
The Merchant Shipping (Gas Carriers) Regulations 1994

Amendments to the IGC Code

Notice to Shipowners, Shipmanagers, Shipbuilders, Shiprepairers, Certifying Authorities, Masters and Ship's Officers

Summary

This Merchant Shipping Notice specifies the amendments to the IGC Code due to enter into force on 1 July 1998 for the purpose of the Merchant Shipping (Gas Carriers) Regulations 1994.

Amendments to the IGC Code

1. The Maritime Safety Committee of the International Maritime Organization adopted amendments to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) by Resolutions MSC.32(63) and MSC.59(67) which will enter into force on 1 July 1998. The MSC Resolutions are attached at annexes 1 and 2 for ready reference.
2. The amendments in Res.MSC.32(63) provide for assignment of increased loading limits for type C tanks without the additional pressure relieving system if the cargo vent system is shown to be adequate using the guidelines developed in the IMO. Chapter 15, Filling Limits for Cargo Tanks has been revised with related amendment to Chapter 8, Cargo Tank Vent Systems. The guidelines are contained in the Annex to the Assembly Resolution A.829(19) - Guidelines for the Evaluation of the Adequacy of Type C Tank Vent Systems. Chapter 8 has been amended further to rationalize some of the provisions in the light of experience within the industry.
3. The amendments in Res.MSC.59(67) mainly replace expressions such as 'satisfactory to the Administration' by requiring compliance with 'recognized standards'. The recognized standards are defined at the outset in a new paragraph 1.3.30.3 and include international or national standards acceptable to the Administration or standards laid down and maintained by classification societies recognized by the Administration. In an amendment to the table in Chapter 19 the product 'Butadiene' has been marked as toxic besides being flammable.

The Merchant Shipping (Gas Carriers) Regulations 1994

4. The Merchant Shipping (Gas Carriers) Regulations 1994 give effect to the provisions in SOLAS Ch. VII Part C - Construction and equipment of ships carrying liquefied gases in bulk by making compliance with the IGC Code mandatory for gas carriers built on or after 1 July 1986. Regulation 1 (5) provides that any reference in the Regulations to the IGC Code includes references to documents amending it, considered by the Secretary of State to be relevant and specified in a Merchant Shipping Notice.
5. Resolutions MSC.32(63) and MSC.59(67) are accordingly specified as relevant documents amending the IGC Code with effect from 1 July 1998 and applicable to ships built on or after 1 July 1998. The amendments covering increased loading limits and the carriage of butadiene will also be applicable to ships built before 1 July 1998. Paragraphs 2, 3 and 4 of the Annex to Resolution MSC.32(63) and paragraph 23 of the Annex to Resolution MSC.59(67) are specified for application to ships built before 1 July 1998.

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***An executive agency of the Department of the
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ANNEX 1

RESOLUTION MSC.32(63) adopted on 23 May 1994

ADOPTION OF 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 Organisation concerning the functions of the Committee,

RECALLING ALSO resolution MSC.5(48), by which the Committee adopted the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code),

RECALLING FURTHER article VIII (b) and regulation VII/11.1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, concerning the procedure for amending the IGC Code,

BEING DESIROUS of keeping the IGC Code up to date,

HAVING CONSIDERED, at its sixty-third session amendments to the Code proposed and circulated in accordance with article VIII(b) (i) of the SOLAS Convention,

1. ADOPTS, in accordance with article VIII(b) (iv) of the SOLAS Convention, amendments to the 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 SOLAS Convention, that the amendments shall be deemed to have been accepted on 1 January 1998 unless, prior to that date, more than one third of the Contracting Governments to the SOLAS Convention or Contracting Governments the combined merchant fleets of which constitute not less than fifty per cent 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 SOLAS Convention, the amendments shall enter into force on 1 July 1998 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII (b) (v) of the SOLAS 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 SOLAS Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of the resolution and its Annex to Members of the Organisation which are not Contracting Governments to the SOLAS Convention.

ANNEX

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

Amendments related to application

1. Existing paragraphs 1.1.2 and 1.1.3 are replaced by the following:

“1.1.2 Unless expressly provided otherwise, the Code applies to ships the keels of which are laid or which are at a stage at which:

.1 construction identifiable with the 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 the less;

on or after 1 July 1998. Ships constructed before 1 July 1998 are to comply with resolution MSC.5(48) adopted on 17 June 1983 subject to amendments by resolution MSC.30(61) adopted on 11 December 1992.

1.1.3 A ship, irrespective of the date of construction, which is converted to a gas carrier on or after 1 July 1998 should be treated as a gas carrier constructed on the date on which such conversion commences.”

Amendments related to filling limits

2. Existing chapter 15 is replaced by the following:

“CHAPTER 15

FILLING LIMITS FOR CARGO TANKS

15.1 General

15.1.1 No cargo tanks should have a higher filling limit (FL) than 98% at the reference temperature, except as permitted by 15.1.3.

15.1.2 The maximum loading limit (LL) to which a cargo tank may be loaded should be determined by the following formula:

$$LL = FL \frac{p_R}{p_L}$$

where:

LL = loading limit expressed in percent which means the maximum allowable liquid volume relative to the tank volume to which the tank may be loaded;

FL = filling limit as specified in 15.1.1 or 15.1.3;

p_R = relative density of cargo at the reference temperature; and

p_L = relative density of cargo at the loading temperature and pressure.

15.1.3 The Administration may allow a higher filling limit (FL) than the limit of 98% specified in 15.1.1 at the reference temperature, taking into account the shape of the tank, arrangements of pressure relief valves, accuracy of level and temperature gauging and the difference between the loading temperature and the temperature corresponding to the vapour pressure of the cargo at the set pressure of the pressure relief valves. Provided the conditions specified in 8.2.17 are maintained.

15.1.4 For the purposes of this chapter only, “reference temperature” means:

- .1 the temperature corresponding to the vapour pressure of the cargo at the set pressure of the pressure relief valves when no cargo vapour pressure/temperature control as referred to in chapter 7 is provided;
- .2 the temperature of the cargo upon termination of loading, during transport, or at unloading, whichever is the greatest, when a cargo vapour pressure/temperature control as referred to in Chapter 7 is provided. If this reference temperature would result in the cargo tank becoming liquid full before the cargo reaches a temperature corresponding to the vapour pressure of the cargo at the set pressure of the relief valves required in 8.2, an additional pressure relieving system complying with 8.3 should be fitted.

15.1.5 The Administration may allow type C tanks to be loaded according to the following formula provided that the tank vent system has been approved in accordance with 8.2.18:

$$LL = FL \frac{pR}{pL}$$

where:

LL = loading limit as specified in 15.1.2;

FL = filling limit as specified in 15.1.1 or 15.1.3;

pR = relative density of cargo at the highest temperature which the cargo may reach upon termination of loading, during transport, or at unloading, under the ambient design temperature conditions described in 7.1.2; and

pL = as specified in 15.1.2.

This paragraph does not apply to products requiring a type 1G ship.

15.2 Information to be provided to the master

The maximum allowable loading limits for each cargo tank should be indicated for each product which may be carried, for each loading temperature which may be applied and for the applicable maximum reference temperature, on a list to be approved by the Administration. Pressures at which the pressure relief valves, including those valves required by 8.3, have been set should also be stated on the list. A copy of the list should be permanently kept on board by the master.

15.3 Chapter 15 applies to all ships regardless of the date of construction.”

3. The following words are added at the end of existing paragraph 8.2.17:

“at the maximum allowable filling limit (FL).”

4. The following new paragraph 8.2.18 is added after existing paragraph 8.2.17:

“8.2.18 The adequacy of the vent system fitted on tanks loaded in accordance with 15.1.5 is to be demonstrated using the guidelines developed by the Organisation*. A relevant certificate should be permanently kept on board the ship. For the purposes of this paragraph, vent system means:

- .1 the tank outlet and the piping to the pressure relief valve;
- .2 the pressure relief valve;
- .3 the piping from the pressure relief valve to the location of discharge to the atmosphere and including any interconnections and piping which joins other tanks.

This paragraph may apply to all ships regardless of the date of construction.”

Amendments related to cargo tank vent systems

5. Existing paragraph 8.2.3 is replaced by the following:

“8.2.3 In general, the setting of the pressure relief valves should not be higher than the vapour pressure which has been used in the design of the tank. However, where two or more pressure relief valves are fitted, valves comprising not more than 50% of the total relieving capacity may be set at a pressure up to 5% above MARVS.”

6. The following sentences are added to existing paragraph 8.2.4:

“Valves should be constructed of materials with a melting point above 925°C. Consideration of lower melting point materials for internal parts and seals should be given if their use provides significant improvement to the general operation of the valve.”

7. Existing paragraph 8.2.9 is replaced by the following:

“8.2.9 Each pressure relief valve installed on a cargo tank should be connected to a venting system which should be so constructed that the discharge of gas will be unimpeded and directed vertically upwards at the exit and so arranged as to minimise the possibility of water or snow entering the vent system. The height of vent exits should not be less than B/3 or 6m, whichever is the greater, above the weather deck and 6m above the working area, the fore and aft gangway, deck storage tanks and cargo liquid lines.”

8. The following sentences are added to existing paragraph 8.2.16:

“The pressure drop in the vent line from the tank to the pressure relief valve inlet should not exceed 3% of the valve set pressure. For unbalanced pressure relief valves the back pressure in the discharge line should not exceed 10% of the gauge pressure at the relief valve inlet with the vent lines under fire exposure as referred to in 8.5.2.”

* Refer to the guidelines to be developed by the organisation.

ANNEX 2

RESOLUTION MSC.59(67) **(adopted on 5 December 1996)**

ADOPTION OF 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 Organisation concerning the functions of the Committee,

RECALLING ALSO resolution MSC.5(48) by which it adopted the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code),

RECALLING FURTHER article VIII (b) and regulation VIII/11.1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended concerning the procedure for amending the IGC Code,

BEING DESIROUS of keeping the IGC Code up to date,

HAVING CONSIDERED at its sixty-seventh session, amendments to the Code proposed and circulated in accordance with article VIII(b)(i) of the SOLAS Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the SOLAS Convention, amendments to the Code the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 1998, unless, prior to that date, more than one third of the Contracting Governments to the SOLAS 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 SOLAS Convention, the amendments shall enter into force on 1 July 1998 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the SOLAS 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 SOLAS Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organisation, which are not Contracting Governments to the SOLAS Convention.

ANNEX

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

CHAPTER 1 - GENERAL

1. The following new paragraph 1.3.30.3. is added after existing paragraph 1.3.30.2:

"1.3.30.3 *Recognised standards* are applicable international or national standards acceptable to the Administration or standards laid down and maintained by an organisation which complies with the standards adopted by the Organisation* and which is recognised by the Administration."

CHAPTER 2 - SHIP SURVIVAL CAPABILITY AND LOCATION OF CARGO TANKS

2. In paragraph 2.3.3, the words "should be of a type acceptable to the Administration and" are deleted and the words "and should comply with recognised standards" are added at the end of the paragraph.

CHAPTER 3 - SHIP ARRANGEMENTS

3. In paragraph 3.8.1, the words "to the approval of the Administration and" are deleted.

CHAPTER 4 - CARGO CONTAINMENT

4. In paragraph 4.2.4.2, in the first sentence, the words "Recognised Standards*" are replaced by the words "recognised standards."
5. In paragraph 4.2.4.3, in the second sentence, the words "(gravity tests)" are replaced by the words "(gravity tanks)."
6. In paragraph 4.2.4.4, the expression "55 N/mm² for ferritic/martensitic steel" is replaced by the expression "55 N/mm² for ferritic-perlitic, martensitic and austenitic steels."
7. In the introductory phrase of paragraph 4.11.2, the words "with the approval of the Administration" are deleted.

CHAPTER 5 - PROCESS PRESSURE VESSELS AND LIQUID, VAPOUR AND PRESSURE PIPING SYSTEMS

8. In paragraph 5.2.2.1, in the definition of the efficiency factor "e", the existing text of the last sentence is replaced by the following:

"In other cases an efficiency factor of less than 1.0, in accordance with recognised standards, may be required by depending on the manufacturing process."

9. In the paragraph 5.2.4.4, in the first sentence, the words "be to a standard acceptable to the Administration" are replaced by the words "should comply with recognised standards" and at the end of the second sentence, the words "by the Administration" are deleted.

* Refer to the Minimum Standards for Recognised Organisations Acting on Behalf of the Administration, set out in appendix 1 to the Guidelines for the Authorisation of Organisations Acting on Behalf of the Administration, adopted by the Organisation by resolution A.739(18).

10. In paragraph 5.4.1, the existing text of the second sentence is replaced by the following:

“Relaxations from these requirements may be accepted, in accordance with recognised standards, for piping inside cargo tanks and open-ended piping.”

11. In paragraph 5.4.2.2, the words “satisfactory to the Administration” are replaced by the words “in accordance with recognised standards.”

12. In paragraph 5.4.2.3, the words “acceptable to the Administration” are replaced by the words “complying with recognised standards.”

13. In paragraph 5.4.3.2, in the first sentence the words, “standards acceptable to the Administration” are replaced by the words “recognised standards.”

14. In paragraph 5.6.4, in the sixth sentence, the words “with 30 s of actuation” are replaced by the words “within 30 s of actuation”.

CHAPTER 8 - CARGO TANK VENT SYSTEMS

15. In paragraph 8.2.2, the words “to the satisfaction of the Administration” are replaced by the words “complying with recognised standards.”

CHAPTER 11 - FIRE PROTECTION AND FIRE EXTINCTION

16. In paragraph 11.2.4, in the second sentence, the words “All pipes, valves nozzles” are replaced by the words “All pipes, valves, nozzles.”

CHAPTER 13 - INSTRUMENTATION (GAUGING, GAS DETECTION)

17. In paragraph 13.3.1, in the last sentence, the word “Administration” is deleted and the words “port Administration” are replaced by the words “port State authority.”

18. In paragraph 13.6.9, the expression “column h” is replaced by the expression “column i.”

CHAPTER 14 - PERSONNEL PROTECTION

19. In paragraph 14.4.1, the expression “column h” is replaced by the expression “column i.”

CHAPTER 16 - USE OF CARGO AS FUEL

20. In paragraph 16.5.6, in the second sentence, the words “and these arrangements should be to the satisfaction of the Administration” are deleted.

CHAPTER 17 - SPECIAL REQUIREMENTS

21. In paragraph 17.20.3.1, in the first sentence, the words “or other material acceptable to the Administration” are replaced by the words “in accordance with recognised standards,” and the second sentence is deleted.

22. In paragraph 17.20.14, in the first sentence, the words “filling limits” are replaced by the words “loading limits.”

CHAPTER 19 - SUMMARY OF MINIMUM REQUIREMENTS

23. In column “f” of the table, for the product “Butadiene”, the entry “F” is replaced by the entry “F+T.”

