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MERCHANT SHIPPING ACT
(CHAPTER 179)

MERCHANT SHIPPING
(SAFETY CONVENTION) (AMENDMENT NO. 2)
REGULATIONS 2016

In exercise of the powers conferred by section 100 of the Merchant Shipping Act, the Maritime and Port Authority of Singapore, with the approval of the Minister for Transport, makes the following Regulations:

Citation and commencement

1. These Regulations are the Merchant Shipping (Safety Convention) (Amendment No. 2) Regulations 2016 and come into operation on 1 January 2017.

Amendment of Regulation 2 of Chapter II-1

2. Regulation 2 of Chapter II-1 of the Merchant Shipping (Safety Convention) Regulations (Rg 11) (called in these Regulations the principal Regulations) is amended by deleting the full-stop at the end of paragraph (*ab*) and substituting a semi-colon, and by inserting immediately thereafter the following paragraphs:

“(ac) “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 to the Convention other than Chapter I;

(ad) “Low-flashpoint fuel” means gaseous or liquid fuel having a flashpoint lower than permitted under Regulation 4(b)(i)(1) of Chapter II-2.”.

Amendment of Regulation 55 of Chapter II-1

3. Regulation 55 of Chapter II-1 of the principal Regulations is amended by deleting paragraphs (a), (b) and (c) and substituting the following paragraphs:

“(a) *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.

(b) *General*

- (i) Machinery, electrical installation and low-flashpoint fuel storage and distribution systems design and arrangements may deviate from the requirements set out in Part 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.
- (ii) When any alternative design or arrangement deviates from the prescriptive requirements of Part C, D, E or G, an engineering analysis, evaluation and approval of the design and arrangement must be carried out in accordance with this Regulation.

(c) *Engineering analysis*

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

- (i) determination of the ship type, machinery, electrical installations, low-flashpoint fuel storage and distribution systems, and spaces concerned;
- (ii) identification of the prescriptive requirements with which the machinery, electrical installations and low-flashpoint fuel storage and distribution systems will not comply;
- (iii) identification of the reason why the proposed design will not meet the prescriptive requirements supported by compliance with other recognised engineering or industry standards;
- (iv) determination of the performance criteria for the ship, machinery, electrical installation, low-flashpoint fuel storage and distribution system or the spaces concerned addressed by the relevant prescriptive requirements:
 - (1) the performance criteria must provide a level of safety not inferior to the relevant prescriptive requirements contained in Part C, D, E or G; and
 - (2) the performance criteria must be quantifiable and measurable;
- (v) 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;
- (vi) technical justification demonstrating that the alternative design and arrangements meet the safety performance criteria; and

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- (vii) risk assessment based on identification of the potential faults and hazards associated with the proposal.

* 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).”.

New Part G of Chapter II-1

4. Chapter II-1 of the principal Regulations is amended by inserting, immediately after Regulation 55, the following Part:

“PART G — SHIPS USING LOW-FLASHPOINT FUELS

Regulation 56

Application

(a) Except as provided for in paragraphs (d) and (e), this Part applies to any ship using low-flashpoint fuels —

- (i) for which the building contract is placed on or after 1 January 2017;
- (ii) 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
- (iii) the delivery of which is on or after 1 January 2021.

Every such ship using low-flashpoint fuels must comply with the requirements of this Part in addition to any other applicable requirements of these Regulations.

(b) Except as provided for in paragraphs (d) and (e), 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 must be treated as a ship using low-flashpoint fuels on the date on which such conversion commenced.

(c) Except as provided for in paragraphs (d) and (e), 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 must be treated as a ship using low-flashpoint fuels on the date on which such undertaking commenced.

(d) This Part does not apply to gas carriers, as defined in Regulation 11(b) of Chapter VII —

- (i) using their cargoes as fuel and complying with the requirements of the IGC Code, as defined in Regulation 11(a) of Chapter VII; or
- (ii) 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.

(e) This Part does 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 Regulation 56(d) and (e), ships using low-flashpoint fuels must comply with the requirements of the IGF Code.”.

Amendment of Regulation 4 of Chapter II-2

5. Regulation 4 of Chapter II-2 of the principal Regulations is amended —

- (a) by deleting the word “and” at the end of paragraph (b)(i)(3)(D);
- (b) by deleting sub-paragraph (4) of paragraph (b)(i) and substituting the following sub-paragraphs:

“(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 sub-paragraph (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 Director 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 sub-paragraph (1) is permitted.”; and

- (c) by inserting, immediately after the words “Regulation 11(f)(i)(1).” in paragraph (e)(iii)(2)(B), the words “For tankers constructed on or after 1 January 2017, any isolation must 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(f)(i)(2).”.

Amendment of Regulation 11 of Chapter II-2

6. Regulation 11 of Chapter II-2 of the principal Regulations is amended —

- (a) by deleting sub-paragraph (ii) of paragraph (f) and substituting the following sub-paragraph:

“(ii) Openings for small flow by thermal variations

Openings for pressure release required by paragraph (f)(i)(1) must —

- (1) have as great a height as is practicable above the cargo tank deck to obtain maximum dispersal of flammable vapours, but in no case less than 2 m above the cargo tank deck; and
- (2) be arranged at the furthest distance practicable but not less than 5 m from the nearest air intakes and openings to enclosed spaces containing a source of ignition and from deck machinery and equipment which may constitute an ignition hazard. Anchor windlass and chain locker openings constitute an ignition hazard.

For tankers constructed on or after 1 January 2017, the openings must be arranged in accordance with Regulation 4(e)(iii)(4)(A).”; and

- (b) by inserting, immediately after the words “failure of the arrangements in paragraph (f)(i)(2).” in paragraph (f)(iii)(2), the words “In addition, for tankers constructed on or after 1 January 2017, the secondary means must 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(e)(iii)(2)(B).”.

Amendment of Regulation 20 of Chapter II-2

7. Regulation 20 of Chapter II-2 of the principal Regulations is amended by deleting sub-paragraph (2) of paragraph (c)(i) and substituting the following sub-paragraph:

“(2) Performance of ventilation systems

- (A) In passenger ships, the power ventilation system must be separate from other ventilation systems. The power ventilation system must be operated to give at least the number of air changes required in paragraph (c)(i)(1) at all times when vehicles are in such spaces, except where an air quality control system in accordance with paragraph (c)(i)(2)(D) is provided. Ventilation ducts serving such cargo spaces capable of being effectively sealed must be separated for each such space. The system must be capable of being controlled from a position outside such spaces.
- (B) In cargo ships, the ventilation fans must normally be run continuously and give at least the number of air changes required in paragraph (c)(i)(1) whenever vehicles are on board, except where an air quality control system in accordance with paragraph (c)(i)(2)(D) is provided. Where this is impracticable, they must 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 must be proved gas-free. One or more portable combustible gas detecting instruments must be carried for this purpose. The system must be entirely separate from other ventilation systems. Ventilation ducts serving ro-ro or vehicle spaces must be capable of being effectively sealed for each cargo space. The system must be capable of being controlled from a position outside such spaces.
- (C) The ventilation system must be such as to prevent air stratification and the formation of air pockets.

- (D) 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 or a decreased amount of ventilation or both. This relaxation does not apply to spaces to which at least 10 air changes per hour is required by paragraph (c)(ii)(2) and spaces subject to Regulations 19(c)(iv)(1) and 20-1.

* Refer to the Revised Design Guidelines and Operational Recommendations for Ventilation Systems in Ro-ro Cargo Spaces (MSC/Circ.1515).”.

Deletion of Chapter XIII

8. Chapter XIII of the principal Regulations is deleted.

New Chapters XIV and XV

9. The principal Regulations are amended by inserting, immediately before the First Schedule, the following Chapters:

“CHAPTER XIV

SAFETY MEASURES FOR SHIPS OPERATING IN POLAR WATERS

Regulation 1

Definitions

For the purpose of this Chapter:

(a) “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 —

- (i) 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 to the Convention other than Chapter I; and

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

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

(b) “Antarctic area” means the sea area south of latitude 60° S.

(c) “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 thence 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.

(d) “Polar waters” means Arctic waters and/or the Antarctic area.

(e) “Ship constructed” means a ship the keel of which is laid or which is at a similar stage of construction.

(f) “At a similar stage of construction” means the stage at which —

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- (i) construction identifiable with a specific ship begins; and
 - (ii) 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

(a) Unless expressly provided otherwise, this Chapter applies to ships operating in polar waters, certified in accordance with Chapter I.

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

(c) 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.

(d) This Chapter does 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.

(e) Nothing in this Chapter prejudices the rights or obligations of States under international law.

Regulation 3

Requirements for Ships to which this Chapter Applies

(a) Ships to which this Chapter applies must comply with the requirements of the safety-related provision of the introduction, and with part I-A, of the Polar Code and must, in addition to the requirements of Regulations 7, 8, 9 and 10 of Chapter I, as applicable, be surveyed and certified, as provided for in that Code.

(b) Ships to which this Chapter applies holding a certificate issued pursuant to the provisions of paragraph (a) must be subject to the control established in Regulation 19 of Chapter I and Regulation 4 of Chapter XI-1. For this purpose, such a certificate must be treated as a certificate issued under Regulation 12 or 13 of Chapter I.

Regulation 4

Alternative Design and Arrangement

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

(b) Structural arrangements, machinery, electrical installations, fire safety design and arrangement measures, 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.

(c) When any alternative design or arrangement deviates 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 arrangement must be carried out based on the guidelines approved by the Organization*.

* 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.

(d) Any alternative design or arrangement deviating from the prescriptive requirements must be recorded in the Polar Ship Certificate and the ship's Polar Water Operational Manual, as required by the Polar Code, such record also defining the

technical and operational measures and conditions for the allowed deviation.

CHAPTER XV

SAVING

Regulation 1

The revoked Merchant Shipping (Safety Convention) Regulations 1981 (G.N. No. S 174/81) as in force immediately before 1 September 1984 continue to apply, unless otherwise expressly provided, to ships constructed before 1 September 1984.”.

Amendment of First Schedule

10. The First Schedule to the principal Regulations is amended —

(a) by inserting, immediately after sub-paragraph 2.1 of the Form of Safety Certificate for Passenger Ships, the following sub-paragraph:

“2.2 the ship complied with Part G of Chapter II-1 of the Convention using as fuel/N.A.¹”;

(b) by renumbering the existing sub-paragraphs 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10 and 2.11 of the Form of Safety Certificate for Passenger Ships as sub-paragraphs 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11 and 2.12, respectively; and

(c) by deleting paragraph 2 of the Form of Safety Construction Certificate for Cargo Ships and substituting the following paragraph:

“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.A⁴.”.

*[G.N. Nos. S 287/99; S 40/2000; S 511/2000; S 533/2001;
S 314/2002; S 613/2002; S 645/2003; S 217/2004;
S 697/2005; S 282/2006; S 691/2006; S 339/2008;
S 686/2008; S 286/2009; S 664/2009; S 366/2010;
S 793/2010; S 622/2011; S 284/2012; S 621/2012;
S 847/2013; S 432/2014; S 866/2014; S 375/2015;
S 802/2015; S 277/2016]*

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