documentazione

ENTRATA IN VIGORE DEGLI EMENDAMENTI ALLA CONVENZIONE INTERNAZIONALE PER LA SALVAGUARDIA DELLA VITA UMANA IN MARE, SOLAS 74/83 (Ministero degli Affari Esteri)*

Si riporta qui di seguito, in lingua inglese con traduzione non ufficiale in lingua italiana, il testo degli emendamenti alla Convenzione Solas 74/83 concernenti:

le radiocomunicazioni per l'applicazione del Global Maritime Distress and Safety System, adottati con Risoluzione n. 1 dell'8 novembre 1988 dalla Conferenza IMO dei Governi contraenti la Convenzione Solas 74/83, le schede di equipaggiamento destinate a completare il certificato di sicurezza per navi passeggeri, il certificato di sicurezza del materiale di armamento per nave da carico e il certificato di sicurezza radioelettrica previsti dalla Solas, adottati con Risoluzione n. 2 dell'8 novembre 1988 dalla Conferenza IMO dei Governi contraenti la Convenzione Solas 74/83, ed infine gli emendamenti alla Convenzione Solas 74/83 adottati con Risoluzione MSC 19 (58) il 25 maggio 1990 relativi la nuova parte B-1 (Regole da 25-1 a 25-10) del Capitolo II-1 «Compartimentazione di galleggiabilità e di stabilità in allagamento per navi da carico».

Tutti i sunnominati emendamenti sono entrati in vigore, a norma dell'art. VIII (b) (vii)(2) della Convenzione, il 1° febbraio 1992.

Resolution 1 of the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea, 1974 on the Global Maritime Distress and Safety System adopted on 9 November 1988.

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* La traduzione non ufficiale in lingua italiana di tale Convenzione sarà pubblicata nel primo volume 1994.

Adoption of Amendments to the International Convention for the Safety of Life at Sea, 1974 concerning Radiocommunications for the Global Maritime Distress and Safety System.

THE CONFERENCE,

NOTING article VIII(c) of the International Convention for the Safety of Life at Sea, 1974 (hereinafter referred to as «the Convention») concerning the procedure for amending the Convention by a Conference of Contracting Governments,

HAVING CONSIDERED amendments to the Convention concerning radiocommunications proposed and circulated to the Members of the Organization and all Contracting Governments to the Convention,

1. ADOPTS, in accordance with article VIII(c)(ii) of the Convention, amendments to chapters I, II-1, III, IV, V of, and the appendix to the Convention, the texts of which are given in the annex to the present resolution;

2. DECIDES, in accordance with article VIII(c)(iii), that the amendments shall be deemed to have been accepted and shall enter into force in accordance with the following procedures:

(a) The amendments shall be deemed to have been accepted on 1 February 1990, unless by that date one third of the Contracting Governments, 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, notify the Secretary-General of the Organization that they object to the amendments;

(b) The amendments which are deemed to have been accepted in accordance with paragraph (a) shall enter into force with respect to all Contracting Governments except those which have objected to the amendments under paragraph (a) and which have not withdrawn such objections, on 1 February 1992.

Annex to resolution 1

Amendments to the International Convention for the Safety of Life at Sea, 1974 concerning Radiocommunications for the Global Maritime Distress and Safety System

Chapter 1

GENERAL PROVISIONS

PART B - SURVEYS AND CERTIFICATES

Regulation 7

Surveys of passenger ships

In the second sentence of paragraphs (b)(i) and (b)(ii) the words «radio installation, radiotelegraph installations in motor lifeboats, portable radio apparatus for survival craft, life-saving appliances, fire protection, fire detecting and extinguishing appliances, radar, echo-sounding device, gyro-compass, pilot ladders, mechanical pilot hoists and other equipment» *are replaced by the words* «radio installations including those used in life-saving appliances, fire protection, fire safety systems and appliances, life-saving appliances and arrangements, shipborne navigational equipment, nautical publications, means of embarkation for pilots and other equipment».

Regulation 8

Surveys of life-saving appliances and other equipment of cargo ships

In the first sentence the words «The life-saving appliances, except a radiotelegraph installation in a motor lifeboat or a portable apparatus for survival craft, the echo-sounding device, the gyro-compass and the fire-extinguishing appliances of cargo ships» *are replaced by* «The life-saving appliances and arrangements (except radio installations), the shipborne navigational equipment and the fire safety systems and appliances of cargo ships of 500 tons gross tonnage and upwards».

In the second sentence the words «the pilot ladders, mechanical pilot hoists», *are replaced by the words* «means of embarkation of pilots, nautical publications».

Regulation 9

The existing title of the regulation is replaced by:
«Surveys of radio installations of cargo ships»

The existing text is replaced by:

«The radio installations of cargo ships, including those used in life-saving appliances, to which chapters III and IV apply, shall be subject to initial and subsequent surveys as provided for passenger ships in regulation 7 of this chapter».

Regulation 10

Surveys of hull, machinery and equipment of cargo ships

The existing words, «Cargo Ship Safety Radiotelegraphy Certificates or Cargo Ship Safety Radiotelephony Certificates» *are replaced by* «or Cargo Ship Safety Radio Certificates».

Regulation 12

Issue of certificates

In paragraph (a) the existing text of subparagraphs (iv) and (v) is replaced by:

«(iv) A certificate called a Cargo Ship Safety Radio Certificate shall be issued to a cargo ship which complies with the requirements of chapter IV and any other relevant requirements of the present regulations.

(v) The Passenger Ship Safety Certificate, the Cargo Ship Safety Equipment Certificate and the Cargo Ship Safety Radio Certificate, referred to in subparagraphs(i), (iii) and(iv), shall be supplemented by a Record of Equipment adopted by the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea, 1974 on the Global Maritime Distress and Safety System, 1988, by resolution 2 as it may be amended».

In paragraph (a)(vii) the existing words «Cargo Ship Safety Radiotelegraphy Certificates, Cargo Ship Safety Radiotelephony Certificates» *are replaced by* «Cargo Ship Safety Radio Certificates».

Existing paragraph (b) is replaced by:

«(b) Notwithstanding any other provisions of the present Convention, any certificate which is issued under, and in accordance with, the provisions of the Convention and which is current on 1 February 1992 shall remain valid until it expires».

Regulation 14

Duration of certificates

In paragraph (b) the existing words «Cargo Ship Safety Radiotelegraphy Certificate or a Cargo Ship Safety Radiotelephony Certificate» *are replaced by* «Cargo Ship Safety Radio Certificate».

Chapter II-1

CONSTRUCTION-SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

PART D - ELECTRICAL INSTALLATIONS

Regulation II-1/42

Emergency source of electrical power in passenger ships.

The existing text of subparagraph 2.2 is replaced by the following:

«2.2 For a period of 36 hours:

.1 the navigation lights and other lights required by the International Regulations for Preventing Collisions at Sea in force; and

.2 on ships constructed on or after 1 February 1995, the VHF radio installation required by regulation IV/7.1.1 and IV/7.1.2; and, if applicable:

.2.1 the MF radio installation required by regulations IV/9.1.1, IV/9.1.2, IV/10.1.2 and IV/10.1.3;

.2.2 the ship earth station required by regulation IV/10.1.1; and

.2.3 the MF/HF radio installation required by regulations IV/10.2.1, IV/10.2.2 and IV/11.1».

In paragraph 2.3.2. the existing words «the navigational aids» *are replaced by* «the shipborne navigational equipment».

The existing text of paragraph 4.1.1 is replaced by the following:

«.1 the lighting required by paragraphs 2.1 and 2.2.1»;

Regulation 43

Emergency source of electrical power in cargo ships

The existing text of subparagraph 2.3 is replaced by the following:

«2.3 For a period of 18 hours:

.1 the navigation lights and other lights required by the International Regulations for Preventing Collisions at Sea in force;

.2 on ships constructed on or after 1 February 1995 the VHF radio installation required by regulation IV/7.1.1 and IV/7.1.2; and, if applicable:

.2.1 the MF radio installation required by regulations IV/9.1.1, IV/9.1.2, IV/10.1.2, and IV/10.1.3;

.2.2 the ship earth station required by regulation IV/10.1.1; and

.2.3 the MF/HF radio installation required by regulations IV/10.2.1, IV/10.2.2 and IV/11.1».

In paragraph 2.4.2 the existing words «the navigational aids» *are replaced by* «the shipborne navigational equipment».

In paragraph 4.1, the existing words «the lighting required by paragraphs 2.1, 2.2 and 2.3» *are replaced by the following:*

«the lighting required by paragraphs 2.1, 2.2 and 2.3.1».

Chapter III

LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Regulation III/1

Application

The existing texts of paragraphs 5 and 6 are replaced by:

«5 With respect to ships constructed before 1 July 1986, the requirements of regulations 8, 9, 10, 18, 21.3, 21.4, 25, 26.3, 27.2, 27.3 and 30.2.7 and, to the extent prescribed therein, regulation 19 shall apply.

6 With respect to ships constructed before 1 February 1992, regulation 6.2, shall apply not later than 1 February 1995».

Regulation III/6

Communications

The existing text of paragraph 1 is replaced by:

«1 Paragraph 2 applies to all passenger ships and to all cargo ships of 300 tons gross tonnage and upwards. With respect to ships constructed before 1 February 1992, paragraph 2 shall apply not later than 1 February 1995. However, ships other than cargo ships of 300 tons gross tonnage and upwards but less than 500 tons gross tonnage which do not comply with paragraph 2 shall comply with all applicable requirements (1) of chapter III of the International Convention for the Safety of Life at Sea, 1974 in force prior to 1 February 1992».

The existing text of paragraph 2 is replaced by:

«2 *Radio life-saving appliances*

2.1 *Two-way VHF radiotelephone apparatus*

2.1.1 At least three two-way VHF radiotelephone apparatus shall be provided on every passenger ship and on every cargo ship of 500 tons gross tonnage and upwards. At least two two-way VHF radiotelephone apparatus shall be provided on every cargo ship of 300 tons gross tonnage and upwards but less than 500 tons gross tonnage. Such apparatus shall conform to performance standards not inferior to those adopted by the Organization (2). If a fixed two-way VHF radiotelephone apparatus is fitted in a survival craft it shall conform to perfomance standards not inferior to those adopted by the Organization (2).

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(1) Regulations III/6.2.3 and 6.2.4 and as applicable regulations III/6.2.1, 6.2.2, 10.6, 38.3.2, 41.7.8 and 42.5 in force prior to 1 February 1992 (1983 SOLAS amendments). See also resolution 4 of the 1988 GMDSS Conference.

(2) Reference is made to the performance standards for survival craft two-way VHF radiotelephone apparatus, adopted by the Organization by resolution A.605(15).

2.1.2 Two-way VHF radiotelephone apparatus provided on board ships prior to 1 February 1992 and not complying fully with the performance standards adopted by the Organization may be accepted by the Administration until 1 February 1999 provided the Administration is satisfied that they are compatible with approved two-way VHF radiotelephone apparatus.

2.2 *Radar transponders*

At least one radar transponder shall be carried on each side of every passenger ship and of every cargo ship of 500 tons gross tonnage and upwards. At least one radar transponder shall be carried on every cargo ship of 300 tons gross tonnage and upwards but less than 500 tons gross tonnage. Such radar transponders shall conform to perfomance standards not inferior to those adopted by the Organization(3). The radar transponders(4) shall be stowed in such locations that they can be rapidly placed in any survival craft other than the liferaft of liferafts required by regulation 26.1.4. Alternatively one radar transponder shall be stowed in each survival craft other than those required by regulation 26.1.4».

Regulation III/10

Manning of survival craft and supervision

The existing paragraph 6 is revoked.

The existing paragraphs 7 and 8 are renumbered as paragraphs 6 and 7 respectively.

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(3) Reference is made to the performance standards for survival craft radar transponders for use in search and rescue operations, adopted by the Organization by resolution A.604(15).

(4) One of these radar transponders may be the radar transponder required by regulation IV/7.1.3.

Regulation III/38

General requirements for liferafts

The existing paragraph 3.2 is revoked.

The existing paragraph 3.3 is renumbered as paragraph 3.2.

The existing text of paragraph 5.1.14 is replaced by:

«.14 an efficient radar reflector, unless a survival craft radar transponder is stowed in the liferaft».

Regulation III/41

General requirements of lifeboats

The existing text of paragraph 7.8 is replaced by:

«7.8 Every lifeboat which is fitted with a fixed two-way VHF radiotelephone apparatus with an antenna which is separately mounted shall be provided with arrangements for siting and securing the antenna effectively in its operating position».

The existing text of paragraph 8.30 is replaced by:

«.30 an efficient radar reflector, unless a survival craft radar transponder is stowed in the lifeboat».

Regulation III/42

Partially enclosed lifeboats

The existing text of paragraph 5 is replaced by:

«5 If a fixed two-way VHF radiotelephone apparatus is fitted in the lifeboat, it shall be installed in a cabin large enough to accommodate both the equipment and the person using it. No separate cabin is required if the construction of the lifeboat provides a sheltered space to the satisfaction of the Administration».

Chapter IV

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

«RADIOCOMMUNICATIONS

PART A – GENERAL

Regulation 1

Application

1 This chapter applies to all ships to which the present regulations apply and to cargo ships of 300 tons 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 (5).

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

.2.1 construction identifiable with a specific ship begins; and

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

4 Every ship shall comply with regulations 7.1.4 (NAVTEX) and 7.1.6. (satellite EPIRB) not later than 1 August 1993.

5 Subject to the provisions of paragraph 4, the Administra-

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(5) 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.

tion shall ensure that every ship constructed before 1 February 1995:

.1 during the period between 1 February 1992 and 1 February 1999:

.1.1 either complies with all applicable requirements of this chapter; or

.1.2 complies with all applicable requirements of chapter IV of the International Convention for the Safety of Life at Sea, 1974 in force prior to 1 February 1992; and

.2 after 1 February 1999, complies with all the applicable requirements of this chapter.

6 Every ship constructed on or after 1 February 1995 shall comply with all the applicable requirements of this chapter.

7 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.

Regulation 2

Terms and definitions

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

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

.2 *Continuous watch* means that the radio 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.

.3 *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 Radio Consultative Committee (CCIR).

.4 *Direct-printing telegraphy* means automated telegraphy techniques which comply with the relevant recommendations of the International Radio Consultative Committee (CCIR).

.5 *General radiocommunications* means operational and public correspondence traffic, other than distress, urgency and safety messages, conducted by radio.

.6 *INMARSAT* means the Organization established by the Convention on the International Maritime Satellite Organization (INMARSAT) adopted on 3 September 1976.

.7 *International NAVTEX Service* means co-ordinated broadcast and automatic reception on 518 kHz of maritime safety information by means of narrow-band direct-printing telegraphy using the English language (6).

.8 *Locating* means the finding of ships, aircraft, units or persons in distress.

.9 *Maritime safety information* means navigational and meteorological warnings, meteorological forecasts and other urgent safety related messages broadcast to ships.

.10 *Polar orbiting satellite service* means a service which is based on polar orbiting satellites which receive and relay distress alerts from satellite EPIRBs and which provides their position.

.11 *Radio Regulations* means the Radio Regulations annexed to, or regarded as being annexed to, the most recent International Telecommunication Convention which is in force at any time.

.12 *Sea area A1* means an area within the radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government (7).

.13 *Sea area A2* means in area, excluding sea area A1, within the radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government (7).

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(6) Reference is made to the NAVTEX manual approved by the Organization.

(7) Reference is made to the recommendation on the provision of radiocommunication services for the global maritime distress and safety system, to be developed by the Organization (see MSC 55/25, annex 3).

.14 *Sea area A3* means an area, excluding sea areas A1 and A2, within the coverage of an INMARSAT geostationary satellite in which continuous alerting is available.

.15 *Sea area A4* means an area outside 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 shall have the meanings as defined in those Regulations.

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;

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

.3 prior to 1 February 1999, when the ship will be taken permanently out of service within two years of a date prescribed by regulation 1 for the application of a requirement of this chapter.

3 Each Administration shall submit to the Organization, as soon as possible after the first of January in each year, a report showing all exemptions granted under paragraphs 1 and 2 during the previous calendar year and giving the reasons for granting such exemptions.

Regulation 4

Functional requirements

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

.1 except as provided in regulations 8.1.1 and 10.1.4.3, of transmitting ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service;

.2 of receiving shore-to-ship distress alerts;

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

.4 of transmitting and receiving search and rescue co-ordinating communications;

.5 of transmitting and receiving on-scene communications;

.6 of transmitting and, as required by regulation V/12(g) and (h), receiving signals for locating;(8)

.7 of transmitting and receiving(9) maritime safety information;

.8 of transmitting and receiving general radiocommunications to and from shore-based radio system or networks subject to regulation 15.8; and

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

PART B – UNDERTAKINGS BY CONTRACTING GOVERNMENTS(10)

Regulation 5

Provision of radiocommunication services

1 Each Contracting Government undertakes to make available, as it deems practical and necessary either individually or in

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(8) Reference is made to resolution A.614(15) on carriage of radar operating in the frequency band 9,300-9,500 MHz adopted by the fifteenth Assembly.

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

(10) 1 Each Contracting Government is not required to provide all radiocommunication services.

co-operation with other Contracting Governments, appropriate shore-based facilities for space and terrestrial radiocommunication services having due regard to the recommendations of the Organization (11). These services are:

.1 a radiocommunication service utilizing geostationary satellites in the Maritime Mobile-Satellite Service;

.2 a radiocommunication service utilizing polar orbiting satellites in the Mobile-Satellite Service;

.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 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 Maritime Mobile Service, Mobile-Satellite Service and Maritime Mobile-Satellite Service, established for sea areas which it has designated off its coasts.

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 regu-

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2 The requirements should be specified for shore-based facilities to cover the various sea areas.

(11) Reference is made to the recommendation on the provision of radiocommunication services for the global maritime distress and safety system, to be developed by the Organization (see MSC 55/25, annex 3).

lation 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:

.1 be so located that no harmful interference of mechanical, electrical or other origin affects its proper use, and so as to ensure electromagnetic compatibility and avoidance of harmful interaction with other equipment and systems;

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

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

.4 be 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 be clearly marked with the call sign, the ship station identity and other codes as applicable for the use of the radio installation.

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 should be available to permit radiocommunications from the wings of the navigating bridge. Portable VHF equipment may be used to meet the latter provision.

Regulation 7

Radio equipment – General

1 Every ship shall be provided with:

.1 a VHF radio installation capable of transmitting and receiving:

.1.1 DSC ([12]) 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; ([13]) and

.1.2 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 subparagraph .1.1 ([13]);

.3 a radar transponder capable of operating in the 9 GHz band, which:

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

.3.2 may be one of those required by regulation III/6.2.2 for a survival craft;

.4 a receiver capable of receiving International NAVTEX service broadcasts if the ship is engaged on voyages in any area in which an International NAVTEX service is provided;

.5 a radio facility for reception of maritime safety information by the INMARSAT enhanced group calling system if the ship is engaged on voyages in any area of INMARSAT coverage but in which an International NAVTEX service is not provided. However, ships engaged exclusively on voyages in areas where an HF direct-printing telegraphy ([14]) maritime safety information service is

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([12]) Digital selective calling (DSC) for all ships and HF direct-printing telegraphy (NBDP) carriage requirements for ships of 300 tons gross tonnage and over but less than 1,600 tons gross tonnage are subject to review in accordance with resolution A.606(15) - Review and evaluation of the GMDSS. Unless otherwise specified this footnote applies to all DSC and NBDP requirements prescribed in the Convention.

([13]) Certain ships may be exempted from this requirement (see regulation 9.4).

([14]) Digital selective calling (DSC) for all ships and HF direct-printing telegraphy (NBDP) carriage requirements for ships of 300 tons gross tonnage and over but less than 1,600 tons gross tonnage are subject to review in accordance with resolution A.606(15) – Review and evaluation of the GMDSS. Unless otherwise specified this footnote applies to all DSC and NBDP requirements prescribed in the Convention.

provided and fitted with equipment capable of receiving such service, may be exempt from this requirement([15]).

.6 subject to the provisions of regulation 8.3, a satellite emergency position-indicating radio beacon (satellite EPIRB) which shall be:

.6.1 capable of transmitting a distress alert either through the polar orbiting satellite service operating in the 406 MHz band or, if the ship is engaged only on voyages within INMARSAT coverage, through the INMARSAT geostationary satellite service operating in the 1.6 GHz band([16]);

.6.2 installed in an easily accessible position;

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

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

.6.5 capable of being activated manually.

2 Until 1 February 1999 or until such other date as may be determined by the Maritime Safety Committee, every ship shall, in addition, be fitted with a radio installation consisting of a radiotelephone distress frequency watch receiver capable of operating on 2,182 kHz.

3 Until 1 February 1999, every ship shall, unless the ship is engaged on voyages in sea area A1 only, be fitted with a device for generating the radiotelephone alarm signal on the frequency 2,182 kHz.

4 The Administration may exempt ships constructed on or after 1 February 1997 from the requirements prescribed by paragraphs 2 and 3.

([15]) Reference is made to the recommendation on promulgation of maritime safety information, to be developed by the Organization (see MSC 55/25, annex 8).

([16]) Subject to the availability of appropriate receiving and processing ground facilities for each ocean region covered by INMARSAT satellites.

Regulation 8

Radio equipment – Sea area A1

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages exclusively 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 on VHF using DSC; this requirement may be fulfilled by the EPIRB prescribed by paragraph 3, either by installing the EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or

.2 through the polar orbiting satellite service on 406 MHz; this requirement may be fulfilled by the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or

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

.4 on HF using DSC; or

.5 through the INMARSAT geostationary satellite service; this requirement may be fulfilled by:

.5.1 an INMARSAT ship earth station;(17) or

.5.2 the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated.

2 The VHF radio installation, required by regulation 7.1.1, shall also be capable of transmitting and receiving general radiocommunications using radiotelephony.

3 Ships engaged on voyages exclusively in sea area A1 may

(17) This requirement can be met by INMARSAT ship earth stations capable of two-way communications, such as Standard-A or Standard-C ship earth stations. Unless otherwise specified, this footnote applies to all requirements for an INMARSAT ship earth station prescribed by this chapter.

carry, in lieu of the satellite EPIRB required by regulation 7.1.6, an EPIRB which shall be:

.1 capable of transmitting a distress alert using DSC on VHF channel 70 and providing for locating by means of a radar transponder operating in the 9 GHz band;

.2 installed in an easily accessible position;

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

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

.5 capable of being activated manually.

Regulation 9

Radio equipment – Sea areas A1 and A2

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages beyond sea area A1, but remaining within sea area A2, shall be provided with:

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

.1.1 2,187.5 kHz using DSC; and

.1.2 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 subparagraph .1.1; and

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

.3.1 through the polar orbiting satellite service on 406 MHz; this requirement may be fulfilled by the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or

.3.2 on HF using DSC; or

.3.3 through the INMARSAT geostationary satellite service; this requirement may be fulfilled by:

.3.3.1 the equipment specified in paragraph 3.2; or

.3.3.2 the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated.

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 ship shall, in addition, be capable of transmitting and receiving general radiocommunications using radiotelephony or direct-printing telegraphy 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 an INMARSAT ship earth station.

4 The Administration may exempt ships constructed before 1 February 1997, which are engaged exclusively on voyages within sea area A2, from the requirements of regulations 7.1.1.1 and 7.1.2 provided such ships maintain, when practicable, a continuous listening watch on VHF channel 16. This watch shall be kept at the position from which the ship is normally navigated.

Regulation 10

Radio equipment – Sea areas A1, A2 and A3

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages beyond sea areas A1 and A2, but remaining within sea area A3, shall, if it does not comply with the requirements of paragraph 2, be provided with:

.1 an INMARSAT ship earth station capable of:

.1.1 transmitting and receiving distress and safety communications using direct-printing telegraphy;

.1.2 initiating and receiving distress priority calls;

.1.3 maintaining watch for shore-to-ship distress alerts, including those directed to specifically defined geographical areas;

.1.4 transmitting and receiving general radiocommunications, using either radiotelephony or direct-printing telegraphy; and

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

.2.1 2,187.5 kHz using DSC; and

.2.2 2,182 kHz using radiotelephony; and

.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 subparagraph .2.1; and

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

.4.1 through the polar orbiting satellite service on 406 MHz; this requirement may be fulfilled by the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or

.4.2 on HF using DSC; or

.4.3 through the INMARSAT geostationary satellite service, by an additional ship earth station or by the satellite EPIRB required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated;

2 In addition to meeting the requirements of regulation 7, every ship engaged on voyages beyond sea areas A1 and A2, but remaining within sea area A3, shall, if it does not comply with the requirements of paragraph 1, be provided with:

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

.1.1 using DSC;

.1.2 using radiotelephony; and

.1.3 using direct-printing telegraphy; and

.2 equipment capable of maintaining DSC watch on 2,187.5 kHz, 8,414.5 kHz and on at least one of the distress and safety DSC frequencies 4,207.5 kHz, 6312 kHz, 12,577 kHz or 16,804.5 kHz; at any time, it shall be possible to select any of these DSC distress and safety frequencies. This equipment may be separate from, or combined with, the equipment required by subparagraph .1; and

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

.3.1 through the polar orbiting satellite service on 406 MHz; this requirement may be fulfilled by the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or

.3.2 through the INMARSAT geostationary satellite service; this requirement may be fulfilled by:

.3.2.1 an INMARSAT ship earth station; or

.3.2.2 the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; and

.4 in addition, ships shall be capable of transmitting and receiving general radiocommunications using radiotelephony or direct-printing telegraphy by an MF/HF 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 subparagraph .1.

3 It shall be possible to initiate transmission of distress alerts by the radio installations specified in subparagraphs 1.1, 1.2, 1.4, 2.1 and 2.3 from the position from which the ship is normally navigated.

4 The Administration may exempt ships constructed before 1 February 1997, and engaged exclusively on voyages within sea areas A2 and A3, from the requirements of regulations 7.1.1.1

and 7.1.2 provided such ships maintain, when practicable, a continuous listening watch on VHF channel 16. This watch shall be kept at the position from which the ship is normally navigated.

Regulation 11

Radio equipment – Sea areas A1, A2, A3 and A4

1 In addition to meeting the requirements of regulation 7, ships engaged on voyages in all sea areas shall be provided with the radio installations and equipment required by regulation 10.2, except that the equipment required by regulation 10.2.3.2 shall not be accepted as an alternative to that required by regulation 10.2.3.1, which shall always be provided. In addition, ships engaged on voyages in all sea areas shall comply with the requirements of regulation 10.3.

2 The Administration may exempt ships constructed before 1 February 1997, and engaged exclusively on voyages within sea areas A2, A3 and A4, from the requirements of regulations 7.1.1.1 and 7.1.2 provided such ships maintain, when practicable, a continuous listening watch on VHF channel 16. This watch shall be kept at the position from which the ship is normally navigated.

Regulation 12

Watches

1 Every ship, while at sea, shall maintain a continuous watch:

.1 on VHF DSC channel 70, if the ship, in accordance with the requirements of regulation 7.1.2, is fitted with a VHF radio installation;

.2 on the distress and safety DSC frequency 2,187.5 kHz, if the ship, in accordance with the requirements of regulation 9.1.2 or 10.1.3, is fitted with an MF radio installation;

.3 on the distress and safety DSC frequencies 2,187.5 kHz and 8,414.5 kHz and also on at least one of the distress and safety 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 10.2.2 or 11.1, is fitted with an MF/HF radio installation. This watch may be kept by means of a scanning receiver;

.4 for satellite shore-to-ship distress alerts, if the ship, in accordance with the requirements of regulation 10.1.1, is fitted with an INMARSAT ship earth station.

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

3 Until 1 February 1999 or until such other date as may be determined by the Maritime Safety Committee, every ship while at sea shall maintain, when practicable, a continuous listening watch on VHF channel 16. This watch shall be kept at the position from which the ship is normally navigated.

4 Until 1 February 1999 or until such other date as may be determined by the Maritime Safety Committee, every ship required to carry a radiotelephone watch receiver shall maintain, while at sea, a continuous watch on the radiotelephone distress frequency 2,182 kHz. This watch shall be kept at the position from which the ship is normally navigated.

Regulation 13

Sources of energy

1 There shall be available at all times, while the ship is at sea, a supply of electrical energy 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 and safety radiocommunications, 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, the MF/HF radio installation required by regulation 10.2.1 or 11.1, or the INMARSAT 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 constructed on or after 1 February 1995;

.2 one hour, on ships constructed before 1 February 1995, if the emergency source of electrical power complies fully with all relevant requirements of regulation II-1/42 or 43 including the requirements to supply the radio installations; and

.3 six hours, on ships constructed before 1 February 1995, if the emergency source of electrical power is not provided or does not comply fully with all relevant requirements of regulation II-1/42 or 43 including the requirements to supply the radio installations ([18]).

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, 2.2 or 2.3, 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 con-

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([18]) 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 receiption + current consumption of any additional loads.

nected 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 (19), at intervals not exceeding 12 months, when the ship is not a 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 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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(19) One method of checking the capacity of an accumulator battery is to fully discharge and recharge the battery, using normal operating current and period (e.g. 10 hours). 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

1 All equipment to which this chapter applies shall be of a type approved by the Administration. Subject to paragraph 2, such equipment shall conform to appropriate perfomance standards not inferior to those adopted by the Organization([20]).

([20]) Reference is made to the following performance standards adopted by the Organization by the resolutions indicated or to be developed by the Organization:

.1 Narrow-band direct-printing equipment for the reception of navigational and meteorological warnings and urgent information to ships (Assembly resolution A.525(13)).

.2 General requirements fors shipborne radio equipment forming part of the future global maritime distress and safety system (Assembly resolution A.569 (14)).

.3 Ship earth stations capable of two-way communications (Assembly resolution A.608(15)).

.4 VHF radio installations capable of voice communications and digital selective calling (Assembly resolution A.609(15)).

.5 Shipborne MF radio installation capable of voice communications and digital selective calling (Assembly resolution A.610(15)).

.6 Shipborne MF/HF radio installations capable of voice communication, narrow-band direct-printing and digital selective calling (Assembly resolution A.613(15)).

.7 Float-free satellite emergency position-indicating radio beacons operating on 406 MHz (Assembly resolution A.611(15)).

.8 Survival craft radar transponder for use in search and rescue operations (Assembly resolution A.604(15)).

.9 Float-free VHF emergency position-indicating radio beacons (Assembly resolution A.612(15)).

.10 INMARSAT Standard-C ship earth stations capable of transmitting and receiving direct-printing communications (MSC 55/25, annex 4).

.11 Enhanced group call equipment (MSC 55/25, annex 5).

.12 Float-free satellite emergency position-indicating radio beacons operating through the geostationary INMARSAT satellite system on 1.6 GHz (MSC 55/25, annex 7).

.13 Float-free release and activation arrangements for emergency radio equipment (MSC 55/25, annex 6).

2 Equipment installed prior to the dates of application by prescribed regulation 1 may be exempted from full compliance with the appropriate performance standards at the discretion of the Administration, provided that the equipment is compatible with equipment complying with the performance standards, having due regard to the criteria which the Organization may adopt in connection with such standards.

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 on-board 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 [21].

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 and 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 and A4, the availability shall be ensured by using a combination of at least two

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[21] Reference is made to the recommendation on general requirements for shipborne radio equipment forming part of the future global maritime distress and safety system (resolution A.569(14)).

methods such as duplication of equipment, shore-based maintenance or at-sea electronic maintenance capability, as may be approved by the Administration, taking into account the recommendations of the Organization.

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 4.8 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 and safety functions.

Regulation 16

Radio personnel

Every ship shall carry personnel qualified for distress and safety radiocommunication purposes to the satisfaction of the Administration. The personnel shall be holders of certificates specified in the Radio Regulations as appropriate, any one of whom shall be designated to have primary responsability for radiocommunications during distress incidents.

Regulation 17

Radio records

A record shall be kept, 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».

Chapter V

«SAFETY OF NAVIGATION»

Regulation 12

Shipborne navigational equipment

The existing text of paragraph (g) is replaced by:

«(g) Ships of 500 tons gross tonnage and upwards constructed on or after 1 September 1984 and ships of 1,600 tons gross tonnage and upwards constructed before 1 September 1984 shall be fitted with a radar installation. From 1 February 1995, the radar installation shall be capable of operating in the 9 GHz frequency band. In addition, after 1 February 1995, passenger ships irrespective of size and cargo ships of 300 tons gross tonnage and upwards when engaged on international voyages, shall be fitted with a radar installation capable of operating in the 9 GHz frequency band. Passenger ships of less than 500 tons gross tonnage and cargo ships of 300 tons gross tonnage and upwards but less than 500 tons gross tonnage may be exempted from compliance with the requirements of paragraph (r) at the discretion of the Administration, provided that the equipment is fully compatible with the radar transponder for search and rescue».

The existing text of paragraph (h) is replaced by:

«(h) Ships of 10,000 tons gross tonnage and upwards shall be fitted with two radar installations, each capable of being operated independently of the other. From 1 February 1995, at least one of the radar installations shall be capable of operating in the 9 GHz frequency band».

The existing text of paragraph (p) is replaced by:

«(p) When engaged on international voyages, ships of 1,600 tons gross tonnage and upwards shall be fitted with a radio direction-finding apparatus. The Administration may exempt a ship from this requirement if it considers it unreasonable or unnecessary for such apparatus to be carried or if the ship is provided with other radionavigation equipment suitable for use throughout its intended voyages».

The existing text of paragraph (q) is replaced by:

«(q) Until 1 February 1999, ships of 1,600 tons gross tonnage and upwards constructed on or after 25 May 1980 and before 1 February 1995, when engaged on international voyages, shall be fitted with radio equipment for homing on the radiotelephone distress frequency».

Regulation 14

Aids to navigation

The existing text is replaced by:

«The Contracting Governments undertake to arrange for the establishment and maintenance of such aids to navigation as, in their opinion, the volume of traffic justifies and the degree of risk requires, and to arrange for information relating to these aids to be made available to all concerned».

Regulation 21

International Code of Signals

The existing text of regulation 21 is replaced by:

«All ships which, in accordance with the present Convention, are required to carry radio installations shall carry the International Code of Signals. This publication shall also be carried by any other ship which, in the opinion of the Administration, has a need to use it».

APPENDIX

The existing forms of the Passenger Ship Safety Certificate, Cargo Ship Safety Construction Certificate, Cargo Ship Safety Equipment

Certificate, Cargo Ship Safety Radiotelegraphy Certificate and Cargo Ship Safety Radiotelephony Certificate and Exemption Certificate 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 (Form P)

(Official seal) *(State)*

for $\frac{an}{a\ short}$ (22) *international voyage*

Issued under 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 (23)

Name of ship ....

Distinctive number or letters ....

Port of registry ....

Gross tonnage ....

---

(22) Delete as appropriate.

(23) Alternatively, the particulars of the ship may be placed horizontally in boxes.

Sea areas in which ship is certified to operate (regulation IV/2) ....

IMO Number [24] ....

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/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 at amidships (regulation II-1/13)	Freeboard	To apply when the spaces in which passengers are carried include the following alternative spaces
C.1	....	....
C.2	....	....
C.3	....	....

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;

---

[24] In accordance with resolution A.600(15) - IMO Ship Identification Number Scheme, this information may be included voluntarily.

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 and radio installations used in life-saving appliances 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 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 Convention.

3 That an Exemption Certificate has/has not[25] been issued.

This certificate is valid until ....

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)

[25] Delete as appropriate.

Form of Safety Construction Certificate for Cargo Ships

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

(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 [26]

Name of ship ....

Distinctive number or letters ....

Port of registry ....

Gross tonnage ....

Deadweight of ship (metric tons) [27] ....

IMO Number [28] ....

Type of ship [29]

---

[26] Alternatively, the particulars of the ship may be placed horizontally in boxes.

[27] For oil tankers, chemical tankers and gas carriers only.

[28] In accordance with resolution A.600(15) - IMO Ship Identification Number Scheme, this information may be included voluntarily.

[29] Delete as appropriate.

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

Date on which keel 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/10 of the Convention.

2 That the survey showed that 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).

3 That an Exemption Certificate has/has not([29]) been issued.

This certificate is valid until ....

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)

([29]) 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
(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 [30]

Name of ship ....

Distinctive number or letters ....

Port of registry ....

Gross tonnage ....

Deadweight of ship (metric tons) [31] ....

Length of ship (regulation III/3.10) ....

IMO Number [32] ....

---

[30] Alternatively, the particulars of the ship may be placed horizontally in boxes.

[31] For oil tankers, chemical tankers and gas carriers only.

[32] In accordance with resolution A.600(15) - IMO Ship Identification Number Scheme, this information may be included voluntarily.

Type of ship [33]

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;

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 and radio installations used in life-saving appliances 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, 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;

---

(33) Delete as appropriate.

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

3 That the ship operates in accordance with regulation III/26.1.1.1 within the limits of the trade area ....

4 That an Exemption Certificate has/has not([34]) been issued.

This certificate is valid until ....

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 Safety Radio Certificate for Cargo Ships

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment of Radio Facilities (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

([34]) Delete as appropriate.

____
(name of the State)

by _______________________________
(person or organization authorized)

Particulars of ship (35)

Name of ship ....

Distinctive number or letters ....

Port of registry ....

Gross tonnage ....

Sea areas in which ship is certified to operate (regulation IV/2) ....

IMO Number (36) ....

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;

---

(35) Alternatively, the particulars of the ship may be placed horizontally in boxes.

(36) In accordance with resolution A.600(15) - IMO Ship Identification Number Scheme, this information may be included voluntarily.

2.2 the 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([37]) been issued.

This certificate is valid until ....

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 Exemption Certificate

EXEMPTION CERTIFICATE

(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)

([37]) Delete as appropriate.

Particulars of ship(38)

Name of ship ....

Distinctive number or letters ....

Port of registry ....

Gross tonnage ....

IMO Number(39) ....

THIS IS TO CERTIFY:

That the ship is, under the authority conferred by regulation..........
of the Convention, exempted from the requirements of ....
..........of the Convention.

Conditions, if any, on which the Exemption Certificate is granted:

....

....

Voyages, if any, for which the Exemption Certificate is granted:

....

....

This certificate is valid until .... subject to the .... Certificate, to which this certificate is attached, remaining valid.

Issued at ....

(Place of issue of certificate)

....

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

---

(38) Alternatively, the particulars of the ship may be placed horizontally in boxes.

(39) In accordance with resolution A.600(15) - IMO Ship Identification Number Scheme, this information may be included voluntarily.

Record of Equipment for the Cargo Ship Safety Equipment Certificate (Form E)

This Record shall be permanently attached to the Cargo Ship Safety Equipment Certificate

RECORD OF EQUIPMENT FOR COMPLIANCE WITH THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED IN 1988

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	....	
2 Total number of lifeboats	Port Side	Starboard-side
2.1 Total number of persons accomodated by them	....	....
2.2 Number of self-righting partially enclosed lifeboats (regulation III/43)	....	....
2.3 Number of totally enclosed lifeboats (regulation III/44)	....	....
2.4 Number of lifeboats with a self-contained air support system (regulation III/45)	....	....
2.5 Number of fire-protected lifeboats (regulation III/46)	....	....
2.6 Other lifeboats		
2.6.1 Number	....	
2.6.2 Type	....	
2.7 Number of freefall lifeboats		
2.7.1 Totally enclosed (regulation III/44)	....	....
2.7.2 Self-contained (regulation III/45)	....	....
2.7.3 Fire-protected (regulation III/46)	....	....

3 Number of motor lifeboats (included in the total lifeboats shown above)	....
3.1 Number of lifeboats fitted with search-lights	....
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	....
5.3 Number of liferafts required by regulation III/26.1.4	....
6 Number of lifebuoys	....
7 Number of lifejackets	....
8 Immersion suits	
8.1 Total number	....
8.2 Number of suits complying with the requirements for life-jackets	....
9 Number of thermal protective aids (40)	....
10 Radio installations used in life-saving appliances	
10.1 Number of radar transponders	....
10.2 Number of two-way VHF radiotelephone apparatus	....

3 Ships constructed before 1 February 1992 which do not fully comply with the applicable requirements of Chapter III of the convention as amended in 1988 (41).

(40) Excluding those required by regulations III/38.5.1.24, III/41.8.31 and III/47.2.2.13.

(41) This section need not be reproduced on the record attached to certificates issued after 1 February 1995.

	Actual provision
Radiotelegraph installation for lifeboat	....
Portable radio apparatus for survival craft	....
Survival craft EPIRB (121.5 MHz and 243.0 MHz)	....
Two-way radiotelephone apparatus	....

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 of stamp of the issuing authority, as appropriate)

Record of Equipment for the Cargo Ship Safety Radio Certificate (Form R)

This Record shall be permanently attached to the Cargo Ship Safety Radio Certificate

RECORD OF EQUIPMENT OF RADIO FACILITIES FOR COMPLIANCE WITH THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED IN 1988

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	....
1.3.4 Direct-printing telegraphy	....
1.4 INMARSAT ship earth station	....
2 Secondary means of alerting	....
3 Facilities for reception of maritime safety information	
3.1 NAVTEX receiver	....
3.2 EGC receiver	....
3.3 HF direct-printing radiotelegraph receiver	....
4 Satellite EPIRB	
4.1 COSPAS-SARSAT	....
4.2 INMARSAT	....
5 VHF EPIRB	....
6 Ship's radar transponder	....
7 Radiotelephone distress frequency watch receiver on 2,182 kHz(42)	....
8 Device for generating the radiotelephone alarm signal on 2,182 kHz(43)	....

(42) 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.

(43) This item need not be reproduced on the record attached to certificates after 1 February 1999.

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 ....

4 *Ships constructed before 1 February 1995 which do not comply with all the applicable requirements of Chapter IV of the convention as amended in 1988* (44).

4.1 For ships required to be fitted with radiotelegraphy in accordance with the Convention in force prior to 1 February 1992.

	Requirements of regulations	Actual provision
Hours of listening by operator	....	....
Number of operators	....	....
Whether auto alarm fitted	....	....
Whether main installation fitted	....	....
Whether reserve installation fitted	....	....
Whether main and reserve transmitters electrically operated or combined	....	....

4.2 For ships required to be fitted with radiotelephony in accordance with the Convention in force prior to 1 February 1992.

	Requirements of regulations	Actual provision
Hours of listening	....	....
Number of operators	....	....

(44) This section need not be reproduced on the record attached to certificates issued after 1 February 1999.

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)

Resolution 2

Records of Equipment to supplement the SOLAS Passenger Ship Safety Certificate, Cargo Ship Safety Equipment Certificate and Cargo Ship Safety Radio Certificate

THE CONFERENCE,

HAVING ADOPTED amendments to the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention) (hereinafter referred to as «the Convention») concerning radiocommunications for the global maritime distress and safety system (GMDSS), including revised forms of the Passenger Ship Safety Certificate, Cargo Ship Safety Equipment Certificate and Cargo Ship Safety Radio Certificate,

NOTING regulation I/12(a)(v) of the Convention, as amended, which prescribes that the said safety certificates shall be supplemented by Records of Equipment adopted by this Conference,

HAVING CONSIDERED the proposed forms of the Records of Equipment prepared by the Maritime Safety Committee at its fifty-fifth session,

1. ADOPTS the forms of the Records of Equipment to supplement the SOLAS Passenger Ship Safety Certificate, Cargo Ship Safety Equipment Certificate and Cargo Ship Safety Radio Certificate, set out in the annex to this resolution;

2. DECIDES that the Records of Equipment annexed to this resolution shall be subject to amendment in accordance with the procedures prescribed in article VIII of the Convention, applicable to amendments to the Annex of the Convention other than chapter I.

Annex

RECORDS OF EQUIPMENT

Record of Equipment for the Passenger Ship Safety Certificate (Form P)

This Record shall be permanently attached to the Passenger Ship Safety Certificate

RECORD OF EQUIPMENT FOR COMPLIANCE WITH THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED IN 1988

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/42)	....	....
2.3 Number of self-righting partially enclosed lifeboats (regulation III/43)	....	....
2.4 Number of totally enclosed lifeboats (regulation III/44)	....	....
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 Buoyant apparatus	
6.1 Number of apparatus	....
6.2 Number of persons capable of being supported	....
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 thermal protective aids [45]	....
11 Radio installations used in life-saving appliances	....
11.1 Number of radar transponders	....
11.2 Number of two-way VHF radiotelephone apparatus	....

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	....

[45] Excluding those required by regulations III/38.5.1.24, III/41.8.31 and III/47.2.2.13.

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	....
1.3.4 Direct-printing radiotelegraphy	....
1.4 INMARSAT ship earth station	....
2 Secondary means of alerting	....
3 Facilities for reception of maritime safety information	....
3.1 NAVTEX receiver	....
3.2 EGC receiver	....
3.3 HF direct-printing radiotelegraph receiver	....
4 Satellite EPIRB	
4.1 COSPAS-SARSAT	....
4.2 INMARSAT	....
5 VHF EPIRB	....
6 Ship's radar transponder	....
7 Radiotelephone distress frequency watch receiver on 2,182 kHz (46)	....
8 Device for generating the radiotelephone alarm signal on 2,182 kHz(47)	

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 ....

(46) 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.

(47) This item need not be reproduced on the record attached to certificates issued after 1 February 1999.

5 *Ships constructed before 1 February 1995 which do not comply with all the applicable requirements of Chapter IV of the Convention as amended in 1988* (48).

	Requirements of regulations	Actual provision
Hours of listening by operator	....	....
Number of operators	....	....
Whether auto alarm fitted	....	....
Whether main installation fitted	....	....
Whether reserve installation fitted	....	....
Whether main and reserve transmitters electrically separated or combined	....	....

6 *Ships constructed before 1 February 1992 which do not fully comply with the applicable requirements of Chapter III of the Convention as amended in 1988* (49).

	Actual provision
Radiotelegraph installation for lifeboat	....
Portable radio apparatus for survival craft	....
Survival craft EPIRB (121.5 MHz and 243.0 MHz)	....
Two-way radiotelephone apparatus	....

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

Issued at ....

(Place of issue of the Record)

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(48) This section need not be reproduced on the record attached to certificates issued after 1 February 1999.

(49) This section need not be reproduced on the record attached to certificates issued after 1 February 1995.

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

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

ANNEX 2

RESOLUTION MSC 19(58)
(adopted on 25 May 1990)

ADOPTION OF 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 FURTHER that by resolution A.265(VIII) the Assembly adopted regulations on subdivision and stability of passenger ships, which may be used as an equivalent to part B «Subdivision and stability» of chapter II-1 of the 1974 SOLAS Convention,

RECOGNIZING that safety of ships will be enhanced by incorporating regulations on subdivision and damage stability applicable to cargo ships in the Convention,

NOTING that, at its fifty-seventh session, regulations on subdivision and damage stability of dry cargo ships, including ro-ro ships, based on the probabilistic concept of survival, were approved in the form of amendments to the SOLAS Convention and circulated in accordance with article VIII(b)(i) of the Convention,

HAVING CONSIDERED the regulations on subdivision and damage stability of dry cargo ships, including ro-ro ships, prepared as a new part B-1 «Subdivision and damage stability of cargo ships» of chapter II-1 of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, the 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 amendments shall be deemed to have

been accepted on 31 July 1991 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 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 Convention, the amendments shall enter into force on 1 February 1992 upon their acceptance in accordance with paragraph 2 above;

4. URGES Contracting Governments to apply the regulations in conjunction with the explanatory notes developed by the Organization in order to ensure their uniform application;

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 International Convention fo the Safety of Life at Sea, 1974;

6. FURTHER REQUESTS the Secretary-General to transmit copies of the resolution to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

TEXT OF AMENDMENTS TO CHAPTER II-1 OF THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

Chapter II-1

CONSTRUCTION - SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Insert the following new part B-1, comprising regulations 25-1 to 25-10, after existing part B:

PART B-1 - SUBDIVISION AND DAMAGE STABILITY OF CARGO SHIPS(50)

(This part applies to cargo ships constructed on or after 1 February 1992).

Regulation 25-1

Application

1 The requirements in this part shall apply to cargo ships over 100 m in length («L_S») but shall exclude those ships which are shown to comply with subdivision and damage stability regulations in other instruments (51) developed by the Organization.

2 Any reference hereinafter to regulations refers to the set of regulations contained in this part.

3 The Administration may for a particular ship or group of ships accept alternative arrangements, if it is satisfied that at least the same degree of safety as represented by these regulations is achieved. Any Administration which allows such alternative arrangements shall communicate to the Organization particulars thereof.

Regulation 25-2

Definitions

For the purpose of these regulations, unless expressly provided otherwise:

1.1 *Subdivision load line* is a waterline used in determining the subdivision of the ship.

1.2 *Deepest subdivision load line* in the subdivision load line which corresponds to the summer draught to be assigned to the ship.

1.3 *Partial load line* is the light ship draught plus 60% of the difference between the light ship draught and depeest subdivision load line.

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(50) The Maritime Safety Committee, in adopting the regulations contained in part B-1, invited Administrations to note that the regulations should be applied in conjunction with the explanatory notes developed by the Organization in order to ensure their uniform application.

(51) Such as Annex I to MARPOL 73/78, IBC, IGC, BCH and GC Codes, Guidelines for the Design and Construction of Offshore Supply Vessels (resolution A.469 (XII)), Code of Safety for Special Purpose Ships (resolution A.534(13)) and regulation 27 of the 1966 LL Convention for bulk carriers assigned B-60 or B-100 freeboard.

2.1 *Subdivision length of the ship* («L_s») is the greatest projected moulded length of that part of the ship at or below deck or decks limiting the vertical extent of flooding with the ship at the deepest subdivision load line.

2.2 *Mid-length* is the mid point of the subdivision length of the ship.

2.3 *Aft terminal* is the aft limit of the subdivision length.

2.4 *Forward terminal* is the forward limit of the subdivision length.

3 *Breadth* («B») is the greatest moulded breadth of the ship at or below the deepest subdivision load line.

4 *Draught* («d») is the vertical distance from the moulded base-line at mid-length to the waterline in question.

5 *Permeability* (« μ ») of a space is the proportion of the immersed volume of that space which can be occupied by water.

Regulation 25-3
Required subdivision index «R»

1 These regulations are intended to provide ships with a minimum standard of subdivision.

2 The degree of subdivision to be provided shall be determined by the required subdivision index «R», as follows:

$R = (0.002 + 0.0009L_s)^{1/3}$ where «L_s» is in metres.

Regulation 25-4
Attained subdivision index «A»

1 The attained subdivision index «A», calculated in accordance with this regulation, shall not be less than the required subdivision index «R», calculated in accordance with paragraph 2 of regulation 25-3.

2 The attained subdivision index «A» shall be calculated for the ship by the following formula:

$$A = \Sigma\ P_i s_i$$

where:

«i» represents each compartment or group of compartmens under consideration,

«P_i» accounts for the probability that only the compartment or group of compartments under consideration may be flooded, disregarding any horizontal subdivision,

«s_i» accounts for the probability of survival after flooding the compartment or group of compartments under consideration, including the effects of any horizontal subdivision.

3 In calculating «A», level trim shall be used.

4 This summation covers only those cases of flooding which contribute to the value of the attained subdivision index «A».

5 The summation indicated by the above formula shall be taken over the ship's length for all cases of flooding in which a single compartment or two or more adjacent compartments are involved.

6 Wherever wing compartments are fitted, contribution to the summation indicated by the formula shall be taken for all cases of flooding in which wing compartments are involved; and additionally, for all cases of simultaneous flooding of a wing compartment or compartments and the adjacent inboard compartment or compartments, assuming a rectangular penetration which extends to the ship's centreline, but excludes damage to any centreline bulkhead.

7 The assumed vertical extent of damage is to extend from the baseline upwards to any watertight horizontal subdivision above the waterline or higher. However, if a lesser extent will give a more severe result, such extent is to be assumed.

8 If pipes, ducts or tunnels are situated within assumed flooded compartments, arrangements are to be made to ensure that progressive flooding cannot thereby extend to compartments other than those assumed flooded. However, the Administration may permit minor progressive flooding if it is demonstrated that its effects can be easily controlled and the safety of the ship is not impaired.

9 In the flooding calculations carried out according to the regulations, only one breach of the hull need be assumed.

Regulation 25-5

Calculation of the factor «P_i»

1 The factor «P_i» shall be calculated according to paragraph 1.1 as appropriate, using the following notations:

x_1 = the distance from the aft terminal of «L_s» to the foremost portion of the aft end of the compartment being considered;

x_2 = the distance from the aft terminal of «L_s» to the aftermost portion of the forward end of the compartment being considered;

$E_1 = x_1 / L_s$

$E_2 = x_2 / L_s$

$E = E_1 + E_2 - 1$

$J = E_2 - E_1$

$J' = J - E, \quad \text{if} \geqslant 0$

$J' = J + E, \quad \text{if } E < 0$

The maximum nondimensional damage length,

$J_{max} = 48/L_s$, but not more than 0.24.

The assumed distribution density of damage location along the ship's length

$a = 1.2 + 0.8E$, but not more than 1.2.

The assumed distribution function of damage location along the ship's length

$F = 0.4 + 0.25\,E\,(1.2 + a)$

$y = J/J_{max}$

$p = F_1 J_{max}$

$q = 0.4\,F_2\,(J_{max})^2$

$F_1 = y^2 - \frac{y^3}{3}$, if $y < 1$,

$F_1 = y - \frac{1}{3}$ otherwise;

$F_2 = \frac{y^3}{3} - \frac{y^4}{12}$, if $y < 1$,

$F_2 = \frac{y^2}{2} - \frac{y}{3} + \frac{1}{12}$ otherwise.

1.1 The factor «P_i» is determined for each single compartment:

1.1.1 Where the compartment considered extends over the entire ship length, «L_s»:

$P_i = 1$

1.1.2 Where the aft limit of the compartment considered coincides with the aft terminal:

$P = F + 0.5ap + q$

1.1.3 Where the forward limit of the compartment considered coincides with the forward terminal:

$P_i = 1 - F + 0.5ap$

1.1.4 When both ends of the compartment considered are inside the aft and forward terminals of the ship length, «L_s»:

$P_i = ap$

1.1.5 In applying the formulae of paragraphs 1.1.2, 1.1.3 and 1.1.4, where the compartment considered extends over the «midlength», these formulae values shall be reduced by an amount determined according to the formula for «q», in which «F_2» is calculated taking «y» to be J'/J_{max}.

2 Wherever wing compartments are fitted, the «P_i»-value for a wing compartment shall be obtained by multiplying the value, as determined in paragraph 3, by the reduction factor «r» according to subparagraph 2.2, which represents the probability that the inboard spaces will not be flooded.

2.1 The «P_i»-value for the case of simultaneous flooding of a wing and adjacent inboard compartment shall be obtained by using the formulae of paragraph 3, multiplied by the factor (1-r).

2.2 The reduction factor «r» shall be determined by the following formulae:

For $J \geqslant 0.2\ b/B$:

$$r = \frac{b}{B}\left(2.3 + \frac{0.08}{J + 0.02}\right) + 0.1, \text{ if } b/B \leqslant 0.2$$

$$r = \left(\frac{0.016}{J + 0.02} + \frac{b}{B} + 0.36\right), \text{ if } b/B > 0.2$$

For J   0.2 b/B the reduction factor «r» shall be determined by linear interpolation between

$$r = 1, \text{ for } J = 0$$

and

$$r = \text{ as for case where } J \geqslant 0.2b/B, \text{ for } J = 0.2\ b/B,$$

where:

b = the mean transverse distance in metres measured at right angles to the centreline at the deepest subdivision load line between the shell and a plane through the outermost portion of and parallel to that part of the longitudinal bulkhead which extends between the longitudinal limits used in calculating the factor «P_i».

3 To evaluate «P_i» for compartments taken singly the formulae in paragraphs 1 and 2 shall be applied directly.

3.1 To evaluate the «P_i»-values attributable to groups of compartments the following applies:

for compartments taken by pairs:

$P_i = P_{12} - P_1 - P_2$
$P_i = P_{23} - P_2 - P_3$, etc.

for compartments taken by groups of three:

$p_i = P_{123} - P_{12} - P_{23} + P_2$
$P_i = P_{234} - P_{23} - P_{34} + P_3$ etc.

for compartments taken by groups of four:

$P_i = P_{1234} - P_{123} - P_{234} + P_{23}$

$P_i = P_{2345} - P_{234} - P_{345} + P_{34}$, etc.

where:

P_{12}, P_{23}, P_{34}, etc.,

P_{123}, P_{234}, P_{345}, etc. and

P_{1234}, P_{2345}, P_{3456}, etc.

shall be calculated according to the formulae in paragraphs 1 and 2 for a single compartment whose nondimensional length «J» corresponds to that of a group consisting of the compartments indicated by the indices assigned to «P».

3.2 The factor «P_i» for a group of three or more adjacent compartments equals zero if the nondimensional length of such a group minus the nondimensional length of the aftermost and foremost compartments in the group is greater than «J max».

Regulation 25-6

Calculation of factor «s_i»

1 The factor «s_i», shall be determined for each compartment or group of compartments according to the following:

1.1 in general for any condition of flooding from any initial loading condition «s» shall be

$$s = C \sqrt{0.5\,(GZmax)\,(range)}$$

with $C = 1$, if $0e \leqslant 25°$,

$C = 0$, if $0e > 30°$,

$C = \dfrac{30 - 0e}{5}$ otherwise

GZmax = maximum positive righting lever (in metres) within the range as given below not more than 0.1 m;

range = range of positive righting levers beyond the angle of equilibrium (in degrees) but not more than 20°;

however, the range shall be terminated at the angle where openings not capable of being closed weathertight are immersed;

0e = final equilibrium angle of heel (in degrees);

1.2 s = 0 where the final waterline taking into account sinkage, heel and trim, immerses the lower edge of openings through which progressive flooding may take place. Such opening shall include air-pipes, ventilators 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 flush scuttles, small watertight hatch covers which maintain the high integrity of the deck, remotely operated sliding watertight doors, access doors and access hatch covers, of watertight integrity, normally closed at sea and sidescuttles of the non-opening type. However, if the compartments so flooded are taken into account in the calculations the requirements of this regulation shall be applied.

1.3 For each compartment or group of compartments «s_i» shall be weighted according to draught considerations as follows:

$s_i = 0.5\ s_1 + 0.5\ s_p$

where

«s_l» is the «s» - factor at the deepest subdivision load line

«s_p» is the «s» - factor at the partial load line.

2 For all compartments forward of the collision bulkhead, the «s» - value, calculated assuming the ship to be at its deepest subdivision load line and with assumed unlimited vertical extent of damage is to be equal to 1.

3 Wherever a horizontal subdivision is fitted above the waterline in question the following applies.

3.1 The «s» - value for the lower compartment or group of compartments shall be obtained by multiplying the value as determined in subparagraph 1.1 by the reduction factor «v» according to subparagraph 3.3, which represents the probability that the spaces above the horizontal subdivision will not be flooded.

3.2 In cases of positive contribution to index «A» due to simultaneous flooding of the spaces above the horizontal subdivision, the resulting «s» - value for such a compartment or group of compartments shall be obtained by an increase of the value as determined by subparagraph 3.1 by the «s» - value for simultaneous flooding according to subparagraph 1.1, multiplied by the factor (1-v).

3.3 The probability factor «v_i» shall be calculated according to:

$v_i = \dfrac{H - d}{Hmax - d}$, for the assumed flooding up to the horizontal subdivision above the subdivision load line, where «H» is to be restricted to a height of «Hmax»,

$v_i = 1$, if the uppermost horizontal subdivision in way of the assumed damaged region is below «Hmax»,

where:

«H» is the height of the horizontal subdivision above the baseline (in metres) which is assumed to limit the vertical extent of damage,

«Hmax» is the maximum possible vertical extent of damage above the baseline (in metres), or

$$Hmax = d + 0.056\ L_s \left(1 - \frac{L_s}{500}\right), \text{ if } L_s \leqslant 250 \text{ m};$$

$$Hmax = d + 7, \text{ if } L_s > 250 \text{ m}$$

whichever is less.

Regulation 25-7

Permeability

For the purpose of the subdivision and damage stability calculations of the regulations, the permeability of each space or part of a space shall be as follows:

Spaces	*Permeability*
Appropriated to stores	0.60
Occupied by accommodation	0.95
Occupied by machinery	0.85
Void spaces	0.95
Dry cargo spaces	0.70
Intended for liquid	0 or 0.95 [52]

Regulation 25-8

Stability information

1 The master of the ship shall be supplied with such reliable information as is necessary to enable him by rapid and simple means to obtain accurate guidance as to the stability of the ship under varying conditions of service. The information shall include:

.1 a curve of minimum operational metacentric height (GM) versus draught which assures compliance with the relevant intact stability requirements and the requirements of regulations 25-1 to 25-6, alternatively a corresponding curve of the maximum allowable vertical centre of gravity (KG) versus draught, or with the equivalents of either of these curves;

.2 instructions concerning the operation of cross-flooding arrangements; and

.3 all other data and aids which might be necessary to maintain stability after damage.

2 There shall be permanently exhibited, or readily available on the navigating bridge, for the guidance of the officer in charge of the ship, plans showing clearly for each deck and hold the boundaries of the watertight compartments, the openings there in with

(52) Whichever results in the more severe requirements.

the means of closure and position of any controls thereof, and the arrangements for the correction of any list due to flooding. In addition, booklets containing the aforementioned information shall be made available to the officers of the ship.

3 In order to provide the information referred to in 1.1, the limiting GM (or KG) values to be used, if they have been determined from considerations related to the subdivision index, the limiting GM shall be varied linearly between the deepest subdivision load line and the partial load line. In such cases, for draughts below the partial load line if the minimum GM requirement at this draught results from the calculation of the subdivision index, then this GM value shall be assumed for lesser draughts, unless the intact stability requirements apply.

Regulation 25-9

Openings in watertight bulkheads and internal decks in cargo ships

1 The number of openings in watertight subdivisions is to be kept to a minimum compatible with the design and proper working of the ship. Where penetrations of watertight bulkheads and internal decks are necessary for access, piping, ventilation, electrical cables, etc., arrangements are to be made to maintain the watertight integrity. The Administration may permit relaxation in the watertightness of openings above the freeboard deck, provided that it is demonstrated that any progressive flooding can be easily controlled and that the safety of the ship is not impaired.

2 Doors provided to ensure the watertight integrity if internal openings which are used while at sea are to be sliding watertight doors capable of being remotely closed from the bridge and are also to be operable locally from each side of the bulkhead. Indicators are to be provided at the control position showing whether the doors are open or closed, and an audible alarm is to be provided at the door closure. The power, control and indicators are to be operable in the event of main power failure. Particular attention is to be paid to minimize the effect of control system

failure. Each power-operated sliding watertight door shall be provided with an individual hand-operated mechanism. It shall be possible to open and close the door by and at the door itself from both sides.

3 Access door and access hatch covers normally closed at sea, intended to ensure the watertight integrity of internal openings, shall be provided with means of indication locally and on the bridge showing whether these doors or hatch covers are open or closed. A notice is to be affixed to each such door or hatch cover to the effect that it is not to be left open. The use of such doors and hatch covers shall be authorized by the officer of the watch.

4 Watertight doors or ramps of satisfactory construction may be fitted to internally subdivide large cargo spaces, provided that the Administration is satisfied that such doors or ramps are essential. These doors or ramps may be hinged, rolling or sliding doors or ramps, but shall not be remotely controlled. Such doors or ramps shall be closed before the voyage commences and shall be kept closed during navigation; the time of opening such doors or ramps in port and of closing them before the ship leaves port shall be entered in the log book. Should any of the doors or ramps be accessible during the voyage, they shall be fitted with a device which prevents unauthorized opening.

5 Other closing appliances which are kept permanently closed at sea to ensure the watertight integrity of internal openings shall be provided with a notice which is to be affixed to each such closing appliance to the effect that it is to be kept closed. Manholes fitted with closely bolted covers need not be so marked.

Regulation 25-10

External openings in cargo ships

1 All external openings leading to compartments assumed intact in the damage analysis, which are below the final damage waterline, are required to be watertight.

2 External openings required to be watertight in accordance with paragraph 1 shall be of sufficient strength and, except for cargo hatch covers, shall be fitted with indicators on the bridge.

3 Openings in the shell plating below the deck limiting the vertical extent of damage shall be kept permanently closed while at sea. Should any of these openings be accessible during the voyage, they shall be fitted with a device which prevents unathorized opening.

4 Notwithstanding the requirements of paragraph 3, the Administration may authorize that particular doors may be opened at the discretion of the master, if necessary for the operation of the ship and provided that the safety of the ship is not impaired.

5 Other closing appliances which are kept permanently closed at sea to ensure the watertight integrity of external openings shall be provided with a notice affixed to each appliance to the effect that it is to be kept closed. Manholes fitted with closely bolted covers need not be so marked.