SOLAS

CONSOLIDATED EDITION 2014

Supplement

December 2016

Since the publication of the SOLAS Consolidated Edition 2014, the following amendments have been adopted by the Maritime Safety Committee:

Resolution	**Amends**	**Date of entry into force**	**Page**
MSC.386(94)	**NEW** Chapter XIV: Safety measures for ships operating in polar waters	1 January 2017	2
MSC.392(95)	Chapter II-1: Construction - structure, subdivision and stability, machinery electrical installations	1 January 2017	4
	Chapter II-2: Construction - fire protection, fire detection and fire extinction		
	Appendix: Certificates		
MSC.394(95)	Appendix: Certificates	1 January 2017	8
MSC.395(95)	Appendix: Certificates	1 January 2017	9

Resolution MSC.386(94)

adopted on 21 November 2014

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

"Chapter XIV
Safety measures for ships operating in polar waters

Regulation 1
Definitions

For the purpose of this chapter:

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

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

.2 amendments to part I-B of the Polar Code are adopted by the Maritime Safety Committee in accordance with its Rules of Procedure.

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

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

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

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

6 *At a similar stage of construction* means the stage at which:

.1 construction identifiable with a specific ship begins; and

.2 assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is less.

Regulation 2
Application

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

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

* Refer to the resolution of adoption of the *International Code for Ships Operating in Polar Waters* (MEPC.264(68)), by the Marine Environment Protection Committee.

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

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

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

Regulation 3

Requirements for ships to which this chapter applies

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

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

Regulation 4

Alternative design and arrangement

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

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

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

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

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

Resolution MSC.392(95)

adopted on 11 June 2015

Chapter II-1
Construction – structure, subdivision and stability, machinery and electrical installations

Part A
General

Regulation 2
Definitions

1 *The following new paragraphs 29 and 30 are added after the existing paragraph 28:*

"**29** *IGF Code* means the International Code of safety for ships using gases or other low flashpoint fuels as adopted by the Maritime Safety Committee of the Organization by resolution MSC.391(95), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I.

30 *Low-flashpoint fuel* means gaseous or liquid fuel having a flashpoint lower than otherwise permitted under regulation II-2/4.2.1.1."

Part F
Alternative design and arrangements

Regulation 55
Alternative designs and arrangements

2 *The existing paragraphs 1 to 3 are replaced with the following:*

"1 Purpose

The purpose of this regulation is to provide a methodology for alternative design and arrangements for machinery, electrical installations and low-flashpoint fuel storage and distribution systems.

2 General

2.1 Machinery, electrical installation and low-flashpoint fuel storage and distribution systems design and arrangements may deviate from the requirements set out in parts C, D, E or G, provided that the alternative design and arrangements meet the intent of the requirements concerned and provide an equivalent level of safety to this chapter.

2.2 When alternative design or arrangements deviate from the prescriptive requirements of parts C, D, E or G, an engineering analysis, evaluation and approval of the design and arrangements shall be carried out in accordance with this regulation.

3 Engineering analysis

The engineering analysis shall be prepared and submitted to the Administration, based on the guidelines developed by the Organization* and shall include, as a minimum, the following elements:

.1 determination of the ship type, machinery, electrical installations, low flashpoint fuel storage and distribution systems and space(s) concerned;

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

.2 identification of the prescriptive requirement(s) with which the machinery, electrical installations and low-flashpoint fuel storage and distribution systems will not comply;

.3 identification of the reason the proposed design will not meet the prescriptive requirements supported by compliance with other recognized engineering or industry standards;

.4 determination of the performance criteria for the ship, machinery, electrical installation, low-flashpoint fuel storage and distribution system or the space(s) concerned addressed by the relevant prescriptive requirement(s):

.1 performance criteria shall provide a level of safety not inferior to the relevant prescriptive requirements contained in parts C, D, E or G; and

.2 performance criteria shall be quantifiable and measurable;

.5 detailed description of the alternative design and arrangements, including a list of the assumptions used in the design and any proposed operational restrictions or conditions;

.6 technical justification demonstrating that the alternative design and arrangements meet the safety performance criteria; and

.7 risk assessment based on identification of the potential faults and hazards associated with the proposal."

3 *The new part G is added after the existing part F as follows:*

"Part G
Ships using low-flashpoint fuels

Regulation 56
Application

1 Except as provided for in paragraphs 4 and 5, this part shall apply to ships using low-flashpoint fuels:

.1 for which the building contract is placed on or after 1 January 2017;

.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 2017; or

.3 the delivery of which is on or after 1 January 2021.

Such ships using low-flashpoint fuels shall comply with the requirements of this part in addition to any other applicable requirements of the present regulations.

2 Except as provided for in paragraphs 4 and 5, a ship, irrespective of the date of construction, including one constructed before 1 January 2009, which converts to using low-flashpoint fuels on or after 1 January 2017 shall be treated as a ship using low flashpoint fuels on the date on which such conversion commenced.

3 Except as provided for in paragraphs 4 and 5, a ship using low-flashpoint fuels, irrespective of the date of construction, including one constructed before 1 January 2009, which, on or after 1 January 2017, undertakes to use low flashpoint fuels different from those which it was originally approved to use before 1 January 2017 shall be treated as a ship using low flashpoint fuels on the date on which such undertaking commenced.

4 This part shall not apply to gas carriers, as defined in regulation VII/11.2:

.1 using their cargoes as fuel and complying with the requirements of the IGC Code, as defined in regulation VII/11.1; or

.2 using other low-flashpoint gaseous fuels provided that the fuel storage and distribution systems design and arrangements for such gaseous fuels comply with the requirements of the IGC Code for gas as a cargo.

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

Regulation 57
Requirements for ships using low-flashpoint fuels

Except as provided in regulations 56.4 and 56.5, ships using low-flashpoint fuels shall comply with the requirements of the IGF Code."

Chapter II-2
Construction – protection, fire detection and fire extinction

Part B
Prevention of fire and explosion

Regulation 4
Probability of ignition

4 *In paragraph 2.1.3.4, the word* "and" *is deleted.*

5 *In paragraph 2.1, the existing subparagraph .4 is replaced with the following:*

"**.4** in cargo ships, to which part G of chapter II-1 is not applicable, the use of oil fuel having a lower flashpoint than otherwise specified in paragraph 2.1.1, for example crude oil, may be permitted provided that such fuel is not stored in any machinery space and subject to the approval by the Administration of the complete installation; and

.5 in ships, to which part G of chapter II 1 is applicable, the use of oil fuel having a lower flashpoint than otherwise specified in paragraph 2.1.1 is permitted."

6 *At the end of existing paragraph 5.3.2.2, the following sentence is added:*

"For tankers constructed on or after 1 January 2017, any isolation shall also continue to permit the passage of large volumes of vapour, air or inert gas mixtures during cargo loading and ballasting, or during discharging in accordance with regulation 11.6.1.2."

Part C
Suppression of fire

Regulation 11
Structural integrity

7 *At the end of existing paragraph 6.2, the following sentence is added:*

"For tankers constructed on or after 1 January 2017, the openings shall be arranged in accordance with regulation 4.5.3.4.1."

8 *In paragraph 6.3.2, the following text is added between the first and the second sentences:*

"In addition, for tankers constructed on or after 1 January 2017, the secondary means shall be capable of preventing over-pressure or under-pressure in the event of damage to, or inadvertent closing of, the means of isolation required in regulation 4.5.3.2.2."

Part G
Special requirements

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

9 *The existing paragraph 3.1.2 is replaced with the following:*

"**3.1.2** ***Performance of ventilation systems***

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

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

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

3.1.2.4 For all ships, where an air quality control system is provided based on the guidelines developed by the Organization,* the ventilation system may be operated at a decreased number of air changes and/or a decreased amount of ventilation. This relaxation does not apply to spaces to which at least ten air changes per hour is required by paragraph 3.2.2 of this regulation and spaces subject to regulations 19.3.4.1 and 20 1.

* Refer to the *Revised design guidelines and operational recommendations for ventilation systems in ro-ro cargo spaces* (MSC/Circ.1515)."

Appendix
Certificates

Form of safety certificate for passenger ships

PASSENGER SHIP SAFETY CERTIFICATE

10 *The following new paragraph 2.2 is added after the existing paragraph 2.1:*

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

11 *The existing paragraphs 2.2 to 2.11 are renumbered accordingly.*

Form of safety construction certificate for cargo ships

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

12 *The existing paragraph 2 is replaced with the following:*

"2. That the survey showed that:

.1 the condition of the structure, machinery and equipment as defined in the above regulation was satisfactory and the ship complied with the relevant requirements of chapters II-1 and II-2 of the Convention (other than those relating to fire safety systems and appliances and fire control plans); and

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

Resolution MSC.394(95)

adopted on 11 June 2015

Amendments to the Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974, as amended

Appendix
Certificates

Form of safety construction certificate for cargo ships

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

The existing paragraph 2 is replaced with the following:

"2 That the survey showed that:

.1 the condition of the structure, machinery and equipment as defined in the above regulation was satisfactory and the ship complied with the relevant requirements of chapters II-1 and II-2 of the Convention (other than those relating to fire safety systems and appliances and fire control plans); and

.2 the ship complied with part G of chapter II-1 of the Convention using ..... as fuel/N.A."

Resolution MSC.395(95)

adopted on 11 June 2015

Amendments to the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974, as amended

Appendix
Certificates

Form of safety certificate for passenger ships

PASSENGER SHIP SAFETY CERTIFICATE

1 *The following new paragraph 2.2 is added after the existing paragraph 2.1:*

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

2 *The existing paragraphs 2.2 to 2.11 are renumbered accordingly.*

Form of safety construction certificate for cargo ships

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

3 *The existing paragraph 2. is replaced with the following:*

"2. That the survey showed that:

.1 the condition of the structure, machinery and equipment as defined in the above regulation was satisfactory and the ship complied with the relevant requirements of chapters II-1 and II-2 of the Convention (other than those relating to fire safety systems and appliances and fire control plans); and

.2 the ship complied with part G of chapter II-1 of the Convention using ..... as fuel/N.A."

Form of safety certificate for cargo ships

CARGO SHIP SAFETY CERTIFICATE

4 *The following new paragraph 2.2 is added after the existing paragraph 2.1:*

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

5 *The existing paragraphs 2.2 to 2.12 are renumbered accordingly.*