *Performance standards for shipborne MF and MF/HF radio installations capable of voice communication, digital selective calling and reception of maritime safety information and search and rescue related information* (resolution MSC.512(105));

.9 *Performance standards for the reception of maritime safety information and search and rescue related information by MF (NAVTEX) and HF* (resolution MSC.508(105));

Ship earth stations and enhanced group call (EGC) equipment

.10 *Performance standards for Inmarsat-C ship earth stations capable of transmitting and receiving direct-printing communications* (resolution MSC.513(105));

.11 *Revised performance standards for enhanced group call (EGC) equipment* (resolution MSC.306(87), as amended);

.12 *Performance standards for a ship earth station for use in the GMDSS* (resolution MSC.434(98));

Integrated radiocommunication systems

.13 *Performance standards for a shipborne integrated communication system (ICS) when used in the Global Maritime Distress and Safety System (GMDSS)* (resolution MSC.517(105));

Emergency position-indicating radio beacons

.14 *Performance standards for float-free release and activation arrangements for emergency radio equipment* (resolution A.662(16));

.15 *Performance standards for float-free emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz* (resolution MSC.471(101));

Search and rescue transmitters and transponders

.16 *Performance standards for search and rescue radar transponders* (resolution MSC.510(105)); and

.17 *Performance standards for survival craft AIS search and rescue transmitters (AIS-SART) for use in search and rescue operations* (resolution MSC.246(83)).

Regulation 15 – Maintenance requirements

1 Equipment shall be so designed that the main units can be replaced readily, without elaborate recalibration or readjustment.

2 Where applicable, equipment shall be so constructed and installed that it is readily accessible for inspection and onboard maintenance purposes.

3 Adequate information shall be provided to enable the equipment to be properly operated and maintained, taking into account the recommendations of the Organization.[18]

4 Adequate tools and spares shall be provided to enable the equipment to be maintained.

5 The Administration shall ensure that radio equipment required by this chapter is maintained to provide the availability of the functional requirements specified in regulation 4 and to meet the recommended performance standards of such equipment.

6 On ships engaged on voyages in sea areas A1 or A2, the availability shall be ensured by using such methods as duplication of equipment, shore-based maintenance or at-sea electronic maintenance capability, or a combination of these, as may be approved by the Administration.

7 On ships engaged on voyages in sea areas A3 or A4, the availability shall be ensured by using a combination of at least two methods such as duplication of equipment, shore-based maintenance or at-sea electronic maintenance capability, as may be approved by the Administration.

8 While all reasonable steps shall be taken to maintain the equipment in efficient working order to ensure compliance with all the functional requirements specified in regulation 4, malfunction of the equipment for providing the general radiocommunications required by regulation 4.1.2 shall not be considered as making a ship unseaworthy or as a reason for delaying the ship in ports where repair facilities are not readily available, provided the ship is capable of performing all distress, urgency and safety functions.

9 EPIRBs shall be:

.1 annually tested, either on board the ship[19] or at an approved testing station, for all aspects of operational efficiency, with special emphasis on checking the emission on operational frequencies, coding and registration, at intervals as specified below:

.1 on passenger ships, within three months before the expiry date of the Passenger Ship Safety Certificate; and

.2 on cargo ships, within three months before the expiry date, or within three months before or after the anniversary date, of the Cargo Ship Safety Radio Certificate; and

.2 subject to maintenance at intervals not exceeding five years, to be performed at an approved shore-based maintenance facility.[20]

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18 Refer to *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)), *General requirements for electromagnetic compatibility (EMC) for all electrical and electronic ship's equipment* (resolution A.813(19)), and *Clarifications of certain requirements in IMO performance standards for GMDSS equipment* (MSC/Circ.862).

19 Refer to *Guidelines on annual testing of emergency position-indicating radio beacons (EPIRBs)* (MSC.1/Circ.1040/Rev.2) and *Guidelines for the avoidance of false distress alerts* (resolution MSC.514(105)).

20 Refer to *Guidelines for shore-based maintenance of emergency position-indicating radio beacons (EPIRBs)* (MSC.1/Circ.1039/Rev.1).

Regulation 16 – Radio personnel

1 Every ship shall carry personnel qualified for distress, urgency and safety communications purposes to the satisfaction of the Administration.[21] The personnel shall be holders of the appropriate certificates specified in the Radio Regulations; one of the personnel shall be designated as having primary responsibility for communications during distress incidents.

2 In passenger ships, at least one person qualified in accordance with paragraph 1 shall be assigned to perform only communications duties during distress incidents.

[21] Refer to the STCW Code, chapter IV, section B-IV/2.

Regulation 17 – Radio records

A record shall be kept on board, to the satisfaction of the Administration and as required by the Radio Regulations, of all incidents connected with the radiocommunication services which appear to be of importance to safety of life at sea.

Regulation 18 – Position-updating

1 All two-way communication equipment carried on board a ship to which this chapter applies which is capable of automatically including the ship's position in the distress alert shall be automatically provided with this information from an internal or external navigation receiver.[22]

2 In case of malfunction of the internal or external navigation receiver, the ship's position and the time at which the position was determined shall be manually updated at intervals not exceeding four hours, while the ship is under way, so that it is always ready for transmission by the equipment.

[22] Requirements for automatic update of the ship's position are given in resolutions MSC.511(105), MSC.512(105) and MSC.513(105).

CHAPTER V
SAFETY OF NAVIGATION

Regulation 5 – Meteorological services and warnings

5 The footnote under paragraph 2.2, after the word "services", is replaced by the following:

"
[*] Refer to regulation IV/7.1.4."

Regulation 19-1 – Long-range identification and tracking of ships

6 Paragraphs 4.1 and 4.2 are replaced by the following:

"4.1 Ships[1] shall be fitted with a system to automatically transmit the information specified in paragraph 5 as follows:

.1 ships constructed on or after 31 December 2008;

.2 ships constructed before 31 December 2008 and certified for operations:

.1 in sea areas A1 and A2, as defined in regulations IV/2.1.15 and IV/2.1.16; or

.2 in sea areas A1, A2 and A3, as defined in regulations IV/2.1.15, IV/2.1.16 and IV/2.1.17,

not later than the first survey[2] of the radio installation after 31 December 2008;

.3 ships constructed before 31 December 2008 and certified for operations in sea areas A1, A2, A3 and A4, as defined in regulations IV/2.1.15, IV/2.1.16, IV/2.1.17 and IV/2.1.18, not later than the first survey[2] of the radio installation after 1 July 2009. However, these ships shall comply with the provisions of sub-paragraph .2 above while they operate within sea areas A1, A2 and A3.

4.2 Ships, irrespective of the date of construction, fitted with an automatic identification system (AIS), as defined in regulation 19.2.4, and operated exclusively within sea area A1, as defined in regulation IV/2.1.15, shall not be required to comply with the provisions of this regulation.

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[1] Refer to *Guidance on the survey and certification of compliance of ships with the requirement to transmit LRIT information* (MSC.1/Circ.1307).

[2] Refer to *Unified interpretation of the term "first survey" referred to in SOLAS regulation* (MSC.1/Circ.1290)."

APPENDIX

CERTIFICATES

7 The existing forms of the Passenger Ship Safety Certificate, the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate, the Nuclear Passenger Ship Safety Certificate and the Nuclear Cargo Ship Safety Certificate, including the associated records of equipment for passenger ship safety (Form P), cargo ship safety (Form E), cargo ship safety radio (Form R) and cargo ship safety (Form C), contained in the appendix to the annex are replaced by the following:

"***FORM OF SAFETY CERTIFICATE FOR PASSENGER SHIPS***

PASSENGER SHIP SAFETY CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for Passenger Ship Safety (Form P)

(Official seal) *(State)*

for *an/a short*[1] international voyage

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974, as amended

under the authority of the Government of

_____
(name of the State)

by _____
(person or organization authorized)

Particulars of ship[2]

Name of ship .....
Distinctive number or letters .....
Port of registry .....
Gross tonnage .....
Sea areas in which ship is certified to operate (regulation IV/2)[3] .....
IMO number[4] .....
Date of build:
Date of building contract .....
Date on which keel was laid or ship was at similar stage of construction .....
Date of delivery .....
Date on which work for a conversion or an alteration or modification of a major character was commenced (where applicable) .....

All applicable dates shall be completed.

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation I/7 of the Convention.

2 That the survey showed that:

2.1 the ship complied with the requirements of the Convention as regards:

.1 the structure, main and auxiliary machinery, boilers and other pressure vessels;

.2 the watertight subdivision arrangements and details;

.3 the following subdivision load lines:

---

1 Delete as appropriate.

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

3 For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

4 In accordance with *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

Subdivision load lines assigned and marked on the ship's side amidships (regulation II-1/18)[5]	Freeboard	To apply when the spaces in which passengers are carried include the following alternative spaces
P1 P2 P3	…… …… ……	…….. …….. ……..

2.2 the ship complied with part G of chapter II-1 of the Convention using ……..…. as fuel/N.A;

2.3 the ship complied with the requirements of the Convention as regards structural fire protection, fire safety systems and appliances and fire-control plans;

2.4 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;

2.5 the ship was provided with a line-throwing appliance in accordance with the requirements of the Convention;

2.6 the ship complied with the requirements of the Convention as regards radio installations;

2.7 the provision and functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention;

2.8 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;

2.9 the ship was provided with lights, shapes, means of making sound signals and distress signals, in accordance with the requirements of the Convention and the International Regulations for Preventing Collisions at Sea in force;

2.10 in all other respects the ship complied with the relevant requirements of the Convention;

2.11 the ship was/was not[1] subjected to an alternative design and arrangements in pursuance of regulation(s) II-1/55 / II-2/17 / III/38[1] of the Convention;

2.12 a Document of approval of alternative design and arrangements for machinery and electrical installations/fire protection/life-saving appliances and arrangements[1] is/is not[1] appended to this Certificate.

3 that an Exemption Certificate has/has not[1] been issued.

This certificate is valid until .....

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

Issued at .....
(Place of issue of certificate)

…….. ……..
(Date of issue) *(Signature of authorized official issuing the certificate)*

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

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1 Delete as appropriate.

5 For ships constructed before 1 January 2009, the applicable subdivision notation "C.1, C.2 and C.3" should be used.

RECORD OF EQUIPMENT FOR PASSENGER SHIP SAFETY (FORM P)

RECORD OF EQUIPMENT FOR COMPLIANCE WITH
THE INTERNATIONAL CONVENTION FOR THE SAFETY
OF LIFE AT SEA, 1974, AS AMENDED

1 ***Particulars of ship***

Name of ship.....
Distinctive number or letters .....
Number of passengers for which certified.....
Minimum number of persons with required qualifications to operate the radio installations .....

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

1	Total number of persons for which life-saving appliances are provided ……..……		
		Port side	**Starboard side**
2	Total number of lifeboats	...……	...……
2.1	Total number of persons accommodated by them	……	……
2.2	Number of partially enclosed lifeboats (regulation III/21 and LSA Code, section 4.5)	……	……
2.3	Number of self-righting partially enclosed lifeboats (regulation III/43[6])	……	……
2.4	Number of totally enclosed lifeboats (regulation III/21 and LSA Code, section 4.6)	……	……
2.5	Other lifeboats		
2.5.1	Number	……	……
2.5.2	Type	……	……
3	Number of motor lifeboats (included in the total lifeboats shown above)	……	
3.1	Number of lifeboats fitted with searchlights	……	
4	Number of rescue boats	……	
4.1	Number of boats which are included in the total lifeboats shown above	……	
4.2	Number of boats which are fast rescue boats	……	
5	Liferafts		
5.1	Those for which approved launching appliances are required		
5.1.1	Number of liferafts	……	
5.1.2	Number of persons accommodated by them	……	
5.2	Those for which approved launching appliances are not required		
5.2.1	Number of liferafts	……	
5.2.2	Number of persons accommodated by them	……	

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

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

6	Number of marine evacuation systems (MES)	……
6.1	Number of liferafts served by them	……
6.2	Number of persons accommodated by them	……
7	Buoyant apparatus	
7.1	Number of apparatus	……
7.2	Number of persons capable of being supported	……
8	Number of lifebuoys	……
9	Number of lifejackets (total)	……
9.1	Number of adult lifejackets	……
9.2	Number of child lifejackets	……
9.3	Number of infant lifejackets	……
10	Immersion suits	……
10.1	Total number	……
10.2	Number of suits complying with the requirements for lifejackets	……
11	Number of anti-exposure suits	……
12	Number of thermal protective aids[7]	……

3 ***Details of radio facilities***

Item		Actual provision
1	Primary systems	
1.1	VHF radio installation	
1.1.1	DSC encoder	……
1.1.2	DSC watch receiver	……
1.1.3	Radiotelephony	……
1.2	MF radio installation	
1.2.1	DSC encoder	……
1.2.2	DSC watch receiver	……
1.2.3	Radiotelephony	……
1.3	MF/HF radio installation	
1.3.1	DSC encoder	……
1.3.2	DSC watch receiver	……
1.3.3	Radiotelephony	……
1.4	Recognized mobile satellite service ship earth station	……
2	Secondary means of initiating the transmission of ship-to-shore distress alerts	……
3	Facilities for reception of MSI and search and rescue related information	……

[7] Excluding those required by the LSA Code, paragraphs 4.1.5.1.24, 4.4.8.31 and 5.1.2.2.13.

3 ***Details of radio facilities*** *(continued)*

4	EPIRB	……
5	Two-way VHF radiotelephone apparatus	
5.1	Portable two-way VHF radiotelephone apparatus	……
5.2	Two-way VHF radiotelephone apparatus fitted in survival craft	……
6	Search and rescue locating devices	
6.1	Radar search and rescue transponders (radar SART) stowed for rapid placement in survival craft	……
6.2	Radar search and rescue transponders (radar SART) stowed in survival craft	……
6.3	AIS search and rescue transmitters (AIS-SART) stowed for rapid placement in survival craft	……
6.4	AIS search and rescue transmitters (AIS-SART) stowed in survival craft	……...

4 ***Methods used to ensure availability of radio facilities*** (regulations IV/15.6 and 15.7)

4.1 Duplication of equipment.....
4.2 Shore-based maintenance .....
4.3 At-sea maintenance capability .....

5 ***Details of navigational systems and equipment***

	Item	Actual provision
1.1	Standard magnetic compass[8]	……
1.2	Spare magnetic compass[8]	……
1.3	Gyro-compass[8]	……
1.4	Gyro-compass heading repeater[8]	……
1.5	Gyro-compass bearing repeater[8]	……
1.6	Heading or track control system[8]	……
1.7	Pelorus or compass bearing device[8]	……
1.8	Means of correcting heading and bearings	……
1.9	Transmitting heading device (THD)[8]	……
2.1	Nautical charts/Electronic chart display and information system (ECDIS)[1]	……
2.2	Backup arrangements for ECDIS	……
2.3	Nautical publications	……
2.4	Backup arrangements for electronic nautical publications	……
3.1	Receiver for a global navigation satellite system/terrestrial radionavigation system/multisystem shipborne radionavigation receiver[1 8]	……

1 Delete as appropriate.

8 Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means, they shall be specified.

5 ***Details of navigational systems and equipment*** *(continued)*

3.2	9 GHz radar[8]	……
3.3	Second radar (3 GHz/9 GHz[1])[8]	……
3.4	Automatic radar plotting aid (ARPA)[8]	……
3.5	Automatic tracking aid[8]	……
3.6	Second automatic tracking aid[8]	……
3.7	Electronic plotting aid[8]	……
4.1	Automatic identification system (AIS)	……
4.2	Long-range identification and tracking system	……
5	Voyage data recorder (VDR)	……
6.1	Speed and distance measuring device (through the water)[8]	……
6.2	Speed and distance measuring device (over the ground in the forward and athwartships direction)[8]	……
7	Echo-sounding device[8]	……
8.1	Rudder, propeller, thrust, pitch and operational mode indicator[1 8]	……
8.2	Rate-of-turn indicator[8]	……
9	Sound reception system[8]	……
10	Telephone to emergency steering position[8]	……
11	Daylight signalling lamp[8]	……
12	Radar reflector[8]	……
13	International Code of Signals	……
14	IAMSAR Manual, Volume III	……
15	Bridge navigational watch alarm system (BNWAS)	……

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

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

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

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

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1 Delete as appropriate.

8 Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means, they shall be specified.

FORM OF SAFETY EQUIPMENT CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY EQUIPMENT CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for Cargo Ship Safety (Form E)

(Official seal) *(State)*

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, as amended

under the authority of the Government of

_____
(name of the State)

by _____
(person or organization authorized)

Particulars of ship[1]

Name of ship .....
Distinctive number or letters .....
Port of registry.....
Gross tonnage .....
Deadweight of ship (metric tons)[2].....
Length of ship (regulation III/3.12).....
IMO number[3] .....

Type of ship[4]

Bulk carrier
Oil tanker
Chemical tanker
Gas carrier
Cargo ship other than any of the above

Date on which keel was laid or ship was at a similar stage of construction or, where applicable, date on which work for a conversion or an alteration or modification of a major character was commenced.....

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation I/8 of the Convention.

2 That the survey showed that:

2.1 the ship complied with the requirements of the Convention as regards fire safety systems and appliances and fire-control plans;

---

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

2 For oil tankers, chemical tankers and gas carriers only.

3 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

4 Delete as appropriate.

2.2 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;

2.3 the ship was provided with a line-throwing appliance in accordance with the requirements of the Convention;

2.4 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;

2.5 the ship was provided with lights, shapes and means of making sound signals and distress signals in accordance with the requirements of the Convention and the International Regulations for Preventing Collisions at Sea in force;

2.6 in all other respects the ship complied with the relevant requirements of the Convention;

2.7 the ship was/was not[4] subjected to an alternative design and arrangements in pursuance of regulation(s) II-2/17 / III/38[4] of the Convention;

2.8 a Document of approval of alternative design and arrangements for fire protection/life-saving appliances and arrangements[4] is/is not[4] appended to this Certificate.

3 That the ship operates in accordance with regulation III/26.1.1.15 within the limits of the trade area ……..

4 That an Exemption Certificate has/has not[4] been issued.

This certificate is valid until .....

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

Issued at .....
(Place of issue of certificate)

…… (Date of issue)

…… (Signature of authorized official issuing the certificate)

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

4 Delete as appropriate.

5 Refer to the 1983 amendments to SOLAS (MSC.6(48)), applicable to ships constructed on or after 1 July 1986, but before 1 July 1998 in the case of self-righting partially enclosed lifeboat(s) on board.

RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY (FORM E)

RECORD OF EQUIPMENT FOR COMPLIANCE WITH
THE INTERNATIONAL CONVENTION FOR THE SAFETY
OF LIFE AT SEA, 1974, AS AMENDED

1 ***Particulars of ship***

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

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

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

[5] Refer to the 1983 amendments to SOLAS (MSC.6(48)), applicable to ships constructed on or after 1 July 1986, but before 1 July 1998 in the case of self-righting partially enclosed lifeboat(s) on board.

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

6	Liferafts	
6.1	Those for which approved launching appliances are required	
6.1.1	Number of liferafts	.....
6.1.2	Number of persons accommodated by them	.....
6.2	Those for which approved launching appliances are not required	
6.2.1	Number of liferafts	.....
6.2.2	Number of persons accommodated by them	.....
6.3	Number of liferafts required by regulation III/31.1.4	.....
7	Number of lifebuoys	.....
8	Number of lifejackets	.....
9	Immersion suits	
9.1	Total number	.....
9.2	Number of suits complying with the requirements for lifejackets	.....
10	Number of anti-exposure suits	.....

3 ***Details of navigational systems and equipment***

	Item	Actual provision
1.1	Standard magnetic compass[6]	.....
1.2	Spare magnetic compass[6]	.....
1.3	Gyro-compass[6]	.....
1.4	Gyro-compass heading repeater[6]	.....
1.5	Gyro-compass bearing repeater[6]	.....
1.6	Heading or track control system[6]	.....
1.7	Pelorus or compass bearing device[6]	.....
1.8	Means of correcting heading and bearings	.....
1.9	Transmitting heading device (THD)[6]	.....
2.1	Nautical charts/Electronic chart display and information system (ECDIS)[4]	.....
2.2	Backup arrangements for ECDIS	.....
2.3	Nautical publications	.....
2.4	Backup arrangements for electronic nautical publications	.....
3.1	Receiver for a global navigation satellite system/terrestrial radionavigation system/multisystem shipborne radionavigation receiver[4 6]	.....

4 Delete as appropriate.

6 Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means, they shall be specified.

3 ***Details of navigational systems and equipment*** *(continued)*

3.2	9 GHz radar	……
3.3	Second radar (3 GHz/9 GHz[4])[6]	……
3.4	Automatic radar plotting aid (ARPA)[6]	……
3.5	Automatic tracking aid[6]	……
3.6	Second automatic tracking aid[6]	……
3.7	Electronic plotting aid[6]	……
4.1	Automatic identification system (AIS)	……
4.2	Long-range identification and tracking system	……
5.1	Voyage data recorder (VDR)[4]	……
5.2	Simplified voyage data recorder (S-VDR)[4]	……
6.1	Speed and distance measuring device (through the water)[6]	……
6.2	Speed and distance measuring device (over the ground in the forward and athwartships direction)[6]	……
7	Echo-sounding device[6]	……
8.1	Rudder, propeller, thrust, pitch and operational mode indicator[4 6]	……
8.2	Rate-of-turn indicator[6]	……
9	Sound reception system[6]	……
10	Telephone to emergency steering position[6]	……
11	Daylight signalling lamp[6]	……
12	Radar reflector	……
13	International Code of Signals	……
14	IAMSAR Manual, Volume III	……
15	Bridge navigational watch alarm system (BNWAS)	……

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

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

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

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

4 Delete as appropriate.

6 Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means, they shall be specified.

FORM OF SAFETY RADIO CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY RADIO CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment
for Cargo Ship Safety Radio (Form R)

(Official seal) *(State)*

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974, as amended

under the authority of the Government of

_____
(name of the State)

by _____
(person or organization authorized)

Particulars of ship[1]

Name of ship.....
Distinctive number or letters.....
Port of registry .....
Gross tonnage .....
Sea areas in which ship is certified to operate (regulation IV/2)[2] .....
IMO number[3].....
Date on which keel was laid or ship was at a similar stage of construction or,
where applicable, date on which work for a conversion or an alteration or
modification of a major character was commenced .....

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation I/9 of the Convention.

2 That the survey showed that:

2.1 the ship complied with the requirements of the Convention as regards radio installations;

2.2 the provision and functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention.

3 That an Exemption Certificate has/has not[4] been issued.

---

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

2 For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

3 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

4 Delete as appropriate.

This certificate is valid until .....

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

Issued at .....
(Place of issue of certificate)

…… ……
(Date of issue) *(Signature of authorized official issuing the certificate)*

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

RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY RADIO (FORM R)

RECORD OF EQUIPMENT FOR COMPLIANCE
WITH THE INTERNATIONAL CONVENTION FOR THE SAFETY
OF LIFE AT SEA, 1974, AS AMENDED

1 *Particulars of ship*

Name of ship……
Distinctive number or letters……
Minimum number of persons with required
qualifications to operate the radio installations ……

2 *Details of radio facilities*

Item		Actual provision
1	Primary systems	
1.1	VHF radio installation	
1.1.1	DSC encoder	……..
1.1.2	DSC watch receiver	……..
1.1.3	Radiotelephony	……..
1.2	MF radio installation	
1.2.1	DSC encoder	……..
1.2.2	DSC watch receiver	……..
1.2.3	Radiotelephony	……..
1.3	MF/HF radio installation	
1.3.1	DSC encoder	……..
1.3.2	DSC watch receiver	……..
1.3.3	Radiotelephony	……..
1.4	Recognized mobile satellite service ship earth station	……..
2	Secondary means of initiating the transmission of ship-to-shore distress alerts	……..
3	Facilities for reception of MSI and search and rescue related information	……..
4	EPIRB	……..
5	Two-way VHF radiotelephone apparatus	
5.1	Portable two-way VHF radiotelephone apparatus	……..
5.2	Two-way VHF radiotelephone apparatus fitted in survival craft	……..
6	Search and rescue locating devices	
6.1	Radar search and rescue transponders (radar SART) stowed for rapid placement in survival craft	……..
6.2	Radar search and rescue transponders (radar SART) stowed in survival craft	……..
6.3	AIS search and rescue transmitters (AIS-SART) stowed for rapid placement in survival craft	……..
6.4	AIS search and rescue transmitters (AIS-SART) stowed in survival craft	……..

3 ***Methods used to ensure availability of radio facilities*** (regulations IV/15.6 and 15.7)

3.1 Duplication of equipment …….

3.2 Shore-based maintenance ……

3.3 At-sea maintenance capability ……..

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

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

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

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

FORM OF NUCLEAR PASSENGER SHIP SAFETY CERTIFICATE

NUCLEAR PASSENGER SHIP SAFETY CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for Passenger Ship Safety (Form P)

(Official seal) *(State)*

for *an / a short*[1] international voyage

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974, as amended

under the authority of the Government of

_____
(name of the State)

by _____
(person or organization authorized)

Particulars of ship[2]

Name of ship .....
Distinctive number or letters.....
Port of registry .....
Gross tonnage .....
Sea areas in which ship is certified to operate (regulation IV/2)[3] .....
IMO number[4] .....

Date of build:

Date of building contract .....
Date on which keel was laid or ship was at similar stage of construction.....
Date of delivery .....
Date on which work for a conversion or an alteration or modification of a major character was commenced (where applicable) .....

All applicable dates shall be completed.

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation VIII/9 of the Convention.

2 That the ship, being a nuclear ship, complied with all the requirements of chapter VIII of the Convention and conformed to the Safety Assessment approved for the ship; and that:

2.1 the ship complied with the requirements of the Convention as regards:

---

1 Delete as appropriate.

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

3 For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

4 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

.1 the structure, main and auxiliary machinery, boilers and other pressure vessels, including the nuclear propulsion plant and the collision protective structure;

.2 the watertight subdivision arrangements and details;

.3 the following subdivision load lines:

Subdivision load lines assigned and marked on the ship's side amidships (regulation II-1/18)[5]	Freeboard	To apply when the spaces in which passengers are carried include the following alternative spaces
P1 P2 P3	……. ……. …….	…….. …….. ……..

2.2 the ship complied with the requirements of the Convention as regards structural fire protection, fire safety systems and appliances and fire-control plans;

2.3 the ship complied with the requirements of the Convention as regards radiation protection systems and equipment;

2.4 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;

2.5 the ship was provided with a line-throwing appliance in accordance with the requirements of the Convention;

2.6 the ship complied with the requirements of the Convention as regards radio installations;

2.7 the provision and functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention;

2.8 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;

2.9 the ship was provided with lights, shapes, means of making sound signals and distress signals, in accordance with the requirements of the Convention and the International Regulations for Preventing Collisions at Sea in force;

2.10 in all other respects the ship complied with the relevant requirements of the Convention;

2.11 the ship was/was not[1] subjected to an alternative design and arrangements in pursuance of regulation(s) II-1/55 / II-2 /17 / III/38[1] of the Convention;

2.12 a Document of approval of alternative design and arrangements for machinery and electrical installations/fire protection/life-saving appliances and arrangements[1] is/is not[1] appended to this Certificate.

---

1 Delete as appropriate.

5 For ships constructed before 1 January 2009, the applicable subdivision notation "C.1, C.2 and C.3" should be used.

This certificate is valid until .....

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

Issued at .....
(Place of issue of certificate)

…… ……
(Date of issue) *(Signature of authorized official issuing the certificate)*

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

FORM OF NUCLEAR CARGO SHIP SAFETY CERTIFICATE

NUCLEAR CARGO SHIP SAFETY CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for Cargo Ship Safety (Form C)

(Official seal) *(State)*

Issued under the provisions of the

INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974, as amended

under the authority of the Government of

_____
(name of the State)

by _____
(person or organization authorized)

Particulars of ship[1]

Name of ship .....
Distinctive number or letters.....
Port of registry .....
Gross tonnage .....
Deadweight of ship (metric tons)[2] .....
Length of ship (regulation III/3.12) .....
Sea areas in which ship is certified to operate (regulation IV/2)[3] .....
IMO number[4] .....

Type of ship[5]
- Bulk carrier
- Oil tanker
- Chemical tanker
- Gas carrier
- Cargo ship other than any of the above

Date of build:

Date of building contract .....
Date on which keel was laid or ship was at similar stage of construction.....
Date of delivery .....
Date on which work for a conversion or an alteration or modification of a major character was commenced (where applicable) .....

All applicable dates shall be completed.

---

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

2 For oil tankers, chemical tankers and gas carriers only.

3 For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

4 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

5 Delete as appropriate.

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation VIII/9 of the Convention.

2 That the ship, being a nuclear ship, complied with all the requirements of chapter VIII of the Convention and conformed to the Safety Assessment approved for the ship; and that:

2.1 the condition of the structure, machinery and equipment as defined in regulation I/10 (as applicable to comply with regulation VIII/9), including the nuclear propulsion plant and the collision protective structure, was satisfactory and the ship complied with the relevant requirements of chapter II-1 and chapter II-2 of the Convention (other than those relating to fire safety systems and appliances and fire-control plans);

2.2 the ship complied with the requirements of the Convention as regards fire safety systems and appliances and fire-control plans;

2.3 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;

2.4 the ship was provided with a line-throwing appliance in accordance with the requirements of the Convention;

2.5 the ship complied with the requirements of the Convention as regards radio installations;

2.6 the provision and functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention;

2.7 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;

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

2.9 in all other respects the ship complied with the relevant requirements of the regulations, so far as these requirements apply thereto;

2.10 the ship was/was not[5] subjected to an alternative design and arrangements in pursuance of regulation(s) II-1/55 / II-2/17 / III/38[5] of the Convention;

2.11 a Document of approval of alternative design and arrangements for machinery and electrical installations/fire protection/life-saving appliance and arrangements[5] is/is not[5] appended to this Certificate.

This certificate is valid until .....

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

Issued at .....
(Place of issue of certificate)

…….. ……
(Date of issue) *(Signature of authorized official issuing the certificate)*

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

[5] Delete as appropriate.

RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY (FORM C)

RECORD OF EQUIPMENT FOR COMPLIANCE WITH
THE INTERNATIONAL CONVENTION FOR THE SAFETYOF
LIFE AT SEA, 1974, AS AMENDED

1 ***Particulars of ship***

Name of ship .....
Distinctive number or letters .....
Minimum number of persons with required qualifications to operate the radio installations .....

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

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

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

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

5	Number of rescue boats	……
5.1	Number of boats which are included in the total lifeboats shown in 2 and 3 above	……
6	Liferafts	
6.1	Those for which approved launching appliances are required	
6.1.1	Number of liferafts	……
6.1.2	Number of persons accommodated by them	……
6.2	Those for which approved launching appliances are not required	
6.2.1	Number of liferafts	……
6.2.2	Number of persons accommodated by them	……
6.3	Number of liferafts required by regulation III/31.1.4	……
7	Number of lifebuoys	……
8	Number of lifejackets	……
9	Immersion suits	
9.1	Total number	……
9.2	Number of suits complying with the requirements for lifejackets	……
10	Number of anti-exposure suits	……

3 ***Details of radio facilities***

Item		Actual provision
1	Primary systems	
1.1	VHF radio installation	
1.1.1	DSC encoder	……..
1.1.2	DSC watch receiver	……..
1.1.3	Radiotelephony	……..
1.2	MF radio installation	
1.2.1	DSC encoder	……..
1.2.2	DSC watch receiver	……..
1.2.3	Radiotelephony	……..
1.3	MF/HF radio installation	
1.3.1	DSC encoder	……..
1.3.2	DSC watch receiver	……..
1.3.3	Radiotelephony	……..
1.4	Recognized mobile satellite service ship earth station	……..
2	Secondary means of initiating the transmission of ship-to-shore distress alerts	……..

3 ***Details of radio facilities*** *(continued)*

3	Facilities for reception of MSI and search and rescue related information	……..
4	EPIRB	……..
5	Two-way VHF radiotelephone apparatus	
5.1	Portable two-way VHF radiotelephone apparatus	……..
5.2	Two-way VHF radiotelephone apparatus fitted in survival craft	……..
6	Search and rescue locating devices	
6.1	Radar search and rescue transponders (radar SART) stowed for rapid placement in survival craft	……..
6.2	Radar search and rescue transponders (radar SART) stowed in survival craft	……..
6.3	AIS search and rescue transmitters (AIS-SART) stowed for rapid placement in survival craft	……..
6.4	AIS search and rescue transmitters (AIS-SART) stowed in survival craft	……..

4 ***Methods used to ensure availability of radio facilities*** (regulations IV/15.6 and 15.7)

4.1 Duplication of equipment ……
4.2 Shore-based maintenance ……
4.3 At-sea maintenance capability ……

5 ***Details of navigational systems and equipment***

	Item	Actual provision
1.1	Standard magnetic compass[7]	……..
1.2	Spare magnetic compass[7]	……..
1.3	Gyro-compass[7]	……..
1.4	Gyro-compass heading repeater[7]	……..
1.5	Gyro-compass bearing repeater[7]	……..
1.6	Heading or track control system[7]	……..
1.7	Pelorus or compass bearing device[7]	……..
1.8	Means of correcting heading and bearings	……..
1.9	Transmitting heading device (THD)[7]	……..
2.1	Nautical charts/Electronic chart display and information system (ECDIS)[5]	……..
2.2	Backup arrangements for ECDIS	……..
2.3	Nautical publications	……..
2.4	Backup arrangements for electronic nautical publications	……..

5 Delete as appropriate.

7 Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means, they shall be specified.

5 ***Details of navigational systems and equipment*** *(continued)*

3.1	Receiver for a global navigation satellite system/terrestrial radionavigation system/multisystem shipborne radionavigation receiver[5] [7]	……..
3.2	9 GHz radar[7]	……..
3.3	Second radar (3 GHz/9 GHz[5])[7]	……..
3.4	Automatic radar plotting aid (ARPA)[7]	……..
3.5	Automatic tracking aid[7]	……..
3.6	Second automatic tracking aid[7]	……..
3.7	Electronic plotting aid[7]	……..
4.1	Automatic identification system (AIS)	……..
4.2	Long-range identification and tracking system	……..
5.1	Voyage data recorder (VDR)[5]	……..
5.2	Simplified voyage data recorder (S-VDR)[5]	……..
6.1	Speed and distance measuring device (through the water)[7]	……..
6.2	Speed and distance measuring device (over the ground in the forward and athwartships direction)[7]	……..
7	Echo-sounding device[7]	……..
8.1	Rudder, propeller, thrust, pitch and operational mode indicator[5] [7]	……..
8.2	Rate-of-turn indicator[7]	……..
9	Sound reception system[7]	……..
10	Telephone to emergency steering position[7]	……..
11	Daylight signalling lamp[7]	……..
12	Radar reflector[7]	……..
13	International Code of Signals	……..
14	IAMSAR Manual, Volume III	……..
15	Bridge navigational watch alarm system (BNWAS)	……

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

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

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

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

***

5 Delete as appropriate.

7 Alternative means of meeting this requirement are permitted under regulation V/19. In case of other means, they shall be specified.

ANNEX 4

RESOLUTION MSC.497(105)
(adopted on 28 April 2022)

AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention") and article VI of the Protocol of 1988 relating to the Convention ("the 1988 SOLAS Protocol") concerning the procedure for amending the 1988 SOLAS Protocol,

HAVING CONSIDERED, at its 105th session, amendments to the 1988 SOLAS Protocol proposed and circulated in accordance with article VIII(b)(i) of the Convention and article VI of the 1988 SOLAS Protocol,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention and article VI(c) of the 1988 SOLAS Protocol, amendments to the appendix to the annex to the 1988 SOLAS Protocol, 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 and article VI of the 1988 SOLAS Protocol, 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 Parties to the 1988 SOLAS Protocol or Parties 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 the Parties concerned to note that, in accordance with article VIII(b)(vii)(2) of the Convention and article VI of the 1988 SOLAS Protocol, 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 and article VI of the 1988 SOLAS Protocol, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to the 1988 SOLAS Protocol;

5 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Parties to the 1988 SOLAS Protocol.

ANNEX

AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

ANNEX

MODIFICATIONS AND ADDITIONS TO THE ANNEX TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

APPENDIX

MODIFICATIONS AND ADDITIONS TO THE APPENDIX TO THE ANNEX TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

The existing forms of the Passenger Ship Safety Certificate, the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Certificate contained in the appendix to the annex are replaced by the following:

FORM OF SAFETY CERTIFICATE FOR PASSENGER SHIPS

PASSENGER SHIP SAFETY CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for Passenger Ship Safety (Form P)

(Official seal) *(State)*

for *an/a short*[1] international voyage

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974, as modified by the Protocol of 1988 relating thereto

under the authority of the Government of

_____
(name of the State)

by _____
(person or organization authorized)

Particulars of ship[2]

Name of ship .....

Distinctive number or letters .....

Port of registry .....

[1] Delete as appropriate.

[2] Alternatively, the particulars of the ship may be placed horizontally in boxes.

Gross tonnage .....

Sea areas in which ship is certified to operate (regulation IV/2)[3] .....

IMO number[4] .....

Date of build:

Date of building contract .....
Date on which keel was laid or ship was at similar stage of construction .....
Date of delivery .....
Date on which work for a conversion or an alteration or modification of a major character was commenced (where applicable) .....

All applicable dates shall be completed.

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation I/7 of the Convention.

2 That the survey showed that:

2.1 the ship complied with the requirements of the Convention as regards:

.1 the structure, main and auxiliary machinery, boilers and other pressure vessels;
.2 the watertight subdivision arrangements and details;
.3 the following subdivision load lines:

Subdivision load lines assigned and marked on the ship's side amidships (regulation II-1/18)[5]	Freeboard	To apply when the spaces in which passengers are carried include the following alternative spaces
P1 P2 P3	....	....

2.2 the ship complied with part G of chapter II-1 of the Convention using ..... as fuel/N.A;

2.3 the ship complied with the requirements of the Convention as regards structural fire protection, fire safety systems and appliances and fire-control plans;

2.4 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;

2.5 the ship was provided with a line-throwing appliance in accordance with the requirements of the Convention;

2.6 the ship complied with the requirements of the Convention as regards radio installations;

2.7 the provision and functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention;

2.8 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;

[3] For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

[4] In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

2.9 the ship was provided with lights, shapes, means of making sound signals and distress signals, in accordance with the requirements of the Convention and the International Regulations for Preventing Collisions at Sea in force;

2.10 in all other respects the ship complied with the relevant requirements of the Convention;

2.11 the ship was/was not[1] subjected to an alternative design and arrangements in pursuance of regulation(s) II-1/55/II-2/17/III/38[1] of the Convention;

2.12 a Document of approval of alternative design and arrangements for machinery and electrical installations/fire protection/life-saving appliances and arrangements[1] is/is not[1] appended to this Certificate.

3 That an Exemption Certificate has/has not[1] been issued.

This certificate is valid until .....

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

Issued at .....

(Place of issue of certificate)

…… ……

(Date of issue) *(Signature of authorized official issuing the certificate)*

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

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

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

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

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

This certificate shall, in accordance with regulation I/14(e)/I/14(f)[1] of the Convention, be accepted as valid until ……

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

---

1 Delete as appropriate.

5 For ships constructed before 1 January 2009, the applicable subdivision notation "C.1, C.2 and C.3" should be used.

1 Delete as appropriate.

FORM OF SAFETY EQUIPMENT CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY EQUIPMENT CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for Cargo Ship Safety (Form E)

(Official seal) *(State)*

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974, as modified by the Protocol of 1988 relating thereto

under the authority of the Government of

_____
(name of the State)

by _____
(person or organization authorized)

Particulars of ship[1]

Name of ship .....

Distinctive number or letters .....

Port of registry.....

Gross tonnage .....

Deadweight of ship (metric tons)[2].....

Length of ship (regulation III/3.12).....

IMO number[3] .....

Type of ship[4]

Bulk carrier
Oil tanker
Chemical tanker
Gas carrier
Cargo ship other than any of the above

Date on which keel was laid or ship was at a similar stage of construction or, where applicable, date on which work for a conversion or an alteration or modification of a major character was commenced.....

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

2 For oil tankers, chemical tankers and gas carriers only.

3 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

4 Delete as appropriate.

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation I/8 of the Convention.

2 That the survey showed that:

2.1 the ship complied with the requirements of the Convention as regards fire safety systems and appliances and fire-control plans;

2.2 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;

2.3 the ship was provided with a line-throwing appliance in accordance with the requirements of the Convention;

2.4 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;

2.5 the ship was provided with lights, shapes and means of making sound signals and distress signals in accordance with the requirements of the Convention and the International Regulations for Preventing Collisions at Sea in force;

2.6 in all other respects the ship complied with the relevant requirements of the Convention;

2.7 the ship was/was not[4] subjected to an alternative design and arrangements in pursuance of regulation(s) II-2/17 / III/38[4] of the Convention;

2.8 a Document of approval of alternative design and arrangements for fire protection/life-saving appliances and arrangements[4] is/is not[4] appended to this Certificate.

3 That the ship operates in accordance with regulation III/26.1.1.1[5] within the limits of the trade area …….

4 That an Exemption Certificate has/has not[4] been issued.

This certificate is valid until ……[6] subject to the annual and periodical surveys in accordance with regulation I/8 of the Convention.

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

Issued at…….
(Place of issue of certificate)

…… ……
(Date of issue) (Signature of authorized official issuing the certificate)

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

---

4 Delete as appropriate.

5 Refer to the 1983 amendments to SOLAS (MSC.6(48)), applicable to ships constructed on or after 1 July 1986, but before 1 July 1998 in the case of self-righting partially enclosed lifeboat(s) on board.

6 Insert the date of expiry as specified by the Administration in accordance with regulation I/14(a) of the Convention. The day and the month of this date correspond to the anniversary date as defined in regulation I/2(n) of the Convention, unless amended in accordance with regulation I/14(h).

Endorsement for annual and periodical surveys

THIS IS TO CERTIFY that, at a survey required by regulation I/8 of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Annual survey:

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Annual/Periodical[4] survey:

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Annual/Periodical[4] survey:

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Annual survey:

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Annual/periodical survey in accordance with regulation I/14(h)(iii)

THIS IS TO CERTIFY that, at an annual/periodical[4] survey in accordance with regulation I/14(h)(iii) of the Convention, this ship was found to comply with the relevant requirements of the Convention.

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

[4] Delete as appropriate.

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

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

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

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

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

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

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

The certificate shall, in accordance with regulation I/14(e)/l/14(f)[4] of the Convention, be accepted as valid until .....

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

[4] Delete as appropriate.

Endorsement for advancement of anniversary date where regulation I/14(h) applies

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

Signed:
.....
(Signature of authorized official)

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

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

Signed:
.....
(Signature of authorized official)

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

FORM OF SAFETY RADIO CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY RADIO CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment
for Cargo Ship Safety Radio (Form R)

(Official seal) *(State)*

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974, as modified by the Protocol of 1988 relating thereto

under the authority of the Government of

_____
(name of the State)

by _____
(person or organization authorized)

Particulars of ship[1]

Name of ship.....

Distinctive number or letters.....

Port of registry .....

Gross tonnage .....

Sea areas in which ship is certified to operate (regulation IV/2)[2] .....

IMO number[3] .....

Date on which keel was laid or ship was at a similar stage of construction or, where applicable, date on which work for a conversion or an alteration or modification of a major character was commenced .....

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulation I/9 of the Convention.

2 That the survey showed that:

2.1 the ship complied with the requirements of the Convention as regards radio installations;

2.2 the provision and functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention.

---

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

2 For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

3 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

3 That an Exemption Certificate has/has not[4] been issued.

This certificate is valid until ……..[5] subject to the periodical surveys in accordance with regulation I/9 of the Convention.

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

Issued at.....
(Place of issue of certificate)

…….…… ……..…….
(Date of issue) *(Signature of authorized official issuing the certificate)*

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

Endorsement for periodical surveys

THIS IS TO CERTIFY that, at a survey required by regulation I/9 of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

4 Delete as appropriate.

5 Insert the date of expiry as specified by the Administration in accordance with regulation I/14(a) of the Convention. The day and the month of this date correspond to the anniversary date as defined in regulation I/2(n) of the Convention, unless amended in accordance with regulation I/14(h).

Periodical survey: Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

Periodical survey in accordance with regulation I/14(h)(iii)

THIS IS TO CERTIFY that, at a periodical survey in accordance with regulation I/14(h)(iii) of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

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

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

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

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

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

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

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

The certificate shall, in accordance with regulation I/14(e)/I/14(f)[4] of the Convention, be accepted as valid until .....

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement for advancement of anniversary date where regulation I/14(h) applies

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

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

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

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

[4] Delete as appropriate.

FORM OF SAFETY CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for Cargo Ship Safety (Form C)

(Official seal) *(State)*

Issued under the provisions of the
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE
AT SEA, 1974, as modified by the Protocol of 1988 relating thereto
under the authority of the Government of

_____
(name of the State)

by _____
(person or organization authorized)

Particulars of ship[1]

Name of ship .....
Distinctive number or letters.....
Port of registry .....
Gross tonnage .....
Deadweight of ship (metric tons)[2] .....
Length of ship (regulation III/3.12).....
Sea areas in which ship is certified to operate (regulation IV/2)[3] .....
IMO number[4] .....

Type of ship[5]

Bulk carrier
Oil tanker
Chemical tanker
Gas carrier
Cargo ship other than any of the above

Date of build:
Date of building contract .....
Date on which keel was laid or ship was at similar stage of construction.....
Date of delivery .....
Date on which work for a conversion or an alteration or modification of a major character was commenced (where applicable) .....

All applicable dates shall be completed.

---

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

2 For oil tankers, chemical tankers and gas carriers only.

3 For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

4 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

5 Delete as appropriate.

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the requirements of regulations I/8, I/9 and I/10 of the Convention.

2 That the survey showed that:

2.1 the condition of the structure, machinery and equipment as defined in regulation I/10 was satisfactory and the ship complied with the relevant requirements of chapter II-1 and chapter II-2 of the Convention (other than those relating to fire safety systems and appliances and fire-control plans);

2.2 the ship complied with part G of chapter II-1 of the Convention using ……..….. as fuel/N.A

2.3 the last two inspections of the outside of the ship's bottom took place on ……and …….…… *(dates)*

2.4 the ship complied with the requirements of the Convention as regards fire safety systems and appliances and fire-control plans;

2.5 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;

2.6 the ship was provided with a line-throwing appliance in accordance with the requirements of the Convention;

2.7 the ship complied with the requirements of the Convention as regards radio installations;

2.8 the provision and functioning of the radio installations used in life-saving appliances complied with the requirements of the Convention;

2.9 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;

2.10 the ship was provided with lights, shapes, means of making sound signals and distress signals in accordance with the requirements of the Convention and the International Regulations for Preventing Collisions at Sea in force;

2.11 in all other respects the ship complied with the relevant requirements of the Convention;

2.12 the ship was/was not[5] subjected to an alternative design and arrangements in pursuance of regulation(s) II-1/55 / II-2/17 / III/38[5] of the Convention;

2.13 a Document of approval of alternative design and arrangements for machinery and electrical installations/fire protection/life-saving appliances and arrangements[5] is/is not[5] appended to this Certificate.

3 That the ship operates in accordance with regulation III/26.1.1.16 within the limits of the trade area……

4 That an Exemption Certificate has/has not[1] been issued.

---

5 Delete as appropriate.

6 Refer to the 1983 amendments to SOLAS (MSC.6(48)), applicable to ships constructed on or after 1 July 1986, but before 1 July 1998 in the case of self-righting partially enclosed lifeboat(s) on board.

This certificate is valid until ……[7] subject to the annual, intermediate and periodical surveys and inspections of the outside of the ship's bottom in accordance with regulations I/8, I/9 and I/10 of the Convention.

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

Issued at ……

(Place of issue of certificate)

……..…… ……..

(Date of issue) *(Signature of authorized official issuing the certificate)*

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

Endorsement for annual and intermediate surveys relating to structure, machinery and equipment referred to in paragraph 2.1 of this certificate

THIS IS TO CERTIFY that, at a survey required by regulation I/10 of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Annual survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Annual/Intermediate[5] survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Annual/Intermediate[5] survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Annual survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

---

7 Insert the date of expiry as specified by the Administration in accordance with regulation I/14(a) of the Convention. The day and the month of this date correspond to the anniversary date as defined in regulation I/2(n) of the Convention, unless amended in accordance with regulation I/14(h).

5 Delete as appropriate.

Annual/intermediate survey in accordance with regulation I/14(h)(iii)

THIS IS TO CERTIFY that, at an annual/intermediate[5] survey in accordance with regulations I/10 and I/14(h)(iii) of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement for inspections of the outside of the ship's bottom[8]

THIS IS TO CERTIFY that, at an inspection required by regulation I/10 of the Convention, the ship was found to comply with the relevant requirements of the Convention.

First inspection:

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

Second inspection:

Signed: .....

(Signature of authorized official)

Place: .....

Date:

(Seal or stamp of the authority as appropriate)

Endorsement for annual and periodical surveys relating to life-saving appliances and other equipment referred to in paragraphs 2.3, 2.4, 2.5, 2.8 and 2.9 of this certificate

THIS IS TO CERTIFY that, at a survey required by regulation I/8 of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Annual survey:

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

Annual/Periodical[5] survey:

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

5 Delete as appropriate.

8 Provision may be made for additional inspections.

Annual/Periodical[5] survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Annual survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Annual/periodical survey in accordance with regulation I/14(h)(iii)

THIS IS TO CERTIFY that, at an annual/periodical[5] survey in accordance with regulations I/8 and I/14(h)(iii) of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Endorsement for periodical surveys relating to radio installations referred to in paragraphs 2.6 and 2.7 of this certificate

THIS IS TO CERTIFY that, at a survey required by regulation I/9 of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

[5] Delete as appropriate.

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate

Periodical survey in accordance with regulation I/14(h)(iii)

THIS IS TO CERTIFY that, at a periodical survey in accordance with regulations I/9 and I/14(h)(iii) of the Convention, the ship was found to comply with the relevant requirements of the Convention.

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

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

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

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

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

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

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

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

The certificate shall, in accordance with regulation I/14(e)/I/14(f)[5] of the Convention, be accepted as valid until .....

[5] Delete as appropriate.

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement for advancement of anniversary date where regulation I/14(h) applies

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

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

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

Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

***

ANNEX 5

RESOLUTION MSC.498(105)
(adopted on 28 April 2022)

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 1994 (1994 HSC CODE)

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution MSC.36(63), by which it adopted the International Code of Safety for High-Speed Craft ("the 1994 HSC Code"), which has become mandatory under chapter X of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation X/1.1 of the Convention concerning the procedure for amending the 1994 HSC Code,

HAVING CONSIDERED, at its 105th session, amendments to the 1994 HSC 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 1994 HSC 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 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 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 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 1994 (1994 HSC CODE)

CHAPTER 8
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

1 Paragraphs 8.2.1, 8.2.1.1 and 8.2.1.2 are replaced by the following:

"8.2.1 [Reserved*]

* The provisions related to two-way VHF radiotelephone apparatus and search and rescue locating devices were relocated under chapter 14 of the 2000 HSC Code (resolution MSC.97(73), as amended up to and including resolution MSC.499(105)). Paragraph 8.2.1 was intentionally left blank to avoid renumbering of existing paragraphs."

CHAPTER 14
RADIOCOMMUNICATIONS

2 The text of chapter 14 is replaced by the following:

"Craft should be provided with radiocommunications facilities as specified in chapter 14 of the 2000 HSC Code (resolution MSC.97(73)), as amended up to and including resolution MSC.499(105), that are fitted and operated in accordance with the provisions of that chapter."

ANNEX 1

FORM OF SAFETY CERTIFICATE FOR HIGH-SPEED CRAFT

Record of Equipment for High-Speed Craft Safety Certificate

3 The existing form of Safety Certificate for High-Speed Craft, including the associated record of equipment for High-Speed Craft Safety Certificate, contained in annex 1 is replaced by the following:

"**FORM OF SAFETY CERTIFICATE FOR HIGH-SPEED CRAFT**

HIGH-SPEED CRAFT SAFETY CERTIFICATE

This Certificate should be supplemented by a Record of Equipment

(Official seal) *(State)*

Issued under the provisions of the
INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT
(Resolution MSC.36(63))
under the authority of the Government of

_____
(full designation of the State)

by _____

(full official designation of the competent person or organization authorized by the Administration)

Particulars of craft[1]

Name of craft .....
Manufacturer's model and hull number.....
Distinctive number or letters.....
IMO number[2] .....
Port of registry .....
Gross tonnage .....
Sea areas in which the craft is certified to operate (2000 HSC Code, paragraph 14.2.1)[3].....
Design waterline corresponding to draughts at draught marks of ……. forward, ……. aft

Category category A passenger craft/category B passenger craft/cargo craft[4]

Craft type air-cushion vehicle/surface-effect ship/hydrofoil/monohull/multihull/ other (give details .....)[4]

Date on which keel was laid or craft was at
a similar stage of construction or on which
a major conversion was commenced .....

THIS IS TO CERTIFY:

1 That the above-mentioned craft has been duly surveyed in accordance with the applicable provisions of the International Code of Safety for High-Speed Craft.

2 That the survey showed that the structure, equipment, fittings, radio station arrangements and materials of the craft and the condition thereof are in all respects satisfactory and that the craft complies with the relevant provisions of the Code.

3 That the life-saving appliances are provided for a total number of persons and no more as follows:
.....
.....

4 That, in accordance with 1.11 of the Code, the following equivalents have been granted in respect of the craft:

paragraph ..... equivalent arrangement .....
....

This certificate is valid until ……..

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

---

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

2 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

3 For a craft certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

4 Delete as appropriate.

Issued at ……

(Place of issue of certificate)

……..…… ……..

(Date of issue) *(Signature of authorized official issuing the certificate)*

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

Endorsement for periodical surveys

THIS IS TO CERTIFY that, at a survey required by 1.5 of the Code, this craft was found to comply with the relevant provisions of the Code.

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement to extend the Certificate if valid for less than 5 years where 1.8.8 of the Code applies

This craft complies with the relevant requirements of the Code, and this Certificate should, in accordance with 1.8.8 of the Code, be accepted as valid until .....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement where the renewal survey has been completed and 1.8.9 of the Code applies

This craft complies with the relevant requirements of the Code, and this Certificate should, in accordance with 1.8.9 of the Code, be accepted as valid until.....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement to extend the validity of the Certificate until reaching the port of survey where 1.8.10 of the Code applies

This Certificate should, in accordance with 1.8.10 of the Code, be accepted as valid until.....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement for the advancement of the anniversary date where 1.8.13 of the Code applies

In accordance with 1.8.13 of the Code, the new anniversary date is.....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

In accordance with 1.8.13 of the Code, the new anniversary date is.....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Record of Equipment for High-Speed Craft Safety Certificate

This Record shall be permanently attached to the
High-Speed Craft Safety Certificate.

RECORD OF EQUIPMENT FOR COMPLIANCE WITH THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT

1 ***Particulars of craft***

Name of craft .....

Manufacturer's model and hull number .....

Distinctive number or letters .....

IMO number[2].....

Category: Category A passenger craft/category B passenger craft/ cargo craft[4]

Craft type: air-cushion, surface-effect ship, hydrofoil, monohull, multihull, other
(give details .....)[4]

Number of passengers for which certified .....

Minimum number of persons with required qualifications to operate
the radio installations .....

2 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

4 Delete as appropriate.

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

1	Total number of persons for which life-saving appliances are provided	. . . . .
2	Total number of lifeboats	. . . . .
2.1	Total number of persons accommodated by them	. . . . .
2.2	Number of partially enclosed lifeboats complying with SOLAS regulation III/42	. . . . .
2.3	Number of totally enclosed lifeboats complying with SOLAS regulation III/44	. . . . .
2.4	Other lifeboats	. . . . .
2.4.1	Number	. . . . .
2.4.2	Type	. . . . .
3	Number of rescue boats	. . . . .
3.1	Number of boats which are included in the total lifeboats shown above	. . . . .
4	Liferafts complying with SOLAS regulations 111/38 to 40 for which suitable means of launching are provided	. . . . .
4.1	Number of liferafts	. . . . .
4.2	Number of persons accommodated by them	. . . . .
5	Open reversible liferafts (annex 10 of the Code)	. . . . .
5.1	Number of liferafts	. . . . .
5.2	Number of persons accommodated by them	. . . . .
6	Number of marine evacuation system (MES)	. . . . .
6.1	Number of persons served by them	. . . . .
7	Number of lifebuoys	. . . . .
8	Number of lifejackets	. . . . .
8.1	Number suitable for adults	. . . . .
8.2	Number suitable for children	. . . . .
9	Immersion suits	. . . . .
9.1	Total number	. . . . .
9.2	Number of suits complying with the requirements for lifejackets	. . . . .
10	Number of anti-exposure suits	. . . . .
10.1	Total number	. . . . .
10.2	Number of suits complying with the requirements for lifejackets	. . . . .

3 *Details of radio facilities*

1	Primary systems	. . . . .
1.1	VHF radio installation	
1.1.1	DSC encoder	. . . . .
1.1.2	DSC watch receiver	. . . . .
1.1.3	Radiotelephony	. . . . .
1.2	MF radio installation	
1.2.1	DSC encoder	. . . . .
1.2.2	DSC watch receiver	. . . . .
1.2.3	Radiotelephony	. . . . .
1.3	MF/HF radio installation	
1.3.1	DSC encoder	. . . . .
1.3.2	DSC watch receiver	. . . . .
1.3.3	Radiotelephony	. . . . .
1.4	Recognized mobile satellite service ship earth station	. . . . .
2	Secondary means of initiating the transmission of ship-to-shore distress alerts	. . . . .
3	Facilities for reception of MSI and search and rescue related information	. . . . .
4	EPIRB	. . . . .
5	Two-way VHF radiotelephone apparatus	. . . . .
6	Radar SART or AIS-SART	. . . . .
7	Radiotelephone distress frequency watch receiver on 2 182 kHz[5]	. . . . .
8	Device for generating the radiotelephone alarm signal on 2 182 kHz[6]	. . . . .

4 *Methods used to ensure availability of radio facilities (paragraphs 14.14.6, 14.14.7 and 14.14.8 of the Code)*

4.1 Duplication of equipment .....

4.2 Shore-based maintenance .....

4.3 At-sea maintenance capability .....

[5] Unless another date is determined by the Maritime Safety Committee, this item need not be reproduced on the record attached to certificates issued after 1 February 1999.

[6] This item need not be reproduced on the record attached to certificates issued after 1 February 1999.

5 ***Details of navigational systems and equipment***

1.1	Magnetic compass	……..
1.2	Gyro-compass	……..
2	Speed and distance measuring device	……..
3	Echo-sounding device	……..
4.1	9 GHz radar	……..
4.2	Second radar (3 GHz/9 GHz[4])	……..
4.3	Automatic radar plotting aid (ARPA)/Automatic tracking aid (ATA)[4]	……..
5	Receiver for a global navigation satellite system/ Terrestrial navigation system/Other means of position fixing[4] [7]	……..
6.1	Rate-of-turn indicator	……..
6.2	Rudder angle indicator/Direction of steering thrust indicator[4]	……..
7.1	Nautical charts/Electronic chart display and information system (ECDIS)[4]	……..
7.2	Backup arrangements for ECDIS	……..
7.3	Nautical publications	……..
7.4	Backup arrangements for nautical publications	……..
8	Search light	……..
9	Daylight signalling lamp	……..
10	Night vision equipment	……..
11	Means to show the mode of the propulsion systems	……..
12	Automatic steering aid (Automatic pilot)	……..
13	Automatic identification system (AIS)	……..
14	Long-range identification and tracking system	……..
15	Voyage data recorder (VDR)	……..

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

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

..... (Date of issue)

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

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

***

4 Delete as appropriate.

7 In case of "other means", they should be specified.

ANNEX 6

RESOLUTION MSC.499(105)
(adopted on 28 April 2022)

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 2000 (2000 HSC CODE)

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution MSC.97(73), by which it adopted the International Code of Safety for High-Speed Craft, 2000 ("the 2000 HSC Code"), which has become mandatory under chapter X of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation X/1.2 of the Convention concerning the procedure for amending the 2000 HSC Code,

HAVING CONSIDERED, at its 105th session, amendments to the 2000 HSC 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 2000 HSC 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 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 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 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 2000 (2000 HSC CODE)

CHAPTER 8
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

1 Paragraphs 8.2.1, 8.2.1.1 and 8.2.1.2 are replaced by the following:

"8.2.1 [Reserved*]

* Refer to chapter 14 for provisions related to two-way VHF radiotelephone apparatus and search and rescue locating devices. Paragraph 8.2.1 was intentionally left blank to avoid renumbering of existing paragraphs."

CHAPTER 14
RADIOCOMMUNICATIONS

2 The text of chapter 14 (Radiocommunications) is replaced by the following:

"14.1 Application

14.1.1 Unless expressly provided otherwise, this chapter applies to all craft specified in 1.3.1 and 1.3.2.

14.1.2 This chapter does not apply to craft to which this Code would otherwise apply while such craft are being navigated within the Great Lakes of North America and their connecting and tributary waters as far east as the lower exit of the St. Lambert Lock at Montreal in the Province of Quebec, Canada.[1]

14.1.3 No provision in this chapter shall prevent the use by any craft, survival craft or person in distress of any means at their disposal to attract attention, make known their position and obtain help.

[1] Such craft are subject to special requirements relative to radio for safety purposes, as contained in the relevant agreement between Canada and the United States.

14.2 Terms and definitions

14.2.1 For the purpose of this chapter, the following terms shall have the meanings defined below:

.1 *AIS-SART* means an automatic identification system search and rescue transmitter capable of operating on frequencies dedicated for AIS (161.975 MHz (AIS1) and 162.025 MHz (AIS2)).

.2 *Bridge-to-bridge communications* means safety radiocommunications between craft and ships from the position from which the craft is normally navigated.

.3 *Continuous radio watch* means that the radio and listening watch concerned shall not be interrupted other than for brief intervals when the craft's receiving capability is impaired or blocked by its own communications or when the facilities are under periodical maintenance or checks.

.4 *Digital selective calling (DSC)* means a technique using digital codes which enables a radio station to establish contact with, and transfer information to, another station or group of stations, and complying with the relevant recommendations of the International Telecommunication Union Radiocommunication Sector (ITU-R).

.5 *Emergency position-indicating radio beacon (EPIRB)* means a transmitter operating in the frequency band 406.0-406.1 MHz capable of transmitting a distress alert via satellite to a rescue coordination centre and transmitting signals for on-scene locating.

.6 *General radiocommunications* means communications other than distress, urgency and safety communications.

.7 *Global Maritime Distress and Safety System (GMDSS)* means a system that performs the functions set out in paragraph 14.5.

.8 *GMDSS identities* means information which may be transmitted to uniquely identify the craft or its associated rescue boats and survival craft. These identities are the craft's call sign, Maritime Mobile Service Identity (MMSI), EPIRB hexadecimal identity, recognized mobile satellite service identities and equipment serial numbers.

.9 *Locating* means the finding of ships, craft, aircraft, survival craft or persons in distress.

.10 *Maritime safety information (MSI)*[2] means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships and craft.

.11 *Radar SART* means a search and rescue transponder operating on radar frequencies in the frequency band 9.2-9.5 GHz.

.12 *Radio Regulations* mean the Radio Regulations complementing the Constitution and Convention of the International Telecommunication Union which is in force at any given time.

.13 *Recognized mobile satellite service* means any service which operates through a satellite system and is recognized by the Organization, for use in GMDSS.

.14 *Satellite service on 406 MHz* means a service operating through a satellite system having global availability designed to detect EPIRBs transmitting in the frequency band 406.0-406.1 MHz.

.15 *Sea area A1* means an area within the radiotelephone coverage of at least one very high frequency (VHF) coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government to the Convention.[3]

.16 *Sea area A2* means an area, excluding sea area A1, within the radiotelephone coverage of at least one medium frequency (MF) coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government to the Convention.[3]

.17 *Sea area A3* means an area, excluding sea areas A1 and A2, within the coverage of a recognized mobile satellite service supported by the ship earth station carried on board, in which continuous alerting is available.

.18 *Sea area A4* means an area outside of sea areas A1, A2 and A3.

14.2.2 All other terms and abbreviations which are used in this chapter and which are defined in the Radio Regulations and in the International Convention on Maritime Search and Rescue, 1979, as it may be amended, shall have the meanings as defined in those Regulations and the SAR Convention.

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[2] Refer to *Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI)* (MSC.1/Circ.1310, as revised).

[3] Refer to *Provision of radio services for the Global Maritime Distress and Safety System (GMDSS)* (resolution MSC.509(105)).

14.3 Exemptions

14.3.1 It is considered highly desirable not to deviate from the requirements of this chapter; nevertheless, the Administration, in conjunction with the base port State, may grant partial or conditional exemptions to individual craft from the requirements of 14.7 to 14.11 provided:

.1 such craft comply with the functional requirements of 14.5; and

.2 the Administration has taken into account the effect such exemptions may have upon the general efficiency of the service for the safety of all ships and craft.

14.3.2 An exemption may be granted under 14.3.1 only:

.1 if the conditions affecting safety are such as to render the full application of 14.7 to 14.11 unreasonable or unnecessary; or

.2 in exceptional circumstances, for a single voyage outside the sea area or sea areas for which the craft is equipped.

14.3.3 Each Administration shall report to the Organization on all exemptions granted under 14.3.1 and 14.3.2 giving the reasons for granting such exemptions.[4]

[4.] Exemptions should be reported through the Organization's Global Integrated Shipping Information System (GISIS) with reference to *Issue of Exemption Certificates under the 1974 SOLAS Convention and Amendments thereto* (SLS.14/Circ.115, as amended).

14.4 GMDSS Identities

14.4.1 This section applies to all craft on all voyages.

14.4.2 Each Administration undertakes to ensure that suitable arrangements are made for registering GMDSS identities and for making information on these identities available to rescue coordination centres on a 24-hour basis. Where appropriate, international organizations maintaining a registry of these identities, such as the ITU Maritime Mobile Access and Retrieval System (MARS), shall be notified by the Administration of these identity assignments.

14.5 Functional requirements[5]

14.5.1 Every craft, while at sea, shall be capable of:

.1 performing the GMDSS functions, which are as follows:

.1 transmitting ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service;

.2 receiving shore-to-ship distress alert relays;

.3 transmitting and receiving ship-to-ship distress alerts;

.4 transmitting and receiving search and rescue coordinating communications;

.5 transmitting and receiving on-scene communications;

.6 transmitting and receiving signals for locating;[6]

.7 receiving MSI;[7]

.8 transmitting and receiving urgency and safety radiocommunications; and

.9 transmitting and receiving bridge-to-bridge communications; and

.2 transmitting and receiving general radiocommunications.

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[5] It should be noted that ships performing GMDSS functions should use *Guidelines for the avoidance of false distress alerts* (resolution MSC.514(105)).

[6] Refer also to 13.5 and 13.15, as appropriate.

[7] It should be noted that craft may have a need for reception of certain maritime safety information while in port.

14.6 Radio installations

14.6.1 Every craft shall be provided with radio installations capable of complying with the functional requirements prescribed by 14.5 throughout its intended voyage and, unless exempted under 14.3, complying with the requirements of 14.7 and, as appropriate for the sea area or areas through which it will pass during its intended voyage, the requirements of either 14.8, 14.9, 14.10 or 14.11.

14.6.2 Every radio installation shall be:

.1 located in such a way that no harmful interference of mechanical, electrical or other origin affects its proper use, and that electromagnetic compatibility is ensured and harmful interaction avoided with other equipment and systems;

.2 so located as to ensure the greatest possible degree of safety and operational availability;

.3 protected against harmful effects of water, extremes of temperature and other adverse environmental conditions;

.4 provided with reliable, permanently arranged electrical lighting, independent of the main source of electrical power, for the adequate illumination of the radio controls for operating the radio installation; and

.5 clearly marked with the GMDSS identities, as applicable, for use by the radio installation operator.

14.6.3 Control of the VHF radiotelephone channels, required for navigational safety, shall be immediately available on the navigating bridge convenient to the conning position, and, where necessary, facilities shall be available to permit radiocommunications from the wings of the navigating bridge. Portable VHF equipment may be used to meet the latter provision.

14.6.4 In passenger craft, a distress panel shall be installed at the conning position, which shall:

.1 contain either one single button which, when pressed, initiates a distress alert using all radio installations required on board for that purpose or one button for each individual installation;

.2 clearly and visually indicate whenever any button or buttons have been pressed; and

.3 be provided with means to prevent inadvertent activation of the button or buttons referred to in 14.6.4.1 and 14.6.4.2.

14.6.5 In passenger craft, if an EPIRB is used as the secondary means of distress alerting and is not remotely activated from the distress panel, it shall be acceptable to have an additional EPIRB installed in the wheelhouse near the conning position.

14.6.6 In passenger craft, a distress alert panel shall be installed at the conning position, which:

.1 shall provide visual and aural indication of any distress alert or alerts received on board;

.2 shall indicate through which radiocommunication service the distress alerts have been received; and

.3 may be combined with the distress panel referred to in 14.6.4.

14.7 Radio equipment: General

14.7.1 Every craft shall be provided with:

.1 a VHF radio installation capable of transmitting and receiving, for distress, urgency and safety communications purposes:

.1 DSC on the frequency 156.525 MHz (channel 70). It shall be possible to initiate the transmission of distress alerts on channel 70 from the position from which the craft is normally navigated; and

.2 radiotelephony on the frequencies 156.300 MHz (channel 6), 156.650 MHz (channel 13) and 156.800 MHz (channel 16);

.2 a radio installation capable of maintaining a continuous DSC watch on VHF channel 70 which may be separate from, or combined with, that required by 14.7.1.1.1;

.3 a radar SART or an AIS-SART, which:

.1 shall be so stowed that it can be easily utilized; and

.2 may be one of those required by 14.7.2.1 for a survival craft;

.4 a receiver or receivers capable of receiving MSI and search and rescue related information throughout the entire voyage in which the craft is engaged;[8]

.5 an EPIRB[9] which shall be:

.1 installed in an easily accessible position;

.2 ready to be manually released and capable of being carried by one person into a survival craft;

.3 capable of floating free if the craft sinks and of being automatically activated when afloat; and

.4 capable of being activated manually; and

.6 a radio installation capable of transmitting and receiving general radiocommunications operating on working frequencies in the band between 156 MHz and 174 MHz. This requirement may be fulfilled by the addition of this capability in the equipment required by 14.7.1.1.

14.7.2 Every passenger high-speed craft and every cargo high-speed craft of 500 gross tonnage and upwards shall be provided with at least:

.1 one radar SART or AIS-SART on each side of the craft; and

.2 three two-way VHF radiotelephone apparatuses.

14.7.3 The radar SARTs or AIS-SARTs required by 14.7.2.1 shall be stowed in such locations that they can be rapidly placed in any one of the liferafts. Alternatively, one radar SART or AIS-SART shall be stowed in each survival craft.

14.7.4 Every passenger craft shall be provided with means for two-way on-scene radiocommunications for search and rescue purposes using the aeronautical frequencies 121.5 MHz and 123.1 MHz from the position from which the craft is normally navigated. These means may be portable.

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[8] Refer to *Guidance for the reception of maritime safety information and search and rescue related information as required in the Global Maritime Distress and Safety System (GMDSS)* (MSC.1/Circ.1645).

[9] Refer to *Search and rescue homing capability* (resolution A.616(15))

14.8 Radio equipment: sea area A1

14.8.1 In addition to meeting the requirements of 14.7, every craft engaged on voyages in sea area A1 shall be provided with a radio installation capable of initiating the transmission of ship-to-shore distress alerts from the position from which the craft is normally navigated, operating either:

1 through the satellite service on 406 MHz; or

2 if the craft is on voyages within coverage of MF coast stations equipped with DSC, on MF using DSC; or

3 on high frequency (HF) using DSC; or

4 through a recognized mobile satellite service ship earth station.

14.8.2 The requirement in 14.8.1.1 may be fulfilled by installing:

.1 the EPIRB required by 14.7.1.5 close to the position from which the craft is normally navigated, but in a location whereby it can still float free of the craft in an emergency; or

.2 the EPIRB required by 14.7.1.5 elsewhere on the craft, provided that this EPIRB has a means of remote activation which is installed near the position from which the craft is normally navigated; or

.3 a second EPIRB near the position from which the craft is normally navigated.

14.9 Radio equipment: sea area A2

14.9.1 In addition to meeting the requirements of 14.7, every craft engaged on voyages within sea area A2 shall be provided with:

.1 an MF radio installation capable of transmitting and receiving, for distress, urgency and safety communications purposes, on the frequencies:

.1 2 187.5 kHz using DSC; and
.2 2 182 kHz using radiotelephony;

.2 a radio installation capable of maintaining a continuous DSC watch on the frequency 2 187.5 kHz which may be separate from, or combined with, that required by 14.9.1.1; and

.3 a secondary means of initiating the transmission of ship-to-shore distress alerts by a radio service other than MF, operating either:

.1 through the satellite service on 406 MHz; or

.2 on HF using DSC; or

.3 through recognized mobile satellite service ship earth station.

14.9.2 It shall be possible to initiate transmission of distress alerts by the radio installations specified in 14.9.1.1 and 14.9.1.3 from the position from which the craft is normally navigated.

14.9.3 The requirement in 14.9.1.3.1 may be fulfilled by installing:

.1 the EPIRB required by 14.7.1.5 close to the position from which the craft is normally navigated, but in a location whereby it can still float free of the craft in an emergency; or

.2 the EPIRB required by 14.7.1.5 elsewhere on the craft, provided that this EPIRB has a means of remote activation which is installed near the position from which the craft is normally navigated; or

.3 a second EPIRB near the position from which the craft is normally navigated.

14.9.4 The craft shall, in addition, be capable of transmitting and receiving general radiocommunications by either:

.1 a radio installation operating on working frequencies in the bands between 1 605 kHz and 4 000 kHz or between 4 000 kHz and 27 500 kHz. This requirement may be fulfilled by the addition of this capability in the equipment required by 14.9.1.1; or

.2 a recognized mobile satellite service ship earth station.

14.10 Radio equipment: sea area A3

14.10.1 In addition to meeting the requirements of 14.7, every craft engaged on voyages within sea area A3 shall be provided with:

.1 a recognized mobile satellite service ship earth station capable of:

.1 transmitting and receiving distress, urgency and safety communications;

.2 initiating and receiving distress priority calls; and

.3 maintaining watch for shore-to-ship distress alert relays, including those directed to specifically defined geographical areas;

.2 an MF radio installation capable of transmitting and receiving, for distress, urgency and safety communications purposes, on the frequencies:

.1 2 187.5 kHz using DSC; and

.2 2 182 kHz using radiotelephony;

.3 a radio installation capable of maintaining a continuous DSC watch on the frequency 2 187.5 kHz which may be separate from, or combined with, that required by 14.10.1.2; and

.4 a secondary means of initiating the transmission of ship-to-shore distress alerts by a radio service operating either:

.1 through the satellite service on 406 MHz; or

.2 on HF using DSC; or

.3 through any recognized mobile satellite service on an additional ship earth station.

14.10.2 It shall be possible to initiate transmission of distress alerts by the radio installations specified in 14.10.1.1, 14.10.1.2 and 14.10.1.4 from the position from which the craft is normally navigated.

14.10.3 The requirement in 14.10.1.4.1 may be fulfilled by installing:

.1 the EPIRB required by 14.7.1.5 close to the position from which the craft is normally navigated, but in a location whereby it can still float free of the craft in an emergency; or

.2 the EPIRB required by 14.7.1.5 elsewhere on the craft, provided that this EPIRB has a means of remote activation which is installed near the position from which the craft is normally navigated; or

.3 a second EPIRB near the position from which the craft is normally navigated.

14.10.4 The craft shall, in addition, be capable of transmitting and receiving general radiocommunications by either:

.1 a recognized mobile satellite service ship earth station; or

.2 a radio installation operating on working frequencies in the bands between 1 605 kHz and 4 000 kHz or between 4 000 kHz and 27 500 kHz.

14.10.5 The requirements in 14.10.4.1 and 14.10.4.2 may be fulfilled by the addition of this capability in the equipment required by 14.10.1.1 or 14.10.1.2, respectively.

14.11 Radio equipment: sea area A4

14.11.1 In addition to meeting the requirements of 14.7, every craft engaged on voyages within sea area A4 shall be provided with:

.1 an MF/HF radio installation capable of transmitting and receiving, for distress, urgency and safety communications purposes, on all distress, urgency and safety frequencies in the bands between 1 605 kHz and 4 000 kHz and between 4 000 kHz and 27 500 kHz:

.1 using DSC; and

.2 using radiotelephony;

.2 equipment capable of maintaining DSC watch on 2 187.5 kHz, 8 414.5 kHz and on at least one of the DSC frequencies 4 207.5 KHz, 6 312 kHz, 12 577 kHz or 16 804.5 kHz; it shall be possible at any time to select any of these DSC frequencies for distress, urgency and safety communications purposes. This equipment may be separate from, or combined with, the equipment required by 14.1.1; and

.3 a secondary means of initiating the transmission of ship-to-shore distress alerts through the satellite service on 406 MHz.

14.11.2 The craft shall, in addition, be capable of transmitting and receiving general radiocommunications by a radio installation operating on working frequencies in the bands between 1 605 kHz and 4 000 kHz and between 4 000 kHz and 27 500 kHz. This requirement may be fulfilled by the addition of this capability in the equipment required by 14.11.1.1.

14.11.3 It shall be possible to initiate transmission of distress alerts by the radio installations specified in 14.11.1.1 and 14.11.1.3 from the position from which the craft is normally navigated.

14.11.4 The requirement in 14.11.1.1.3 may be fulfilled by installing:

.1 the EPIRB required by 14.7.1.5 close to the position from which the craft is normally navigated, but in a location whereby it can still float free of the craft in an emergency; or

.2 the EPIRB required by 14.7.1.5 elsewhere on the craft, provided that this EPIRB has a means of remote activation which is installed near the position from which the craft is normally navigated; or

.3 a second EPIRB near the position from which the craft is normally navigated.

14.12 Watches

14.12.1 Every craft, while at sea, shall maintain a continuous radio watch for distress, urgency and safety communications purposes:

.1 on VHF DSC channel 70;

.2 on DSC frequency 2 187.5 kHz, if the craft, in accordance with the requirements of 14.9.1.2 or 14.10.1.3, is fitted with an MF radio installation;

.3 on DSC frequencies 2 187.5 kHz and 8 414.5 kHz and also on at least one of the DSC frequencies 4 207.5 kHz, 6 312 kHz, 12 577 kHz or 16 804.5 kHz, appropriate to the time of day and the geographical position of the craft, if the craft, in accordance with the requirement of 14.11.1.2, is fitted with an MF/HF radio installation. This watch may be kept by means of a scanning receiver; and

.4 for satellite shore-to-ship distress alert relays, if the craft, in accordance with the requirements of 14.10.1.1, is fitted with a recognized mobile satellite service ship earth station.

14.12.2 Every craft, while at sea, shall maintain a radio watch for broadcasts of MSI and search and rescue related information on the appropriate frequency or frequencies on which such information is broadcast for the area in which the craft is navigating.

14.12.3 Every craft, while at sea, shall maintain, when practicable, a continuous listening watch, which shall be kept at the position from which the craft is normally navigated, on:

.1 VHF channel 16; and

.2 other appropriate frequencies for urgency and safety radiocommunications for the area in which the craft is navigating.

14.13 Sources of energy

14.13.1 While the craft is at sea, a supply of electrical energy shall be available at all times sufficient to operate the radio installations and to charge any batteries used as part of a reserve source or sources of energy for the radio installations.

14.13.2 A reserve source or sources of energy shall be provided on every craft to supply radio installations, for the purpose of conducting distress, urgency and safety communications, in the event of failure of the craft's main and emergency sources of electrical power. The reserve source or sources of energy shall be capable of simultaneously operating the VHF radio installation required by 14.7.1.1 and, as appropriate for the sea area or sea areas for which the craft is equipped, either the MF radio installation required by 14.9.1.1 or 14.10.1.2, the MF/HF radio installation required by 14.11.1.1 or the ship earth station required by 14.10.1.1 and any of the additional loads mentioned in 14.13.5 and 14.13.8 for a period of at least:

.1 one hour on craft provided with an emergency source of electrical power, if such source of power complies fully with all relevant provisions of 12.3 and 12.7 or 12.8, including the supply of such power to the radio installations; and

.2 six hours on craft not provided with an emergency source of electrical power complying fully with all relevant provisions of 12.3 and 12.7 or 12.8, including the supply of such power to the radio installations.

The reserve source or sources of energy need not supply independent HF and MF radio installations at the same time.

14.13.3 The reserve source or sources of energy shall be independent of the propelling power of the craft and the craft's electrical system.

14.13.4 Where, in addition to the VHF radio installation, two or more of the other radio installations referred to in 14.13.2 can be connected to the reserve source or sources of energy, they shall be capable of simultaneously supplying, for the period specified, as appropriate, in 14.13.2.1 or 14.13.2.2, the VHF radio installation and:

.1 all other radio installations which can be connected to the reserve source or sources of energy at the same time; or

.2 whichever of the other radio installations will consume the most power, if only one of the other radio installations can be connected to the reserve source or sources of energy at the same time as the VHF radio installation.

14.13.5 The reserve source or sources of energy may be used to supply the electrical lighting required by 14.6.2.4.

14.13.6 Where a reserve source of energy consists of a rechargeable accumulator battery or batteries:

.1 a means of automatically charging such batteries shall be provided which shall be capable of recharging them to minimum capacity requirements within 10 hours; and

.2 the capacity of the battery or batteries shall be checked, using an appropriate method,[10] at intervals not exceeding 12 months, when the craft is not at sea.

14.13.7 The siting and installation of accumulator batteries which provide a reserve source of energy shall be such as to ensure:

.1 the highest degree of service;

.2 a reasonable lifetime;

.3 reasonable safety;

.4 that the battery temperatures remain within the manufacturer's specifications whether under charge or idle; and

.5 that when fully charged, the batteries will provide at least the minimum required hours of operation under all weather conditions.

14.13.8 If an uninterrupted input of information from the craft's navigational or other equipment to a radio installation required by this chapter is needed to ensure its proper performance, including the navigation receiver referred to in 14.18, means shall be provided to ensure the continuous supply of such information in the event of failure of the craft's main or emergency source of electrical power.

[10] One method of checking the capacity of an accumulator battery is to fully discharge and recharge the battery, using normal operating current and period. Assessment of the charge condition can be made at any time, but it should be done without significant discharge of the battery when the ship is at sea.

14.14 Performance standards

14.14.1 All equipment to which this chapter applies shall be of a type approved by the Administration. Such equipment shall conform to appropriate performance standards not inferior to those adopted by the Organization.[11]

[11] Refer to the following performance standards adopted by the Organization:

General requirements

.1 *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));

.2 *Performance standards for the presentation of navigation-related information on shipborne navigational displays* (resolution MSC.191(79), as amended);

.3 *Performance standards for bridge alert management* (resolution MSC.302(87));

VHF equipment

.4 *Performance standards for shipborne VHF radio installations capable of voice communication and digital selective calling* (resolution MSC.511(105));

.5 *Performance standards for survival craft portable two-way VHF radiotelephone apparatus* (resolution MSC.515(105));

.6 *Recommendation on Performance standards for on-scene (aeronautical) portable two-way VHF radiotelephone apparatus* (annex 1 to resolution MSC.80(70), as amended);

MF and HF equipment

.7 *System performance standard for the promulgation and coordination of maritime safety information using high-frequency narrow-band direct-printing* (resolution MSC.507(105));

.8 *Performance standards for shipborne MF and MF/HF radio installations capable of voice communication, digital selective calling and reception of maritime safety information and search and rescue related information* (resolution MSC.512(105));

.9 *Performance standards for the reception of maritime safety information and search and rescue related information by MF (NAVTEX) and HF* (resolution MSC.508(105));

Ship earth stations and enhanced group call (EGC) equipment

.10 *Performance standards for Inmarsat-C ship earth stations capable of transmitting and receiving direct-printing communications* (resolution MSC.513(105));

.11 *Revised performance standards for enhanced group call (EGC) equipment* (resolution MSC.306(87), as amended);

.12 *Performance standards for a ship earth station for use in the GMDSS* (resolution MSC.434(98));

Integrated radiocommunication systems

.13 *Performance standards for a shipborne integrated communication system (ICS) when used in the Global Maritime Distress and Safety System (GMDSS)* (resolution MSC.517(105));

Emergency position-indicating radio beacons

.14 *Performance standards for float-free release and activation arrangements for emergency radio equipment* (resolution A.662(16));

.15 *Performance standards for float-free emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz* (resolution MSC.471(101));

Search and rescue transmitters and transponders

.16 *Performance standards for search and rescue radar transponders* (resolution MSC.510(105)); and

.17 *Performance standards for survival craft AIS search and rescue transmitters (AIS-SART) for use in search and rescue operations* (resolution MSC.246(83)).

14.15 Maintenance requirements

14.15.1 Equipment shall be so designed that the main units can be replaced readily without elaborate recalibration or readjustment.

14.15.2 Where applicable, equipment shall be so constructed and installed that it is readily accessible for inspection and onboard maintenance purposes.

14.15.3 Adequate information shall be provided to enable the equipment to be properly operated and maintained, taking into account the recommendations of the Organization.[12]

14.15.4 Adequate tools and spares shall be provided to enable equipment to be maintained.

14.15.5 The Administration shall ensure that radio equipment required by this chapter is maintained to provide the availability of the functional requirements specified in 14.5 and to meet the recommended performance standards of such equipment.

14.15.6 On craft engaged on voyages in sea areas A1 or A2, the availability shall be ensured by using such methods as duplication of equipment, shore-based maintenance or at-sea electronic maintenance capability, or a combination of these, as may be approved by the Administration.

14.15.7 On craft engaged on voyages in sea areas A3 or A4, the availability shall be ensured by using a combination of at least two methods, such as duplication of equipment, shore-based maintenance or at-sea electronic maintenance capability, as may be approved by the Administration.

14.15.8 However, for craft operating solely between ports where adequate facilities for shore-based maintenance of the radio installations are available, and provided that no journey between two such ports exceeds six hours, then the Administration may exempt such craft from the requirement to use at least two maintenance methods. For such craft, at least one maintenance method shall be used.

14.15.9 While all reasonable steps shall be taken to maintain the equipment in efficient working order to ensure compliance with all the functional requirements specified in 14.5, malfunction of the equipment for providing the general radiocommunications, required by 14.5.1.2, shall not be considered as making a craft unseaworthy or as a reason for delaying the craft in ports where repair facilities are not readily available, provided the craft is capable of performing all distress, urgency and safety functions.

14.15.10 EPIRBs shall be:

.1 annually tested, either on board the craft[13] or at an approved testing station, for all aspects of operational efficiency, with special emphasis on checking the emission on operational frequencies, coding and registration, at intervals specified below:

.1 on passenger craft, within three months before the expiry date of the High-Speed Craft Safety Certificate; and

.2 on cargo craft, within three months before the expiry date, or within three months before or after the anniversary date, of the High-Speed Craft Safety Certificate; and

.2 subject to maintenance at intervals not exceeding five years, to be performed at an approved shore-based maintenance facility.[14]

[12] Refer to *General requirements for shipborne radio equipment forming part of the lobal Maritime Distress and Safety System (GMDSS) and for electronic navigational aids* (resolution A.694(17)), *General requirements for electromagnetic compatibility (EMC) for all electrical and electronic ship's equipment* (resolution A.813(19)), and *Clarifications of certain requirements in IMO performance standards for GMDSS equipment* (MSC/Circ.862).

[13] Refer to *Guidelines on annual testing of emergency position-indicating radio beacons (EPIRBs)* (MSC.1/Circ.1040/Rev.2) and *Guidelines for the avoidance of false distress alerts* (resolution MSC.514(105)).

[14] Refer to *Guidelines for shore-based maintenance of emergency position-indicating radio beacons (EPIRBs)* (MSC.1/Circ.1039/Rev.1).

14.16 Radio personnel

14.16.1 Every craft shall carry personnel qualified for distress, urgency and safety communications purposes to the satisfaction of the Administration.[15] The personnel shall be holders of the appropriate certificates specified in the Radio Regulations; one of the personnel shall be designated as having primary responsibility for communications during distress incidents.

[15] Refer to the STCW Code, chapter IV, section B-IV/2.

14.16.2 In passenger craft, at least one person qualified in accordance with 14.16.1 shall be assigned to perform only communications duties during distress incidents.

14.17 Radio records

A record shall be kept on board, to the satisfaction of the Administration and as required by the Radio Regulations, of all incidents connected with the radiocommunication service which appear to be of importance to safety of life at sea.

14.18 Position-updating

14.18.1 All two-way communication equipment carried on board craft to which this chapter applies which is capable of automatically including the craft's position in the distress alert shall be automatically provided with this information from an internal or external navigation receiver.[16]

[16] Requirements for automatic update of the craft's position are given in resolutions MSC.511(105), MSC.512(105) and MSC.513(105).

14.18.2 In case of malfunction of the internal or external navigation receiver the craft's position and the time at which the position was determined shall be manually updated at intervals not exceeding four hours, while the craft is under way, so that it is always ready for transmission by the equipment."

ANNEX

FORM OF HIGH-SPEED CRAFT SAFETY CERTIFICATE AND RECORD OF EQUIPMENT

High-Speed Craft Safety Certificate

3 The existing form of High-Speed Craft Safety Certificate and Record of Equipment, contained in annex 1 is replaced by the following:

"FORM OF HIGH-SPEED CRAFT SAFETY CERTIFICATE AND RECORD OF EQUIPMENT

HIGH-SPEED CRAFT SAFETY CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment

(Official seal) *(State)*

Issued under the provisions of the

INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 2000
(Resolution MSC.97(73))

under the authority of the Government of

_____
(full designation of the State)

by _____
(full official designation of the competent person or organization authorized by the Administration)

Particulars of craft[1]

Name of craft .....
Manufacturer's model and hull number.....
Distinctive number or letters.....
IMO number[2] .....
Port of registry .....
Gross tonnage .....
Sea areas in which the craft is certified to operate (paragraph 14.2.1)[3].....
Design waterline corresponding to a height of ..... below the reference line at the longitudinal centre of flotation, and draughts at the draught marks of ..... forward and ..... aft.
The upper edge of the reference line is…… at (…… mm below uppermost deck at side)[4] (…… mm above the underside of keel)[4] at longitudinal centre of flotation.

Category category A passenger craft/category B passenger craft/cargo craft[4]

Craft type air-cushion vehicle/surface-effect ship/hydrofoil/monohull/multihull/ other (give details .....)[4]

Date on which keel was laid or craft was at a similar stage of construction or on which a major conversion was commenced .....

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

2 In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

3 For a craft certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

4 Delete as appropriate.

THIS IS TO CERTIFY:

1 That the above-mentioned craft has been duly surveyed in accordance with the applicable provisions of the International Code of Safety for High-Speed Craft, 2000.

2 That the survey showed that the structure, equipment, fittings, radio station arrangements and materials of the craft and the condition thereof are in all respects satisfactory and that the craft complies with the relevant provisions of the Code.

3 That the life-saving appliances are provided for a total number of ..... persons and no more as follows:

.....

.....

4 That, in accordance with 1.11 of the Code, the following equivalents have been granted in respect of the craft:

paragraph ..... equivalent arrangement .....

....

This certificate is valid until[5] ……..

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

Issued at ……

(Place of issue of certificate)

……..…… ……..

(Date of issue) *(Signature of authorized official issuing the certificate)*

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

Endorsement for periodical surveys

THIS IS TO CERTIFY that, at a survey required by 1.5 of the Code, this craft was found to comply with the relevant provisions of the Code.

Periodical survey: Signed: .....

(Signature of authorized official)

Place: .....

Date: .....

(Seal or stamp of the authority, as appropriate)

5 Insert the date of expiry as specified by the Administration in accordance with 1.8.4 of the Code. The day and the month of this date correspond to the anniversary date as defined in 1.4.3 of the Code, unless amended in accordance with 1.8.12.1 of the Code.

Periodical survey: Signed: .....
(Signature of authorized official)

Place: .....
Date:

(Seal or stamp of the authority, as appropriate)

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Periodical survey: Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement to extend the Certificate if valid for less than 5 years where 1.8.8 of the Code applies

This craft complies with the relevant requirements of the Code, and this Certificate shall, in accordance with 1.8.8 of the Code, be accepted as valid until.....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....
(Seal or stamp of the authority, as appropriate)

Endorsement where the renewal survey has been completed and 1.8.9 of the Code applies

This craft complies with the relevant requirements of the Code, and this Certificate shall, in accordance with 1.8.9 of the Code, be accepted as valid until.....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement to extend the validity of the Certificate until reaching the port of survey where 1.8.10 of the Code applies

This Certificate shall, in accordance with 1.8.10 of the Code, be accepted as valid until.....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Endorsement for the advancement of the anniversary date where 1.8.12 of the Code applies

In accordance with 1.8.12 of the Code, the new anniversary date is.....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

In accordance with 1.8.12 of the Code, the new anniversary date is.....

Signed: .....
(Signature of authorized official)
Place: .....
Date: .....

(Seal or stamp of the authority, as appropriate)

Record of Equipment for High-Speed Craft Safety Certificate

This Record shall be permanently attached to the
High-Speed Craft Safety Certificate.

RECORD OF EQUIPMENT FOR COMPLIANCE WITH THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 2000

1 ***Particulars of craft***

Name of craft .....

Manufacturer's model and hull number .....

Distinctive number or letters .....

IMO number[2].....

Category: Category A passenger craft/category B passenger craft/cargo craft[4]

Craft type: air-cushion vehicle, surface-effect ship, hydrofoil, monohull, multihull, other (give details .....)[4]

Number of passengers for which certified .....

Minimum number of persons with required qualifications to operate the radio installations .....

[2] In accordance with the *IMO Ship Identification Number Scheme*, adopted by the Organization by resolution A.1117(30).

[4] Delete as appropriate.

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

1	Total number of persons for which life-saving appliances are provided	. . . . .
2	Total number of lifeboats	. . . . .
2.1	Total number of persons accommodated by them	. . . . .
2.2	Number of partially enclosed lifeboats complying with section 4.5 of the LSA Code	. . . . .
2.3	Number of totally enclosed lifeboats complying with sections 4.6 and 4.7 of the LSA Code	. . . . .
2.4	Other lifeboats	. . . . .
2.4.1	Number	. . . . .
2.4.2	Type	. . . . .
3	Number of rescue boats	. . . . .
3.1	Number of boats which are included in the total lifeboats shown above	. . . . .
4	Liferafts complying with sections 4.1 to 4.3 of the LSA Code for which suitable means of launching are provided	. . . . .
4.1	Number of liferafts	. . . . .
4.2	Number of persons accommodated by them	. . . . .
5	Open reversible liferafts (annex 11 of the Code)	. . . . .
5.1	Number of liferafts	. . . . .
5.2	Number of persons accommodated by them	. . . . .
6	Number of marine evacuation system (MES)	. . . . .
6.1	Number of persons served by them	. . . . .
7	Number of lifebuoys	. . . . .
8	Number of lifejackets	. . . . .
8.1	Number suitable for adults	. . . . .
8.2	Number suitable for children	. . . . .
9	Immersion suits	. . . . .
9.1	Total number	. . . . .
9.2	Number of suits complying with the requirements for lifejackets	. . . . .
10	Number of anti-exposure suits	. . . . .
10.1	Total number	. . . . .
10.2	Number of suits complying with the requirements for lifejackets	. . . . .

3 ***Details of navigational systems and equipment***

1.1	Magnetic compass	……..
1.2	Transmitting heading device (THD)	……..
1.3	Gyro-compass	……..
2	Speed and distance measuring device	……..
3	Echo-sounding device	……..
4.1	9 GHz radar	……..
4.2	Second radar (3 GHz/9 GHz[4])	……..
4.3	Automatic radar plotting aid (ARPA)/Automatic tracking aid (ATA)[4]	……..
5	Receiver for a global navigation satellite system/ Terrestrial navigation system/Other means of position fixing[4 6]	……..
6.1	Rate-of-turn indicator	……..
6.2	Rudder angle indicator/Direction of steering thrust indicator[4]	……..
7.1	Nautical charts/Electronic chart display and information system (ECDIS)[4]	……..
7.2	Backup arrangements for ECDIS	……..
7.3	Nautical publications	……..
7.4	Backup arrangements for nautical publications	……..
8	Search light	……..
9	Daylight signalling lamp	……..
10	Night vision equipment	……..
11	Means to show the mode of the propulsion systems	……..
12	Automatic steering aid (Automatic pilot)	……..
13	Radar reflector/ Other means[4 6]	……..
14	Sound reception system	……..
15	Automatic identification system (AIS)	……..
16	Long-range identification and tracking system	……..
17	Voyage data recorder (VDR)	……..

4 Delete as appropriate.

6 In case of "other means", they should be specified.

4 *Details of radio facilities*

1	Primary systems	. . . . .
1.1	VHF radio installation	
1.1.1	DSC encoder	. . . . .
1.1.2	DSC watch receiver	. . . . .
1.1.3	Radiotelephony	. . . . .
1.2	MF radio installation	
1.2.1	DSC encoder	. . . . .
1.2.2	DSC watch receiver	. . . . .
1.2.3	Radiotelephony	. . . . .
1.3	MF/HF radio installation	
1.3.1	DSC encoder	. . . . .
1.3.2	DSC watch receiver	. . . . .
1.3.3	Radiotelephony	. . . . .
1.4	Recognized mobile satellite service ship earth station	. . . . .
2	Secondary means of initiating the transmission of ship-to-shore distress alerts	. . . . .
3	Facilities for reception of MSI and search and rescue related information	. . . . .
4	EPIRB	. . . . .
5	Two-way VHF radiotelephone apparatus	. . . . .
6	Radar SART or AIS-SART	. . . . .
7	Two-way on-scene radiocommunications 121.5 MHz & 123.1 MHz	. . . . .

5 *Methods used to ensure availability of radio facilities (paragraphs 14.15.6, 14.15.7 and 14.15.8 of the Code)*

5.1 Duplication of equipment .....

5.2 Shore-based maintenance .....

5.3 At-sea maintenance capability .....

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

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

..... (Date of issue)

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

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

***

ANNEX 3

RESOLUTION MSC.521(106)
(adopted on 10 November 2022)

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974 (CHAPTER XV)

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 106th 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 January 2024, 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 July 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 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

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

CHAPTER XV
SAFETY MEASURES FOR SHIPS CARRYING INDUSTRIAL PERSONNEL

The following new chapter XV (Safety measures for ships carrying industrial personnel) is added after existing chapter XIV (Safety measures for ships operating in polar waters):

"CHAPTER XV
Safety measures for ships carrying industrial personnel

Regulation 1 - *Definitions*

For the purpose of this chapter:

1 *Industrial personnel (IP)* means all persons transported or accommodated on board for the purpose of offshore industrial activities performed on board other ships and/or offshore facilities.

2 *IP Code* means the International Code of Safety for Ships Carrying Industrial personnel, as adopted by the Maritime Safety Committee by resolution MSC.527(106), as may be amended, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I.

3 *Offshore industrial activities* mean the construction, maintenance, decommissioning, operation or servicing of offshore facilities related, but not limited to, exploration and exploitation of resources by the renewable or hydrocarbon energy sectors, aquaculture, ocean mining or similar activities.

4 *HSC Code* means the International Code of Safety for High-Speed Craft, 2000, adopted by the Maritime Safety Committee by resolution MSC.97(73), as may be amended, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I.

Regulation 2 - *General*

1 Wherever in the IP Code a reference is made to passenger ship requirements, the corresponding cargo ship requirements are deemed to be complied with.

2 For the purpose of this chapter, industrial personnel shall not be treated or considered as passengers.

3 Wherever in this chapter, or in the IP Code, the number of industrial personnel appears as a parameter, it shall be the aggregate number of industrial personnel, special personnel[1] and passengers carried on board, where the number of passengers shall not exceed 12.

4 Notwithstanding the provisions of regulation 2.1 above, for high-speed craft to which chapter X applies and notwithstanding the provisions of chapters 2 to 12 and 18 of the HSC Code, a ship certified in accordance with the requirements of this chapter and the IP Code shall be deemed to have complied with the requirements of chapters 2 to 12 and 18 of the HSC Code.

[1] Refer to the Code of Safety for Special Purpose Ships, 2008.

Regulation 3
Application

1 Unless expressly provided otherwise, this chapter applies to cargo ships and high-speed cargo craft, of 500 gross tonnage and upwards, constructed on or after 1 July 2024 which carry more than 12 industrial personnel.

2 Cargo ships constructed before 1 July 2024, authorized by the Administration to carry more than 12 industrial personnel in accordance with the recommendations developed by the Organization, shall comply with regulations III/1, III/2 (except for paragraph 2.1.7), IV/7 and IV/8 of the IP Code by the first intermediate or renewal survey, whichever occurs first, after 1 July 2024.

3 High-speed cargo craft constructed before 1 July 2024, authorized by the Administration to carry more than 12 industrial personnel in accordance with the recommendations developed by the Organization,[2] shall comply with regulations III/1, III/2 (except for paragraph 2.1.7), V/7 and V/8 of the IP Code by the third periodical or first renewal survey, whichever occurs first, after 1 July 2024.

4 Cargo ships and high-speed cargo craft, irrespective of date of construction, which prior to the 1 July 2024 have not been authorized by the Administration to carry more than 12 industrial personnel based on the recommendations developed by the Organization,[2] shall comply and be certified in accordance with this chapter and the IP Code prior to the carriage of more than 12 industrial personnel on board.

[2] Refer to the *Interim recommendations on the safe carriage of more than 12 industrial personnel on board vessels engaged on international voyages* (resolution MSC.418(97)).

5 For the purpose of this chapter, the expression *constructed* refers to the description given in regulations:

.1 II-2/1.1.2.1, as complemented by regulation II-2/1.1.3 for cargo ships; and

.2 X/1.4, as complemented by regulation X/1.5 for high-speed cargo craft.

Regulation 4 - *Application of other chapters*

1 The regulations for cargo ships contained in the other chapters of the present Convention apply to ships described in regulation 3.1 above, except as modified by this chapter.

2 Notwithstanding the provisions of regulation 4.1 above, for high-speed craft to which the HSC Code applies, the regulations for cargo craft in that Code apply except as modified by this chapter.

Regulation 5 - *Requirements*

1 Ships and high-speed craft to which this chapter applies shall:

.1 be certified as a cargo ship or high-speed cargo craft in accordance with either chapter I or chapter VIII or chapter X, as applicable;

.2 meet the requirements of the IP Code; and

.3 in addition to the requirements of regulations I/8, I/9 and I/10 or of sections 1.5 to 1.9 of the HSC Code, as applicable, be surveyed and certified, as provided for in the IP Code.

2 Ships and high-speed craft to which this chapter applies, holding a certificate issued pursuant to the provisions of regulation 5.1 above, shall be subject to the control established in regulation I/19 or XI-1/4, and in 1.10 of the HSC Code, as applicable. For this purpose, such certificates shall be treated as a certificate issued under regulation I/12 or I/13."

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ANNEX 7

RESOLUTION MSC.525(106)
(adopted on 10 November 2022)

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

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution A.1049(27), by which the Assembly adopted the International Code on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers, 2011 ("the 2011 ESP Code"), which has become mandatory under chapter XI-1 of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation XI-1/2 of the Convention concerning the procedure for amending the 2011 ESP Code,

HAVING CONSIDERED, at its 106th session, amendments to the 2011 ESP Code, proposed and circulated in accordance with article VIII(b)(i) of the Convention:

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

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 January 2024, 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 the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 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 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

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

Contents

1 Under "Annex A", "Part B", "3 Annual survey", a new item is added after existing paragraph 3.6, as follows:

"3.7 Examination of double-side skin void spaces for bulk carriers exceeding 20 years of age and of 150 m in length and upwards"

ANNEX A

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

Part A

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

2 Renewal survey

2.3 *Space protection*

2 Paragraph 2.3.1 is replaced by the following:

"2.3.1 Where provided, the condition of the corrosion prevention system of ballast tanks shall be examined. For ballast tanks, excluding double-bottom tanks, where a hard protective coating is found to be in less than GOOD condition as defined in 1.2.11, and it is not renewed, or where a soft or semi-hard coating has been applied, or where a hard protective coating has not been applied from the time of construction, the tanks in question shall be examined at annual intervals. Thickness measurements shall be carried out as deemed necessary by the surveyor. When such breakdown of hard protective coating is found in water ballast double-bottom tanks and it is not renewed, where a soft or semi-hard coating has been applied or where a hard protective coating has not been applied from the time of construction, the tanks in question may be examined at annual intervals. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurement shall be carried out."

4 Intermediate survey

4.2 *Single-side skin bulk carriers 5 to 10 years of age*

3 Paragraphs 4.2.1.2 and 4.2.1.3 are replaced by the following:

"4.2.1.2 Where a hard coating is found to be in less than GOOD condition, corrosion or other defects are found in water ballast tanks, or where hard protective coating was not applied from the time of construction, the examination shall be extended to other ballast tanks of the same type.

4.2.1.3 In ballast tanks other than double-bottom tanks, where a hard protective coating is found to be in less than GOOD condition and it is not renewed, or where a

soft or semi-hard coating has been applied, or where a hard protective coating was not applied from the time of construction, the tanks in question shall be examined and thickness measurements carried out as considered necessary at annual intervals. When such breakdown of hard protective coating is found in ballast double-bottom tanks, where a soft or semi-hard coating has been applied, or where a hard protective coating has not been applied, the tanks in question may be examined at annual intervals. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurements shall be carried out."

ANNEX 7

CONDITION EVALUATION REPORT (EXECUTIVE HULL SUMMARY REPORT)

Contents of condition evaluation report (executive hull summary report)

4 Part 8 (Memoranda) is replaced by the following:

"Part 8 – Memoranda
- Acceptable defects
- Any points of attention for future surveys, e.g. for suspect areas
- Examination of ballast tanks at annual surveys due to coating breakdown"

Tank/hold corrosion prevention system

5 The existing text of the paragraph after note no. 3 is replaced by the following:

"For ballast tanks, if coating condition less than GOOD is given, tanks shall be examined at annual surveys. This shall be noted in part 8 of the Contents of condition evaluation report (executive hull summary report)."

ANNEX 9

GUIDELINES FOR TECHNICAL ASSESSMENT IN CONJUNCTION WITH THE PLANNING OF ENHANCED SURVEYS FOR SINGLE-SIDE SKIN BULK CARRIERS – RENEWAL SURVEY HULL

References

6 The existing reference no. 3 (IACS) is replaced by the following:

"3 IACS Recommendation 76, Guidelines for Surveys, Assessment and Repair of Hull Structure – Bulk Carriers, 2007".

Part B

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

2 Renewal survey

2.3 *Space protection*

7 Paragraph 2.3.1 is replaced by the following:

"2.3.1 Where provided, the condition of the corrosion prevention system of ballast tanks shall be examined. For ballast tanks, excluding double-bottom tanks, where a

hard protective coating is found to be in less than GOOD condition as defined in 1.2.11, and it is not renewed, or where a soft or semi-hard coating has been applied, or where a hard protective coating has not been applied from the time of construction, the tanks in question shall be examined at annual intervals. Thickness measurements shall be carried out as deemed necessary by the surveyor. When such breakdown of hard protective coating is found in water ballast double-bottom tanks and it is not renewed, where a soft or semi-hard coating has been applied or where a hard protective coating has not been applied from the time of construction, the tanks in question may be examined at annual intervals. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurement shall be carried out."

8 A new paragraph 2.3.4 is added after existing paragraph 2.3.3, as follows:

"2.3.4 For double-side skin void spaces bounding cargo holds for bulk carriers exceeding 20 years of age and of 150 m in length and upwards, where provided, the condition of the corrosion prevention system of void spaces shall be examined. Where a hard protective coating is found to be in POOR condition as defined in 1.2.11, and it is not renewed, or where a soft or semi-hard coating has been applied, or where a hard protective coating has not been applied from the time of construction, the void spaces in question shall be examined at annual intervals. Thickness measurements shall be carried out as deemed necessary by the surveyor."

3 Annual survey

9 A new paragraph 3.7 is added after existing paragraph 3.6.2, as follows:

"**3.7 *Examination of double-side skin void spaces for bulk carriers exceeding 20 years of age and of 150 m in length and upwards***

Examination of double-side skin void spaces, for bulk carriers exceeding 20 years of age and of 150 m in length and upwards, shall be carried out when required as a consequence of the results of the renewal survey and intermediate survey. When considered necessary by the Administration, or when extensive corrosion exists, thickness measurements shall be carried out. If the results of these thickness measurements indicate that substantial corrosion is found, the extent of thickness measurements shall be increased in accordance with annex 10. These extended thickness measurements shall be carried out before the survey is credited as completed. Suspect areas identified at previous surveys shall be examined. Areas of substantial corrosion identified at previous surveys shall have thickness measurements taken. For bulk carriers built under the IACS Common Structural Rules, the annual thickness gauging may be omitted where a protective coating has been applied in accordance with the coating manufacturer's requirements and is maintained in good condition."

4 Intermediate survey

4.2 *Double-side skin bulk carriers 5 to 10 years of age*

4.2.1 *Ballast tanks*

10 Paragraphs 4.2.1.2 and 4.2.1.3 are replaced by the following:

"4.2.1.2 Where a hard coating is found to be in less than GOOD condition, corrosion or other defects are found in water ballast tanks or where hard protective coating was

not applied from the time of construction, the examination shall be extended to other ballast tanks of the same type.

4.2.1.3 In ballast tanks other than double-bottom tanks, where a hard protective coating is found to be in less than GOOD condition and it is not renewed, or where a soft or semi-hard coating has been applied, or where a hard protective coating was not applied from the time of construction, the tanks in question shall be examined and thickness measurements carried out as considered necessary at annual intervals. When such breakdown of hard protective coating is found in ballast double-bottom tanks, where a soft or semi-hard coating has been applied, or where a hard protective coating has not been applied, the tanks in question may be examined at annual intervals. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurements shall be carried out."

ANNEX 7

CONDITION EVALUATION REPORT (EXECUTIVE HULL SUMMARY REPORT)

Contents of condition evaluation report (executive hull summary report)

11 Parts 5 (Tank/hold corrosion prevention system) and 8 (Memoranda) are replaced by the following:

"Part 5 – Tank/hold/double-side skin void space corrosion prevention system	- Separate form indicating: - location of coating - condition of coating (if applicable)
Part 8 – Memoranda	- Acceptable defects - Any points of attention for future surveys, e.g. for suspect areas - Examination of ballast tanks and double-side skin void spaces at annual surveys due to coating breakdown"

Tank/hold corrosion prevention system

12 The chapeau of "Tank/hold corrosion prevention system", including the table and the text underneath, is replaced by the following:

"Tank/hold/double-side skin void space corrosion prevention system

Tank/hold/void Nos.[1]	**Tank/hold/void corrosion prevention system[2]**	**Coating condition[3]**	**Remarks**

Notes:

1 All ballast tanks, cargo holds and double-side skin void spaces shall be listed.
2 C = Coating
NP = No protection
3 Coating condition according to the following standard:

GOOD condition with only minor spot rusting.

FAIR condition with local breakdown of coating at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition.

POOR condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

For ballast tanks, if coating condition less than GOOD is given, tanks shall be examined at annual surveys. This shall be noted in part 8 of the Contents of condition evaluation report (executive hull summary report).

For double-side skin void spaces on bulk carriers exceeding 20 years of age and of 150 m in length and upwards, if coating condition POOR is given, those void spaces shall be examined at annual surveys. This shall be noted in part 8 of the Contents of condition evaluation report (executive hull summary report)."

ANNEX 9

GUIDELINES FOR TECHNICAL ASSESSMENT IN CONJUNCTION WITH PLANNING FOR ENHANCED SURVEYS OF DOUBLE-SIDE SKIN BULK CARRIERS – RENEWAL SURVEY HULL

References

13 The existing references are replaced by the following:

"1 IACS, Recommendation 76: Guidelines for Surveys, Assessment and Repair of Hull Structure – Bulk Carriers, 2007

2 TSCF, Guidelines for the Inspection and Maintenance of Double Hull Tanker Structures, 1995

3 TSCF, Guidelines Manual for Tanker Structures, 1997"

ANNEX B

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

Part A

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

1 General

1.2 *Definitions*

14 Paragraph 1.2.1 is replaced by the following:

"1.2.1 *Double-hull oil tanker* is a ship which is constructed primarily for the carriage of oil in bulk, has cargo tanks forming an integral part of the ship's hull and is protected by a double-hull which extends for the entire length of the cargo area, consisting of double sides and double-bottom spaces for the carriage of water ballast or void spaces."

2 Renewal survey

2.6 *Extent of tank pressure testing*

15 Paragraph 2.6.1 is replaced by the following:

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

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

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

.1 a tank testing procedure, specifying fill heights, tanks being filled and bulkheads being tested, has been submitted by the owner and reviewed by the Administration prior to the testing being carried out;

.2 the tank testing is carried out prior to the overall survey or close-up survey;

.3 the tank testing is carried out within the special survey window and not more than three months prior to the date on which the overall or close-up survey is completed;

.4 the tank testing has been satisfactorily carried out and there is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;

.5 the satisfactory results of the testing are recorded in the vessel's logbook; and

.6 the internal and external condition of the tanks and associated structure are found satisfactory by the surveyor at the time of the overall and close-up survey."

ANNEX 10

CONDITION EVALUATION REPORT (EXECUTIVE HULL SUMMARY REPORT)

Contents of condition evaluation report (executive hull summary report)

16 Part 9 (Memoranda) is replaced by the following:

"Part 9 – Memoranda
- Acceptable defects
- Any points of attention for future surveys, e.g. for suspect areas
- Examination of ballast tanks at annual surveys due to coating breakdown"

Tank corrosion prevention system

17 The existing text of the paragraph after note 3 is replaced by the following:

"For ballast tanks, if coating condition less than GOOD is given, tanks shall be examined at annual surveys. This shall be noted in part 9 of the Contents of condition evaluation report (executive hull summary report)."

ANNEX 12

GUIDELINES FOR TECHNICAL ASSESSMENT IN CONJUNCTION WITH THE PLANNING OF ENHANCED SURVEYS FOR OIL TANKERS

References

18 The existing references are replaced by the following:

"1 IACS, Recommendation 96: Double Hull Oil Tankers – Guidelines for Surveys, Assessment and Repair of Hull Structures, 2019.

2 TSCF, Guidelines for the Inspection and Maintenance of Double Hull Tanker Structures, 1995.

3 TSCF, Guidelines Manual for Tanker Structures, 1997."

Part B

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

1 General

1.2 *Definitions*

19 Paragraph 1.2.1 is replaced by the following:

"1.2.1 *Oil tanker* is a ship which is constructed primarily to carry oil in bulk in cargo tanks forming an integral part of the ship's hull, including ship types such as combination carriers (ore/oil ships, etc.) but excluding ships carrying oil in independent tanks which are not part of the ship's hull, such as asphalt carriers."

2 Renewal Survey

2.6 *Extent of tank pressure testing*

20 Paragraph 2.6.1 is replaced by the following:

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

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

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

.1 a tank testing procedure, specifying fill heights, tanks being filled and bulkheads being tested, has been submitted by the owner and reviewed by the Administration prior to the testing being carried out;

.2 the tank testing is carried out prior to the overall survey or close-up survey;

.3 the tank testing is carried out within the special survey window and not more than three months prior to the date on which the overall or close-up survey is completed;

.4 the tank testing has been satisfactorily carried out and there is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;

.5 the satisfactory results of the testing are recorded in the vessel's logbook; and

.6 the internal and external condition of the tanks and associated structure are found satisfactory by the surveyor at the time of the overall and close-up survey."

ANNEX 9

CONDITION EVALUATION REPORT (EXECUTIVE HULL SUYMMARY REPORT)

Contents of condition evaluation report (executive hull summary report)

20 Part 9 (Memoranda) is replaced by the following:

"Part 9 – Memoranda
- Acceptable defects
- Any points of attention for future surveys, e.g. for suspect areas
- Examination of ballast tanks at annual surveys due to coating breakdown"

Tank corrosion prevention system

21 The existing text of the paragraph after note no. 3 is replaced by the following:

"For ballast tanks, if coating condition less than GOOD is given, tanks shall be examined at annual surveys. This shall be noted in part 9 of the Contents of condition evaluation report (executive hull summary report)."

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ANNEX 8

RESOLUTION MSC.526(106)
(adopted on 10 November 2022)

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, 1974 ("the Convention"),

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

NOTING that the Marine Environment Protection Committee, at its seventy-eighth session, adopted amendments to the IBC Code concerning watertight doors by resolution MEPC.345(78), for concurrent adoption by the Maritime Safety Committee,

HAVING CONSIDERED, at its 106th 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 said amendments shall be deemed to have been accepted on 1 January 2024, 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 the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 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 ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

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

CHAPTER 2
SHIP SURVIVAL CAPABILITY AND LOCATION OF CARGO TANKS

2.9 Survival requirements

Paragraph 2.9.2.1 is replaced by the following:

".1 the waterline, taking into account sinkage, heel and trim, shall be below the lower edge of any opening through which progressive flooding or downflooding may take place. Such openings shall include air pipes and openings which are closed by means of weathertight doors or hatch covers and may exclude those openings closed by means of watertight manhole covers and watertight flush scuttles, small watertight cargo tank hatch covers which maintain the high integrity of the deck, remotely operated sliding watertight doors, hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea, hinged watertight doors that are permanently closed at sea, and sidescuttles of the non-opening type;".

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ANNEX 9

RESOLUTION MSC.527(106)
(adopted on 10 November 2022)

INTERNATIONAL CODE OF SAFETY FOR SHIPS CARRYING INDUSTRIAL PERSONNEL (IP CODE)

THE MARITIME SAFETY COMMITTEE,

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

RECOGNIZING the need for a mandatory code for the safe carriage of industrial personnel on ships and for ensuring their safety during personnel transfer operations to and from other ships and/or offshore facilities,

NOTING resolution MSC.521(106), by which it adopted chapter XV of the International Convention for the Safety of Life at Sea, 1974 ("the Convention") to make the provisions of the International Code of Safety for Ships Carrying Industrial Personnel (IP Code) mandatory under the Convention,

HAVING CONSIDERED, at its 106th session, the IP Code,

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

2 INVITES Contracting Governments to the Convention to note that the IP Code will take effect on 1 July 2024 upon entry into force of chapter XV of the Convention;

3 ALSO INVITES Contracting Governments to consider the voluntary application of the IP Code, as far as practicable, to ships of less than 500 gross tonnage and to ships not operating on international voyages;

4 REQUESTS the Secretary-General of the Organization to transmit certified copies of the present resolution and the text of the IP Code, contained in the annex, to all Contracting Governments to the Convention;

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

ANNEX

INTERNATIONAL CODE OF SAFETY FOR SHIPS CARRYING INDUSTRIAL PERSONNEL (IP CODE)

Contents

Preamble

1 As the maritime offshore and energy sectors are expanding, new offshore industrial activities have emerged. This in turn has created a growing demand to provide for the safe carriage of industrial personnel to and from other ships and/or offshore facilities.

2 It is recognized that the safety standards in the existing IMO instruments do not fully cover specific risks of maritime operations within the offshore sectors, such as personnel transfer operations.

3 Furthermore, it is recognized that, at the time of developing this Code, industrial personnel are a special category of persons yet to be defined in regulation I/2 of the International Convention for the Safety of Life at Sea (SOLAS), 1974.

4 However, the difficulties caused by the lack of a clear definition for industrial personnel and the lack of an international safety standard for the carriage of industrial personnel on board in the existing IMO instruments are also recognized.

5 The International Code of Safety for Ships Carrying Industrial Personnel (IP Code) has been developed to supplement existing IMO instruments in order to meet the demand from the offshore and energy sectors and overcome these difficulties. The Code, in addition to the cargo ship requirements in SOLAS regulations, provides an international standard of safety for ships carrying industrial personnel which will facilitate safe carriage and safe personnel transfer by addressing additional risks connected to such operations.

6 The Code has been developed for ships operating on international voyages as defined in SOLAS regulation I/2(d). However, it is recognized that the transport of a large number of industrial personnel will take place either within the confines of a particular coastal State or between a base port and an offshore installation outside territorial waters. To facilitate international movement and safe operations of ships carrying industrial personnel, Administrations are encouraged to apply this Code also to ships operating only on such voyages.

7 The Code applies to ships of 500 gross tonnage and upwards. However, it is recognized that ships below 500 gross tonnage may also carry an aggregated number of passengers, special personnel and industrial personnel in excess of 12. In such cases the Administration may apply the goals and functional requirements of the Code as far as practicable. If such ships are in compliance with the IP Code, Administrations may consider issuing an Industrial Personnel Safety Certificate for a ship carrying more than 12 industrial personnel, as long as all relaxations are indicated in this certificate.

PART I
GENERAL

1 Goal

The goal of this Code is to provide for the safe carriage of industrial personnel on ships and their safety during personnel transfer operations by addressing any risks present not adequately mitigated by the applicable safety standards in the International Convention for the Safety of Life at Sea (SOLAS), 1974.

2 Definitions

2.1 *Carriage* means transportation, accommodation or both.

2.2 *Essential systems* mean systems referred to in SOLAS regulation II-2/21.4.

2.3 *HSC Code* means the International Code of Safety for High-Speed Craft, 2000, as adopted by the Maritime Safety Committee of the Organization by resolution MSC.97(73), as amended.

2.4 *Industrial personnel (IP)* means all persons transported or accommodated on board for the purpose of offshore industrial activities performed on board other ships and/or offshore facilities.

2.5 *IP area* is every area or space where IP are normally intended to stay during voyage or are allowed to access.

2.6 *Offshore industrial activities* mean the construction, maintenance, decommissioning, operation or servicing of offshore facilities related, but not limited, to exploration and exploitation of resources by the renewable or hydrocarbon energy sectors, aquaculture, ocean mining or similar activities.

2.7 *Personnel transfer* means the full sequence of the operation of transferring personnel and their equipment at sea to or from a ship to which this Code applies and from or to another ship or an offshore facility.

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

3 Certificate and survey

3.1 Every ship to which this Code applies shall have on board a valid Industrial Personnel Safety Certificate.

3.2 The Industrial Personnel Safety Certificate shall be issued after an initial or renewal survey to a ship which complies with the requirements of this Code.

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

3.4 The Industrial Personnel Safety Certificate shall be drawn up in a form corresponding to the model given in the appendix to this Code. If the language is not English, French or Spanish, the text shall include translation into one of these languages.

3.5 The Industrial Personnel Safety Certificate validity, survey dates and endorsements shall be harmonized with the relevant SOLAS certificates in accordance with the provisions of SOLAS regulation I/14 or X/3.2, as appropriate. The certificate shall include a supplement recording equipment required by the present Code.

3.6 The Industrial Personnel Safety Certificate and the Record of Equipment shall be issued in addition to the relevant certificates required in SOLAS regulation XV/5.1.1.

PART II
GOALS AND FUNCTIONAL REQUIREMENTS

1 Industrial personnel

1.1 Goal

The goal of this chapter is to provide:

.1 for safe operations during the carriage of industrial personnel; and

.2 that industrial personnel are medically fit and familiar with the hazards associated with the operational environment including the risks associated with personnel transfer operations.

1.2 Functional requirements

In order to achieve the goal set out in paragraph 1.1 above, the following functional requirements are embodied in the regulations in part III:

Means shall be provided to ensure that industrial personnel:

.1 are medically fit;

.2 are able to communicate with the ship's crew;

.3 have received appropriate safety training;

.4 have received onboard ship-specific safety familiarization; and

.5 have received onboard familiarization with the ship's transfer arrangements and equipment.

2 Safe transfer of personnel

2.1 Goal

The goal of this chapter is to provide for the safety of all persons involved in personnel transfer, including safe and suitable means of transfer and the capability of safely carrying out the operations connected to personnel transfer.

2.2 Functional requirements

In order to achieve the goal set out in paragraph 2.1 above, the following functional requirements are embodied in the regulations in part III:

2.2.1 Means shall be provided to avoid injuries during personnel transfer.

2.2.2 Arrangements for personnel transfer shall be:

.1 designed, constructed and maintained to withstand the loads they are subjected to;

.2 designed and engineered to fail to a safe condition in the event of a loss or reduction in their associated functionality; and

.3 capable of safely returning persons in transfer to a safe location after loss of power.

2.2.3 Means for position keeping shall be provided and arranged in a manner that prevents accidents during transfer of personnel and is suitable for the mode of operation and interactions with other ships or offshore facilities.

2.2.4 Means shall be provided to ensure that the information on the number of industrial personnel on board and their identity is kept updated to assist in ensuring that the actual number of persons on board is known at all times.

3 Subdivision and stability

3.1 Goal

The goal of this chapter is to provide for adequate stability of the ship, in both the intact and damaged conditions, taking into consideration the total number of persons on board.

3.2 Functional requirement

In order to achieve the goal set out in paragraph 3.1 above, the ship shall be designed with weathertight and watertight boundaries providing for an adequate stability standard, in both the intact and damaged conditions, taking into account the total number of persons on board. This functional requirement is embodied in the regulations in parts IV and V.

4 Machinery installations

4.1 Goal

The goal of this chapter is to provide for machinery installations capable of delivering the required functionality to ensure safe navigation and safe carriage of persons on board both during normal operation and in any emergency situation, taking into account the total number of persons on board.

4.2 Functional requirements

In order to achieve the goal set out in paragraph 4.1 above, the following functional requirements are embodied in the regulations in parts IV and V:

.1 where the capacity needed to ensure the required functionality of any machinery system is dependent on the number of persons on board (e.g. bilge pumping systems), necessary additional capacity shall be provided;

.2 steering gear systems shall be capable of maintaining steerage after any incident affecting machinery installations; and

.3 essential systems shall have the necessary redundancy or isolation, or a combination thereof, in order to ensure the capability of safely accommodating persons on board after any incident affecting machinery installations, taking into account the number of persons on board.

5 Electrical installations

5.1 Goal

The goal of this chapter is to provide for:

.1 emergency sources of power capable of delivering the required functionality of essential systems in emergency situations, taking into account the total number of persons on board; and

.2 protection of all persons on board from electrical hazards.

5.2 Functional requirements

In order to achieve the goal set out in paragraph 5.1 above, the following functional requirements are embodied in the regulations in parts IV and V:

.1 emergency power supply to essential systems shall have the necessary redundancy or isolation, or a combination thereof, to ensure the capability of safely accommodating persons on board after damage, taking into account the number of persons on board and the time for orderly evacuation; and

.2 precautions against shock, fire and other hazards of electrical origin shall be provided.

6 Periodically unattended machinery spaces

6.1 Goal

The goal of this chapter is to ensure that, if and when a machinery space is periodically unattended, this does not impair the safety of the ship or the persons on board.

6.2 Functional requirements

In order to achieve the goal set out in paragraph 6.1 above, the following functional requirements are embodied in the regulations in parts IV and V:

.1 periodically unattended machinery spaces shall provide safe operations, taking into account the number of persons on board; and

.2 a periodically unattended machinery space shall be equipped with additional controls, monitoring and alarm systems to provide safe operation, taking into account the number of persons on board, in order to achieve a safety equivalent to that of a normally attended machinery space.

7 Fire safety

7.1 Goal

The goal of this chapter is to fulfil the fire safety objectives of SOLAS or the basic fire safety principles of the HSC Code, taking into account the number of persons on board.

7.2 Functional requirement

In order to achieve the goal set out in paragraph 7.1 above, the means to fulfil the fire safety functional requirements of SOLAS or the basic fire safety principles of the HSC Code, taking into account the number of persons on board, are embodied in the regulations in parts IV and V.

8 Life-saving appliances and arrangements

8.1 Goal

The goal of this chapter is to provide for appropriate and sufficient means to ensure safe abandonment of the ship and recovery of persons.

8.2 Functional requirements

In order to achieve the goal set out in paragraph 8.1 above, the following functional requirements are embodied in the regulations in parts IV and V:

.1 the capacity of the survival craft shall be sufficient to accommodate all persons on board;

.2 appropriate and sufficient personal life-saving appliances shall be available for all persons on board;

.3 sufficient space for assembling and mustering must be ensured;

.4 onboard communication and alarm systems shall be provided to ensure emergency communication to all persons on board; and

.5 means shall be provided to ensure the safe recovery of persons.

9 Dangerous goods

9.1 Goal

The goal of this chapter is to provide for the safe carriage of industrial personnel while transporting and handling dangerous goods on ships certified in accordance with this Code, taking into consideration the total number of persons on board.

9.2 Functional requirement

In order to achieve the goal set out in paragraph 9.1 above, any hazard caused by the transportation and handling of dangerous goods shall be taken into account and the risk to all persons on board shall be minimized, having regard to the nature of the dangerous goods. This functional requirement is embodied in the regulations in parts IV and V.

PART III
REGULATIONS

Regulation 1 - *Industrial personnel*

1.1 In order to meet the functional requirements set out in paragraph II/1.2.1, all industrial personnel shall be at least 16 years of age and documentary evidence shall be made available to the master that they are physically and medically fit to fulfil all the requirements in this regulation, based on a standard acceptable to the Administration.

1.2 In order to meet the functional requirements set out in paragraph II/1.2.2, all industrial personnel shall demonstrate adequate knowledge of the working language on board in order to be able to communicate effectively and understand any instructions given by the ship's crew.

1.3 In order to meet the functional requirements set out in paragraph II/1.2.3, all industrial personnel shall, prior to boarding the ship, receive training or instruction with respect to:[1]

.1 personal survival that includes:

.1 knowledge of emergency situations that may occur on board a ship;

.2 the use of personal life-saving equipment;

.3 safely entering the water from a height, and survival in the water; and

.4 boarding a survival craft from the ship and water while wearing a lifejacket;

.2 fire safety that includes knowledge of the types of fire hazards on board ships and precautionary measures to be taken to prevent a fire; and

.3 personal safety and social responsibilities that include:

.1 understanding the authority of the master or their representative on board;

.2 complying with instructions provided by the shipboard personnel; and

.3 understanding safety information symbols, signs and alarm signals found on board ships.

1.4 No industrial personnel shall be carried on board the ship unless the master has been provided with documentation confirming that such personnel have received the training or instructions required by this regulation.

1.5 In order to meet the functional requirement set out in paragraph II/1.2.4, all industrial personnel shall, prior to leaving port or immediately after boarding, receive onboard ship-specific safety familiarization that includes:

.1 the layout of the ship;

.2 the location of personal life-saving appliances, muster and embarkation stations, emergency escape routes and first aid stations;

.3 the safety information, symbols, signs and alarms on board; and

.4 action to be taken in the event of an alarm sounding or the declaration of an emergency.

1.6 In order to meet the functional requirement set out in paragraph II/1.2.5, all industrial personnel shall, prior to being transferred, receive familiarization in the ship's procedures, arrangements and any additional safety measures or equipment for the transfer of personnel to other ships and/or offshore facilities.

[1] Personnel meeting the training requirements in paragraph 5.5 of the *Recommendations for the training and certification of personnel on mobile offshore units* (resolution A.1079(28)) or industrial training standards, such as those of the Global Wind Organization (GWO), Offshore Petroleum Industry Training Organization (OPITO) or Basic Offshore Safety Induction and Emergency Training (OPITO-accredited), may be considered as meeting the requirements of this section.

Regulation 2 - *Safe transfer*

2.1 In order to meet the functional requirement in paragraph II/2.2.1, the following applies:

.1 Personnel transfer appliances and arrangements shall be kept clean, properly maintained and regularly inspected to ensure that they are safe to use.

.2 The rigging and use of the personnel transfer arrangements shall be supervised by a responsible officer and operated by properly trained personnel. Safety procedures shall be established and followed by personnel engaged in rigging and operating any mechanical equipment.

.3 Means of communication shall be provided between the supervising responsible officer and the navigation bridge.

.4 All personnel transfer arrangements shall be permanently marked to enable identification of each appliance for the purposes of survey, inspection and record-keeping. A record of use and maintenance shall be kept on board the ship.

.5 Prior to commencing personnel transfer operations, the personnel transfer arrangements shall be checked to ensure they are functioning properly.

.6 Means shall be provided to ensure safe and unobstructed passage for industrial personnel between the personnel transfer arrangements and where they are being transported or accommodated on board.

.7 Lighting capable of being supplied by the emergency source of power shall be provided to illuminate the personnel transfer arrangements, the water below the transfer arrangements and the passage specified in sub-paragraph .6 above.

.8 The deck area for personnel transfer shall be designated and free from obstructions.

.9 A job safety analysis shall be carried out when planning, and before executing, personnel transfer at sea. The analysis shall take into account environmental conditions, as well as operational and equipment limitations.

.10 When planning personnel transfer, the guidance developed by the Organization[2] or other relevant guidance[3] acceptable to the Administration should be taken into account.

2.2 In order to meet the functional requirement in paragraph II/2.2.2, personnel transfer arrangements shall be designed, constructed, tested and installed in accordance with standards[4] acceptable to the Administration or requirements of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1.

2.3 In addition, the following applies:

.1 The design of the personnel transfer arrangements shall be suitable for the arrangement on the ship.

.2 An analysis shall be performed in order to evaluate failures in IP transfer arrangements and all its associated systems which might impair the availability of the transfer arrangements and/or endanger the safety of the persons involved.

The analysis[5] shall:

.1 consider the effects of failure in all the equipment and systems due to single failure, fire in any space or flooding of any watertight compartment that could affect the availability of the transfer arrangements; and

.2 provide solutions to ensure the availability of the IP transfer arrangements and the safety of all persons involved upon such failures identified in .1.

.3 Where a single failure results in failure of more than one component in a system (common cause failure), all the resulting failures shall be considered together. Where the occurrence of a failure leads directly to further failures, all those failures shall be considered together.

2.4 In order to meet the functional requirement in paragraph II/2.2.3, the manoeuvrability of the ship together with the expected need for the ship to keep position over time shall be evaluated, to ensure the correct use of position-keeping equipment.

2.5 In order to meet the functional requirement in paragraph II/2.2.4, procedures shall be in place to ensure correct information on the number and identity of personnel on board at all times.

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[2] Refer to the *Guidance on safety when transferring persons at sea* (MSC-MEPC.7/Circ.10).

[3] Such as the latest revision of IMCA M202 Guidance on the transfer of personnel to/from offshore vessels and structures.

[4] Refer to relevant sections of EN 13852-1:2013.

[5] Appropriate analysis may be QFA or FMEA and their associated reports.

PART IV
ADDITIONAL REGULATIONS FOR SHIPS CERTIFIED IN ACCORDANCE WITH SOLAS CHAPTER I

Regulation 1 - *General*

1.1 Unless expressly provided otherwise in this part, ships carrying industrial personnel shall meet the SOLAS requirements for cargo ships and the applicable regulations in this part.

1.2 Ships complying with paragraph 1.1 in addition to the applicable regulations in this part are considered to meet the goals and functional requirements in paragraphs II/3 to II/9.

Regulation 2 - *Subdivision and stability*

2.1 In order to meet the functional requirement set out in paragraph II/3.2.1, the following applies:

.1 Where the ship is certified to carry more than 240 persons on board, it shall meet the requirements of SOLAS regulation II-1/5 as though the ship is a passenger ship and the industrial personnel are counted as passengers. However, SOLAS regulation II-1/5.5 is not applicable.

.2 Subdivision and damage stability shall be in accordance with SOLAS chapter II-1, where the ship is considered a passenger ship and industrial personnel are counted as passengers, with the value *R* as follows:

.1 where the ship is certified to carry more than 240 persons, the value *R* is assigned as *R*;

.2 where the ship is certified to carry not more than 60 persons, the value *R* is assigned as 0.8*R; or*

.3 for more than 60 persons, but not more than 240 persons, the value *R* shall be determined by linear interpolation between the values given in sub-paragraphs .1 and .2 above.

$$R = 1 - \frac{5{,}000}{L_s + 2.5N + 15{,}225}$$

Where:

$N = N_1 + 2N_2$

N_1 = number of persons for whom lifeboats are provided

N_2 = number of persons (including officers and crew) the ship is permitted to carry in excess of N_1

.3 Where the conditions of service are such that compliance with paragraph 2.1.2 above on the basis of $N=N_1+2N_2$ is impracticable and where the Administration considers that a suitably reduced degree of hazard exists, a lesser value of *N* may be taken but in no case less than $N=N_1+N_2$.

.4 For ships to which paragraph 2.1.2.1 above applies, the requirements of SOLAS regulations II-1/8 and II-1/8-1 and of SOLAS chapter II-1 parts B-2, B-3 and B-4 shall be applied as though the ship is a passenger ship and the industrial personnel are passengers. However, SOLAS regulations II-1/14 and II-1/18 are not applicable.

.5 For ships to which paragraphs 2.1.2.2 and 2.1.2.3 above apply, except as provided in paragraph 2.1.6 below, the provisions of SOLAS chapter II-1, parts B-2, B-3 and B-4 shall apply as though the ship is a cargo ship and the industrial personnel are crew. However, the requirements of SOLAS regulations II-1/8 and II-1/8-1 need not be applied and SOLAS regulations II-1/14 and II-1/18 are not applicable.

.6 All ships certified in accordance with this Code shall comply with SOLAS regulations II-1/9, II-1/13, II-1/19, II-1/20 and II-1/21 as though the ship is a passenger ship.

Regulation 3 - *Machinery installations*

3.1 In order to meet the functional requirement set out in paragraph II/4.2.1, the ship shall comply with SOLAS regulation II-1/35-1 as though the ship is a passenger ship.

3.2 In order to meet the functional requirement set out in paragraph II/4.2.2, where the ship is certified to carry more than 240 persons on board, it shall comply with the requirements of SOLAS regulation II-1/29 as though the ship is a passenger ship.

Regulation 4 - *Electrical installations*

4.1 In order to meet the functional requirement set out in paragraph II/5.2.1, the following applies:

.1 for installations in ships of more than 50 m in length carrying not more than 60 persons on board, the requirements in SOLAS regulation II-1/42.2.6.1 shall apply in addition to the requirements in SOLAS regulation II-1/43; and

.2 for installations in ships carrying more than 60 persons on board, SOLAS regulation II-1/42 shall apply.

4.2 In order to meet the functional requirement set out in paragraph II/5.2.2 for installations on ships carrying more than 60 persons on board, SOLAS regulation II-1/45.12 shall apply.

Regulation 5 - *Periodically unattended machinery spaces*

In order to meet the functional requirements set out in paragraph II/6.2, ships carrying more than 240 persons on board shall be considered as passenger ships in relation to SOLAS chapter II-1, part E.

Regulation 6 - *Fire safety*

In order to meet the functional requirements set out in paragraphs II/7.2 and 4.2.3, the following applies:

.1 where the ship is certified to carry more than 240 persons on board, the requirements of SOLAS chapter II-2 for passenger ships carrying more than 36 passengers shall apply; and

.2 where the ship is certified to carry more than 60, but not more than 240 persons on board, the requirements of SOLAS chapter II-2 for passenger ships carrying not more than 36 passengers apply, except that SOLAS regulations II-2/21 and 22 need not apply.

Regulation 7 - *Life-saving appliances and arrangements*

In order to meet the functional requirements set out in paragraph II/8.2:

.1 for ships carrying more than 60 persons on board, the requirements of SOLAS chapter III for passenger ships engaged on international voyages, which are not short international voyages, shall apply;

.2 regardless of the number of the persons on board, SOLAS regulations III/2 and III/19.2.3 are not applicable;

.3 where the term "passenger" is used in SOLAS chapter III, it shall be read to mean industrial personnel as prescribed in SOLAS regulation XV/2.3; and

.4 notwithstanding sub-paragraph .3 above, the required number of infant or child lifejackets shall be calculated solely based on the number of passengers on board.

Regulation 8 - *Dangerous goods*

8.1 General

Industrial personnel may only bring dangerous goods on board for the purpose of their role off the ship and with the prior consent of the master of the ship. These dangerous goods shall be considered as cargo and shall be transported in accordance with part A of SOLAS chapter VII.

8.2 Carriage of dangerous goods in packaged form

In order to meet the functional requirements in paragraph II/9.2:

.1 for ships certified to carry more than 240 persons on board, SOLAS regulation II-2/19.3.6.2 for passenger ships carrying more than 36 passengers shall apply; and

.2 for the purpose of the requirements of the IMDG Code, ships certified to carry more than 240 persons on board shall be considered as passenger ships and those certified to carry 240 or fewer persons on board shall be considered as cargo ships.

8.3 Carriage of dangerous goods in solid form in bulk

In order to meet the functional requirements in paragraph II/9.2:

.1 for ships certified to carry more than 240 persons on board, SOLAS regulation II-2/19.3.6.2 for passenger ships carrying more than 36 passengers shall apply; and

.2 for the purpose of the requirements of the IMSBC Code, industrial personnel shall be considered as personnel in the context of personnel protection.

8.4 Carriage of dangerous liquid chemicals, liquefied gases and oil

8.4.1 In order to meet the functional requirements in paragraph II/9.2, when simultaneously carrying dangerous liquid chemicals and/or liquefied gases as cargo in bulk and industrial personnel, the ship shall either be certified in accordance with the requirements of parts B or C of SOLAS chapter VII or meet and be certified in accordance with a standard not inferior to that developed by the Organization.[6] In addition:

.1 carriage of toxic products, low-flashpoint products or acids shall not be allowed when the total number of persons on board exceeds 60;

.2 for the purpose of carrying industrial personnel, the areas and spaces on ships where industrial personnel are not permitted to enter shall be clearly marked;

.3 the arrangements for personnel transfer shall be located outside the cargo area;

.4 the access to the arrangements for personnel transfer shall, as far as practicable, be located outside the cargo area; and

.5 embarkation or personnel transfer and loading or unloading of cargo shall not take place simultaneously.

8.4.2 In order to meet the functional requirements in paragraph II/9.2, when simultaneously carrying oil as cargo, as defined in Annex I of MARPOL, and industrial personnel, the additional requirements in paragraph 8.4.1 above shall apply.

8.4.3 For the purpose of this requirement:

.1 "low-flashpoint products" mean:

.1 noxious liquid substances with a flashpoint not exceeding 60°C;

.2 oil with a flashpoint not exceeding 60°C; and

.3 liquefied gases which require flammable vapour detection in accordance with chapter 19 of the IGC Code;

.2 "toxic products" mean:

.1 dangerous chemicals to which special requirement 15.12 of the IBC Code applies; and

.2 liquefied gases which require toxic vapour detection in accordance with chapter 19 of the IGC Code; and

.3 "acids" mean dangerous chemicals to which special requirement 15.11 of the IBC Code applies.

8.4.4 In order to meet the functional requirements in paragraph II/9.2 when carrying liquefied gases in bulk, for the purpose of the requirements of the IGC Code, industrial personnel shall be considered as personnel in the context of training and personnel protection.

[6] Refer to the *Code for the Transport and Handling of Hazardous and Noxious Liquid Substances in Bulk on Offshore Support Vessels (OSV Chemical Code*) (resolution A.1122(30)).

PART V
ADDITIONAL REGULATIONS FOR CRAFT CERTIFIED IN ACCORDANCE WITH SOLAS CHAPTER X

Regulation 1 - *General*

1.1 High-speed cargo craft certified in accordance with SOLAS chapter X shall not carry more than 60 persons on board.

1.2 Unless expressly provided otherwise in this part, high-speed craft carrying not more than 60 persons on board shall meet the requirements for cargo craft in the HSC Code and the applicable regulations in this part.

1.3 Craft complying with paragraph 1.2 above in addition to the applicable regulations in this part are considered to meet the goals and functional requirements in paragraphs II/3 to II/9.

1.4 The carriage of IP on high-speed craft is not considered as transit voyage, as specified in 1.9.1.1 of the HSC Code, and a permit to operate is required.

1.5 Where the term "passenger" is used in applicable requirements in the HSC Code, it shall be read to mean "persons on board other than crew".

Regulation 2 - *Subdivision and stability*

In order to meet the functional requirements set out in paragraph II/3.2, the following applies:

.1 Chapter 2, part B, except 2.13.2 and 2.14, of the HSC Code shall apply in lieu of chapter 2, part C of the HSC Code.

.2 When applying the provisions of chapter 2 of the HSC Code, the expression "passenger" shall be read as "persons on board other than crew". In addition, the mass of each such person shall be assumed to be 90 kg instead of 75 kg.

Regulation 3 - *Machinery installations*

In order to meet the functional requirements set out in paragraph II/4.2, provisions in chapter 10, part B of the HSC Code shall apply as applicable to category A passenger craft in lieu of chapter 10, part C of the HSC Code.

Regulation 4 - *Electrical installations*

In order to meet the functional requirements set out in paragraph II/5.2, 12.7.10 of the HSC Code shall apply.

Regulation 5 - *Periodically unattended machinery spaces*

[no provisions]

Regulation 6 - *Fire safety*

[no provisions]

Regulation 7 - *Life-saving appliances and arrangements*

In order to meet the functional requirements set out in paragraph II/8.2:

.1 4.2.3 of the HSC Code shall apply;

.2 8.4.3 of the HSC Code shall apply – the expression "passenger spaces" shall be read as "IP area"; and

.3 the required number of infant or child lifejackets shall be calculated solely based on the number of passengers on board.

Regulation 8 - *Dangerous goods*

8.1 Industrial personnel may only bring dangerous goods on board for the purpose of their role off the craft and with the prior consent of the master of the craft. These dangerous goods shall be considered as cargo and shall be transported in accordance with chapter 7, part D of the HSC Code.

8.2 In order to meet the functional requirements set out in paragraph II/9.2:

.1 for the purpose of carrying IP, the areas and spaces on craft where IP are not permitted to enter shall be clearly marked;

.2 the arrangement for personnel transfer shall be located outside the cargo area;

.3 the access to the arrangements for personnel transfer shall, as far as practicable, be located outside the cargo area; and

.4 embarkation or personnel transfer and loading or unloading of cargo shall not take place simultaneously.

APPENDIX

FORM OF SAFETY CERTIFICATE FOR SHIPS CARRYING INDUSTRIAL PERSONNEL

INDUSTRIAL PERSONNEL SAFETY CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for the Industrial Personnel Safety Certificate (Form IP)

(Official seal) (State)

Issued under the provisions of the

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

under the authority of the Government of

(name of the State)

by _____
(person or organization authorized)

Particulars of ship[7]

Name of ship .....

Distinctive number or letters .....

Port of registry .....

Gross tonnage .....

IMO number[8] .....

Date [dd/mm/yyyy] on which keel was laid or ship was at a similar stage of construction or, where applicable, date on which work for a conversion or an alteration or modification of a major character was commenced .....

[7] Alternatively, the particulars of the ship may be placed horizontally in boxes.

[8] In accordance with the *IMO Ship Identification Number Scheme* adopted by the Organization by resolution A.1117(30).

THIS IS TO CERTIFY:

1 ☐ *check box, if applicable*
That the ship has been surveyed in accordance with the provisions of section I/3 of the International Code of Safety for Ships Carrying Industrial Personnel as a ship to which regulations XV/3.1 or 3.4 of the Convention apply.

.1 That the survey showed that:

.1 the structure, equipment, fittings and materials of the ship and the condition thereof are in all respects satisfactory and that the ship complies with the relevant provisions of the Code; and

.2 if fitted, the personnel transfer appliances and arrangement and the condition thereof are in all respects satisfactory and comply with the provisions of regulation III/2 of the Code.

2 ☐ *check box, if applicable*
That the ship has been surveyed in accordance with the provisions of section I/3 of the International Code of Safety for Ships Carrying Industrial Personnel as a ship to which regulations XV/3.2 or XV/3.3 of the Convention apply.

.1 That the survey showed that:

.1 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with regulation IV/7 or V/7 of the Code, as applicable;

.2 the ship, if permitted to carry dangerous goods, complies with the relevant provisions of regulation IV/8 or V/8 of the Code, as applicable; and

.3 if fitted, the personnel transfer appliances and arrangement and the condition thereof are in all respects satisfactory and comply with the provisions of regulation III/2 (except for paragraph 2.1.7) of the Code.

3 This certificate is not valid for the carriage of toxic products, low-flashpoint products or acids when the total number of persons on board exceeds 60.

This certificate is valid until ..... ……

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

Issued at .....
(Place of issue of certificate)

.....
(Date of issue)

(Signature of authorized official issuing the certificate)

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

ENDORSEMENT FOR ANNUAL, PERIODICAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that, at a survey required by section I/3 of the Code, the ship was found to comply with the relevant provisions of the Code:

Annual/Periodical* survey:

Signed:
…….
(Signature of authorized official)

Place: …….

Date: …….

(Seal or stamp of the authority, as appropriate)

Annual/Periodical/Intermediate* survey:

Signed:
…….
(Signature of authorized official)

Place: …….

Date: …….

(Seal or stamp of the authority, as appropriate)

Annual/Periodical/Intermediate* survey:

Signed:
…….
(Signature of authorized official)

Place: …….

Date: …….

(Seal or stamp of the authority, as appropriate)

Annual/Periodical* survey:

Signed:
…….
(Signature of authorized official)

Place: …….

Date: …….

(Seal or stamp of the authority, as appropriate)

**Delete as appropriate.*

ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR LESS THAN FIVE YEARS WHERE REGULATION I/14(C) OF THE CONVENTION OR 1.8.8 OF THE 2000 HSC CODE APPLIES

The ship complies with the relevant requirements of the Convention, and this certificate shall, in accordance with regulation I/14(c) of the Convention* or 1.8.8 of the 2000 HSC Code,* be accepted as valid until.....

Signed: .....
(Signature of authorized official)

Place: .....

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

ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN COMPLETED AND REGULATION I/14(D) OF THE CONVENTION OR 1.8.9 OF THE 2000 HSC CODE APPLIES

The ship complies with the relevant requirements of the Convention, and this certificate shall, in accordance with regulation I/14(d) of the Convention* or 1.8.9 of the 2000 HSC Code,* be accepted as valid until.....

Signed: .....
(Signature of authorized official)

Place: .....

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

ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF SURVEY OR FOR A PERIOD OF GRACE WHERE REGULATION I/14(E) OR I/14(F) OF THE CONVENTION OR 1.8.10 OF THE 2000 HSC CODE APPLIES

This certificate shall, in accordance with regulation I/14(e)/l/14(f)* of the Convention or 1.8.10 of the 2000 HSC Code,* be accepted as valid until.....

Signed: .....
(Signature of authorized official)

Place: .....

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

**Delete as appropriate.*

ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE WHERE REGULATION I/14(H) OF THE CONVENTION OR 1.8.12 OF THE 2000 HSC CODE APPLIES

In accordance with regulation I/14(h) of the Convention* or 1.8.12 of the 2000 HSC Code,* the new anniversary date is .....

Signed: .....
(Signature of authorized official)

Place: .....

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

In accordance with regulation I/14(h) of the Convention* or 1.8.12 of the 2000 HSC Code,* the new anniversary date is .....

Signed: .....
(Signature of authorized official)

Place: .....

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

**Delete as appropriate.*

Record of Equipment for the Industrial Personnel Safety Certificate
(Form IP)

This Record should be permanently attached to the
Industrial Personnel Safety Certificate

RECORD OF EQUIPMENT FOR COMPLIANCE WITH THE INTERNATIONAL CODE OF SAFETY FOR SHIPS CARRYING INDUSTRIAL PERSONNEL

1 Particulars of ship

Name of ship .....

Distinctive number or letters .....

Total number of persons on board
for which certified .....

2 Details of life-saving appliances

1	Total number of persons for which life-saving appliances are provided	. . . . .	
		Port side	Starboard side
2	Total number of lifeboats	. . . . .	. . . . .
2.1	Total number of persons accommodated by them	. . . . .	. . . . .
2.2	Number of partially enclosed lifeboats (SOLAS regulation III/21 or III/31, or 8.10 of the HSC Code, as applicable, and LSA Code, section 4.5)	. . . . .	. . . . .
2.3	Number of self-righting partially enclosed lifeboats (SOLAS regulation III/21 or III/31, or 8.10 of the HSC Code, as applicable, and LSA Code, section 4.5)	. . . . .	. . . . .
2.4	Number of totally enclosed lifeboats (SOLAS regulation III/21 or III/31, or 8.10 of the HSC Code, as applicable, and LSA Code, sections 4.6)	. . . . .	. . . . .
2.5	Other lifeboats	. . . . .	. . . . .
2.5.1	Number	. . . . .	. . . . .
2.5.2	Type	. . . . .	. . . . .

3	Number of motor lifeboats (included in the total lifeboats shown above)	. . . . .
3.1	Number of lifeboats fitted with searchlights	. . . . .
4	Number of rescue boats	. . . . .
4.1	Number of boats which are included in the total lifeboats shown above	. . . . .
5	Liferafts	. . . . .
5.1	Those for which approved launching appliances are required	. . . . .
5.1.1	Number of liferafts	. . . . .
5.1.2	Number of persons accommodated by them	. . . . .
5.2	Those for which approved launching appliances are not required	
5.2.1	Number of liferafts	. . . . .
5.2.2	Number of persons accommodated by them	. . . . .
6	Number of marine evacuation systems (MES)	. . . . .
6.1	Persons accommodated by them	. . . . .
7	Buoyant apparatus	. . . . .
7.1	Number of apparatuses	. . . . .
7.2	Number of persons capable of being supported	. . . . .
8	Number of lifebuoys	. . . . .
9	Number of lifejackets (total)	. . . . .
9.1	Number of adult lifejackets	. . . . .
9.2	Number of child lifejackets	. . . . .
9.3	Number of infant lifejackets	. . . . .
10	Immersion suits	. . . . .
10.1	Total number	. . . . .
11	Number of thermal protective aids[9]	. . . . .

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

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

.....
(Date of issue)

(Signature of duly authorized official issuing the Record)

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

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[9] Excluding those required by the LSA Code, paragraphs 4.1.5.1.24, 4.4.8.31 and 5.1.2.2.13.

***

ANNEX 1

RESOLUTION MEPC.343(78)
(adopted on 10 June 2022)

AMENDMENTS TO THE ANNEX OF THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

Amendments to MARPOL Annex I

(Watertight doors)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering amendments thereto for adoption by the Parties,

HAVING CONSIDERED, at its seventy-eighth session, proposed amendments to MARPOL Annex I concerning watertight doors,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, amendments to MARPOL Annex I, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(iii) of MARPOL, that the amendments shall be deemed to have been accepted on 1 July 2023 unless prior to that date, not less than one-third of the Parties or Parties the combined merchant fleets of which constitute not less than 50 per cent of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said 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 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to MARPOL;

5 ALSO REQUESTS the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to MARPOL.

ANNEX

AMENDMENTS TO MARPOL ANNEX I

(Watertight doors)

CHAPTER 4 – REQUIREMENTS FOR THE CARGO AREA OF OIL TANKERS

PART A – CONSTRUCTION

Regulation 28 – Subdivision and damage stability

1 Paragraph 3.1 is replaced by the following:

".1 The final waterline, taking into account sinkage, heel and trim, shall be below the lower edge of any opening through which progressive flooding may take place. Such openings shall include air pipes and those which are closed by means of weathertight doors or hatch covers and may exclude those openings closed by means of watertight manhole covers and flush scuttles, small watertight cargo tank hatch covers which maintain the high integrity of the deck, remotely operated sliding watertight doors, hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea, hinged watertight doors that are permanently closed at sea, and sidescuttles of the non-opening type."

***

ANNEX 3

RESOLUTION MEPC.345(78)
(adopted on 10 June 2022)

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

(Watertight doors)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO resolution MEPC.19(22), by which it adopted the *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (the IBC Code)*, and resolution MEPC.16(22), by which the IBC Code has become mandatory under Annex II of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL),

RECALLING FURTHER article 16 of MARPOL and regulation 1.4 of MARPOL Annex II concerning the procedure for considering amendments to the IBC Code for adoption by the Parties,

HAVING CONSIDERED, at its seventy-eighth session, proposed amendments to the IBC Code concerning watertight doors,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, 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 16(2)(f)(iii) of MARPOL, that the amendments to the IBC Code shall be deemed to have been accepted on 1 January 2024 unless, prior to that date, not less than one-third of the Parties or Parties the combined merchant fleets of which constitute not less than 50 per cent of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the amendments to the IBC Code shall enter into force on 1 July 2024 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, in conformity with article 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments to the IBC Code contained in the annex to all parties to MARPOL;

5 ALSO REQUESTS the Secretary-General to transmit copies of the present resolution and its annex to the Members of the Organization which are not Parties to MARPOL.

ANNEX

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

(Watertight doors)

CHAPTER 2

SHIP SURVIVAL CAPABILITY AND LOCATION OF CARGO TANKS

2.9 Survival requirements

1 Paragraph 2.9.2.1 is replaced by the following:

".1 the waterline, taking into account sinkage, heel and trim, shall be below the lower edge of any opening through which progressive flooding or downflooding may take place. Such openings shall include air pipes and openings which are closed by means of weathertight doors or hatch covers and may exclude those openings closed by means of watertight manhole covers and watertight flush scuttles, small watertight cargo tank hatch covers which maintain the high integrity of the deck, remotely operated sliding watertight doors, hinged watertight access doors with open/closed indication locally and at the navigation bridge, of the quick-acting or single-action type that are normally closed at sea, hinged watertight doors that are permanently closed at sea, and sidescuttles of the non-opening type;"

ANNEX 1

RESOLUTION MEPC.359(79)
(adopted on 16 December 2022)

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

Amendments to MARPOL ANNEXES I, II and IV

(Regional reception facilities within Arctic waters and Form of IOPP Certificate and Supplements)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering amendments thereto for adoption by the Parties,

HAVING CONSIDERED, at its seventy-ninth session, proposed amendments to MARPOL Annexes I, II and IV concerning regional reception facilities within Arctic waters and Form of IOPP Certificate and Supplements**,** which were circulated in accordance with article 16(2)(a) of MARPOL,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, amendments to MARPOL Annexes I, II and IV, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(iii) of MARPOL, that the amendments shall be deemed to have been accepted on 1 November 2023 unless prior to that date not less than one third of the Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said amendments shall enter into force on 1 May 2024 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to MARPOL;

5 ALSO REQUESTS the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to MARPOL.

ANNEX

AMENDMENTS TO MARPOL ANNEXES I, II AND IV

(Regional reception facilities within Arctic waters and Form of IOPP Certificate and Supplements)

AMENDMENTS TO MARPOL ANNEX I

Regulation 38 – Reception facilities

1 Paragraph 4 is replaced by the following:

"4 The following States may satisfy the requirements in paragraphs 1 to 3 of this regulation through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements:

.1 small island developing States; and

.2 States the coastline of which borders on Arctic waters, provided that regional arrangements shall cover only ports within Arctic waters of those States.

Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization.*

The Government of each Party participating in the arrangement shall consult with the Organization, for circulation to the Parties of the present Convention, on:

.1 how the Regional Reception Facilities Plan takes into account the guidelines developed by the Organization;*

.2 particulars of the identified Regional Ships Waste Reception Centres taking into account the guidelines developed by the Organization;* and

.3 particulars of those ports with only limited facilities."

2 Paragraph 6 is replaced by the following:

"6 The following States may satisfy the requirements in paragraph 5 of this regulation through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements:

.1 small island developing States; and

* Refer to the *2012 Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63)), as amended by resolution MEPC.363(79).

.2 States the coastline of which borders on Arctic waters, provided that regional arrangements shall cover only ports within Arctic waters of those States.

Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization.*

The Government of each Party participating in the arrangement shall consult with the Organization, for circulation to the Parties of the present Convention, on:

.1 how the Regional Reception Facilities Plan takes into account the guidelines developed by the Organization,*

.2 particulars of the identified Regional Ships Waste Reception Centres taking into account the guidelines developed by the Organization;* and

.3 particulars of those ports with only limited facilities."

Appendix II

Form of IOPP Certificate and Supplements

Form B of the Supplement to the International Oil Pollution Prevention Certificate (IOPP Certificate)

3 The title of section 5 is replaced by the following:

"**5 – Construction (regulations 18, 19, 20, 21, 22, 23, 26, 27, 28 and 33)**"

AMENDMENTS TO MARPOL ANNEX II

Regulation 18 – Reception facilities and cargo unloading terminal arrangements

4 Paragraph 3 is replaced by the following:

"3 The following States may satisfy the requirements in paragraphs 1, 2 and 6 of this regulation through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements:

.1 small island developing States; and

.2 States the coastline of which borders on Arctic waters, provided that regional arrangements shall cover only ports within Arctic waters of those States.

* Refer to the *2012 Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63)), as amended by resolution MEPC.363(79).

Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization.*

The Government of each Party participating in the arrangement shall consult with the Organization, for circulation to the Parties of the present Convention, on:

.1 how the Regional Reception Facilities Plan takes into account the guidelines developed by the Organization;*

.2 particulars of the identified Regional Ships Waste Reception Centres taking into account the guidelines developed by the Organization;* and

.3 particulars of those ports with only limited facilities."

AMENDMENTS TO MARPOL ANNEX IV

Regulation 12 – Reception facilities

5 Paragraph 2 is replaced by the following:

"2 The following States may satisfy the requirements in paragraph 1 of this regulation through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements:

.1 small island developing States; and

.2 States the coastline of which borders on Arctic waters, provided that regional arrangements shall cover only ports within Arctic waters of those States.

Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization.*

The Government of each Party participating in the arrangement shall consult with the Organization, for circulation to the Parties of the present Convention, on:

.1 how the Regional Reception Facilities Plan takes into account the guidelines developed by the Organization;*

.2 particulars of the identified Regional Ships Waste Reception Centres taking into account the guidelines developed by the Organization;* and

.3 particulars of those ports with only limited facilities."

***

* Refer to the *2012 Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63)), as amended by resolution MEPC.363(79).

ANNEX 2

RESOLUTION MEPC.360(79)
(adopted on 16 December 2022)

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

MARPOL ANNEX V

(Regional reception facilities within Arctic waters and Garbage Record Book)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering amendments thereto for adoption by the Parties,

HAVING CONSIDERED, at its seventy-ninth session, proposed amendments to MARPOL Annex V concerning regional reception facilities within Arctic waters and Garbage Record Book, which were circulated in accordance with article 16(2)(a) of MARPOL,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, amendments to MARPOL Annex V, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(iii) of MARPOL, that the amendments shall be deemed to have been accepted on 1 November 2023 unless prior to that date not less than one third of the Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said amendments shall enter into force on 1 May 2024 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of article 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to MARPOL;

5 ALSO REQUESTS the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to MARPOL.

ANNEX

AMENDMENTS TO MARPOL ANNEX V

(Regional reception facilities within Arctic waters and Garbage Record Book)

Regulation 8 – Reception facilities

1 In the first sentence of paragraph 2.2, the words "sub-paragraph 3.1" are replaced by the words "paragraph 2.1".

2 Paragraph 3 is replaced by the following:

"3 The following States may satisfy the requirements in paragraphs 1 and 2.1 of this regulation through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements:

.1 small island developing States; and

.2 States the coastline of which borders on Arctic waters, provided that regional arrangements shall cover only ports within Arctic waters of those States.

Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization.*

The Government of each Party participating in the arrangement shall consult with the Organization, for circulation to the Parties of the present Convention, on:

.1 how the Regional Reception Facilities Plan takes into account the guidelines developed by the Organization;*

.2 particulars of the identified Regional Ships Waste Reception Centres, taking into account the guidelines developed by the Organization;* and

.3 particulars of those ports with only limited facilities."

Regulation 10 – Placards, garbage management plans and garbage record-keeping

3 The first sentence of the chapeau of paragraph 3 is replaced by the following:

"3 Every ship of 100 gross tonnage and above and every ship which is certified to carry 15 or more persons engaged in voyages to ports or offshore terminals under the jurisdiction of another Party to the Convention and every fixed or floating platform shall be provided with a Garbage Record Book."

* Refer to the *2012 Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63)), as amended by resolution MEPC.363(79).

4 Paragraph 3.6 is replaced by the following:

".6 In the event of any discharge or accidental loss referred to in regulation 7 of this annex an entry shall be made in the Garbage Record Book, or in the case of any ship of less than 100 gross tonnage, an entry shall be made in the ship's official logbook of the date and time of occurrence, port or position of the ship at time of occurrence (latitude, longitude and water depth if known), the reason for the discharge or loss, details of the items discharged or lost, categories of garbage discharged or lost, estimated amount for each category in cubic metres, reasonable precautions taken to prevent or minimize such discharge or accidental loss and general remarks."

***

ANNEX 3

RESOLUTION MEPC.361(79)
(adopted on 16 December 2022)

AMENDMENTS TO THE ANNEX OF THE PROTOCOL OF 1997 TO AMEND THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

(Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering amendments thereto for adoption by the Parties,

HAVING CONSIDERED, at its seventy-ninth session, proposed amendments to MARPOL Annex VI, concerning the Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter, which were circulated in accordance with article 16(2)(a) of MARPOL,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, amendments to MARPOL Annex VI, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(iii) of MARPOL, that the amendments shall be deemed to have been accepted on 1 November 2023 unless prior to that date not less than one third of the Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said amendments shall enter into force on 1 May 2024 upon their acceptance in accordance with paragraph 2 above;

4 ALSO INVITES the Parties to note that, in accordance with regulation 14.7 of MARPOL Annex VI, ships operating in the Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter are exempt from the requirements in paragraphs 4 and 6 of regulation 14 of MARPOL Annex VI and from the requirements of paragraph 5 of that regulation insofar as they relate to paragraph 4 of that regulation until 1 May 2025;

5 INVITES coastal States of the Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter to ratify and effectively implement MARPOL Annex VI, as soon as possible, if they have not yet done so, at least by the date of entry into force of the said amendments;

6 REQUESTS the Secretary-General, for the purposes of article 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to MARPOL;

7 ALSO REQUESTS the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to MARPOL.

ANNEX

AMENDMENTS TO MARPOL ANNEX VI

(Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter)

Regulation 14
Sulphur oxides (SO_X) and particulate matter

1 At the end of paragraph 3.3, the word "and" is deleted. At the end of paragraph 3.4, "." is replaced by "; and". A new paragraph 3.5 is added as follows:

".5 the Mediterranean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII to this annex."

Appendix VII
Emission control areas (regulations 13.6 and 14.3)

2 A new paragraph 4 is inserted, as follows:

"4 In respect of the application of regulation 14.4, the Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter includes all waters bounded by the coasts of Europe, Africa and Asia, and is described by the following coordinates:

.1 the western entrance to the Straits of Gibraltar, defined as a line joining the extremities of Cape Trafalgar, Spain (36°11'.00 N, 6°02'.00 W) and Cape Spartel, Morocco (35°48'.00 N, 5°55'.00 W);

.2 the Strait of Canakkale, defined as a line joining Mehmetcik Burnu (40°03'N, 26°11'E) and Kumkale Burnu (40°01'.00 N, 26°12'.00 E); and

.3 the northern entrance to the Suez Canal excluding the area enclosed by geodesic lines connecting points 1-4 with the following coordinates:

Point	Latitude	Longitude
1	31˚29'.00 N	32°16'.00 E
2	31˚29'.00 N	32°28'.48 E
3	31˚14'.00 N	32°32'.62 E
4	31˚14'.00 N	32°16'.00 E

***

ANNEX 4

MEPC RESOLUTION MEPC.362(79)
(adopted on 16 December 2022)

AMENDMENTS TO THE ANNEX OF THE PROTOCOL OF 1997 TO AMEND THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

Amendments to MARPOL Annex VI (Regional reception facilities within Arctic waters, information to be included in the bunker delivery note (BDN) and information to be submitted to the IMO Ship Fuel Oil Consumption Database)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO article 16 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocols of 1978 and 1997 relating thereto (MARPOL), which specifies the amendment procedure and confers upon the appropriate body of the Organization the function of considering amendments thereto for adoption by the Parties,

HAVING CONSIDERED, at its seventy-ninth session, proposed amendments to MARPOL Annex VI concerning regional reception facilities within Arctic waters, information to be included in the bunker delivery note (BDN) and information to be submitted to the IMO Ship Fuel Oil Consumption Database, which were circulated in accordance with article 16(2)(a) of MARPOL,

1 ADOPTS, in accordance with article 16(2)(d) of MARPOL, amendments to MARPOL Annex VI, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article 16(2)(f)(iii) of MARPOL, that the amendments shall be deemed to have been accepted on 1 November 2023 unless prior to that date not less than one third of the Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet have communicated to the Organization their objection to the amendments;

3 INVITES the Parties to note that, in accordance with article 16(2)(g)(ii) of MARPOL, the said amendments shall enter into force on 1 May 2024 upon their acceptance in accordance with paragraph 2 above;

4 ALSO INVITES the Parties to consider the early application of the amendments to appendix IX with regard to information to be submitted to the IMO Ship Fuel Oil Consumption Database from 1 January 2024;

5 REQUESTS the Secretary-General, for the purposes of article 16(2)(e) of MARPOL, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to MARPOL;

6 ALSO REQUESTS the Secretary-General to transmit copies of the present resolution and its annex to Members of the Organization which are not Parties to MARPOL.

ANNEX

AMENDMENTS TO MARPOL ANNEX VI

(Regional reception facilities within Arctic waters, information to be included in the bunker delivery note (BDN) and information to be submitted to the IMO Ship Fuel Oil Consumption Database)

Regulation 17
Reception facilities

1 Paragraph 2 is replaced by the following:

"2 The following States may satisfy the requirements in paragraph 1 of this regulation through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements:

.1 small island developing States; and

.2 States the coastline of which borders on Arctic waters, provided that regional arrangements shall cover only ports within Arctic waters of those States.

Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization.*

The Government of each Party participating in the arrangement shall consult with the Organization, for circulation to the Parties of the present Convention, on:

.1 how the Regional Reception Facilities Plan takes into account the guidelines developed by the Organization;*

.2 particulars of the identified Regional Ships Waste Reception Centres taking into account the guidelines developed by the Organization;* and

.3 particulars of those ports with only limited facilities."

Appendix V
Information to be included in the bunker delivery note (regulation 18.5)

2 The following new item 9 and associated footnote are added to the list, below item 8 "Sulphur content (% m/m)":

"The flashpoint (°C) specified in accordance with standards acceptable to the Organization,* or a statement that the flashpoint has been measured at or above 70ºC;"

* ISO 2719:2016, Determination of flash point – Pensky-Martens closed cup method, Procedure A (for Distillate Fuels) or Procedure B (for Residual Fuels)."

3 Existing item 9 is renumbered as new item 10 in the list.

* Refer to the *2012 Guidelines for the development of a Regional Reception Facilities Plan* (resolution MEPC.221(63)), as amended by resolution MEPC.363(79).

Appendix IX
Information to be submitted to the IMO Ship Fuel Oil Consumption Database (regulation 27)

4 Appendix IX is replaced by the following:

"

Appendix IX

Information to be submitted to the IMO Ship Fuel Oil Consumption Database (regulation 27)

Identity of the ship

IMO number ……

Period of calendar year for which the data is submitted

Start date (dd/mm/yyyy) …….

End date (dd/mm/yyyy) ……..

Technical characteristics of the ship

Year of delivery……..……

Ship type, as defined in regulation 2 of this annex or other (to be stated) ……..

Gross tonnage (GT)[1] ……...

Net tonnage (NT)[2] ……

Deadweight tonnage (DWT)[3] …….

Power output (rated power) [4] of main and auxiliary reciprocating internal combustion engines over 130 kW (to be stated in kW) ……

Attained EEDI[5] (if applicable)……..……..……

Attained EEXI[6] (if applicable)……..

Ice class[7]……...

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1 Gross tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969.

2 Net tonnage should be calculated in accordance with the International Convention on Tonnage Measurement of Ships, 1969. If not applicable, note "N/A".

3 DWT means the difference in tonnes between the displacement of a ship in water of relative density of 1,025 kg/m^3 at the summer load draught and the lightweight of the ship. The summer load draught should be taken as the maximum summer draught as certified in the stability booklet approved by the Administration or an organization authorized by it. If not applicable, note "N/A".

4 Rated power means the maximum continuous rated power as specified on the nameplate of the engine.

5 Refer to the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73), as amended by resolutions MEPC.322(74) and MEPC.332(76)), and as may be further amended.

6 Refer to the *2022 Guidelines on the method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI)* (resolution MEPC.350(78)).

7 Ice class should be consistent with the definition set out in the International Code for Ships Operating in Polar Waters (Polar Code) (resolutions MEPC.264(68) and MSC.385(94)). If not applicable, note "N/A".

Fuel oil consumption, by fuel oil type in metric tonnes and methods used for collecting fuel oil consumption data ……

Distance travelled ……

Hours under way……

For ships to which regulation 28 of MARPOL Annex VI applies:

Applicable CII:[8] ☐AER ☐cgDIST

Required annual operational CII[9]……

Attained annual operational CII before any correction[10]……
Attained annual operational CII[11]……Operational carbon intensity rating:[12]

☐A ☐B ☐C ☐D ☐E

CII for trial purpose (none, one or more on voluntary basis):[13]

☐ EEPI (gCO_2/t•nm): ……

☐ cbDIST (gCO_2/berth•nm): ……

☐ clDIST (gCO_2/m•nm): ……

☐ EEOI (gCO_2/t•nm or others)[14]: ……."

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8 Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1)* (resolution MEPC.352(78)).

9 Refer to the *2022 Guidelines on the reference lines for use* with operational carbon intensity indicators *(CII reference lines guidelines, G2)* (resolution MEPC.353(78)) and *2021 Guidelines on the* operational carbon intensity *reduction factors relative to reference lines (CII reduction factors guidelines, G3)* (resolution MEPC.338(76)).

10 As calculated in accordance with the *2022 Guidelines on operational carbon intensity indicators and the calculation methods* (*CII guidelines, G1*) (resolution MEPC.352(78)) before any correction using *Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

11 As calculated in accordance with the *2021 Guidelines on operational carbon intensity indicators and the calculation methods* (*CII guidelines, G1*) (resolution MEPC.352(78)) and having been corrected taking into account *Interim guidelines on correction factors and voyage adjustments for CII calculations (G5)* (resolution MEPC.355(78)).

12 Refer to the *2022 Guidelines on the operational carbon intensity rating of ships (CII rating guidelines, G4)* (resolution MEPC.354(78)).

13 Refer to the *2022 Guidelines on operational carbon intensity indicators and the calculation methods* (*CII guidelines, G1*) (resolution MEPC.352(78)).

14 Refer to the *Guidelines for voluntary use of the ship energy efficiency operational indicator (EEOI))* (MEPC.1/Circ.684).