INTERNATIONAL MARITIME ORGANIZATION

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REPORT OF THE MARITIME SAFETY COMMITTEE ON ITS EIGHTY-FIRST SESSION

Attached are annexes 1 to 21 to the report of the Maritime Safety Committee on its eighty-first session (MSC 81/25).

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ANNEX 1

RESOLUTION MSC.201(81)
(adopted on 18 May 2006)

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

THE MARITIME SAFETY COMMITTEE,

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

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"), concerning the amendment procedure applicable to the Annex to the Convention, other than the provisions of chapter I thereof,

HAVING CONSIDERED, at its eighty-first session, amendments to the Convention, proposed and circulated in accordance with article VIII(b)(i) thereof,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 January 2010, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2010 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

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

CHAPTER II-2
CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Regulation 9 – Containment of fire

1 In subparagraph .2 of paragraph 4.1.3.3, "." is replaced by "; or".

2 In paragraph 4.1.3.3, the following new subparagraph .3 is added after the existing subparagraph .2:

".3 water-mist nozzles that have been tested and approved in accordance with the guidelines approved by the Organization*."

Regulation 15 – Arrangements for oil fuel, lubricating oil and other flammable oils

3 In regulation II-2/15, as amended by resolution MSC.31(63), the text after the title is replaced by the following:

"(Paragraphs 2.9 to 2.12 of this regulation apply to ships constructed on or after 1 February 1992, except that the references to paragraphs 2.10 and 2.11 in paragraphs 3 and 4 apply to ships constructed on or after 1 July 1998)".

CHAPTER III
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Regulation 7 – Personal life-saving appliances

4 In paragraph 2.1, the following new subparagraphs .1 and .2 are inserted:

".1 for passenger ships on voyages less than 24 h, a number of infant lifejackets equal to at least 2.5% of the number of passengers on board shall be provided;

.2 for passenger ships on voyages 24 h or greater, infant lifejackets shall be provided for each infant on board;",

and the existing subparagraphs .1 and .2 are renumbered as subparagraphs .3 and .4. The word "and" is moved from the end of renumbered subparagraph .3 to the end of renumbered subparagraph .4.

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* Refer to the Revised Guidelines for approval of sprinkler systems equivalent to that referred to in SOLAS regulation II-2/12 (resolution A.800(19)).

5 The following new subparagraph .5 is inserted after the renumbered subparagraph .4 of paragraph 2.1:

".5 if the adult lifejackets provided are not designed to fit persons weighing up to 140 kg and with a chest girth of up to 1,750 mm, a sufficient number of suitable accessories shall be available on board to allow them to be secured to such persons."

CHAPTER IV
RADIOCOMMUNICATIONS

Regulation 7 – Radio equipment: General

6 The existing text of subparagraph .6.1 of paragraph 1 is replaced by the following:

".6.1 capable of transmitting a distress alert through the polar orbiting satellite service operating in the 406 MHz band;"

Regulation 9 – Radio equipment: Sea areas A1 and A2

7 The existing text of subparagraph .3.3 of paragraph 1 is replaced by the following:

".3.3 through the Inmarsat geostationary satellite service by a ship earth station."

Regulation 10 – Radio equipment: Sea areas A1, A2 and A3

8 The existing text of subparagraph .4.3 of paragraph 1 is replaced by the following:

".4.3 through the Inmarsat geostationary satellite service by an additional ship earth station."

9 The existing text of subparagraph .3.2 of paragraph 2 is replaced by the following:

".3.2 through the Inmarsat geostationary satellite service by a ship earth station; and"

CHAPTER V
SAFETY OF NAVIGATION

Regulation 22 – Navigation bridge visibility

10 The following new paragraph 4 is added after the existing paragraph 3:

"4 Notwithstanding the requirements of paragraphs 1.1, 1.3, 1.4 and 1.5, ballast water exchange may be undertaken provided that:

.1 the master has determined that it is safe to do so and takes into consideration any increased blind sectors or reduced horizontal fields of vision resulting from the operation to ensure that a proper lookout is maintained at all times;

.2 the operation is conducted in accordance with the ship's ballast water management plan, taking into account the recommendations on ballast water exchange adopted by the Organization; and

.3 the commencement and termination of the operation are recorded in the ship's record of navigational activities pursuant to regulation 28."

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ANNEX 2

RESOLUTION MSC.202(81)
(adopted on 19 May 2006)

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

THE MARITIME SAFETY COMMITTEE,

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

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"), concerning the amendment procedure applicable to the Annex to the Convention, other than the provisions of chapter I thereof,

HAVING CONSIDERED, at its eighty-first session, amendments to the Convention, proposed and circulated in accordance with article VIII(b)(i) thereof,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2007, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2008 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

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

CHAPTER V
SAFETY OF NAVIGATION

Regulation 2 – Definitions[1]

1 The following text is inserted after the existing paragraph 5:

"6 *High-speed craft* means a craft as defined in regulation X/1.3.

7 *Mobile offshore drilling unit* means a mobile offshore drilling unit as defined in regulation XI-2/1.1.5."

2 The following new regulation 19-1 is inserted after the existing regulation 19:

"**Regulation 19-1**
Long-range identification and tracking of ships

1 Nothing in this regulation or the provisions of performance standards and functional requirements[2] adopted by the Organization in relation to the long-range identification and tracking of ships shall prejudice the rights, jurisdiction or obligations of States under international law, in particular, the legal regimes of the high seas, the exclusive economic zone, the contiguous zone, the territorial seas or the straits used for international navigation and archipelagic sea lanes.

2.1 Subject to the provisions of paragraphs 4.1 and 4.2, this regulation shall apply to the following types of ships engaged on international voyages:

.1 passenger ships, including high-speed passenger craft;

.2 cargo ships, including high-speed craft, of 300 gross tonnage[3] and upwards; and

.3 mobile offshore drilling units.

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[1] The amendments to regulation 2 take into account the amendments to the regulation which were adopted on 20 May 2004, under cover of resolution MSC.153(78), and which will enter into force on 1 July 2006.

[2] Refer to the Performance standards and functional requirements for the long-range identification and tracking of ships, adopted by the Maritime Safety Committee of the Organization by resolution MSC.210(81).

[3] The gross tonnage to be used for determining whether a cargo ship or high-speed craft is required to comply with the provisions of this regulation shall be that determined under the provisions of the International Convention on Tonnage Measurement of Ships, 1969 irrespective of the date on which the ship or high-speed craft has been or is being constructed.

2.2 The term "ship", when used in paragraphs 3 to 11.2, includes the passenger and cargo ships, the high-speed craft and the mobile offshore drilling units which are subject to the provisions of this regulation.

3 This regulation establishes provisions to enable Contracting Governments to undertake the long-range identification and tracking of ships.

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

.1 ships constructed on or after 31 December 2008;

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

.1 in sea areas A1 and A2, as defined in regulations IV/2.1.12 and IV/2.1.13; or

.2 in sea areas Al, A2 and A3, as defined in regulations IV/2.1.12, IV/2.1.13 and IV/2.1.14;

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

.3 ships constructed before 31 December 2008 and certified for operations in sea areas Al, A2, A3 and A4, as defined in regulations IV/2.1.12, IV/2.1.13, IV/2.1.14 and IV/2.1.15, not later than the first survey of the radio installation after 1 July 2009. However, these ships shall comply with the provisions of subparagraph .2 above whilst they operate within sea areas A1, A2 and A3.

4.2 Ships, irrespective of the date of construction, fitted with an automatic identification system (AIS), as defined in regulation 19.2.4, and operated exclusively within sea area A1, as defined in regulation IV/2.1.12, shall not be required to comply with the provisions of this regulation.

5 Subject to the provisions of paragraph 4.1, ships shall automatically transmit the following long-range identification and tracking information:

.1 the identity of the ship;

.2 the position of the ship (latitude and longitude); and

.3 the date and time of the position provided.

6 Systems and equipment used to meet the requirements of this regulation shall conform to performance standards and functional requirements[4] not inferior to those adopted by the Organization. Any shipboard equipment shall be of a type approved by the Administration.

[4] Refer to the Performance standards and functional requirements for the long-range identification and tracking of ships, adopted by the Maritime Safety Committee of the Organization by resolution MSC.210(81).

7 Systems and equipment used to meet the requirements of this regulation shall be capable of being switched off on board or be capable of ceasing the distribution of long-range identification and tracking information:

.1 where international agreements, rules or standards provide for the protection of navigational information; or

.2 in exceptional circumstances and for the shortest duration possible where the operation is considered by the master to compromise the safety or security of the ship. In such a case, the master shall inform the Administration without undue delay and make an entry in the record of navigational activities and incidents maintained in accordance with regulation 28 setting out the reasons for the decision and indicating the period during which the system or equipment was switched off.

8.1 Subject to the provisions of paragraphs 8.2 to 11.2, Contracting Governments shall be able to receive long-range identification and tracking information about ships, for security and other purposes as agreed by the Organization, as follows:

.1 the Administration shall be entitled to receive such information about ships entitled to fly its flag irrespective of where such ships may be located;

.2 a Contracting Government shall be entitled to receive such information about ships which have indicated their intention to enter a port facility, as defined in regulation XI-2/1.1.9, or a place under the jurisdiction of that Contracting Government, irrespective of where such ships may be located provided they are not located within the waters landward of the baselines, established in accordance with international law, of another Contracting Government; and

.3 a Contracting Government shall be entitled to receive such information about ships entitled to fly the flag of other Contracting Governments, not intending to enter a port facility or a place under the jurisdiction of that Contracting Government, navigating within a distance not exceeding 1,000 nautical miles of its coast provided such ships are not located within the waters landward of the baselines, established in accordance with international law, of another Contracting Government; and

.4 a Contracting Government shall not be entitled to receive, pursuant to subparagraph .3, such information about a ship located within the territorial sea of the Contracting Government whose flag the ship is entitled to fly.

8.2 Contracting Governments shall specify and communicate to the Organization relevant details, taking into account the performance standards and functional requirements adopted by the Organization[5], to enable long-range identification and

[5] Refer to the Performance standards and functional requirements for the long-range identification and tracking of ships, adopted by the Maritime Safety Committee of the Organization by resolution MSC.210(81).

tracking information to be made available pursuant to the provisions of paragraph 8.1. The Contracting Government concerned may, at any time thereafter, amend or withdraw such communication. The Organization shall inform all Contracting Governments upon receipt of such communication together with the particulars thereof.

9.1 Notwithstanding the provisions of paragraph 8.1.3, the Administration shall be entitled, in order to meet security or other concerns, at any time, to decide that long-range identification and tracking information about ships entitled to fly its flag shall not be provided pursuant to the provisions of paragraph 8.1.3 to Contracting Governments. The Administration concerned may, at any time thereafter, amend, suspend or annul such decisions.

9.2 The Administration concerned shall communicate, pursuant to paragraph 9.1, such decisions to the Organization. The Organization shall inform all Contracting Governments upon receipt of such communication together with the particulars thereof.

9.3 The rights, duties and obligations, under international law, of the ships whose Administration invoked the provisions of paragraph 9.1 shall not be prejudiced as a result of such decisions.

10 Contracting Governments shall, at all times:

.1 recognize the importance of long-range identification and tracking information;

.2 recognize and respect the commercial confidentiality and sensitivity of any long-range identification and tracking information they may receive;

.3 protect the information they may receive from unauthorized access or disclosure; and

.4 use the information they may receive in a manner consistent with international law.

11.1 Contracting Governments shall bear all costs associated with any long-range identification and tracking information they request and receive. Notwithstanding the provisions of paragraph 11.2, Contracting Governments shall not impose any charges on ships in relation to the long-range identification and tracking information they may seek to receive.

11.2 Unless the national legislation of the Administration provides otherwise, ships entitled to fly its flag shall not incur any charges for transmitting long-range identification and tracking information in compliance with the provisions of this regulation.

12 Notwithstanding the provisions of paragraph 8.1, the search and rescue services of Contracting Governments shall be entitled to receive, free of any charges, long-range identification and tracking information in relation to the search and rescue of persons in distress at sea.

13 Contracting Governments may report to the Organization any case where they consider that provisions of this regulation or of any other related requirements established by the Organization have not been or are not being observed or adhered to.

14 The Maritime Safety Committee shall determine the criteria, procedures and arrangements for the establishment, review and audit of the provision of long-range identification and tracking information to Contracting Governments pursuant to the provisions of this regulation."

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ANNEX 3

RESOLUTION MSC.203(81)
(adopted on 18 May 2006)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978, AS AMENDED

THE MARITIME SAFETY COMMITTEE,

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

RECALLING FURTHER article XII of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978 (hereinafter referred to as "the Convention"), concerning the procedures for amending the Convention,

HAVING CONSIDERED, at its eighty-first session, amendments to the Convention proposed and circulated in accordance with article XII(1)(a)(i) of the Convention,

1. ADOPTS, in accordance with article XII(1)(a)(iv) of the Convention, amendments to the Convention, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article XII(1)(a)(vii)(2) of the Convention, that the amendments to the Convention shall be deemed to have been accepted on 1 July 2007, unless, prior to that date more than one third of Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross register tons or more, have notified their objections to the amendments;

3. INVITES Parties to note that, in accordance with article XII(1)(a)(viii) of the Convention, that the amendments to the Convention, shall enter into force on 1 January 2008 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article XII(1)(a)(v) to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Parties to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Parties to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978, AS AMENDED

CHAPTER I
GENERAL PROVISIONS

Regulation I/1 – Definitions and clarifications

1 The full stop "." at the end of paragraph 1 subparagraph .25 is replaced by a semicolon ";".

2 In paragraph 1, the following new subparagraphs .26 and .27 are inserted after the existing subparagraph .25:

".26 *ISPS Code* means the International Ship and Port Facility Security (ISPS) Code adopted on 12 December 2002, by resolution 2 of the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, as may be amended by the Organization;

.27 *Ship security officer* means the person on board the ship, accountable to the master, designated by the Company as responsible for the security of the ship including implementation and maintenance of the ship security plan and liaison with the Company security officer and port facility security officers."

CHAPTER VI
EMERGENCY, OCCUPATIONAL SAFETY, MEDICAL CARE AND SURVIVAL FUNCTIONS

3 The existing title of chapter VI is replaced by the following:

"**Emergency, occupational safety, security, medical care and survival functions**"

4 The following new regulation VI/5 is inserted after the existing regulation VI/4:

"Regulation VI/5
Mandatory minimum requirements for the issue of certificates of proficiency for ship security officers

1 Every candidate for a certificate of proficiency as ship security officer shall:

.1 have approved seagoing service of not less than 12 months or appropriate seagoing service and knowledge of ship operations; and

.2 meet the standard of competence for certification of proficiency as ship security officer, set out in section A-VI/5, paragraphs 1 to 4 of the STCW Code.

2 Administrations shall ensure that every person found qualified under the provisions of this regulation is issued with a certificate of proficiency.

3 Every Party shall compare the standards of competence which it required of ship security officers who hold or can document qualifications before the entry into force of this regulation with those specified for the certificate of proficiency in section A-VI/5 of the STCW Code, and shall determine the need for requiring these personnel to update their qualifications.

4 Until 1 July 2009, a Party may continue to recognize personnel who hold or can document qualifications as ship security officers before the entry into force of this regulation."

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ANNEX 4

RESOLUTION MSC.204(81)
(adopted on 18 May 2006)

ADOPTION OF AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO article VIII(b) of the International Convention for the Safety of Life at Sea, 1974 (hereinafter referred to as "the Convention") and article VI of the Protocol of 1988 relating to the Convention (hereinafter referred to as "the 1988 SOLAS Protocol") concerning the procedure for amending the Convention and the 1988 SOLAS Protocol,

RECALLING FURTHER article VI(b) of the 1988 SOLAS Protocol which stipulates, *inter alia*, that amendments to the Annex to the Protocol shall be adopted and brought into force in accordance with the procedure applicable to the adoption and entry into force of amendments to chapter I of the Annex to the Convention, as specified in subparagraphs (iv), (vi)(1) and (vii)(1) of paragraph (b) of article VIII of the Convention,

NOTING that, in accordance with article VIII(b)(vi)(1) of the Convention, an amendment to the Annex to the 1988 SOLAS Protocol shall be deemed to have been accepted on the date on which it is accepted by two thirds of the Parties to the Protocol,

HAVING CONSIDERED, at its eighty-first session, amendments to the 1988 SOLAS Protocol proposed and circulated in accordance with article VIII(b)(i) of the Convention and article VI(b) of the 1988 SOLAS Protocol,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention and article VI(b) of the 1988 SOLAS Protocol, amendments to the Annex to the 1988 SOLAS Protocol, the text of which is set out in the Annex to the present resolution;

2. REQUESTS the Secretary-General, in accordance with article VIII(b)(v) of the Convention and article VI(b) of the 1988 SOLAS Protocol, to transmit certified copies of the present resolution and its Annex to all Parties to the 1988 SOLAS Protocol, for consideration and acceptance, and also to transmit copies to all Members of the Organization;

3. URGES all Parties to the 1988 SOLAS Protocol to accept the amendments at the earliest possible date.

ANNEX

AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

ANNEX

MODIFICATIONS AND ADDITIONS TO THE ANNEX TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

CHAPTER I

GENERAL PROVISIONS

PART B

SURVEY AND CERTIFICATES

Regulation 10 - Surveys of structure, machinery and equipment of cargo ships

The existing text of subparagraph (v) of paragraph (a) of the regulation is replaced by the following:

"(v) a minimum of two inspections of the outside of the ship's bottom during the five-year period of validity of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate, except where regulation 14(e) or 14(f) is applicable. Where regulation 14(e) or 14(f) is applicable, this five-year period may be extended to coincide with the extended period of validity of the certificate. In all cases the interval between any two such inspections shall not exceed 36 months;".

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ANNEX 5

RESOLUTION MSC.205(81)
(adopted on 18 May 2006)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution MSC.122(75) by which it adopted the International Maritime Dangerous Goods Code (hereinafter referred to as "the IMDG Code"), which has become mandatory under chapter VII of the International Convention for the Safety of Life at Sea, 1974, as amended (hereinafter referred to as "the Convention"),

NOTING ALSO article VIII(b) and regulation VII/1.1 of the Convention concerning the amendment procedure for amending the IMDG Code,

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

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IMDG Code, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2007, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world' s merchant fleet, have notified their objections to the amendments;

3. INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2008 upon their acceptance in accordance with paragraph 2 above;

4. AGREES that Contracting Governments to the Convention may apply the aforementioned amendments in whole or in part on a voluntary basis as from 1 January 2007;

5. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

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

ANNEX

AMENDMENTS TO THE INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE (RESOLUTION MSC.122(75))

PART 1

Chapter 1.1

1.1.3.2.3 Insert the following new first sentence "Doses to persons shall be below the relevant dose limits".

At the end of the second sentence, replace: "and doses to persons shall be below the relevant dose limits", with "within the restriction that the doses to individuals be subject to dose constraints.".

1.1.3.2.4 Replace "the radiation hazards involved and" with "radiation protection including".

Replace "to ensure restriction of their exposure and that" with "to restrict their occupational exposure and the exposure".

1.1.3.2.5 In the French version, replace "dose effective" with "dose efficace".

Delete indent .1 and renumber .2 and .3 as .1 and .2.

1.1.3.4.1 Insert "of radioactive material" after "which consignments".

Delete "applicable to radioactive material" at the end.

1.1.3.4.2 Delete "international", in the last sentence.

Chapter 1.2

1.2.1 In the definition of "Elevated temperature substance", amend "61°C" to read "60°C". In the definition of "Remanufactured IBCs", amend "6.5.4.1.1" to read "6.5.6.1.1".

1.2.3 Add the following abbreviations in alphabetical order:

> **"ASTM** ***American Society for Testing and Materials (ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428-2959, United States of America);"***
>
> **"CGA** ***Compressed Gas Association (CGA, 4221 Walney Road, 5th Floor, Chantilly VA 20151-2923, United States of America);"***
>
> **"EN (standard)** ***means a European standard published by the European Committee for Standardization (CEN) (CEN – 36 rue de Stassart, B-1050 Brussels, Belgium);"***
>
> **"IAEA** ***International Atomic Energy Agency (IAEA, P.O. Box 100 – A -1400 Vienna, Austria);"***
>
> **"ICAO** ***International Civil Aviation Organization (ICAO, 999 University Street, Montreal, Quebec H3C 5H7, Canada);"***
>
> **"IMO** ***International Maritime Organization (IMO, 4 Albert Embankment, London SE1 7SR, United Kingdom);"***
>
> **"ISO (standard)** ***an international standard published by the International Organization for Standardization (ISO - 1, rue de Varembé, CH-1204 Geneva 20, Switzerland);"***
>
> **"UNECE** ***United Nations Economic Commission for Europe (UNECE, Palais des Nations, 8-14 avenue de la Paix, CH-1211 Geneva 10, Switzerland);"***

and delete the current abbreviations and text against IAEA, IMO, ISO and UN ECE and provide addresses of other organizations.

Chapter 1.4

1.4.3.1 For class 6.2, insert "(UN Nos. 2814 and 2900)" after "Category A".
For class 7, replace "type B or type C" with "Type B(U) or Type B(M) or Type C".
Delete the last paragraph.

1.4.3.5 Add a new paragraph after 1.4.3.4 to read as follows:

"1.4.3.5 For radioactive material, the provisions of this chapter are deemed to be complied with when the provisions of the Convention on Physical Protection of Nuclear Material and of IAEA INFCIRC/225 (Rev.4) are applied".

PART 2

Chapter 2.1

2.0.2.4 Amend "2.5.3.3.2" to read "2.5.3.3".

2.1.3.5 Insert the following new paragraphs:

"**2.1.3.5** ***Assignment of fireworks to hazard divisions***

2.1.3.5.1 Fireworks shall normally be assigned to hazard divisions 1.1, 1.2, 1.3, and 1.4 on the basis of test data derived from Test Series 6 of the United Nations *Manual of Test and Criteria*. However, since the range of such articles is very extensive and the availability of test facilities may be limited, assignment to hazard divisions may also be made in accordance with the procedure in 2.1.3.5.2.

2.1.3.5.2 Assignment of fireworks to UN Nos.0333, 0334, 0335 or 0336 may be made on the basis of analogy, without the need for Test Series 6 testing, in accordance with the default fireworks classification table in 2.1.3.5.5. Such assignment shall be made with the agreement of the competent authority. Items not specified in the table shall be classified on the basis of test data derived from Test Series 6 of the United Nations *Manual of Test and Criteria*.

NOTE: *The addition of other types of fireworks to column 1 of the table in 2.1.3.5.5 shall only be made on the basis of full test data submitted to the UN Sub-Committee of Experts on the Transport of Dangerous Goods for consideration.*

2.1.3.5.3 Where fireworks of more than one hazard division are packed in the same package they shall be classified on the basis of the highest hazard division unless test data derived from Test Series 6 of the United Nations Manual of Test and Criteria indicate otherwise.

2.1.3.5.4 The classification shown in the table in 2.1.3.5.5 applies only for articles packed in fibreboard boxes (4G).

2.1.3.5.5 *Default fireworks classification table*[*]

NOTE 1: *References to percentages in the table, unless otherwise stated, are to the mass of all pyrotechnic composition (e.g., rocket motors, lifting charge, bursting charge and effect charge).*

***NOTE 2*:** *"Flash composition" in this table refers to pyrotechnic compositions containing an oxidizing substance, or black powder, and a metal powder fuel that are used to produce an aural report effect or used as a bursting charge in fireworks devices.*

[*] This table contains a list of firework classifications that may be used in the absence of Test Series 6, of the United Nations Manual of Test and Criteria, data (see 2.1.3.5.2).

NOTE 3: *Dimensions in mm refers to:*

- *for spherical and peanut shells the diameter of the sphere of the shell;*
- *for cylinder shells the length of the shell;*
- *for a shell in mortar, Roman candle, shot tube firework or mine the inside diameter of the tube comprising or containing the firework;*
- *for a bag mine or cylinder mine, the inside diameter of the mortar intended to contain the mine.*

Type	Includes: / Synonym:	Definition	Specification	Classification
Shell, spherical or cylindrical	Spherical display shell: aerial shell, colour shell, dye shell, multi-break shell, multi-effect shell, nautical shell, parachute shell, smoke shell, star shell; report shell: maroon, salute, sound shell, thunderclap, aerial shell kit	Device with or without propellant charge, with delay fuse and bursting charge, pyrotechnic unit(s) or loose pyrotechnic composition and designed to be projected from a mortar	All report shells	1.1G
			Colour shell: ≥ 180 mm	1.1G
			Colour shell: < 180 mm with > 25% flash composition, as loose powder and/ or report effects	1.1G
			Colour shell: < 180 mm with ≤ 25% flash composition, as loose powder and/ or report effects	1.3G
			Colour shell: ≤ 50 mm, or ≤ 60 g pyrotechnic composition, with ≤ 2% flash composition as loose powder and/ or report effects	1.4G
	Peanut shell	Device with two or more spherical aerial shells in a common wrapper propelled by the same propellant charge with separate external delay fuses	The most hazardous spherical aerial shell determines the classification	
	Preloaded mortar, shell in mortar	Assembly comprising a spherical or cylindrical shell inside a mortar from which the shell is designed to be projected	All report shells	1.1G
			Colour shell: ≥ 180 mm	1.1G
			Colour shell: > 50 mm and < 180 mm	1.2G
			Colour shell: ≤ 50 mm, or < 60 g pyrotechnic composition, with ≤ 25% flash composition as loose powder and/ or report effects	1.3G

Type	Includes: / Synonym:	Definition	Specification	Classification
Shell, spherical or cylindrical *(cont'd)*	Shell of shells (spherical) (Reference to percentages for shell of shells are to the gross mass of the fireworks article)	Device without propellant charge, with delay fuse and bursting charge, containing report shells and inert materials and designed to be projected from a mortar	> 120 mm	1.1G
		Device without propellant charge, with delay fuse and bursting charge, containing report shells ≤ 25g flash composition per report unit, with ≤ 33% flash composition and ≥ 60% inert materials and designed to be projected from a mortar	≤ 120 mm	1.3G
		Device without propellant charge, with delay fuse and bursting charge, containing colour shells and/or pyrotechnic units and designed to be projected from a mortar	> 300 mm	1.1G
		Device without propellant charge, with delay fuse and bursting charge, containing colour shells ≤ 70mm and/or pyrotechnic units, with ≤ 25% flash composition and ≤ 60% pyrotechnic composition and designed to be projected from a mortar	> 200 mm and ≤ 300 mm	1.3G
		Device with propellant charge, with delay fuse and bursting charge, containing colour shells ≤ 70 mm and/or pyrotechnic units, with ≤ 25% flash composition and ≤ 60% pyrotechnic composition and designed to be projected from a mortar	≤ 200 mm	1.3G
Battery/ combination	Barrage, bombardos, cakes, finale box, flowerbed, hybrid, multiple tubes, shell cakes, banger batteries, flash banger batteries	Assembly including several elements either containing the same type or several types each corresponding to one of the types of fireworks listed in this table, with one or two points of ignition	The most hazardous firework type determines the classification	

Type	Includes: / Synonym:	Definition	Specification	Classification
Roman candle	Exhibition candle, candle, bombettes	Tube containing a series of pyrotechnic units consisting of alternate pyrotechnic composition, propellant charge, and transmitting fuse	≥ 50 mm inner diameter, containing flash composition, or <50 mm with >25% flash composition	1.1G
			≥ 50 mm inner diameter, containing no flash composition	1.2G
			< 50 mm inner diameter and ≤ 25% flash composition	1.3G
			≤ 30 mm inner diameter, each pyrotechnic unit ≤ 25 g and ≤ 5% flash composition	1.4G
Shot tube	Single shot Roman candle, small preloaded mortar	Tube containing a pyrotechnic unit consisting of pyrotechnic composition, propellant charge with or without transmitting fuse	≤ 30 mm inner diameter and pyrotechnic unit > 25 g, or > 5% and ≤ 25% flash composition	1.3G
			≤ 30 mm inner diameter, pyrotechnic unit ≤ 25 g and ≤ 5% flash composition	1.4G
Rocket	Avalanche rocket, signal rocket, whistling rocket, bottle rocket, sky rocket, missile type rocket, table rocket	Tube containing pyrotechnic composition and/or pyrotechnic units, equipped with stick(s) or other means for stabilization of flight, and designed to be propelled into the air	Flash composition effects only	1.1G
			Flash composition > 25% of the pyrotechnic composition	1.1G
			> 20 g pyrotechnic composition and flash composition ≤ 25 %	1.3G
			≤ 20 g pyrotechnic composition, black powder bursting charge and ≤ 0.13 g flash composition per report and ≤ 1 g in total	1.4G

Type	Includes: / Synonym:	Definition	Specification	Classification
Mine	Pot-au-feu, ground mine, bag mine, cylinder mine	Tube containing propellant charge and pyrotechnic units and designed to be placed on the ground or to be fixed in the ground. The principal effect is ejection of all the pyrotechnic units in a single burst producing a widely dispersed visual and/or aural effect in the air or: Cloth or paper bag or cloth or paper cylinder containing propellant charge and pyrotechnic units, designed to be placed in a mortar and to function as a mine	> 25% flash composition, as loose powder and/ or report effects	1.1G
			≥ 180 mm and ≤ 25% flash composition, as loose powder and/ or report effects	1.1G
			< 180 mm and ≤ 25% flash composition, as loose powder and/ or report effects	1.3G
			≤ 150 g pyrotechnic composition, containing ≤ 5% flash composition as loose powder and/ or report effects. Each pyrotechnic unit ≤ 25 g, each report effect < 2g ; each whistle, if any, ≤ 3 g	1.4G
Fountain	Volcanos, gerbs, showers, lances, Bengal fire, flitter sparkle, cylindrical fountains, cone fountains, illuminating torch	Non-metallic case containing pressed or consolidated pyrotechnic composition producing sparks and flame	≥ 1 kg pyrotechnic composition	1.3G
			< 1 kg pyrotechnic composition	1.4G
Sparkler	Handheld sparklers, non-handheld sparklers, wire sparklers	Rigid wire partially coated (along one end) with slow burning pyrotechnic composition with or without an ignition tip	Perchlorate based sparklers: > 5 g per item or > 10 items per pack	1.3G
			Perchlorate based sparklers: ≤ 5 g per item and ≤ 10 items per pack; Nitrate based sparklers: ≤ 30 g per item	1.4G
Bengal stick	Dipped stick	Non-metallic stick partially coated (along one end) with slow-burning pyrotechnic	Perchlorate based items: > 5 g per item or > 10 items per pack	1.3G

Type	Includes: / Synonym:	Definition	Specification	Classification
		composition and designed to be held in the hand	Perchlorate based items: ≤ 5 g per item and ≤ 10 items per pack; nitrate based items: ≤ 30 g per item	1.4G
Low hazard fireworks and novelties	Table bombs, throwdowns, crackling granules, smokes, fog, snakes, glow worm, serpents, snaps, party poppers	Device designed to produce very limited visible and/ or audible effect which contains small amounts of pyrotechnic and/ or explosive composition	Throwdowns and snaps may contain up to 1.6 mg of silver fulminate; snaps and party poppers may contain up to 16 mg of potassium chlorate/ red phosphorous mixture; other articles may contain up to 5 g of pyrotechnic composition, but no flash composition	1.4G
Spinner	Aerial spinner, helicopter, chaser, ground spinner	Non-metallic tube or tubes containing gas- or spark-producing pyrotechnic composition, with or without noise producing composition, with or without aerofoils attached	Pyrotechnic composition per item > 20 g, containing ≤ 3% flash composition as report effects, or whistle composition ≤ 5 g	1.3G
			Pyrotechnic composition per item ≤ 20 g, containing ≤ 3% flash composition as report effects, or whistle composition ≤ 5 g	1.4G
Wheels	Catherine wheels, Saxon	Assembly including drivers containing pyrotechnic composition and provided with a means of attaching it to a support so that it can rotate	≥ 1 kg total pyrotechnic composition, no report effect, each whistle (if any) ≤ 25 g and ≤ 50 g whistle composition per wheel	1.3G
			< 1 kg total pyrotechnic composition, no report effect, each whistle (if any) ≤ 5 g and ≤ 10 g whistle composition per wheel	1.4G

Type	Includes: / Synonym:	Definition	Specification	Classification
Aerial wheel	Flying Saxon, UFO's, rising crown	Tubes containing propellant charges and sparks- flame- and/ or noise producing pyrotechnic compositions, the tubes being fixed to a supporting ring	> 200 g total pyrotechnic composition or > 60 g pyrotechnic composition per driver, ≤ 3% flash composition as report effects, each whistle (if any) ≤ 25 g and ≤ 50 g whistle composition per wheel	1.3G
			≤ 200 g total pyrotechnic composition and ≤ 60 g pyrotechnic composition per driver, ≤ 3% flash composition as report effects, each whistle (if any) ≤ 5 g and ≤ 10 g whistle composition per wheel	1.4G
Selection pack	Display selection box, display selection pack, garden selection box, indoor selection box; assortment	A pack of more than one type each corresponding to one of the types of fireworks listed in this table	The most hazardous firework type determines the classification	
Firecracker	Celebration cracker, celebration roll, string cracker	Assembly of tubes (paper or cardboard) linked by a pyrotechnic fuse, each tube intended to produce an aural effect	Each tube ≤ 140 mg of flash composition or ≤ 1 g black powder	1.4G
Banger	Salute, flash banger, lady cracker	Non-metallic tube containing report composition intended to produce an aural effect	> 2 g flash composition per item	1.1G
			≤ 2 g flash composition per item and ≤ 10 g per inner packaging	1.3G
			≤ 1 g flash composition per item and ≤ 10 g per inner packaging or ≤ 10 g black powder per item	1.4G

Chapter 2.2

2.2.2.2 Delete "are transported at a pressure not less than 280 kPa at 20°C, or as refrigerated liquids, and which".

2.2.2.5 Add a new paragraph to read as follows:

"2.2.2.5 Gases of class 2.2, other than refrigerated liquefied gases, are not subject to the provisions of this Code if they are transported at an absolute pressure less than 280 kPa at 20°C.".

Chapter 2.3

2.3.1.2 Amend "61°C" to read "60°C".

2.3.2.5 First indent; amend "61°C" to read "60°C".

2.3.2.6 In the hazard grouping based on flammability table, amend "61" to read "60".

Chapter 2.4

2.4.2.3.1.1.2 Amend to read as follows:

".2 they are oxidizing substances according to the classification procedure for class 5.1 (see 2.5.2) except that mixtures of oxidizing substances which contain 5.0% or more of combustible organic substances shall be subjected to the classification procedure defined in Note 3;".

Add a new NOTE 3 to read as follows:

"NOTE 3*: Mixtures of oxidizing substances meeting the criteria of class 5.1 which contain 5.0% or more of combustible organic substances, which do not meet the criteria, mentioned in .1, .3, .4 or .5 above, shall be subjected to the self-reactive substance classification procedure.*

A mixture showing the properties of a self-reactive substance, type B to F, shall be classified as a self-reactive substance of class 4.1.

A mixture showing the properties of a self-reactive substance, type G, according to the principle of 2.4.2.3.3.2.7 shall be considered for classification as a substance of class 5.1 (see 2.5.2).".

2.4.2.3.2.3 Add the following new entry to the table:

UN generic entry	SELF-REACTIVE SUBSTANCE	Concen - tration (%)	Packing method	Control tempera- ture (°C)	Emergency temperature (°C)	Remarks
3228	ACETONE-PYROGALLOL COPOLYMER 2-DIAZO-1-NAPHTHOL-5-SULPHONATE	100	OP8			

In remark (2) after the table, insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

2.4.2.3.3.2 .2 Insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

2.4.2.3.3.3 Delete.

2.4.5 In the flowchart on classification of organometallic substances, amend "61ºC" to read "60ºC".

Chapter 2.5

2.5.3.2.4 Amend the following entries in the table as follows:

Number (generic entry)	ORGANIC PEROXIDE	Concen-tration (%)	Diluent type A (%)	Diluent Type B (%)	Inert solid (%)	Water (%)	Packing Method	Control tempe-rature (°C)	Emer-gency tempe-rature (°C)	Subsidiary risks and remarks
3101	2,5 DIMETHYL-2,5-DI-(*tert*-BUTYLPEROXY)-HEXYNE-3	> 86-100					OP5			(3)
3107	POLYETHER POLY-*tert*-BUTYLPEROXY CARBONATE	≤ 52		≥ 48			OP8			
3115	ISOPROPYL *sec*-BUTYL PEROXYDICARBONATE + DI-*sec*-BUTYL PEROXYDICARBONATE + DI-ISOPROPYL PEROXYDICARBONATE	≤ 32 + ≤ 15-18 + ≤12-15	≥ 38				OP7	-20	-10	

In Note (8) after the table, replace "< 10.7%" with "≤ to 10.7%".

In Note (18) after the table, add at the end of the sentence "for concentrations below 80%".

2.5.3.3.2.2 Insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

2.5.3.3.2.6 Amend "4.2.1.12" to read "4.2.1.13".

2.5.3.3.3 Delete.

Chapter 2.6

2.6.2.2.4.5 Amend "2.6.2.2.4.1" to read "2.6.2.2.4.3".

2.6.2.2.4.1 Amend the table to read as follows:

Packing group	Oral toxicity LD_{50} (mg/kg)	Dermal toxicity LD_{50} (mg/kg)	Inhalation toxicity by dusts and mists LC_{50} (mg/l)
I	≤ 5.0	≤ 50	≤ 0.2
II	> 5.0 and ≤ 50	> 50 and ≤ 200	> 0.2 and ≤ 2.0
III*	> 50 and ≤ 300	> 200 and ≤ 1000	> 2.0 and ≤ 4.0

2.6.2.2.4.7.1 In the explanation of "f_i", replace "liquid" with "mixture".

2.6.2.2.4.7.2 Insert "comprising the mixture" after "component substance" and before "using the formula".

2.6.3.1.3 Amend to read as follows:

"*Cultures* are the result of a process by which pathogens are intentionally propagated. This definition does not include human or animal patient specimens as defined in 2.6.3.1.4.".

2.6.3.1.4 Add a new 2.6.3.1.4 to read as follows and renumber subsequent paragraphs accordingly:

"2.6.3.1.4 *Patient specimens* are human or animal materials, collected directly from humans or animals, including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluid swabs, and body parts being transported for purposes such as research, diagnosis, investigational activities, disease treatment and prevention.".

2.6.3.2.1 Insert ", UN 3291" after "UN 2900".

2.6.3.2.2.1 In the first sentence, replace "disease to humans or animals" with "disease in otherwise healthy humans or animals".

In the Table with the indicative examples:

Under UN 2814:

- Replace "Hantaviruses causing hantavirus pulmonary syndrome" with "Hantavirus causing hemorragic fever with renal syndrome".

- Add "(cultures only)" after "Rabies virus", "Rift Valley fever virus" and "Venezuelan equine encephalitis virus".

Under UN 2900:

- Delete "African horse sickness virus" and "Bluetongue virus".

- Insert "Velogenic" before "Newcastle disease virus".

- Add "(cultures only)" after each micro-organism in the list.

2.6.3.2.2.2 Delete "except that cultures, as defined in 2.6.3.1.3, shall be assigned to UN 2814 or UN 2900 as appropriate".

In the Note amend the proper shipping name to read: "BIOLOGICAL SUBSTANCE, CATEGORY B".

2.6.3.2.3 Renumber current 2.6.3.2.3 as 2.6.3.2.3.1 and add a new 2.6.3.2.3 to read as follows:

"2.6.3.2.3 *Exemptions*".

Insert the following new subparagraphs:

"2.6.3.2.3.2 Substances containing micro-organisms which are non-pathogenic to humans or animals are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

2.6.3.2.3.3 Substances in a form that any present pathogens have been neutralized or inactivated such that they no longer pose a health risk are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

2.6.3.2.3.4 Environmental samples (including food and water samples) which are not considered to pose a significant risk of infection are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.".

2.6.3.2.4 Current 2.6.3.2.4 becomes new 2.6.3.2.3.5. Amend the beginning of the paragraph to read as follows: "Dried blood spots, collected by applying a drop of blood onto absorbent material, or faecal occult blood screening tests and blood or blood components…".

Current 2.6.3.2.5 Delete.

2.6.3.2.3.6 Add a new paragraph to read as follows:

"2.6.3.2.3.6 Human or animal specimens for which there is minimal likelihood that pathogens are present are not subject to the provisions of this Code if the specimen is transported in a packaging which will prevent any leakage and which is marked with the words "Exempt human specimen" or "Exempt animal specimen", as appropriate. The packaging should meet the following conditions:

(a) The packaging should consist of three components:

(i) a leak-proof primary receptacle(s);

(ii) a leak-proof secondary packaging; and

(iii) an outer packaging of adequate strength for its capacity, mass and intended use, and with at least one surface having minimum dimensions of 100 mm x 100 mm;

(b) For liquids, absorbent material in sufficient quantity to absorb the entire contents should be placed between the primary receptacle(s) and the secondary packaging so that, during transport, any release or leak of a liquid substance will not reach the outer packaging and will not compromise the integrity of the cushioning material;

(c) When multiple fragile primary receptacles are placed in a single secondary packaging, they should be either individually wrapped or separated to prevent contact between them.

NOTE: *An element of professional judgment is required to determine if a substance is exempt under this paragraph. That judgment should be based on the known medical history, symptoms and individual circumstances of the source, human or animal, and endemic local conditions. Examples of specimens which may be transported under this paragraph include the blood or urine tests to monitor cholesterol levels, blood glucose levels, hormone levels, or prostate specific antibodies (PSA); those required to monitor organ function such as heart, liver or kidney function for humans or animals with non-infectious diseases, or therapeutic drug monitoring; those conducted for insurance or employment purposes and are intended to determine the presence of drugs or alcohol; pregnancy test; biopsies to detect cancer; and antibody detection in humans or animals.*"

2.6.3.5.1 Delete "or containing Category B infectious substances in cultures" in the first sentence and ", other than in cultures," in the last sentence.

2.6.3.6 Add the following new title:

"**2.6.3.6** ***Infected animals***"

2.6.3.6.1 Current 2.6.3.2.6 becomes new 2.6.3.6.1. In new 2.6.3.6.1 add the following new first sentence: "Unless an infectious substance cannot be consigned by any other means, live animals shall not be used to consign such a substance.".

2.6.3.6.2 Add a new 2.6.3.6.2 to read as follows:

"2.6.3.6.2 Animal carcasses affected by pathogens of category A or which would be assigned to Category A in cultures only, shall be assigned to UN 2814 or UN 2900 as appropriate.

Other animal carcasses affected by pathogens included in Category B shall be transported in accordance with provisions determined by the competent authority.”.

Chapter 2.7

2.7.1.2 (e) Replace “the values specified in 2.7.7.2.” with “the values specified in 2.7.7.2.1 (b), or calculated in accordance with 2.7.7.2.2 to 2.7.7.2.6.”.

2.7.1.2 (f) Replace “defined” with “set out in the definition for ‘contamination’ ”.

2.7.2 In the definition of “*Multilateral approval*”, amend the first sentence to read as follows:

Multilateral approval means approval by the relevant competent authority of the country of origin of the design or shipment, as applicable and also, where the consignment is to be transported through or into any other country, approval by the competent authority of that country.”.

In the definition of “*Freight container in the case of radioactive material transport*”, amend the end of the first sentence and the beginning of the current second sentence to read as follows: “…transport without intermediate reloading which is of a permanent enclosed character, …”.”

In the definition of “*Specific activity of a radionuclide*”, delete: “or volume”.

In the definition of “Natural Uranium” (under “Uranium-natural, depleted, enriched”) replace “chemically separated uranium” with “uranium (which may be chemically separated)”.

2.7.3.2 (a)(ii) Amend to read: “Natural uranium, depleted uranium, natural thorium or their compounds or mixtures, providing they are unirradiated and in solid or liquid form;”.

2.7.4.6 (a) Amend to read:

“(a) The tests prescribed in 2.7.4.5 (a) and 2.7.4.5 (b) provided the mass of the special form radioactive material

(i) is less than 200 g and they are alternatively subjected to the class 4 impact test prescribed in ISO 2919:1990 “Radiation protection - Sealed radioactive sources - General requirements and classification”; or

(ii) is less than 500 g and they are alternatively subjected to the class 5 impact test prescribed in ISO 2919:1990: “Sealed Radioactive Sources – Classification”; and”.

2.7.7.1.7 Amend the beginning of the first sentence to read: “Unless excepted by 6.4.11.2, packages containing …”.

2.7.7.1.8 Amend to read as follows:

"Packages containing uranium hexafluoride shall not contain:

(a) a mass of uranium hexafluoride different from that authorized for the package design;

(b) a mass of uranium hexafluoride greater than a value that would lead to an ullage smaller than 5% at the maximum temperature of the package as specified for the plant systems where the package shall be used; or

(c) uranium hexafluoride other than in solid form or at an internal pressure above atmospheric pressure when presented for transport.".

2.7.7.2.1 In the table, amend the value in the last column for Te-121m to read "1×10^6" instead of "1×10^5".

Amend (a) and (b) after the table as follows:

"(a) A_1 and/or A_2 values for these parent radionuclides include contributions from daughter radionuclides with half-fives less than 10 days, as listed in the following:

Mg-28	Al-28
Ar-42	K-42
Ca-47	Sc-47
Ti-44	Sc-44
Fe-52	Mn-52m
Fe-60	Co-60m
Zn-69m	Zn-69
Ge-68	Ga-68
Rb-83	Kr-83m
Sr-82	Rb-82
Sr-90	Y-90
Sr-91	Y-91m
Sr-92	Y-92
Y-87	Sr-87m
Zr-95	Nb-95m
Zr-97	Nb-97m, Nb-97
Mo-99	Tc-99m
Tc-95m	Tc-95
Tc-96m	Tc-96
Ru-103	Rh-103m
Ru-106	Rh-106
Pd-103	Rh-103m
Ag-108m	Ag-108
Ag-110m	Ag-110
Cd-115	In-115m
In-114m	In-114
Sn-113	In-113m

Sn-121m	Sn-121
Sn-126	Sb-126m
Te-118	Sb-118
Te-127m	Te-127
Te-129m	Te-129
Te-131m	Te-131
Te-132	I-132
I-135	Xe-135m
Xe-122	I-122
Cs-137	Ba-137m
Ba-131	Cs-131
Ba-140	La-140
Ce-144	Pr-144m, Pr-144
Pm-148m	Pm-148
Gd-146	Eu-146
Dy-166	Ho-166
Hf-172	Lu-172
W-178	Ta-178
W-188	Re-188
Re-189	Os-189m
Os-194	Ir-194
Ir-189	Os-189m
Pt-188	Ir-188
Hg-194	Au-194
Hg-195m	Hg-195
Pb-210	Bi-210
Pb-212	Bi-212, Tl-208, Po-212
Bi-210m	Tl-206
Bi-212	Tl-208, Po-212
At-211	Po-211
Rn-222	Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Po-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Ra-225	Ac-225, Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ra-226	Rn-222, Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-228	Ac-228
Ac-225	Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ac-227	Fr-223
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Th-234	Pa-234m, Pa-234
Pa-230	Ac-226, Th-226, Fr-222, Ra-222, Rn-218, Po-214
U-230	Th-226, Ra-222, Rn-218, Po-214
U-235	Th-231
Pu-241	U-237
Pu-244	U-240, Np-240m
Am-242m	Am-242, Np-238
Am-243	Np-239
Cm-247	Pu-243
Bk-249	Am-245
Cf-253	Cm-249”

(b) Insert "Ag-108m Ag-108" after: "Ru-106 Rh-106".

Delete: "Ce-134, La-134"; "Rn-220, Po-216"; "Th-226, Ra-222, Rn-218, Po-214"; and "U-240, Np-240m".

2.7.7.2.2 In the first sentence, delete "competent authority approval, or for international transport," and amend the beginning of the second sentence to read as follows: "It is permissible to use an A_2 value calculated using a dose coefficient for the appropriate lung absorption type as recommended by the International Commission on Radiological Protection, if the chemical forms of each radionuclide under both normal …".

In the table:

- Amend the second entry in the first column to read: "Alpha emitting nuclides but no neutron emitters are known to be present".

- Amend the third entry in the first column to read: "Neutron emitting nuclides are known to be present or no relevant data are available".

2.7.8.4 (d) and (e) Add at the end: "except under the provisions of 2.7.8.5".

2.7.8.5 Add a new 2.7.8.5 to read:

"2.7.8.5 In case of international transport of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, assignment to the category as required in 2.7.8.4 shall be in accordance with the certificate of the country of origin of design.".

2.7.9.3 (b) In the first sentence, insert "manufactured" after "or" and before "article".

Chapter 2.8

2.8.2.2 Amend the beginning of the last sentence to read as follows: "Liquids, and solids which may become liquid during transport, which are judged not to cause…" *(remainder of the sentence unchanged)*.

2.8.2.5.3.2 In the second sentence, amend "SAE 1015" to read "SAE 1020".

PART 3

Chapter 3.1

3.1.2.6.1 Insert "or equal to" after "less than" and before "50°C".

3.1.4.4 In the acids' list, amend the proper shipping names of UN 1779, UN 1848, UN 2626 and UN 2823 to read: "Formic acid with more than 85% acid by mass", "Propionic acid with not less than 10% and 90% by mass", "Chloric acid, aqueous solution with not more than 10% chloric acid" and "Crotonic acid, solid" respectively.

In the acids' list, delete the entry for 2253.

In the acids' list, add the following entries in proper order:

"2353 Butyryl chloride

3412 Formic acid with not less than 10% but not more than 85% acid by mass

3412 Formic acid with not less than 5% but not more than 10% acid by mass

3463 Propionic acid with not less than 90% acid by mass

3472 Crotonic acid, liquid"

In the liquid halogenated hydrocarbons' list, amend the proper shipping name of UN 1303 to read "Vinylidene chloride, stabilized".

In the alkalis' list, amend the proper shipping names of UN 1835, UN 2030, UN 2270, UN 2733, UN 2734 to read "Tetramethylammonium hydroxide solution", "Hydrazine, aqueous solution with more than 37% hydrazine, by mass", "Ethylamine, aqueous solution with not less than 50% but not more than 70% ethylamine", "Amines, flammable, corrosive, n.o.s. or polyamines, flammable, corrosive, n.o.s." and "Amines, liquid, corrosive, flammable, n.o.s. or polyamines, liquid, corrosive, flammable, n.o.s." respectively.

Chapter 3.2

3.2.1 In the explanations for column (7), insert "or article" after "inner packaging" in the first sentence.

In the explanations for column (13), add the following text at the end: "The gases authorized for transport in MEGCs are indicated in the column "MEGC" in Tables 1 and 2 of packing instruction P200 in 4.1.4.1.".

Dangerous Goods List

UN 0153 Amend "P112 (a), (b) or (c)" to read "P112 (b) or (c)" in column 8.

UN 0224 Amend the name in column (2) to read "BARIUM AZIDE, dry or wetted with less than 50% water, by mass".

UN 1014 Delete this entry.

UN 1015 Delete this entry.

UN 1040 Insert "TP 90" in column (14) and "TP91" in column (12).

UN 1143 Amend the name in column (2) to read as follows: "CROTONALDEHYDE or CROTONALDEHYDE, STABILIZED" and add "324" in column (6).

UN 1170 Insert "330" in column (6) and delete "PP2" from column (9).

UN 1198 Replace "61°C" with "60°C" in the second sentence in column (17).

UN 1263 Add "TP27", "TP28" and "TP29" in column (14) for packing groups I, II and III, respectively.

UN 1268 Delete "TP9" in column (14) for packing groups II and III.

UN 1272 Replace "61°C" with "60°C" in the second sentence in column (17).

UN 1295 Insert "See 7.2.1.13.1.2" in column (16).

UN 1366 Delete this entry.

UN 1370 Delete this entry.

UN 1386 In column (8), delete "BP" for PG III.

UN 1386 In column (8), delete "BP" for PG III.

UN 1391 Replace "282" with "329" in column (6).

UN 1463 Add "6.1" before "8" in column (4). Add "Segregation as for class 5.1 but "Separated from" classes 4.1 and 7" in column (16).

UN 1569 Replace "T3" and "TP33" with "T10" and "TP2, TP13" in columns (13) and (14) respectively.

UN 1649 Replace "162" with "329" in column (6) and insert "If flammable: F-E, S-D" in column (15).

UN 1689 Add "B1" in column (11).

UN 1733 Replace “1 L” with “1 kg” in column (7) and “P001” with “P002” in column (8).

UN 1733 Replace “IBC02” with “IBC08” in column (10) and add “B2, B4” in column (11), “T3” in column (13) and “TP33” in column (14). In column (17) delete the first sentence.

UN 1740 Amend the name in column (2) to read: “HYDROGENDIFLUORIDES, SOLID, N.O.S.”

UN 1745 Add “TP2 , TP12 and TP13” in column (14).

UN 1746 Add “TP2 , TP12 and TP13” in column (14).

UN 1779 Amend the name in column (2), to read as follows: “FORMIC ACID with more than 85% acid by mass” and add “3” in column (4). In column (15) replace “F-A, S-B” with “F-E, S-C”. In column (17), first sentence, insert “flammable” between “colourless” and “liquid”. In column (17), add at the end “Pure FORMIC ACID: flashpoint 42°C c.c.”

UN 1818 Insert “See 7.2.1.13.1.2” in column (16).

UN 1848 Amend the name in column (2) to read as follows: “PROPIONIC ACID with not less than 10% and less than 90% acid by mass”. Delete “938” in column (6).

UN 1849 Replace “T4” with “-” in column (12).

UN 1942 Amend the first two sentences in column (16) to read: “Category C. Category A only if the special stowage provisions of 7.1.11.5 are complied with.”

UN 1950 Add “See SP63” in column (3), “327” and “959” in column (6), “LP02” in column (8) and “PP87” and “L2” in column (9). Insert the following text in column (16):

“For WASTE AEROSOLS: Category C. Clear of living quarters and away from sources of heat. Segregation as for the appropriate sub-division of class 2.”. In the paragraph for AEROSOLS with a capacity above 1*l* in column (16), replace “division” with “sub-division”.

UN 1956 Insert “292” in column (6).

UN 1979 Delete this entry.

UN 1980 Delete this entry.

UN 1981 Delete this entry.

UN 1987 Insert “330” in column (6).

UN 1993 Insert “330” in column (6).

UN 2005 Delete this entry.

UN 2014 Insert “See 7.2.1.13.1.2” in column (16).

UN 2015 Replace “T10” with “T9” in column (13) and replace “T9” with “-” in column (12).

UN 2030 Replace “298” with “329” in column (6) for packing group I. In column (13), replace “T20” with “T10” for packing group I and “T15” with “T7” for packing group II, and in column (14), replace “TP2” with "TP1" for packing group III. Insert “If flammable: F-E, S-C” in column (15) for packing group I.

UN 2067 Amend the first two sentences in column (16) to read “Category C. Category A only if the special stowage provisions of 7.1.11.5 are complied with.”

UN 2189 Insert “See 7.2.1.13.1.2” in column (16).

UN 2211 Amend the text in column (16) to read “Category E. Shaded from radiant heat and protected from sparks and open flame. When stowed under deck, mechanical ventilation shall be in accordance with SOLAS regulation II-2/19 (II-2/54) for flammable liquids with flashpoint below 23°C (c.c). Segregation as for class 3 but “Separated from” class 1 except division 1.4S.”.

UN 2258 Amend the proper shipping name to read “1, 2-PROPYLENEDIAMINE” in column (2).

UN 2290 Replace “nitric” by “nitrous” in column (17).

UN 2308 Replace “B11” with “B20” in column (11).

UN 2346 Replace “P” with “-” in column (4).

UN 2445 Delete this entry.

UN 2477 Replace “61°C” with “60°C” in the second sentence in column (17).

UN 2600 Delete this entry.

UN 2616 Replace “61°C” with “60°C” in the second sentence in column (17) for packing group II.

UN 2662 Delete this entry.

UN 2683 Replace “61°C” with “60°C” in the fourth sentence in column (16).

UN 2687 Replace “P” with “-” in column (4).

UN 2758 Add “61” in column (6).

UN 2760 Add “61” in column (6).

UN 2762 Add “61” in column (6).

UN 2764 Add “61” in column (6).

UN 2772 Add “61” in column (6).

UN 2776 Add “61” in column (6).

UN 2778 Add “61” in column (6).

UN 2779 Replace “See above” with “Category A. Clear of living quarters” in column (16) for packing groups II and III.

UN 2780 Add “61” in column (6).

UN 2782 Add “61” in column (6).

UN 2784 Add “61” in column (6).

UN 2787 Add “61” in column (6).

UN 2789 Replace “61°C” with “60°C” in the third sentence in column (17).

UN 2802 Amend the third sentence in column (17) to read “Corrosive to steel.”.

UN 2814 Insert “BK2 only for animal carcasses” in column (13). Delete “See also 5.5.1” in column (17).

UN 2823 Amend the name in column (2) to read: “CROTONIC ACID, SOLID”.

UN 2870 In columns (13) and (14) of the entry ALUMINIUM BOROHYDRIDE, insert “T21” and “TP7, TP33” respectively.

UN 2870 In columns (13) and (14) of the entry for ALUMINIUM BOROHYDRIDE IN DEVICES delete “T21” and “TP7, TP33” respectively.

UN 2880 For packing group II: insert “322” in column (6);
For packing group III: replace “316” with “223”, “313” and “314”;

UN 2900 Insert “only for animal carcasses” after “BK2” in column (13).

UN 2903 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 2912 Add “325” in column (6).

UN 2915 Add “325” in column (6).

UN 2927 Replace “TP 11” with “T11” in column (13) for packing group II.

UN 2949 Insert “T7” and “TP2” in columns (12) and (13) respectively.

UN 2984 Insert “See 7.2.1.13.1.2” in column (16).

UN 2991 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 2993 Amend the proper shipping name to read “ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE flashpoint not less than 23°C” in column (2) for all packing groups. Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 3005 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 3009 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 3011 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 3013 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 3015 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 3017 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 3019 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 3021 Add “61” in column (6).

UN 3024 Add “61” in column (6).

UN 3025 Replace “61°C” with “60°C” in the first sentence in column (17) for packing group I.

UN 3051 Delete this entry.

UN 3052 Delete this entry.

UN 3053 Delete this entry.

UN 3065 Amend the end of the first paragraph in column (17) to read:

“…may be transported in wooden barrels with a capacity of more than 250 litres and not more than 500 litres meeting the general requirements of 4.1.1, as appropriate, on the following conditions:…”.

Replace the word “casks” wherever it appears with “wooden barrels” in column (17).

UN 3066 Add “TP28” and “TP29” in column (14) for packing groups II and III, respectively.

UN 3076 Delete this entry.

UN 3100 Insert “●” in column (4) for packing group I.

UN 3100 Insert a new entry for packing group II to read “3100” “OXIDIZING SOLID, SELF-HEATING, N.O.S”, “5.1”, “4.2, “●”, “II”, “76, 274”, “None”, “P099”, “-”,“-”,“-”,“-”, “-”, “-”, “F-A, S-Q”, “-”, “-” in columns (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16) and (17) respectively.

UN 3101 Add “323” in column (6).

UN 3102 Add “323” in column (6).

UN 3103 Add “323” in column (6).

UN 3104 Add “323” in column (6).

UN 3105 Add “323” in column (6) and insert “See 7.2.1.13.1.2” in column (16).

UN 3106 Add “323” in column (6).

UN 3107 Add “323” in column (6) and insert “See 7.2.1.13.1.2” in column (16).

UN 3108 Add “323” in column (6).

UN 3109 Add “323” in column (6) and insert “See 7.2.1.13.1.2” in column (16).

UN 3110 Add “323” in column (6).

UN 3111 Add “323” in column (6).

UN 3112 Replace “●” with “-” in column (4) and add “323” in column (6).

UN 3113 Add “323” in column (6).

UN 3114 Add “323” in column (6).

UN 3115 Add “323” in column (6).

UN 3116 Add “323” in column (6).

UN 3117 Add “323” in column (6).

UN 3118 Add “323” in column (6).

UN 3119 Add “323” in column (6).

UN 3120 Add “323” in column (6).

UN 3127 Insert “●”in column (4) for packing groups II and III.

UN 3130 Add “If under deck, in a mechanically ventilated space.” in column (16) for packing group II.

UN 3131 Replace “P402” with “P403” in column (8) for packing group I.

UN 3133 Insert “●”in column (4) for packing groups II and III.

UN 3137 Insert “●”in column (4).

UN 3149 Insert “See 7.2.1.13.1.2” in column (16).

UN 3245 Amend the proper shipping name in column (2) to read as follows: “GENETICALLY MODIFIED MICROORGANISMS or GENETICALLY MODIFIED ORGANISMS”.

UN 3254 Replace “TP33” with “TP 2” in column (14).

UN 3256 Replace “61°C” with “60°C” in the proper shipping name in column (2).

UN 3259 Replace “T3” with “T1” in column (13) for packing group III.

UN 3291 Insert “BK2” in column (13).

UN 3314 Amend the text in column (16) to read “Category E. Shaded from radiant heat and protected from sparks and open flame. When stowed under deck, mechanical ventilation shall be in accordance with SOLAS regulation II-2/19 (II-.2/54) for flammable liquids with flashpoint below 23°C (c.c). Segregation as for class 3 but “Separated from” class 1 except division 1.4S.”.

UN 3321 Add “325” in column (6).

UN 3322 Add “325” in column (6).

UN 3324 Add “326” in column (6).

UN 3325 Add “326” in column (6).

UN 3327 Add "326" in column (6).

UN 3346 Add “61” in column (6).

UN 3350 Add “61” in column (6).

UN 3359 In column (17), amend the first sentence to read: “A FUMIGATED UNIT is a closed cargo transport unit containing goods or materials that either are or have been fumigated within the unit.”.

UN 3359 In column (17), amend the last sentence to read: “A closed cargo transport unit that has been fumigated is not subject to the provisions of this Code if it has been completely ventilated either by opening the doors of the unit or by mechanical ventilation after fumigation and if the date of ventilation is marked on the fumigation warning sign (see also special provision 910).”.

UN 3360 Replace “620” with “360” in the last sentence in column (17).

UN 3373 Amend the proper shipping name in column (2) to read: “BIOLOGICAL SUBSTANCE, CATEGORY B” and add “T1” and “TP1” in columns (13) and (14), respectively. In column (17) amend existing text to read “Substances which are known or are reasonably expected to contain pathogens, transported in a form that when exposure to it occurs, are not capable of causing permanent disability, life-threatening or fatal disease to humans or animals. Human or animal specimens for which there is minimal likelihood that pathogens are present, are not subject to the provisions of this Code (see 2.6.3.2.3.6). Other exemptions are stated in 2.6.3.2.3.”.

UN 3375 Amend the existing text in column (17) to read: “Non sensitized emulsions, suspensions and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use. Substances shall satisfactorily pass Test Series 8 of the United Nations Manual of Tests and Criteria, Part I, Section 18 and be approved by the competent authority.”.

UN 3378 Delete “B13” in column (11) for packing group III.

UN 3424 Delete “, especially lead” after “heavy metals” in second sentence in column (16) for packing group III.

UN 3433 Delete this entry.

UN 3435 Delete this entry.

UN 3457 Add “Segregation as for class 5.1 but “Away from” classes 4.1, 5.1 and 7.” in column (16).

UN 3461 Delete this entry.

Add the following new entries in the DGL and the Index as appropriate:

							Packing		IBC		Portable tanks and bulk containers						
UN No.	**Name and description**	**Class or division**	**Subsidiary risk(s)**	**Packing group**	**Special provi-sions**	**Limited quanti-ties**	**Instruc-tions**	**Provi-sions**	**Instruc-tion**	**Provi-sions**	**IMO**	**UN**	**Provi-sions**	**EmS**	**Stowage and segregation**	**Properties and observations**	**UN No.**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
3412	FORMIC ACID with not less than 10% but not more than 85% acid by mass	8		II		1 L	P001		IBC02			T7	TP2	F-A, S-B	Category A. Clear of living quarters.	Colourless liquid with a pungent odour. Corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	3412
	FORMIC ACID with not less than 5% but less than 10% acid by mass	8		III		5 L	P001 LP01		IBC03			T4	TP1	F-A, S-B	Category A. Clear of living quarters.	See entry above.	3412
3463	PROPIONIC ACID with not less than 90% acid by mass	8	3	II		1 L	P001		IBC02			T7	TP2	F-E, S-C	Category A.	Colourless flammable liquid with a pungent odour. Miscible with water. Corrosive to lead and most other metals. Burns skin. Vapours irritate mucous membranes. Pure PROPIONIC ACID: flashpoint 50°C c.c.	3463

							Packing		IBC		Portable tanks and bulk containers						
UN No.	**Name and description**	**Class or division**	**Subsidiary risk(s)**	**Packing group**	**Special provi-sions**	**Limited quanti-ties**	**Instruc-tions**	**Provi-sions**	**Instruc-tion**	**Provi-sions**	**IMO**	**UN**	**Provi-sions**	**EmS**	**Stowage and segregation**	**Properties and observations**	**UN No.**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
3469	PAINT, FLAMMABLE, CORROSIVE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE (including paint thinning or reducing compound)	3	8 •	I	163	NONE	P001					T11	TP2 TP27	F-E, S-C	Category E. Clear of living quarters.	Miscibility with water depends upon the composition. Corrosive contents cause burns to skin, eyes and mucous membranes.	3469
		3	8 •	II	163 944	1 L	P001		IBC02			T7	TP2 TP8 TP28	F-E, S-C	Category B. Clear of living quarters.	See entry above.	3469
		3	8 •	III	163 223 944	5 L	P001		IBC03			T4	TP1 TP29	F-E, S-C	Category A. Clear of living quarters.	See entry above.	3469

							Packing		IBC		Portable tanks and bulk containers						
UN No.	**Name and description**	**Class or division**	**Subsidiary risk(s)**	**Packing group**	**Special provi-sions**	**Limited quanti-ties**	**Instruc-tions**	**Provi-sions**	**Instruc-tion**	**Provi-sions**	**IMO**	**UN**	**Provi-sions**	**EmS**	**Stowage and segregation**	**Properties and observations**	**UN No.**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
3470	PAINT, CORROSIVE, FLAMMABLE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL CORROSIVE, FLAMMABLE (including paint thinning or reducing compound)	8	3 •	II	163 944	1 L	P001		IBC02			T7	TP2 TP8 TP28	F-E, S-C	Category B. Clear of living quarters.	Miscibility with water depends upon the composition. Corrosive contents cause burns to skin, eyes and mucous membranes.	3470
3471	HYDROGENDIFLUO-RIDES SOLUTION, N.O.S.	8	6.1 •	II	944	1 L	P001		IBC02			T7	TP2	F-A, S-B	Category A. Shade from radiant heat. Clear of living quarters. "Separated from" acids.	When involved in a fire or in contact with acids, evolves hydrogen fluoride, an extremely irritating and corrosive gas. Corrosive to glass, other siliceous materials and most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3471

							Packing		IBC		Portable tanks and bulk containers						
UN No.	**Name and description**	**Class or division**	**Subsidiary risk(s)**	**Packing group**	**Special provi-sions**	**Limited quanti-ties**	**Instruc-tions**	**Provi-sions**	**Instruc-tion**	**Provi-sions**	**IMO**	**UN**	**Provi-sions**	**EmS**	**Stowage and segregation**	**Properties and observations**	**UN No.**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
		8	6.1 •	III	223 944	5 L	P001		IBC03			T4	TP1	F-A, S-B	Category A. Shade from radiant heat. Clear of living quarters. “Separated from” acids.	See entry above.	3471
3472	CROTONIC ACID, LIQUID	8		III		5 L	P001 LP01		IBC03			T4	TP1	F-A, S-B	Category A. Keep as cool as reasonably practicable.	Causes burns to skin, eyes and mucous membranes.	3472
3473	FUEL CELL CARTRIDGES containing flammable liquids	3			328	1 L	P003	PP88						F-E, S-D	Category A.	Fuel cell cartridges containing flammable liquids including methanol or methanol/water solutions.	3473

Chapter 3.3

3.3.1 **SP133** Insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

SP162 Delete.

SP181 Insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

SP204 Insert "(Model No.8, see 5.2.2.2.2)" after "risk label".

SP215 In the last sentence, amend "azocarbonamide" to read "azodicarbonamide".

SP216 In the last sentence, insert "and articles" before "containing" and amend the end to read: "… free liquid in the packet or article.".

SP247 Amend the end of the first paragraph to read:

"…may be transported in wooden barrels with a capacity of more than 250 litres and not more than 500 litres meeting the general requirements of 4.1.1, as appropriate, on the following conditions:…".

In subparagraph .5, add at the end "or regulation II-2/54 of SOLAS 74, as amended by the resolutions indicated in II-2/1.2.1, as applicable".

Replace the word "casks" wherever it appears with "wooden barrels" in the special provision.

SP251 In the first sentence, add "for example" before "for medical," add "or repair" before "purposes". Replace "or" between "analytical" and "testing" with ",".

SP282 Delete.

SP289 Amend as follows:
Replace "vehicles" and "vehicle" with "conveyances" and "conveyance", respectively.

SP292 Amend to read as follows:

"Mixtures containing not more than 23.5% oxygen by volume may be transported under this entry when no other oxidizing gases are present. A class 5.1 subsidiary risk label is not required for any concentrations within this limit.".

SP293 Amend to read:

"The following definitions apply to matches:

(a) Fusee matches are matches the heads of which are prepared with a friction-sensitive igniter composition and a pyrotechnic composition which burns with little or no flame, but with intense heat;

(b) Safety matches are combined with or attached to the box, book or card that can be ignited by friction only on a prepared surface;

(c) Strike anywhere matches are matches that can be ignited by friction on a solid surface;

(d) Wax Vesta matches are matches that can be ignited by friction either on a prepared surface or on a solid surface.".

SP297 In the first paragraph, amend "5.4.2.1.9" to read "5.4.2.1.8".

SP298 Delete.

SP299 In paragraph (iii), replace "620" with "360".

SP303 Amend to read as follows:

"Receptacles shall be assigned to the class and, if any, subsidiary hazard of the gas or mixture of gases contained therein determined in accordance with the provisions of chapter 2.2.".

SP309 Amend to read as follows:

"This entry applies to non sensitized emulsions, suspensions and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use.

The mixture for emulsions typically has the following composition: 60-85% ammonium nitrate, 5-30% water, 2-8% fuel, 0.5-4% emulsifier agent, 0-10% soluble flame suppressants, and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.

The mixture for suspensions and gels typically has the following composition: 60-85% ammonium nitrate, 0-5% sodium or potassium perchlorate, 0-17% hexamine nitrate or monomethylamine nitrate, 5-30% water, 2-15% fuel, 0.5-4% thickening agent, 0-10% soluble flame suppressants, and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.

Substances shall satisfactorily pass Test Series 8 of the United Nations Manual of Tests and Criteria, Part I, Section 18 and be approved by the competent authority.".

SP313 Insert "(Model No.8, see 5.2.2.2.2)" after "risk label".

SP316 Delete "or hydrated".

SP319 Delete the first sentence.

SP320 Delete.

Add the following new special provisions:

"**306** This entry may only be used for substances that do not exhibit explosive properties of class 1 when tested in accordance to Test Series 1 and 2 of class 1 (see *United Nations Manual of Tests and Criteria*, Part 1)".

322 When transported in non-friable tablet form, these goods are assigned to packing group III.

323 The label conforming to the model No.5.2(a) as in 5.2.2.2.2 may be used until 1 January 2011.

324 This substance needs to be stabilized when in concentrations of not more than 99%.

325 In the case of non-fissile or fissile excepted uranium hexafluoride, the material shall be classified under UN 2978.

326 In the case of fissile uranium hexafluoride, the material shall be classified under UN 2977.

327 Waste aerosols consigned in accordance with 5.4.1.4.3.3 may be transported under this entry for the purposes of reprocessing or disposal. They need not be protected against inadvertent discharge provided that measures to prevent dangerous build up of pressure and dangerous atmospheres are addressed. Waste aerosols, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P003 and special provision PP87, or packing instruction LP02 and special packing provision L2. Leaking or severely deformed aerosols shall be transported in salvage packagings provided appropriate measures are taken to ensure there is no dangerous build up of pressure. Waste aerosols shall not be transported in closed freight containers.

328 This entry applies to fuel cell cartridges containing flammable liquids including methanol or methanol/water solutions. Fuel cell cartridge means a container that stores fuel for discharge into fuel cell powered equipment through a valve(s) that controls the discharge of fuel into such equipment and is free of electric charge generating components. The cartridge shall be designed and constructed to prevent the fuel from leaking during normal conditions of transport.

This entry applies to fuel cell cartridge design types shown without their packaging to pass an internal pressure test at a pressure of 100 kPa (gauge).

329 Where substances have a flashpoint of 60°C or less, the package(s) shall bear a "FLAMMABLE LIQUID" subsidiary risk label (Model No.3, see 5.2.2.2.2) in addition to the hazard label(s) required by this Code.

330 Alcohols containing petroleum products (e.g. gasoline) up to 5% shall be transported under the entry UN 1987 ALCOHOLS, N.O.S.

909 In the penultimate paragraph of SP 909, delete the words "other than the marine environment" and amend "environments" to read "the environment".

910 Amend the first sentence to read:

"A FUMIGATED UNIT is a closed cargo transport unit containing goods or materials that either are or have been fumigated within the unit.".

910 Amend paragraph 6 to read:

"A closed cargo transport unit that has been fumigated is not subject to the provisions of this Code if it has been completely ventilated either by opening the doors of the unit or by mechanical ventilation after fumigation and if the date of ventilation is marked on the fumigation warning sign. When the fumigated goods or materials have been unloaded, the fumigation warning sign(s) shall be removed (see also 7.4.3)."

938 Delete.

959 Add new SP959 to read:

"959 Waste aerosols authorized for transport under special provision 327 shall only be transported on short international voyages. Long international voyages are authorized only with the approval of the competent authority. Packagings shall be marked and labelled and cargo transport units shall be marked and placarded for appropriate sub-division of class 2 and, if applicable, the subsidiary risk(s).".

Chapter 3.4

3.4.1 Insert a new sentence before the last sentence to read as follows:
"The provisions of chapter 1.4 do not apply to the transport of dangerous goods packed in limited quantities.".

Amend the beginning of the last sentence to read:
"All other provisions ….".

3.4.2.1 In the first sentence amend "packaged" to read "packed".

3.4.2.1 Insert a new second sentence to read: "However, the use of inner packagings is not necessary for the transport of articles such as aerosols or "receptacles, small, containing gas"."

Amend 3.4.4.1 to read:

"3.4.4.1 Different dangerous substances in limited quantities may be packed in the same outer packaging, provided:

.1 the substances comply with the provisions of 7.2.1.11; and

.2 the segregation provisions of chapter 7.2, including the provisions in column (16) of the Dangerous Goods List, are taken into account. However, notwithstanding the individual provisions specified in the Dangerous Goods List, substances in packing group III within the same class may be packed together subject to compliance with 3.4.4.1.1 of the IMDG Code. The following statement shall be included in the transport document: "Transport in accordance with 3.4.4.1.2 of the IMDG Code" (see 5.4.1.5.2.2).".

3.4.5.2 Amend the first sentence to read "Cargo transport units containing dangerous goods in only limited quantities need not be placarded nor marked according to 5.3.2.0 and 5.3.2.1.

3.4.6.2 Delete.

3.4.7 Add "*" after "UN Number" and insert the following footnote "The diamond mark is not required.".

PART 4

Chapter 4.1

Renumber all references to renumbered paragraphs of chapters 6.1, 6.5 and 6.6, as appropriate.

4.1.1 In the Note, insert "only" after "6.2 and 7" and replace "P621" with "P620, P621, P650".

4.1.1.5 Insert the following new second sentence:

"Inner packagings containing liquids shall be packaged with their closures upward and placed within outer packagings consistent with the orientation markings prescribed in 5.2.1.7 of this Code.".

4.1.1.5.1 Insert a new paragraph 4.1.1.5.1 with the same text as in existing 6.1.5.1.6 with the insertion of the words "or a large packaging" after "combination packaging" and the words "or large packaging" after "outer packaging" in the first sentence. Renumber the current 4.1.1.5.1 and 4.1.1.5.2 as 4.1.1.5.2 and 4.1.1.5.3 respectively.

4.1.1.7.2 Replace "shall" with "should" at the end of the paragraph.

4.1.1.8 Amend to read as follows:

"4.1.1.8 Where pressure may develop in a package by the emission of gas from the contents (as a result of temperature increase or other causes), the packaging or IBC may be fitted with a vent provided that the gas emitted will not cause danger on account of its toxicity, its flammability, the quantity released, etc.

A venting device shall be fitted if dangerous overpressure may develop due to normal decomposition of substances. The vent shall be so designed that, when the packaging or IBC is in the attitude in which it is intended to be transported, leakages of liquid and the penetration of foreign substances are prevented under normal conditions of transport.

4.1.1.8.1 Liquids may only be filled into inner packagings which have an appropriate resistance to internal pressure that may be developed under normal conditions of transport.".

4.1.1.12 In the first sentence, replace ", including IBCs," with "as specified in chapter 6.1" and delete ", or 6.5.4.7 for the various types of IBCs".

Delete .3.

In the last paragraph, delete ", or IBC," in the first sentence and "or IBC" in the second sentence.

4.1.1.17.5 Replace "6.1.5.8" with "6.1.5.7".

4.1.1.17.6 Add a new paragraph to read as follows:

"4.1.1.17.6 Appropriate measures shall be taken to ensure there is no dangerous build up of pressure.".

4.1.2.1 Replace "61°C" with "60°C".

4.1.2.2 Replace the first sentence with the following paragraph:

"Every metal, rigid plastics and composite IBC, shall be inspected and tested, as relevant, in accordance with 6.5.1.6.4 or 6.5.1.6.5:

(a) before it is put into service;

(b) thereafter at intervals not exceeding two and a half and five years, as appropriate;

(c) after the repair or remanufacture, before it is re-used for transport."

Amend the second sentence to read "An IBC shall not be filled and offered for transport after the date of expiry of the last periodic test or inspection.".

4.1.3.6 Amend to read as follows:

"4.1.3.6 Pressure receptacles for liquids and solids

4.1.3.6.1 Unless otherwise indicated in this Code, pressure receptacles conforming to:

a) the applicable requirements of chapter 6.2; or

b) the National or International standards on the design, construction, testing, manufacturing and inspection, as applied by the country in which the pressure receptacles are manufactured, provided that the provisions of 4.1.3.6 and 6.2.3.3 are met,

are authorized for the transport of any liquid or solid substance other than explosives, thermally unstable substances, organic peroxides, self-reactive substances, substances where significant pressure may develop by evolution of chemical reaction and radioactive material (unless permitted in 4.1.9).

This sub-section is not applicable to the substances mentioned in 4.1.4.1, packing instruction P200, table 3.

4.1.3.6.2 Every design type of pressure receptacle shall be approved by the competent authority of the country of manufacture or as indicated in chapter 6.2.

4.1.3.6.3 Unless otherwise indicated, pressure receptacles having a minimum test pressure of 0.6 MPa shall be used.

4.1.3.6.4 Unless otherwise indicated, pressures receptacles may be provided with an emergency pressure relief device designed to avoid bursting in case of overfill or fire accidents.

Pressure receptacle valves shall be designed and constructed in such a way that they are inherently able to withstand damage without release of the contents or shall be protected from damage which could cause inadvertent release of the contents of the pressure receptacle, by one of the methods as given in 4.1.6.1.8 (.1) to (.5).

4.1.3.6.5 The level of filling shall not exceed 95% of the capacity of the pressure receptacle at 50°C. Sufficient ullage (outage) shall be left to ensure that the pressure receptacle will not be liquid full at a temperature of 55°C.

4.1.3.6.6 Unless otherwise indicated pressure receptacles shall be subjected to a periodic inspection and test every 5 years. The periodic inspection shall include an external examination, an internal examination or alternative method as approved by the competent authority, a pressure test or equivalent effective non-destructive testing with the agreement of the competent authority including an inspection of all accessories (e.g., tightness of valves, emergency relief valves of fusible elements). Pressure receptacles shall not be filled after they become due for periodic inspection and test but may be transported after the expiry of the time limit. Pressure receptacle repairs shall meet the requirements of 4.1.6.1.11.

4.1.3.6.7 Prior to filling, the filler shall perform an inspection of the pressure receptacle and ensure that the pressure receptacle is authorized for the substances to be transported and that the provisions of this Code have been met. Shut-off valves shall be closed after filling and remain closed during transport. The consignor shall verify that the closures and equipment are not leaking.

4.1.3.6.8 Refillable pressure receptacles shall not be filled with a substance different from that previously contained unless the necessary operations for change of service have been performed.

4.1.3.6.9 Marking of pressure receptacles for liquids and solids according to 4.1.3.6 (not conforming to the requirements of chapter 6.2) shall be in accordance with the requirements of the competent authority of the country of manufacturing.”.

4.1.4.1 **P001** Insert a new row after “Composite packagings” to read as follows:

“Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.”.

Add “or” at the end of special packing provision PP1(a).

Amend special packing provision PP2, to read as follows:

“**PP2** For UN 3065, wooden barrels with a maximum capacity of 250 litres and which do not meet the provisions of chapter 6.1 may be used.”.

P002 Insert a new row after "Composite packagings" to read as follows:

"Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.".

In special packing provision **PP37**, amend the second sentence to read as follows:

"All bags of any type shall be transported in closed cargo transport units or be placed in closed rigid overpacks.".

P003 Add the following new special packing provisions PP87 and PP88:

"**PP87** For UN 1950 waste aerosols transported in accordance with special provision 327, the packagings shall have a means of retaining any free liquid that might escape during transport, e.g. absorbent material. The packaging shall be adequately ventilated to prevent the creation of flammable atmosphere and the build-up of pressure.

PP88 For UN 3473 when fuel cell cartridges are packed with equipment, they shall be packed in inner packagings or placed in the outer packaging with cushioning material so that the cartridges are protected against damage that may be caused by the movement or placement of the equipment and the cartridges within the outer packaging.".

P112(b) Delete "and UN 0223" in special packing provision PP47.

P200 In paragraph (3)(b), in the sentence preceding the first equation, replace "gases for which data are not provided in the table" with "gases and gas mixtures for which relevant data are not available".

In paragraph (3)(c), in the sentence before the equation, replace "gases for which filling data are not provided in the table" with "gases and gas mixtures for which relevant data are not available".

In paragraph (4), amend special provisions "k", "l", "n" and "z" as follows:

<u>Special provision "k"</u>: Replace lines 4 to 8 with the following text:

"Bundles containing UN 1045 Fluorine, compressed, may be constructed with isolation valves on assemblies (groups) of cylinders not exceeding 150 litres total water capacity instead of isolation valves on every cylinder.

Cylinders and individual cylinders in a bundle shall have a test pressure greater than or equal to 200 bar and a minimum wall thickness of 3.5 mm for aluminium alloy or 2 mm for steel. Individual cylinders not complying with this requirement shall be transported in a rigid outer packaging that will adequately protect the cylinder and its fittings and meeting the packing group I performance level. Pressure drums shall have a minimum wall thickness as specified by the competent authority.".

Special provision "l": In the last sentence, replace "total quantity" with "maximum net mass".

Special provision "n": Amend to read as follows:

"Individual cylinders and assemblies of cylinders within a bundle shall contain not more than 5 kg of UN 1045 Fluorine compressed. Bundles containing UN 1045 Fluorine, compressed, may be divided in assemblies (groups) of cylinders not exceeding 150 litres total water capacity.".

Special provision "p": Amend "porous mass" to read "porous material".

Special provision "z": Amend the third paragraph to read as follows:

"Toxic substances with an LC_{50} less than or equal to 200 ml/m^3 shall not be transported in tubes, pressure drums or MEGCs and shall meet the requirements of special packing provision "k". However, UN 1975 Nitric oxide and dinitrogen tetroxide mixture may be transported in pressure drums.".

In Tables 1 and 2, delete the entries for the following UN Nos.: 1014, 1015, 1979, 1980, 1981 and 2600.

In Table 1, in the heading of column 13 and in the footnote, replace "Working pressure" with "Maximum working pressure".

In Table 2:

- For UN Nos. 2192 and 2199, add "q" (twice for UN No. 2199) in the column under the heading "Special packing provisions".

- For UN 2451, delete "300" and "0.75" in the columns for "Test pressure" and "Filling ratio", respectively.

In Table 3: add a cross in the column "Pressure drums" for UN Nos. 1745, 1746 and 2495.

P400 (1) Amend to read as follows:

"Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met. They shall be made of steel and shall be subjected to an initial test and periodic tests every 10 years at a pressure of not less than 1MPa (10 bar, gauge pressure). During carriage, the liquid shall be under a layer of inert gas with a gauge pressure of not less than 20 kPa (0.2 bar).".

P401 (1) and P402 (1) Amend to read as follows:

"Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met. They shall be made of steel and subjected to an initial test and periodic tests every 10 years at a pressure of not less than 0.6MPa (6 bar, gauge pressure). During carriage, the liquid shall be under a layer of inert gas with a gauge pressure of not less than 20 kPa (0.2 bar).".

P403, P404 and P410 Insert a new row after "Composite packagings" to read as follows:

"Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.".

P404 In the second row, delete UN numbers "2005, 3052, 3203, 3392, 3394, 3395, 3396, 3397, 3398, 3399 and 3400".

Delete UN numbers "2005, 3052 and 3203" in special packing provision PP31.

P520 Under "Additional provisions" in "4", insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

P601 and P602 Amend paragraph (1) to read as follows:

"(1) Combination packagings with a maximum gross mass of 15 kg, consisting of:

– one or more glass inner packaging(s) with a maximum quantity of 1 litre each and filled to not more than 90% of their capacity; the closure(s) of which shall be physically held in place by any means capable of preventing back-off or loosening by impact or vibration during transport, individually placed in;

– metal receptacles together with cushioning and absorbent material sufficient to absorb the entire contents of the glass inner packaging(s), further packed in;

– 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2 outer packagings.".

Amend paragraph (4) to read as follows:

"(4) Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met. They shall be subjected to an initial test and periodic tests every 10 years at a pressure of not less than 1MPa (10 bar) (gauge pressure). Pressure receptacles may not be equipped with any pressure relief device. Each pressure receptacle containing a toxic by inhalation liquid with an LC_{50} less than or equal to 200 ml/m^3 (ppm) shall be closed with a plug or valve conforming to the following:

(a) Each plug or valve shall have a taper-threaded connection directly to the pressure receptacle and be capable of withstanding the test pressure of the pressure receptacle without damage or leakage;

(b) Each valve shall be of the packless type with non-perforated diaphragm, except that, for corrosive materials, a valve may be of the packed type with an assembly made gas-tight by means of a seal cap with gasket joint attached to the valve body or the pressure receptacle to prevent loss of material through or past the packing;

(c) Each valve outlet shall be sealed by a threaded cap or threaded solid plug and inert gasket material;

(d) The materials of construction for the pressure receptacle, valves, plugs, outlet caps, luting and gaskets shall be compatible with each other and with the lading.

Each pressure receptacle with a wall thickness at any point of less than 2.0 mm and each pressure receptacle that does not have fitted valve protection shall be transported in an outer packaging. Pressure receptacles shall not be manifolded or interconnected.".

P650 Amend paragraph (2) to read as follows:

"(2) The packaging shall consist of at least three components:

(a) a primary receptacle;

(b) a secondary packaging; and

(c) a outer packaging;

of which either the secondary or the outer packaging shall be rigid."

In paragraph (4):

Amend the second sentence to read as follows: "The mark shall be in the form of a square set at an angle of 45° (diamond-shaped) with each side having a length of at least 50 mm, the width of the line shall be at least 2 mm and the letters and numbers shall be at least 6 mm high.".

Add the following new third sentence: "The proper shipping name "BIOLOGICAL SUBSTANCE, CATEGORY B" in letters at least 6 mm high shall be marked on the outer package adjacent to the diamond-shaped mark.".

Insert a new paragraph (5) to read as follows and renumber subsequent paragraphs accordingly:

"(5) At least one surface of the outer packaging shall have a minimum dimension of 100 mm × 100 mm.".

Amend current paragraph (5) (renumbered (6)) to read as follows:

"(6) The completed package shall be capable of successfully passing the drop test in 6.3.2.5 as specified in 6.3.2.2 to 6.3.2.4 of this Code at a height of 1.2 m. Following the appropriate drop sequence, there shall be no leakage from the primary receptacle(s) which shall remain protected by absorbent material, when required, in the secondary packaging.".

In (7) (renumbered (8)), add a new subparagraph (d) to read as follows:

"(d) If there is any doubt as to whether or not residual liquid may be present in the primary receptacle during transport then a packaging suitable for liquids, including absorbent materials, shall be used.".

In the last sentence of paragraph (8)(a) (renumbered (9)(a)), insert "the package (the outer packaging or the overpack)" after "packagings and" and before "shall be marked".

Insert a new paragraph (10) to read as follows and renumber subsequent paragraphs accordingly:

"(10) When packages are placed in an overpack, the package markings required by this packing instruction shall either be clearly visible or be reproduced on the outside of the overpack.".

Add a new paragraph (13) to read as follows:

"(13) Other dangerous goods shall not be packed in the same packaging as class 6.2 infectious substances unless they are necessary for maintaining the viability, stabilizing or preventing degradation or neutralizing the hazards of the infectious substances. A quantity of 30 ml or less of dangerous goods included in Classes 3, 8 or 9 may be packed in each primary receptacle containing infectious substances. When these small quantities of dangerous goods are packed with infectious substances in accordance with this packing instruction no other provisions of the Code need be met.".

P800 Amend paragraph (1) to read as follows:

"(1) Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.".

P802 In paragraph (4), delete "Austenitic".

Amend paragraph (5) to read as follows:

"(5) Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.".

P906 In the second row, amend "3452" to read "3432".

4.1.4.2 **IBC02** Add ",2984" after "2014" in special packing provision B5.

4.1.4.3 **LP02** Add a new special packing provision "L2" to read as follows:

"**L2** For UN 1950 aerosols, the large packaging shall meet the packing group III performance level. Large packagings for waste aerosols transported in accordance with special provision 327 shall have in addition

a means of retaining any free liquid that might escape during transport e.g., absorbent material.".

4.1.6.1.2 Amend "porous mass" to read "porous material" (twice).

4.1.6.1.8 Delete "for unprotected valves as described in .4," in the last paragraph.

4.1.9.1.3 Amend to read:

"A package shall not contain any items other than those that are necessary for the use of the radioactive material. The interaction between these items and the package under the conditions of transport applicable to the design, shall not reduce the safety of the package.".

4.1.9.2.2 Amend to read: "For LSA material and SCO which is or contains fissile material the applicable provisions of 6.4.11.1, 7.2.9.4 and 7.2.9.5 shall be met.".

Chapter 4.2

4.2.0 Amend the title to read:

"**4.2.0 Transitional provisions**"

4.2.0 Number the existing text (including the Notes) under 4.2.0 as 4.2.0.1.

4.2.0.2 Add a new 4.2.0.2 to read as follows:

"4.2.0.2 UN portable tanks and MEGCs constructed according to a design approval certificate which has been issued before 1 January 2008 may continue to be used provided that they are found to meet the applicable periodic inspection and test provisions.".

4.2.1.15 Add a new 4.2.1.15 to read as follows:

"4.2.1.15 Additional provisions applicable to the transport of class 6.2 substances in portable tanks (Reserved).".

Renumber subsequent paragraphs accordingly.

4.2.1.18.1 Replace "(10)" with "(13)".

4.2.5.1.1 Add a note at the end of the paragraph to read as follows:

"**NOTE**: The gases authorized for transport in MEGCs are indicated in the column "MEGC" in Tables 1 and 2 of packing instruction P200 in 4.1.4.1.".

4.2.5.3 In TP4, replace "4.2.1.15.2" with "4.2.1.16.2". In TP33 replace "4.2.1.18" with "4.2.1.19".

In TP5, amend "shall not be exceeded" to read "shall be met".

Add a new "TP 90" to read: "Tanks with bottom openings may be used on short international voyages.".

Add a new "TP 91" to read: "Portable tanks with bottom openings may also be used on long international voyages.".

Chapter 4.3

4.3.2.4.1 Amend 4.3.2.4.1 to read:

"4.3.2.4.1 Bulk waste goods of class 6.2 (UN Nos.2814 and 2900 (animal carcasses only))".

4.3.2.4.1.2 Replace "UN 2900" with "UN 2814 and UN 2900".

4.3.2.4.1.3 Replace "UN 2900" with "UN 2814 and UN 2900".

4.3.2.4.2 Add a new paragraph 4.3.2.4.2 to read as follows:

"4.3.2.4.2 Bulk wastes of class 6.2 (UN 3291)

.1 only closed bulk containers (BK2) shall be permitted;

.2 closed bulk containers, and their openings, shall be leakproof by design. These bulk containers shall have non porous interior surfaces and shall be free from cracks or other features that could damage packagings inside, impede disinfection or permit inadvertent release;

.3 wastes of UN 3291 shall be contained within the closed bulk container in UN type tested and approved sealed leakproof plastics bags tested for solids of packing group II and marked in accordance with 6.1.3.1. Such plastics bags shall be capable of passing the tests for tear and impact resistance according to ISO 7765-1:1988 "Plastics film and sheeting. Determination of impact resistance by the free-falling dart method. Part 1: Staircase methods" and ISO 6383-2:1983 "Plastics. Film and sheeting. Determination of tear resistance. Part 2: Elmendorf method". Each bag shall have an impact resistance of at least 165 g and a tear resistance of at least 480 g in both parallel and perpendicular planes with respect to the length of the bag. The maximum net mass of each plastics bag shall be 30 kg;

.4 single articles exceeding 30 kg such as soiled mattresses may be transported without the need for a plastics bag when authorized by the competent authority;

.5 wastes of UN 3291 which contain liquids shall only be transported in plastics bags containing sufficient absorbent material to absorb the entire amount of liquid without it spilling in the bulk container;

.6 wastes of UN 3291 containing sharp objects shall only be transported in UN type tested and approved rigid packagings meeting the provisions of packing instructions P621, IBC620 or LP621.

.7 rigid packagings specified in packing instructions P621, IBC620 or LP621 may also be used. They shall be properly secured to prevent damage during normal conditions of transport. Wastes transported in rigid packagings and plastics bags together in the same closed bulk container shall be adequately segregated from each other, e.g., by suitable rigid barriers or dividers, mesh nets or otherwise securing the packagings, such that they prevent damage to the packagings during normal conditions of transport;

.8 wastes of UN 3291 in plastics bags shall not be compressed in a closed bulk container in such a way that bags may be rendered no longer leakproof;

.9 the closed bulk container shall be inspected for leakage or spillage after each journey. If any wastes of UN 3291 have leaked or been spilled in the closed bulk container, it shall not be re-used until after it has been thoroughly cleaned and, if necessary, disinfected or decontaminated with an appropriate agent. No other goods shall be transported together with UN 3291 other than medical or veterinary wastes. Any such other wastes transported in the same closed bulk container shall be inspected for possible contamination.”.

PART 5

Chapter 5.1

5.1.2.1 Add at the end of the last sentence "unless markings and labels representatives of all dangerous goods, as required by chapter 5.2, in the overpack are visible.".

5.1.2.3 Add a new paragraph to read as follows:

"5.1.2.3 Each package bearing package orientation markings as prescribed in 5.2.1.7 of this Code and which is overpacked, placed in a unit load or used as an inner packaging in a large packaging shall be oriented in accordance with such markings.".

5.1.5.1.2.3 Amend to read:

"For each package requiring competent authority approval, it shall be ensured that all the requirements specified in the approval certificates have been satisfied;".

5.1.5.2.2.3 Amend to read:

"The shipment of packages containing fissile materials if the sum of the criticality safety indexes of the packages in a single freight container or in a single conveyance exceeds 50. Excluded from this requirement shall be shipments by seagoing vessels, if the sum of the criticality safety indexes does not exceed 50 for any hold, compartment or defined deck area and the distance of 6 m between groups of packages or overpacks as required in table 7.1.8.4.2 is met; and".

5.1.5.2.4.4.5 Insert "symbol" after "SI prefix".

Chapter 5.2

5.2.1.4 and 5.2.2.1.7 Add "and large packagings" after "capacity".

5.2.1.5.4.3 Amend the end of the sentence to read as follows: "…origin of design and either the name of the manufacturer or other identification of the packaging specified by the competent authority of the country of origin of design.".

5.2.1.5.8 Add the following new paragraph:

"5.2.1.5.8 In case of international transport of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned, marking shall be in accordance with the certificate of the country of origin of the design.".

5.2.1.7 Add the following new paragraphs:

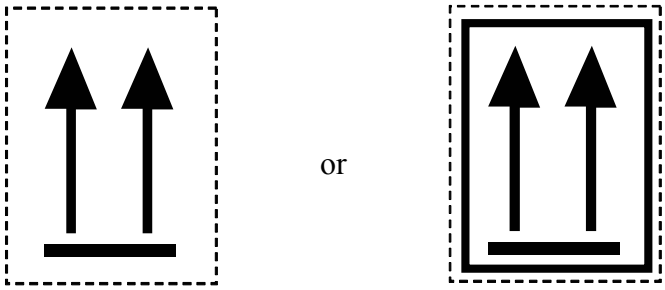
"5.2.1.7 Except as provided in 5.2.1.7.1:

- combination packagings having inner packagings containing liquid dangerous goods;

- single packagings fitted with vents; and

- open cryogenic receptacles intended for the transport of refrigerated liquefied gases,

shall be legibly marked with package orientation arrows which are similar to the illustration shown below or with those meeting the specifications of ISO 780:1985. The orientation arrows shall appear on two opposite vertical sides of the package with the arrows pointing in the correct upright direction. They shall be rectangular and of a size that is clearly visible commensurate with the size of the package. Depicting a rectangular border around the arrows is optional.



Two black or red arrows on white or suitable contrasting background. The rectangular border is optional

5.2.1.7.1 Orientation arrows are not required on packages containing:

(a) pressure receptacles;

(b) dangerous goods in inner packagings of not more than 120 ml which are prepared with sufficient absorbent material between the inner and outer packagings to completely absorb the liquid contents;

(c) class 6.2 infectious substances in primary receptacles of not more than 50 ml;

(d) class 7 radioactive material in Type IP-2, IP-3, A, B(U), B(M) or C packages; or

(e) articles which are leak-tight in all orientations (e.g. alcohol or mercury in thermometers, aerosols, etc.).

5.2.1.7.2 Arrows for purposes other than indicating proper package orientation shall not be displayed on a package marked in accordance with this sub-section.”.

5.2.2.1.2 Amend to read as follows:

"Where articles or substances are specifically listed in the Dangerous Goods List, a danger class label shall be affixed for the hazard shown in column 3. A subsidiary risk label shall also be affixed for any risk indicated by a class or division number in column 4 of the Dangerous Goods List. However, special provisions indicated in column 6 may also require a subsidiary risk label where no subsidiary risk is indicated in column 4 or may exempt from the requirement for a subsidiary risk label where such a risk is indicated in the Dangerous Goods List."

5.2.2.1.12.2.2 Insert "symbol" after "SI prefix".

5.2.2.1.12.5 Add the following new paragraph:

"5.2.2.1.12.5 In case of international transport of packages requiring competent authorities design or shipment approval, for which different approval types apply in the different countries concerned, labelling shall be in accordance with the certificate of the country of origin of design.".

5.2.2.1.13 Delete.

5.2.2.2.1 Add the following note at the end of the existing text:

"***NOTE***: *Where appropriate, labels in 5.2.2.2.2 are shown with a dotted outer boundary as provided for in 5.2.2.2.1.1. This is not required when the label is applied on a background of contrasting colour.*".

5.2.2.2.1.1 Add the following sentence at the end: "Labels shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.".

5.2.2.2.2 In the labels for class 5:

Replace the text under label No. 5.1 with the following:

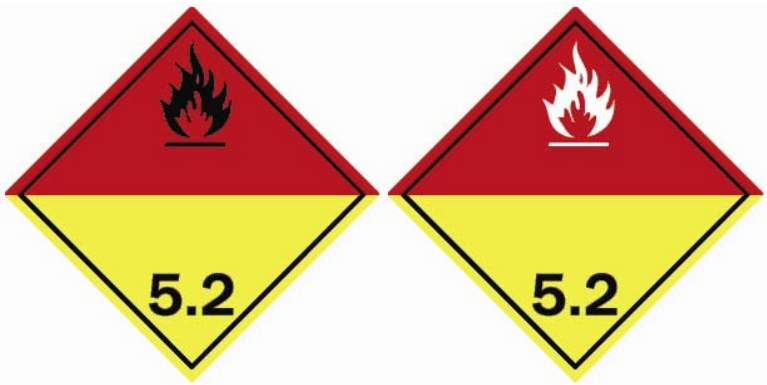
"(No.5.1)
Class 5.1
Oxidizing substances
Symbol (flame over circle): black. Background: yellow
Figure "5.1" in bottom corner"

Retain the existing label No.5.2 and replace the text below it by:

"(No.5.2(a)*)
Class 5.2
Organic peroxides
Symbol (flame over circle): black. Background: yellow
Figure "5.2" in bottom corner"

and add a footnote to read: "* May be used until 1 January 2011.".

Add label No.5.2(b) and the text under the label with the following:



"(No.5.2(b))
Class 5.2
Organic peroxides
Symbol (flame): black or white.
Background: upper half red; lower half yellow.
Figure "5.2" in bottom corner".

5.2.2.2.2 In the label for class 8:

Replace the shaded hand with unshaded hand. Add a footnote to read "A class 8 label with a shaded hand may also be used".

Chapter 5.3

5.3.1.1.2 Add the following sentence at the end: "Placards shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.".

5.3.1.1.3 Amend the first sentence to read as follows:

"Placards shall also be displayed for those subsidiary risks for which a subsidiary risk label is required according to 5.2.2.1.2."

5.3.2.4 Amend the first sentence to read: "Cargo transport units containing dangerous goods in only limited quantities need not be placarded nor marked according to 5.3.2.0 and 5.3.2.1."

5.3.2.5.2 Amend 5.3.2.5.2 to read:

"5.3.2.5.2 A fumigated unit shall be marked with the warning sign, as specified in .3, affixed in a location where it will be easily seen by persons attempting to enter the interior of the unit. The marking, as required by this paragraph, shall remain on the unit until the following provisions are met:

.1 the fumigated unit has been ventilated to remove harmful concentrations of fumigant gas; and

.2 the fumigated goods or materials have been unloaded.".

5.3.2.5.3 Add the following to the fumigation warning sign before the phrase "DO NOT ENTER":

"VENTILATED ON [date *]"

Chapter 5.4

5.4.1.4.1 Replace current .2 and .3 with the following:

".2 The proper shipping name, as determined according to 3.1.2, including the technical name enclosed in parenthesis, as applicable (see 3.1.2.8);

.3 The primary hazard class or, when assigned, the division of the goods, including for Class 1, the compatibility group letter. The words "Class" or "Division" may be included preceding the primary hazard class or division numbers;".

Insert a new .4 to read as follows:

".4 Subsidiary hazard class or division number(s) corresponding to the subsidiary risk label(s) required to be applied, when assigned, shall be entered following the primary hazard class or division and shall be enclosed in parenthesis. The words "Class" or "Division" may be included preceding the subsidiary hazard class or division numbers;".

Current ".4" becomes new ".5".

5.4.1.4.2 Amend the first paragraph and the examples to read as follows:

"The five elements of the dangerous goods description specified in 5.4.1.4.1 shall be shown in the order listed above (i.e. .1, .2, .3, .4 and .5) with no information interspersed, except as provided in this Code.

5.4.1.4.3.6 Amend "61°C" to read "60°C".

5.4.1.4.4 Amend to read:

"5.4.1.4.4 Examples of a dangerous goods description:

UN1098 ALLYL ALCOHOL 6.1 (3) I (21°C c.c.)
UN1098, ALLYL ALCOHOL, class 6.1, (class 3), PG I, (21°C c.c.)
UN 1092, Acrolein, stabilized, class 6.1 (3), PG I, (-24°C c.c.) MARINE POLLUTANT
UN 2761, Organochlorine pesticide, solid, toxic, n.o.s (Aldrin 19%), class 6.1, PG III, MARINE POLLUTANT"

5.4.1.5.1 In the current last but one sentence, replace "packagings" with "packages" and insert the following sentence before the last sentence: "UN packaging codes may only be used to supplement the description of the kind of package (e.g., one box (4G)).".

5.4.1.5.2 Number the first paragraph as "5.4.1.5.2.1".

5.4.1.5.2.2 Add a new paragraph to read:

"5.4.1.5.2.2 Where a shipment is offered in accordance with 3.4.4.1.2, the following statement shall be included in the transport document: "Transport in accordance with 3.4.4.1.2 of the IMDG Code.".

5.4.1.5.7.1.3 Insert "symbol" after "SI prefix".

5.4.1.5.7.3 Insert the following new paragraph:

"5.4.1.5.7.3 In case of international transport of packages requiring competent authorities design or shipment approval, for which different approval types apply in the different countries concerned, the UN number and proper shipping name required in 5.4.1.4.1 shall be in accordance with the certificate of the country of origin of design.".

Renumber existing 5.4.1.5.7.3 as 5.4.1.5.7.4.

5.4.1.5.11 Amend the heading of 5.4.1.5.11 to read:

"**5.4.1.5.11 Special provisions for segregation**"

5.4.1.5.11 Number the first paragraph as "5.4.1.5.11.1" and replace "shown" with "included".

5.4.1.5.11.2 Add a new paragraph to read:

"5.4.1.5.11.2 When substances are loaded together in a cargo transport unit in accordance with 7.2.1.13.1.2, the following statement shall be included in the transport document: "Transport in accordance with 7.2.1.13.1.2 of the IMDG Code.".

5.4.1.5.11.3 Add a new paragraph to read:

"5.4.1.5.11.3 When acid and alkali substances of class 8 are transported in the same cargo transport unit, whether in the same packaging or not, in accordance with 7.2.1.13.2, the following statement shall be included in the transport document: "Transport in accordance with 7.2.1.13.2 of the IMDG Code.".

5.4.1.5.12 Replace "shown" with "included".

PART 6

Chapter 6.1

6.1.2.5 Under 2., replace "wooden barrel" with "(Reserved)".

6.1.2.7 In the table, replace the text in the row for "Wooden barrels" with "(Reserved)".

6.1.4.6 Amend to read: "6.1.4.6 *(Deleted)*".

6.1.4.19.1.1 Amend "6.1.4.8.4" and "6.1.4.8.7" to read "6.1.4.8.3" and "6.1.4.8.6", respectively.

6.1.4.19.2.8 Amend "6.1.4.8.3" and "6.1.4.8.7" to read "6.1.4.8.2" and "6.1.4.8.6", respectively.

6.1.5.1.6 Replace current text with the following:

"6.1.5.1.6 (Reserved)

NOTE: *For the conditions for assembling different inner packagings in an outer packaging and permissible variations in inner packagings, see 4.1.1.5.1.*".

6.1.5.2.4 Delete. Renumber next paragraph accordingly.

6.1.5.2.5 Amend "6.1.4.8.4" to read "6.1.4.8.3" at the end of the first sentence.

6.1.5.3.1 In the table, delete "wooden barrels" under "Packaging".

Chapter 6.2

6.2.1.3.6.5.4 Amend the footnote to read as follows:

"**See for example CGA Publications S-1.2-2003 "Pressure Relief Device Standards - Part 2 - Cargo and Portable Tanks for Compressed Gases" and S-1.1-2003 "Pressure Relief Device Standards - Part 1 - Cylinders for Compressed Gases".*".

6.2.1.4.1.10 Amend "porous mass" to read "porous material".

6.2.1.5.1 Amend subparagraph .3 to read as follows:

".3 Check of the threads if there is evidence of corrosion or if the fittings are removed;"

Amend the end of Note 2 under subparagraph .4 to read as follows:

"… *based on acoustic emission testing, ultrasonic examination or a combination of acoustic emission testing and ultrasonic examination*.".

6.2.1.5.2 Amend "porous mass" to read "porous material".

6.2.2.1.1 Insert the following new entry at the end of the table:

ISO 11119-3:2002	Gas cylinders of composite construction - Specification and test methods - Part 3: Fully wrapped fibre reinforced composite gas cylinders with non-load-sharing metallic or non-metallic liners

6.2.2.1.3 In the table, under "For the cylinder shell:", delete the reference to ISO 7866:1999. Amend "porous mass" to read "porous material".

6.2.2.1.4 Add a new paragraph to read as follows:

"6.2.2.1.4 The following standard applies for the design, construction and initial inspection and test of UN cryogenic receptacles, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.2.5:

ISO 21029-1:2004	Cryogenic vessels – Transportable vacuum insulated vessels of not more than 1000 l volume – Part 1: Design, fabrication, inspection and tests

"

6.2.2.5.2.1 Amend "6.2.2.6" and "6.2.2.7" to read "6.2.2.7" and "6.2.2.8" respectively at the end of the first paragraph.

6.2.2.5.3.1 In .1, insert "of personnel" after "responsibilities" and delete ", and power of the management". Delete the "," and insert "and" between "structure" and "responsibilities".

In .2, replace "systematic actions" with "procedures".

Delete the commas before "and" in .3 and .4.

6.2.2.5.4.10 Amend to read as follows:

"6.2.2.5.4.10 Modifications to approved design types

The manufacturer shall either:

(a) inform the issuing competent authority of modifications to the approved design type, where such modifications do not constitute a new design, as specified in the pressure receptacle standard; or

(b) request a subsequent design type approval where such modifications constitute a new design according to the relevant pressure receptacle standard. This additional approval shall be given in the form of an amendment to the original design type approval certificate.".

6.2.2.7.2 In (g) add the following new last sentence at the end of the existing text:

"In the case of pressure receptacles for UN 1001 acetylene, dissolved and UN 3374 acetylene, solvent free, at least one decimal shall be shown after the decimal point and two digits for pressure receptacles of less than 1 kg;".

In (k) and (l): Insert ", any coating," after "during filling" and replace "two" with "three" in the first sentence. Insert the following new last sentence at the end of the existing text:

"At least one decimal shall be shown after the decimal point. For pressure receptacles of less than 1 kg, the mass shall be expressed to two significant figures rounded down to the last digit;".

6.2.2.7.2 (g), (k) and (l) Amend "porous mass" to read "porous material".

6.2.2.7.7 Add the following new paragraph:

"6.2.2.7.7 For acetylene cylinders, with the agreement of the competent authority, the date of the most recent periodic inspection and the stamp of the body performing the periodic inspection and test may be engraved on a ring held on the cylinder by the valve. The ring shall be configured so that it can only be removed by disconnecting the valve from the cylinder.".

6.2.4 Renumber current paragraphs 6.2.4.1 and 6.2.4.2 as 6.2.4.1.1 and 6.2.4.1.2 respectively and insert a new 6.2.4.1 to read as follows:

"6.2.4.1 *Small receptacles containing gas (gas cartridges)"*

Add the following new paragraphs:

"6.2.4.2 *Aerosol dispensers*

Each filled aerosol dispenser shall be subjected to a test performed in a hot water bath or an approved water bath alternative.

6.2.4.2.1 *Hot water bath test*

6.2.4.2.1.1 The temperature of the water bath and the duration of the test shall be such that the internal pressure reaches that which would be reached at 55°C (50°C if the liquid phase does not exceed 95% of the capacity of the aerosol dispenser at 50°C). If the contents are sensitive to heat or if the aerosol dispensers are made of plastics material which softens at this test temperature, the temperature of the bath shall be set at between 20°C and 30°C but, in addition, one aerosol dispenser in 2000 shall be tested at the higher temperature.

6.2.4.2.1.2 No leakage or permanent deformation of an aerosol dispenser may occur, except that a plastic aerosol dispenser may be deformed through softening provided that it does not leak.

6.2.4.2.2 *Alternative methods*

With the approval of the competent authority alternative methods which provide an equivalent level of safety may be used provided that the requirements of 6.2.4.2.2.1, 6.2.4.2.2.2 and 6.2.4.2.2.3 are met.

6.2.4.2.2.1 Quality system

Aerosol dispenser fillers and component manufacturers shall have a quality system. The quality system shall implement procedures to ensure that all aerosol dispensers that leak or that are deformed are rejected and not offered for transport.

The quality system shall include:

(a) a description of the organizational structure and responsibilities;

(b) the relevant inspection and test, quality control, quality assurance, and process operation instructions that will be used;

(c) quality records, such as inspection reports, test data, calibration data and certificates;

(d) management reviews to ensure the effective operation of the quality system;

(e) a process for control of documents and their revision;

(f) a means for control of non-conforming aerosol dispensers;

(g) training programmes and qualification procedures for relevant personnel; and

(h) procedures to ensure that there is no damage to the final product.

An initial audit and periodic audits shall be conducted to the satisfaction of the competent authority. These audits shall ensure the approved system is and remains adequate and efficient. Any proposed changes to the approved system shall be notified to the competent authority in advance.

6.2.4.2.2.2 Pressure and leak testing of aerosol dispensers before filling

Every empty aerosol dispenser shall be subjected to a pressure equal to or in excess of the maximum expected in the filled aerosol dispensers at 55°C (50°C if the liquid phase does not exceed 95% of the capacity of the receptacle at 50°C). This shall be at least two-thirds of the design pressure of the aerosol dispenser. If any aerosol dispenser shows evidence of leakage at a rate equal to or greater than 3.3×10^{-2} mbar.l.s^{-1} at the test pressure, distortion or other defect, it shall be rejected.

6.2.4.2.2.3 Testing of the aerosol dispensers after filling

Prior to filling, the filler shall ensure that the crimping equipment is set appropriately and the specified propellant is used.

Each filled aerosol dispenser shall be weighed and leak tested. The leak detection equipment shall be sufficiently sensitive to detect at least a leak rate of 2.0×10^{-3} mbar.l.s^{-1} at 20°C.

Any filled aerosol dispenser which shows evidence of leakage, deformation or excessive weight shall be rejected.".

6.2.4.3 Add a new paragraph to read as follows:

"6.2.4.3 With the approval of the competent authority, aerosols and receptacles, small, containing pharmaceutical products and non flammable gases which are required to be sterile, but may be adversely affected by water bath testing, are not subject to 6.2.4.1 and 6.2.4.2 if:

(a) They are manufactured under the authority of a national health administration and, if required by the competent authority, follow the principles of Good Manufacturing Practice (GMP) established by the World Health Organization (WHO)[2]; and

(b) An equivalent level of safety is achieved by the manufacturer's use of alternative methods for leak detection and pressure resistance, such as helium detection and water bathing a statistical sample of at least 1 in 2000 from each production batch.".

Chapter 6.4

6.4.5.2.2 Amend to read as follows:

".2 more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.5.4.1.3(ii) Amend to read "more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.5.4.2.3 Amend to read "more than a 20% increase in the maximum radiation level at any external surface of the package.".

[2] *WHO Publication: "Quality assurance of pharmaceuticals. A compendium of guidelines and related materials. Volume 2: Good manufacturing practices and inspection".*

6.4.5.4.4.3.2 Amend to read "more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.5.4.5.2.2 Amend to read "more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.7.14(b) Amend to read "more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.7.16 In the first sentence, replace "liquids" with "liquid radioactive material".

6.4.8.3 In the first sentence, delete "Except as required in 6.4.3.1 for a package transported by air," and replace "6.4.8.4," with "6.4.8.5 and in the absence of insolation,".

6.4.8.4 The text of current 6.4.8.13 becomes new 6.4.8.4, with the following amendments:

In the first sentence, insert "under exclusive use" before "shall not exceed 85°C" and replace "6.4.8.4" with "6.4.8.5". Delete the second sentence: ("The package shall… exceeds 50°C.").

6.4.8.4 to 6.4.8.12 Renumber as 6.4.8.5 to 6.4.8.13. Amend all cross-references accordingly.

6.4.11.2.1 Amend the end of the sentence after the formula to read: "provided that the smallest external dimension of each package is not less than 10 cm and that either:".

Amend .3 to read as follows:

".3 there are not more than 5 g of fissile material in any 10 litre volume of material. Neither beryllium nor deuterium shall be present in quantities exceeding 1% of the applicable consignment mass limits provided in Table 6.4.11.2, except for deuterium in natural concentration in hydrogen.".

6.4.11.7 (b) Amend the first sentence to read as follows: "For packages containing uranium hexafluoride only, with maximum enrichment of 5 mass percent uranium-235:".

6.4.13 Amend "6.4.1" to read "6.4.15".

6.4.20.2(a) Delete the duplicated words "at the top" in the second sentence.

6.4.22.1(a) and (b) Amend to read as follows:

"(a) Each design that meets the provisions of 6.4.6.4 shall require multilateral approval;

(b) Each design that meets the provisions of 6.4.6.1 to 6.4.6.3 shall require unilateral approval by the competent authority of the country of origin of the design, unless multilateral approval is otherwise required by this Code.".

6.4.23.3(a) Replace "the consignment" with "the shipment".

6.4.23.14 Insert a new paragraph (m) to read as follows:

"(m) A description of the containment system;"
Renumber current subparagraphs (m) and (n) accordingly.

Under (n), insert a new subparagraph (ii) to read as follows:

"(ii) A description of the confinement system;".
Renumber current subparagraphs (ii) to (vi) accordingly.

Insert a new subparagraph (p) to read as follows:

"(p) For packages containing more than 0.1 kg of uranium hexafluoride, a statement specifying those prescriptions of 6.4.6.4 that apply if any and any amplifying information which may be useful to other competent authorities.".
Renumber current subparagraphs (o) to (u) accordingly.

6.4.23.15 Delete the last sentence.

6.4.24.3 In the first sentence, delete "until 31 December 2003" and insert "the multilateral approval of package design;" before "the mandatory programme of quality assurance".

Delete the sentence: "After this date use may continue subject, additionally, to multilateral approval of package design.".

Chapter 6.5

6.5.1 Amend the title to read "**General requirements**".

6.5.1.4.3 In the table, in the entry for "HZ Composite with plastics inner receptacle", second column, insert "inner" after "plastics" (six times).

6.5.1.5 Delete "6.5.1.5 Construction provisions".

6.5.1.5.9 Delete.

Section 6.5.3 Insert a new section 6.5.3 as follows:

6.5.3 and 6.5.3.1 Insert two new paragraphs to read as follows:

"**6.5.3 Construction requirements**

6.5.3.1 ***General requirements***"

6.5.3.1.1 to
6.5.3.1.8: Existing 6.5.1.5.1 to 6.5.1.5.8 become new paragraphs 6.5.3.1.1 to 6.5.3.1.8.

Section 6.5.4 Text of existing 6.5.1.6 with appropriate renumbering of paragraphs, subparagraphs and references to paragraphs numbers, becomes text of new sub-section 6.5.4, as follows:

6.5.4 Heading of existing 6.5.1.6.

6.5.4.1 Text of existing 6.5.1.6.1.

6.5.4.2 Text of existing 6.5.1.6.2 with the following modifications:

Replace "periodic tests" with "periodic inspections and tests" and "6.5.4.14" with "6.5.4.4" respectively.

6.5.4.3 Text of existing 6.5.1.6.3.

6.5.4.4 Text of existing 6.5.1.6.4 with the following modifications:

In the first paragraph, replace "Inspection:" with the heading "Inspection and testing" and add a new NOTE after the heading to read as follows:

"NOTE: See also 6.5.4.5 for tests and inspections on repaired IBCs.".

The text beginning with "every metal, rigid plastics…" and subparagraphs .1 and .2 become new 6.5.4.4.1 with the following modifications:

In .1, insert "(including after remanufactured)" after "put into service".

Insert a new sentence, after the last sentence of subparagraph .2 ("Thermal insulation, … body of the IBC."), to read as follows: "Each IBC shall correspond in all respects to its design type.".

Insert a new paragraph 6.5.4.4.2 as follows:

"6.5.4.4.2 Every metal, rigid plastics and composite IBC for liquids, or for solids which are filled or discharged under pressure, shall undergo a suitable leakproofness test and be capable of meeting the test level indicated in 6.5.6.7.3:

(a) before it is first used for transport;

(b) at intervals of not more than two and a half years.

For this test the IBC need not have its closures fitted. The inner receptacle of a composite IBC may be tested without the outer casing, provided the test results are not affected.".

The last paragraph of existing 6.5.1.6.4 ("A report of each inspection … requirements in 6.5.2.2.1).") becomes new 6.5.4.4.3 with the following modifications:

In the first sentence, add "and test" after "each inspection" and "or test" after "next inspection" respectively.

In the second sentence, add "and test" after "inspection" twice.

6.5.4.5 Title of existing 6.5.1.6.6.

6.5.4.5.1 Text of existing 6.5.1.6.5.

6.5.4.5.2 Text of existing 6.5.1.6.6.1. Replace "6.5.4.14.3 and 6.5.1.6.4.1.1" with "6.5.4.4".

6.5.4.5.3 Text of existing 6.5.1.6.6.2.

6.5.4.5.4 Text of existing 6.5.1.6.6.3. Replace "6.5.1.6.6.1" with "6.5.4.5.2".

6.5.4.5.5 Text of existing 6.5.1.6.7.

Renumber existing sections 6.5.3 and 6.5.4 in 6.5.5 and 6.5.6 respectively, and renumber accordingly subsequent paragraphs and references thereto.

6.5.6.1.3 (current 6.5.4.1.3) Delete.

6.5.6.5.2 (current 6.5.4.5.2) Replace the last sentence of this paragraph with the following text:

"Flexible IBCs shall be filled with a representative material and then shall be loaded to six times their maximum permissible gross mass, the load being evenly distributed.".

6.5.6.5.5.2 (current 6.5.4.5.5.2): Add at the end: "and no loss of contents.".

6.5.6.9.2 (current 6.5.4.9.2) In subparagraph .1, amend the first sentence to read:

"Metal IBCs: the IBC shall be filled to not less than 95% of its maximum capacity for solids or 98% of its maximum capacity for liquids.".

Amend subparagraph .2 to read as follows: "Flexible IBCs: the IBC shall be filled to the maximum permissible gross mass, the contents being evenly distributed.".

In subparagraph .3, amend the first sentence to read: "Rigid plastics and composite IBCs: the IBC shall be filled to not less than 95% of its maximum capacity for solids or 98% of its maximum capacity for liquids.".

In subparagraph .4, insert "maximum" before "capacity" and delete "in accordance with the design type".

6.5.6.9.4 (current 6.5.4.9.4) Amend to read as follows:

"6.5.6.9.4 *Drop height*

For solids and liquids, if the test is performed with the solid or liquid to be transported or with another substance having essentially the same physical characteristics:

Packing group I	Packing group II	Packing group III
1.8 m	1.2 m	0.8 m

For liquids if the test is performed with water:

(a) Where the substances to be transported have a relative density not exceeding 1.2:

Packing group II	Packing group III
1.2 m	0.8 m

(b) Where the substances to be transported have a relative density exceeding 1.2, the drop heights shall be calculated on the basis of the relative density (d) of the substance to be transported rounded up to the first decimal as follows:

Packing group II	Packing group III
d × 1.0 m	d × 0.67 m

6.5.6.14 to 6.5.6.14.4 (current 6.5.4.14 to 6.5.4.14.4) Delete.

Chapter 6.6

6.6.5.1.6 Amend to read as follows:

"6.6.5.1.6 (Reserved)

***NOTE**: For the conditions for assembling different inner packagings in a large packaging and permissible variations in inner packagings, see 4.1.1.5.1.".*

6.6.5.2.2 Insert a new 6.6.5.2.2 with the same text as existing 6.5.4.1.3, replacing the reference to 6.5.4.9.4 by a reference to 6.6.5.3.4.4 in subparagraph .1.

Renumber accordingly existing 6.6.5.2.2 to 6.6.5.2.3 and references thereto.

6.6.5.3.2.4 and 6.6.5.3.3.5 Amend by replacing the existing text with that of 6.5.4.5.5 (renumbered 6.5.6.5.5) and 6.5.4.6.5 (renumbered 6.5.6.6.5) respectively, but replacing the word "IBCs" by "large packagings".

Chapter 6.7

6.7.1.1 In the first sentence, amend "classes 2" to read "classes 1,2,".

6.7.2.19.1, 6.7.3.15.1
and 6.7.4.14.1 Replace the existing text and list of standards with the following text:

"Portable tanks meeting the definition of container in the International Convention for Safe Containers (CSC), 1972, as amended, shall not be used unless they are successfully qualified by subjecting a representative prototype of each design to the Dynamic, Longitudinal Impact Test prescribed in the United Nations Manual for Tests and Criteria, Part IV, Section 41. This provision only applies to portable tanks which are constructed according to a design approved certificate which has been issued on and after 1 January 2008.".

6.7.3.8.1.1 In the footnote, replace "CGA S-1.2-1995" and "CGA Pamphlet S-1.2-1995" with "CGA S-1.2-2003 "Pressure Relief Device Standards-Part 2-Cargo and Portable Tanks for Compressed Gases".".

6.7.4.7.4 Add the following footnote "See for example CGA Pamphlet S-1.2-2003 "Pressure Relief Device Standards-Part 2-Cargo and Portable Tanks for Compressed Gases."".

6.7.5.4.1 Replace the first sentence with the following two sentences:

"The elements of MEGCs used for the transport of UN 1013 carbon dioxide and UN 1070 nitrous oxide shall be isolated by a valve into assemblies of not more than 3,000 litres. Each assembly shall be fitted with one or more pressure relief devices.".

(Current final sentence remains unchanged).

6.7.5.5.1 and
6.7.5.5.2 Replace "CGA S-1.2-1995" with "CGA S-1.2-2003 "Pressure Relief Device Standards, Part 2, Cargo and Portable Tanks for Compressed Gases"."

Replace "CGA S-1.1-1994" with "CGA S-1.1-2003 "Pressure Relief Device Standards, Part 1, Cylinders for Compressed Gases"."

6.7.5.6.1 Amend to read as follows:

"6.7.5.6.1 Pressure relief devices shall be clearly and permanently marked with the following:

(a) the manufacturer's name and relevant catalogue number;

(b) the set pressure and/or the set temperature;

(c) the date of the last test.".

6.7.5.6.2 Delete this paragraph and renumber subsequent paragraph accordingly.

6.7.5.8.1 In the third sentence, replace “and oxidising” with “, pyrophoric and oxidizing”.

6.7.5.12.1 Replace the existing text and list of standards with the following text:

“MEGCs meeting the definition of container in the CSC shall not be used unless they are successfully qualified by subjecting a representative prototype of each design to the Dynamic, Longitudinal Impact Test prescribed in the United Nations Manual for Tests and Criteria, Part IV, Section 41. This provision only applies to MEGCs which are constructed according to a design approved certificate which has been issued on and after 1 January 2008.”.

Chapter 6.8

6.8.3.3.2.1.5 Amend “6.7.4.2.1” to read “6.7.4.2.13”.

PART 7

Chapter 7.1

7.1.1.15 Amend "top of side walls …" to read "top or side walls …" in the first sentence.

7.1.11.5.1 Amend to read:

"7.1.11.5.1 AMMONIUM NITRATE, UN 1942 and AMMONIUM NITRATE BASED FERTILIZERS, UN 2067 may be stowed under deck in a clean cargo space capable of being opened up in an emergency. The possible need to open hatches in case of fire to provide maximum ventilation and to apply water in an emergency and the consequent risk to the stability of the ship through flooding of cargo space shall be considered before loading."

Chapter 7.2

7.2.7.1.3.1 In the list of Dangerous Goods List entries delete the following entries:

"DIETHYLZINC 1366 4.2
DIMETHYLZINC 1370 4.2
MAGNESIUM ALKYLS 3053 4.2"

Amend paragraph 7.2.1.13 to read:

"**7.2.1.13 Special provisions for segregation**"

Add new 7.2.1.13.1 to read:

"7.2.1.13.1 No segregation needs to be applied

.1 between dangerous goods of different classes which comprise the same substance but vary only in their water content, such as sodium sulphide in classes 4.2 and 8 or for class 7 if the difference is due to quantity only;

.2 between dangerous goods which belong to a group of substances of different classes but for which scientific evidence exists that they do not react dangerously when in contact with each other. Substances within the same table shown below are compatible with one another.

Table 1

UN No.	Proper Shipping Name	Class	Subsidiary risk(s)	Packing group
2014	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)	5.1	8	II

Table 1				
UN No.	**Proper Shipping Name**	**Class**	**Subsidiary risk(s)**	**Packing group**
2984	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 8% but less than 20% hydrogen peroxide (stabilized as necessary)	5.1		III
3105	ORGANIC PEROXIDE TYPE D, LIQUID (peroxyacetic acid, type D, stabilized)	5.2	8	
3107	ORGANIC PEROXIDE TYPE E, LIQUID (peroxyacetic acid, type E, stabilized)	5.2	8	
3109	ORGANIC PEROXIDE TYPE F, LIQUID (peroxyacetic acid, type F, stabilized)	5.2	8	
3149	HYDROGEN PEROXIDE AND PEROXYACETIC ACID, MIXTURE with acid(s), water and not more than 5% peroxyacetic acid, STABILIZED	5.1	8	II

Table 2				
UN No.	**Proper Shipping Name**	**Class**	**Subsidiary risk(s)**	**Packing group**
1295	TRICHLOROSILANE	4.3	3/8	I
1818	SILICON TETRACHLORIDE	8	-	II
2189	DICHLOROSILANE	2.3	2.1/8	-

7.2.1.13.2 Insert new paragraph 7.2.1.13.2 to read:

"7.2.1.13.2 Notwithstanding the provisions of 7.2.1.7.1 to 7.2.1.7.4, substances of class 8, packing group II or III, that would otherwise be required to be segregated from one another due to the provisions pertaining to segregation groups as identified by an entry in column (16) of the dangerous goods list indicating "Away from" or "Separated from" "acids" or "Away from" or "Separated from" "alkalis", may be transported in the same cargo transported unit, whether in the same packaging or not, provided:

.1 the substances comply with the provisions of 7.2.1.11;

.2 the package does not contain more than 30 litres for liquids or 30 kg for solids;

.3 the transport document includes the statement required by 5.4.1.5.11.3; and

.4 a copy of the test report that verifies that the substances do not react dangerously with each other shall be provided if requested by the competent authority."

7.2.7.2.1.1 Amend "7.2.7.4" to read "7.2.7.2.1.5" in the second sentence.

Chapter 7.3

7.3.2.1 Replace "61°C" with "60°C".

Chapter 7.4

7.4.2.5.1 Amend 7.4.2.5.1 to read:

"7.4.2.5.1 Unless otherwise specified in this Code, the provisions concerning ventilation that are set out in various places in this Code shall be taken to refer to the space aboard the ship in which cargo transport units are stowed and shall not be interpreted to require ventilation into cargo transport unit.".

7.4.3.2 Add at the end of 7.4.3.2:

"Ventilated containers shall be marked with the date of ventilation on the fumigated warning sign(s). When the fumigated goods or materials have been unloaded, the fumigation warning sign(s) shall be removed.".

7.4.5.13 In the first indent, insert before "and the refrigeration", "or regulation II-2/54 of SOLAS 74, as amended by the resolutions indicated II-2/1.2.1, as applicable,".

7.4.6.4.2 Add, after "class 1", "other than division 1.4".

Chapter 7.7

7.7.6 Insert new 7.7.6 as follows:

"**7.7.6 Special provisions for flammable gases or liquids having a flashpoint below 23°C c.c. transported under temperature control**

7.7.6.1 When flammable gases or liquids having a flashpoint below 23°C c.c. are packed or loaded in a cargo transport unit equipped with a refrigerating or heating system, the cooling or heating equipment shall comply with 7.7.3.

7.7.6.2 When flammable liquids having a flashpoint below 23°C c.c. and not requiring temperature control for safety reasons are transported under temperature control conditions for commercial reasons, explosion-proof electrical fittings are not required, when the substances are pre-cooled to and transported at a control

temperature of at least 10°C below the flashpoint. In case of failure of the refrigerating system, the system shall be disconnected from the power supply."

7.7.6 (existing) Renumber as 7.7.7.

7.7.7 (existing) Renumber as 7.7.8.

7.7.8 (new) Replace "exemption" with "approval".

Chapter 7.9

7.9.3 Replace existing 7.9.3 with the following:

"**7.9.3 Contact information for the main designated national competent authorities**

Contact information for the main designated national competent authorities concerned is given in this paragraph*. Corrections to these addresses should be sent to the Organization**.

---

* Reference is made to MSC.1/Circ.1201, as may be amended, which provides a more comprehensive listing of contact information for competent authorities and bodies.

** International Maritime Organization
4 Albert Embankment
London SE1 7SR
United Kingdom
Email: info@imo.org
Fax: +44 207587 3210

LIST OF CONTACT INFORMATION FOR THE MAIN DESIGNATED NATIONAL COMPETENT AUTHORITY

Country	Contact information for the main designated national competent authority
ALGERIA	Ministère des Transports/Direction de la Marine Marchande 119 Rue Didouche Mourad Alger ALGÉRIE Telephone: +213 26061 46 Telex: 66063 DGAF DZ
AMERICAN SAMOA	Silila Patane Harbour Master Port Administration Pagopago American Samoa AMERICAN SAMOA 96799
ARGENTINA	Prefectura Naval Argentina (Argentine Coast Guard) Dirección de protección ambiental Departamento de protección ambiental y mercancías peligrosas Division mercancías y residuos peligrosos Avda. Eduardo Madero 235 4º piso, Oficina 4.36 y 4.37 Buenos Aires (C1106ACC) REPÚBLICA ARGENTINA Telephone: +54 11 4318 7669 Telefax: +54 11 4318 7474 Email: dpma-mp@prefecturanaval.gov.ar
AUSTRALIA	Manager, Ship Inspection Maritime Operations Australian Maritime Safety Authority GPO Box 2181 Canberra ACT 2601 AUSTRALIA Telephone: +61 2 6279 5048 Telefax: +61 2 6279 5058 Email: psc@amsa.gov.au Website: www.amsa.gov.au

Country	Contact information for the main designated national competent authority
BAHAMAS	Bahamas Maritime Authority Second Floor Latham House 16 Minories London, EC3N 1EH UNITED KINGDOM Telephone: +44 (0)20 7264 2550 Telefax: +44 (0)20 7264 2579 Email: tech@bahamasmaritime.com
BARBADOS	Director of Maritime Affairs Ministry of Tourism and International Transport 2nd Floor Carlisle House Hincks Street Bridgetown St. Michael Barbados Telephone: +1 246 426 2710/3342 Telefax: +1 246 426 7882 Email: ctech@sunbeach.net
BELGIUM	Federal Public Service Mobility and Transport Directorate-general Maritime Transport Rue du Progrès 56 1210 Brussels B-BELGIUM Telephone: +32 2 277 3500 Telefax: +32 2 277 4051 Email: dg.mar@mobilit.fgov.be Website: www.mobilit.fgov.be
BELIZE	Ports Commissioner Belize Port Authority PO Box 633 Belize City BELIZE C.A. Telephone: +501 227 2540/0981 Telefax: +501 227 2500

Country	Contact information for the main designated national competent authority
BRAZIL	Diretoria de Portos e Costas (DPC-20) Rua Teófilo Otoni No. 04 Centro Rio de Janeiro CEP 20090-070 BRAZIL Telephone: +55 21 2104 5203 Telefax: +55 21 2104 5202 Email: secom@dpc.mar.mil.br
BULGARIA	Ministry of Transport Bulgarian Maritime Administration Directorate European Integration and International Affairs 9 Diakon Ignatiy Str. Sofia 1000 BULGARIA Telephone: +359 2 930 09 10 / 930 09 50 Telefax: +359 2 930 09 20 E-mail: ivalev@marad.bg Website: www.marad.bg
CANADA	The Chairman Board of Steamship Inspection Transport Canada -Marine Safety Tower C, Place de Ville 330 Sparks Street, 10th Floor Ottawa, Ontario K1A ON5 CANADA Telephone: +1 613 991 3132 +1 613 991 3143 +1 613 991 3139/40 Telefax: +1 613 993 8196
CHILE	Dirección General del Territorio Marítimo y de Marina Mercante Dirección de Seguridad y Operaciones Marítimas Depto. Prevención de Riesgos Errázuriz 537 Valparaiso CHILE Telephone: +56 32 208256 Telefax: +56 32 208262 Telex: 230602 DGTM CL 330461 DGTM CK

Country	Contact information for the main designated national competent authority
CHINA	Maritime Safety Administration People's Republic of China 11 Jianguomen Nei Avenue Beijing 100736 CHINA Telephone: +86 10 6529 2588 +86 10 6529 2218 Telefax: +86 10 6529 2245 Telex: 222258 CMSAR CN
CROATIA	Ministry of Maritime Affairs Transport and Communication Marine Safety Division Prisavlje 14 1000 Zagreb REPUBLIC OF CROATIA Telephone: +385 1 611 5966 Telefax: +385 1 611 5968 Email: pomorski-promet@zg.tel.hr
CUBA	Ministerio del Transporte Dirección de Seguridad e Inspección Marítima Boyeros y Tulipán Plaza Ciudad de la Habana CUBA Telephone: +53 7 881 6607 +53 7 881 9498 Telefax: +53 7 881 1514 Email: dsim@mitrans.transnet.cu
CYPRUS	Department of Merchant Shipping Ministry of Communications and Works Kylinis Street Mesa Geitonia CY-4007 Lemesos P.O. Box 56193 CY-3305 Lemesos CYPRUS Telephone: +357 5 848 100 Telefax: +357 5 848 200 Telex: 2004 MERSHIP CY Email: dms@cytanet.com.cy

Country	Contact information for the main designated national competent authority
CZECH REPUBLIC	Ministry of Transport of the Czech Republic Navigation and Waterways Division Nábr. L.. Svobody 12 110 15 Praha 1 CZECH REPUBLIC Telephone: +42 (0)2 230 312 25 Telefax: +42 (0)2 248 105 96 Telex: +42 (0)2 12 10 96 Domi C
DENMARK	Danish Maritime Authority P.O. Box 2605 Vermundsgade 38C 2100 Copenhagen Ø DENMARK Telephone: +45 39 17 44 00 Telefax: +45 39 17 44 01 Email: SFS@dma.dk
ECUADOR	Dirección General de la Marine Mercante y del Litoral P.O. Box 7412 Guayaquil ECUADOR Telephone: +593 4 526 760 Telefax: +593 4 324 246 Telex: 04 3325 DIGMER ED
ESTONIA	Estonian Maritime Administration Maritime Safety Division Valge 4 EST-11413 Tallinn ESTONIA Telephone: +372 6205 700/715 Telefax: +372 6205 706 Email: mot@vta.ee
FINLAND	Finnish Maritime Administration P.O. Box 171 FI-00181 Helsinki FINLAND Telephone: +358 20 448 1 Telefax: +358 20 448 4500 +358 20 448 4336 Email: keskushallinto@fma.fi

Country	Contact information for the main designated national competent authority
FINLAND (continued)	*Packaging and Certification Institute* Safety Technology Authority (TUKES) P.O Box 123 FI-00181 Helsinki FINLAND Telephone: +358 961671 Telefax: +358 96167466 Email: kirjaamo@tukes.fi
FRANCE	MTETM/DGMT/MMD Arche sud 92055 La Défense cedex FRANCE Telephone: +33 (0)1 40 81 86 49 Telefax: +33 (0)1 40 81 10 65 Email: olga.lefevre@equipement.gouv.fr
GAMBIA	The Managing Director Gambia Ports Authority Banjul THE GAMBIA Telephone: +220 27266 Telefax: +220 27268 Telex: 2235 GAMPORTS GV
GERMANY	Federal Ministry of Transport, Building and Urban Affairs Dangerous Goods Branch Robert-Schuman-Platz 1 D-53175 Bonn GERMANY Telephone: +49 228 3000 or 300- extension +49 228 300 2643 Telefax: +49 228 300 3428 Email: Ref-A33@bmvbs.bund.de
GREECE	Ministry of Mercantile Marine Safety of Navigation Division International Relations Department 150 Gr. Lambraki Av. 185 18 Piraeus GREECE Telephone: +301 4191188 Telefax: +301 4128150 Telex: +212022, 212239 YEN GR Email: dan@yen.gr

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GUYANA	Guyana Maritime Authority/Administration Ministry of Public Works and Communications Building Top Floor Fort street Kingston Georgetown REPUBLIC OF GUYANA Telephone: +592 226 3356 +592 225 7330 +592 226 7842 Telefax: +592 226 9581 Email: MARAD@networksgy.com
ICELAND	Iceland Maritime Administration Verturvör 2 IS-202 Kópavogur ICELAND Telephone: +354 560 0000 Telefax: +354 560 0060 E-mail: skrifstofa@vh.is
INDIA	The Directorate General of Shipping Jahz Bhawan Walchand Hirachand Marg Bombay 400 001 INDIA Telephone: +91 22 263651 Telex: +DEGESHIP 2813-BOMBAY
INDONESIA	Director of Marine Safety Directorate-General Sea Communication (Department Perhubungan) JI. Merdeka Barat No.8 Jakarta Pusat. INDONESIA Telephone: +62 381 3269 Telefax: +62 384 0788
IRAN	Ports and Shipping Organization 751 Enghelab Avenue Tehran IRAN Telephone: +98 21 8809280 to 89 Telefax: +98 21 8804100 Telex: 212271 BNDR-IR

Country	Contact information for the main designated national competent authority
IRELAND	The Chief Surveyor Marine Survey Office Department of Transport Leeson Lane Dublin 2 IRELAND Telephone: +353 1 604 14 20 Telefax: +353 1 604 14 08 E-mail: mso@transport.ie
ISRAEL	Shipping and Ports Inspectorate Itzhak Rabin Government Complex Building 2 Pal-Yam 15a Haifa 31999 ISRAEL Telephone: +972 4 8632080 Telefax: +972 4 8632118 Email: techni@mot.gov.il
ITALY	Italian Coast Guard Headquarters Viale dell'Arte 16 00144 Rome ITALY Telephone: +39 06 5908 4919 Telefax: +39 06 5908 4918 Email: uff1.rep6.cogecap@infrastrutturetrasporti.it
JAMAICA	The Maritime Authority of Jamaica 4th Floor, Dyoll Building 40 Knutsford Boulevard Kingston 5 JAMAICA, W.I. Telephone: +1 876 929 2201 +1 876 754 7260/5 Telex: +1 876 7256 Email: maj@jamaicaships.com Website: www.jamaicaships.com

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LATVIA	Maritime Administration of Latvia 5 Trijadibas iela L V-1 048 Riga LATVIA Telephone: +371 70 62 171 +371 70 62 120 +371 70 62 117 Telefax: +371 78 60 082
LIBERIA	Office of the Commissioner of Maritime Affairs Bureau of Maritime Affairs, R.L. Tubman Boulevard P.O. Box 10-9042 1000 Monrovia 10 LIBERIA Telephone: +231 224 604 / 908 Telefax: +231 226 069 Office of the Deputy Commissioner of Maritime Affairs, R.L. Technical Division Marine Operations Department c/o Liberian International Ship & Corporate Registry 8619 Westwood Center Drive, Suite 300 Vienna, Virginia, 22182 U.S.A. Telephone: +1 703 790 3434 Telefax: +1 703 790 5655 Email: info@liscr.com Website: www.liscr.com

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MALAYSIA	Director Marine Department Peninsular Malaysia P.O. Box 12 42007 Port Kelang Selangor MALAYSIA Telex: MA 39748
MARSHALL ISLANDS	Office of the Maritime Administrator Maritime Operations Department Republic of the Marshall Islands 11495 Commerce Park Drive Reston, Virginia 20191-1507 USA Telephone: +1 703 620 4880 Telefax: +1 703 476 8522 Telex: 248403 IRI UR Email: maritime@register-iri.com
MEXICO	Coordinación General de Puertos y Marina Mercante Secretaria de Comunicaciones y Transportes Nuevo León 210 Piso 3 Colonia Hipódromo Col. Santa Cruz Atoyac D.F.C.P. 06100 MEXICO Telephone: +52 55 526 53220 Fax: +52 55 557 43902 Email: jtlozano@sct.gob.mx
MOROCCO	Direction de la Marine Marchande et des Pêches Maritimes Boulevard EI Hansali Casablanca MOROCCO Telephone: +1 212 227 8092 +1 212 222 1931 Telex: 24613 MARIMAR M 22824

Country	Contact information for the main designated national competent authority
NETHERLANDS	Ministry of Transport, Public Works and Water Management Directorate-General for Civil Aviation and Freight Transport P.O. Box 20904 2500 EX The Hague THE NETHERLANDS Telephone: +31 70 351 6171 Telefax: +31 70 351 1479 Ministry of Transport, Public Works and Water Management Transport Information Centre P.O. Box 90653 2509 LR The Hague THE NETHERLANDS Telephone: +31 70 305 2444 Telefax: +31 70 305 2424 Email: vervoerinfo@ivw.nl
NEW ZEALAND	Director of Maritime New Zealand Maritime New Zealand Level 8 Gen-i Tower 109 Featherston Street P.O. Box 27006 Wellington NEW ZEALAND Telephone: +64 4 473 0111 Telefax: +64 4 494 1263 E-Mail: dangerous.goods@maritimenz.govt.nz Website: www.maritimenz.govt.nz
NORWAY	Norwegian Maritime Directorate Stensberggt. 27 P.O. Box 8123 Dep. 0032 Oslo NORWAY Telephone: +47 22 45 45 00 Telefax: +47 22 56 87 80 Email: postmottak@sjofartsdir.no

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PANAMA	Autoridad Marítima de Panamá Edificio 5534 Diablo Heights PO Box 8062 Panama 7 REPUBLIC OF PANAMA Telephone: +507 232 5100/5295 Telefax: +507 232 5527 Email: ampadmon@amp.gob.pa Website: www.amp.gob.pa
PAPUA NEW GUINEA	First Assistant Secretary Department of Transport Division of Marine P.O. Box 457 Konedobu PAPUA NEW GUINEA (PNG) Telephone: +675 211866 Telex: 22203
PERU	Dirección General de Capitanías y Guardacostas Marine de Guerra del Perú Constitución 150 Callao PERU Telephone: +51-1-4200162 Telefax: +51-1-4690505 Telex: 26042 PE DICAPI 26069 PE COSCTAL

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PHILIPPINES	Philippines Ports Authority Port of Manila Safety Staff P.O. Box 193 Port Area Manila 2803 PHILIPPINES Telephone: +63 2473441 to 49
POLAND	Ministry of Transport and Maritime Economy Department of Maritime and Inland Waters Administration ul. Chalubińskiego 4/6 00-928 Warsaw POLAND Telephone: +48 22 6 211 448 Telefax: +48 22 6 288 515 Telex: 816651 PKL PL
PORTUGAL	Direcçao-Geral de Navegaçao e dos Transportes Maritimos Praça Luis de Camoes, 22 -2°Dto 1200 Lisboa PORTUGAL Telephone: +351 1 373821 Telefax: +351 1 373826 Telex: 16753 SEMM PO
REPUBLIC OF KOREA	Maritime Safety Policy Division Maritime Safety Bureau Ministry of Maritime Affairs and Fisheries 140-2 Gye-Dong, Jongno-Gu, Seoul, 110-793 REPUBLIC OF KOREA Telephone: +82 2 3674 6312 Telefax: +82 2 3674 6317
RUSSIAN FEDERATION*	Department of State Policy for Maritime and River Transport Ministry of Transport of the Russian Federation Rozhdestvenka Street, 1, bldg. 1 Moscow 109012 RUSSIAN FEDERATION Telephone: +7 495 926 14 74

* Except for governmental explosives.

Country	Contact information for the main designated national competent authority
SAINT KITTS AND NEVIS	Department of Maritime Affairs Director of Maritime Affairs Ministry of Transport P.O. Box 186 Needsmust ST. KITTS WI Tel: +869 466-7032/4846 Fax: +869 465-0604/9475 E-mail: Maritimeaffairs@yahoo.com
SAUDI ARABIA	Port Authority Saudi Arabia Civil Defence Riyadh SAUDI ARABIA Telephone: +966 1 464 9477
SINGAPORE	Maritime and Port Authority of Singapore Shipping Division 21st Storey PSA Building 460 Alexandra Road SINGAPORE 119963 Telephone: +65 375 1931/6223/1600 Telefax: +65 375 6231 Email: shipping@mpa.gov.sg
SLOVENIA	Uprava Republike Siovenije za pomorstvo Ukmarjev trg 2 66 000 Koper SLOVENIA Telephone: +386 66 271 216 Telefax: +386 66 271 447 Telex: +34 235 UP POM SI
SOUTH AFRICA	South African Maritime Safety Authority P.O. Box 13186 Hatfield 0028 Pretoria SOUTH AFRICA Telephone: +27 12 342 3049 Telefax: +27 12 342 3160 South African Maritime Safety Authority Hatfield Gardens, Block E (Ground Floor) Corner Arcadia and Grosvenor Street Hatfield 0083 Pretoria SOUTH AFRICA

Country	Contact information for the main designated national competent authority
SPAIN	Dirección General de la Marina Mercante Subdirección General de Trafico, Seguridad y Contaminación c/Ruiz de Alarcón, 1 28014 Madrid SPAIN Telephone: +34 91 597 92 69/70 Telefax: +34 91 597 92 87 Email: mercancias.peligrosas@mfom.es
SWEDEN	Swedish Maritime Administration Maritime Safety Inspectorate Ship Technical Division SE-601 78 Norrköping SWEDEN Telephone: +46 11 191000 Telefax: +46 11 239934 E-mail: inspektion@sjofartsverket.se
SWITZERLAND	Office suisse de la navigation maritime Nauenstrasse 49 P.O. Box CH-4002 Basel SWITZERLAND Telephone: +41 61 27091 20 Telefax: +41 61 270 91 29 Email: dv-ssa@eda.admin.ch
THAILAND	Ministry of Transport and Communications Ratchadamnoen-Nok Avenue Bangkok 10100 THAILAND Telephone: +66 2 2813422 Telefax: +66 2 2801714 Telex: 70000 MINOCOM TH
TUNISIA	Ministère du Transport Direction Générale de la Marine Marchande Avenue 7 novembre (près l'aéroport) 2035 Tunis B.P. 179 Tunis cedex TUNISIA Telephone: +216 71 806 362 Telefax: +216 71 806 413

Country	Contact information for the main designated national competent authority
UNITED KINGDOM	Maritime and Coastguard Agency Bay 2/21 Spring Place 105 Commercial Road Southampton, SO15 1EG UNITED KINGDOM Telephone: +44 23 8032 9182 / 100 Telefax: +44 23 8032 9204 Email: dangerous.goods@mcga.gov.uk
UNITED STATES	US Department of Transportation Pipeline and Hazardous Materials Safety Administration Office of International Standards 400 Seventh Street SW Washington, D.C. 20590-0001 U.S.A. Telephone: +1 202 366 0656 Telefax: +1 202 366 5713 Email: infocntr@dot.gov Website: hazmat.dot.gov United States Coast Guard Hazardous Materials Standards Division (G-PSO-3) 2100 Second Street SW Washington, D.C. 20593-0001 U.S.A. Telephone: +1 202 267 1577 +1 202 267 1217 Telefax: +1 202 267 4570
URUGUAY	Prefectura del Puerto de Montevideo Rambla 25 de Agosto de 1825 S/N Montevideo URUGUAY Telephone: +598 2 960123 +598 2 960022 Telex: 23929 COMAPRE-UY
VANUATU	Commissioner of Maritime Affairs Vanuatu Maritime Authority P.O Box 320 Port Vila VANUATU Telephone: +678 23128 Telefax: +678 22949 Email: vma@vanuatu.com.vu

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YEMEN	Executive Chairman Maritime Affairs Authority P.O. Box 19395 Sanaa REPUBLIC OF YEMEN Tel: +967 1 414 412 / 419 914/ 423 005 Fax: +967 1 414 645 E-mail: MAA-HeadOffice@y.net.ye Website: www.MAA.gov.ye
Associate Member HONG KONG, CHINA	The Director of Marine Marine Department GPO Box 4155 HONG KONG, CHINA Telephone: +852 2852 3085 Telefax: +852 2815 8596 Telex: 64553 MARHQ HX

Appendix A

In the table for class 6.2, amend the proper shipping name to read "BIOLOGICAL SUBSTANCES, CATEGORY B".

In the table for class 8, amend the proper shipping name of UN No.1740 to read "HYDROGENDIFLUORIDE, SOLID, N.O.S.", and add a new entry under Specific entries "8" "6.1" "3471" "HYDROGENDIFLUORIDE SOLUTION, N.O.S.".

Index

Delete the entries for "1,4-Benzenediol", "p-Dihydroxybenzene", "Hydroquinol", "HYDROQUINONE, SOLID", "Quinol" and "HYDROQUINONE SOLUTION".

Delete all entries relevant to UN nos.1014, 1015, 1979, 1980, 1981, 2600, 2662 and 3435.

Delete all entries relevant to UN nos. 1366, 1370, 2005, 2445, 3051, 3052, 3053, 3076, 3433 and 3461.

Amend the proper shipping names for UN nos.1143, 1740, 1779, 1848, 2823, 2993, 3245, 3256 and 3373.

Add entries relevant to UN Nos.3412 (two entries depending upon the concentration of acid), 3463, 3469, 3470, 3471, 3472 and 3473.

In column (2) of the entry for "*ortho*-Aminoanisole, see", replace "P" with "-".

In column (4) of the entry for "n-Amylbenzene, see Note 1" add "-".

In column (2) of the entry for "BUTANEDIONE", delete "P".

In column (4) of the entry for "Camphechlor", insert "-".

Delete the entry for "Copper Chloride (solution)".

In column (2) of the entry for "Cupric Chloride, see", replace "P" with "PP".

In column (2) of the entry for "Cuprous Chloride, see", replace "P" with "PP".

In column (2) of the entry for "DICYCLOHEXYLAMMONIUM NITRITE", replace "P" with "-".

In the entry for "Difluoroethane and Dichlorodifluoromethane, Azeotropic Mixture with approximately 74% dichlorodifluoromethane, see DICHLORODIFLUOROMETHANE and DIFLUOROETHANE, AZEOTROPIC MIXTURE", amend "and" to read "AND".

In column (4) of the entry for "Dioxathion" insert "-".

In column (2) of the entries for "FIBRES, VEGETABLE with oil" and "FIBRES, ANIMAL with oil", add "N.O.S.".

In column (2) of the entry for ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED, replace "●" with "-".

Amend "ORGANOMETALLIC SUBSTANCE, SOLID, TOXIC" to read "ORGANOMETALLIC COMPOUND, SOLID, TOXIC".

In column (2) of the entry for “OXIDIZING SOLID, FLAMMABLE, N.O.S.” replace “-” with “●”.

In column (2) of the entry for “OXIDIZING SOLID, SELF-HEATING, N.O.S.” replace “-” with “●”.

Amend “1,2-PROPYLENEDIAMINES” to read “1,2-PROPYLENEDIAMINE”.

In column (2) of the entry for “SELF-HEATING SOLID, OXIDIZING, N.O.S.” replace “-” with “●”.

Delete the entry for “Sodium Alloys (liquid), *see also* POTASSIUM SODIUM ALLOYS”.

In column (2) of the entry for “WATER-REACTIVE SOLID, OXIDIZING, N.O.S.” replace “-” with “●”.

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ANNEX 6

RESOLUTION MSC.206(81)
(adopted on 18 May 2006)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CODE FOR FIRE SAFETY SYSTEMS (FSS CODE)

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution MSC.98(73) by which it adopted the International Code for Fire Safety Systems (hereinafter referred to as "the FSS Code"), which has become mandatory under chapter II-2 of the International Convention for the Safety of Life at Sea, 1974 (hereinafter referred to as "the Convention"),

NOTING ALSO article VIII(b) and regulation II-2/3.22 of the Convention concerning the procedure for amending the FSS Code,

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

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the FSS Code, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2010, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2010 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE FOR FIRE SAFETY SYSTEMS (FSS CODE)

CHAPTER 5
FIXED GAS FIRE-EXTINGUISHING SYSTEMS

The existing text of chapter 5 is replaced by the following:

"**1 Application**

This chapter details the specifications for fixed gas fire-extinguishing systems as required by chapter II-2 of the Convention.

2 Engineering specifications

2.1 *General*

2.1.1 Fire-extinguishing medium

2.1.1.1 Where the quantity of the fire-extinguishing medium is required to protect more than one space, the quantity of medium available need not be more than the largest quantity required for any one space so protected. The system shall be fitted with normally closed control valves arranged to direct the agent into the appropriate space.

2.1.1.2 The volume of starting air receivers, converted to free air volume, shall be added to the gross volume of the machinery space when calculating the necessary quantity of the fire-extinguishing medium. Alternatively, a discharge pipe from the safety valves may be fitted and led directly to the open air.

2.1.1.3 Means shall be provided for the crew to safely check the quantity of the fire-extinguishing medium in the containers.

2.1.1.4 Containers for the storage of fire-extinguishing medium, piping and associated pressure components shall be designed to pressure codes of practice to the satisfaction of the Administration having regard to their locations and maximum ambient temperatures expected in service.*

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* Publication ISO – 9809/1: Refillable seamless steel gas cylinders (design, construction and testing);
ISO – 3500: Seamless steel CO_2 cylinders. For fixed fire-fighting installations on ships, specifying the principal external dimensions, accessories, filling ratio and marking for seamless steel CO_2 cylinders used in fixed fire-fighting installations on ships, in order to facilitate their interchange ability;
ISO – 5923: Fire protection – Fire-extinguishing media – Carbon dioxide;
ISO – 13769: Gas cylinders – Stamp marking;
ISO – 6406: Periodic inspection and testing of seamless steel gas cylinders;
ISO – 9329, part 1: Seamless steel tubes for pressure purposes – Technical delivery conditions – Part 1: Unalloyed steels with specified room temperature properties;
ISO – 9329, part 2: Seamless steel tubes for pressure purposes – Technical delivery conditions – Part 2: Unalloyed and alloyed steels with specified elevated temperature properties;
ISO – 9330, part 1: Welded steel tubes for pressure purposes – Technical delivery conditions – Part 1: Unalloyed steel tubes with specified room temperature properties;
ISO – 9330, part 2: Welded steel tubes for pressure purposes – Technical delivery conditions – Part 2: Electric resistance and induction welded unalloyed and alloyed steel tubes with specified elevated temperature properties.

2.1.2 Installation requirements

2.1.2.1 The piping for the distribution of fire-extinguishing medium shall be arranged and discharge nozzles so positioned that a uniform distribution of the medium is obtained. System flow calculations shall be performed using a calculation technique acceptable to the Administration.

2.1.2.2 Except as otherwise permitted by the Administration, pressure containers required for the storage of fire-extinguishing medium, other than steam, shall be located outside the protected spaces in accordance with regulation II-2/10.4.3 of the Convention.

2.1.2.3 Spare parts for the system shall be stored on board and be to the satisfaction of the Administration.

2.1.2.4 In piping sections where valve arrangements introduce sections of closed piping, such sections shall be fitted with a pressure relief valve and the outlet of the valve shall be led to open deck.

2.1.2.5 All discharge piping, fittings and nozzles in the protected spaces shall be constructed of materials having a melting temperature which exceeds 925°C. The piping and associated equipment shall be adequately supported.

2.1.2.6 A fitting shall be installed in the discharge piping to permit the air testing as required by paragraph 2.2.3.1.

2.1.3 System control requirements

2.1.3.1 The necessary pipes for conveying fire-extinguishing medium into the protected spaces shall be provided with control valves so marked as to indicate clearly the spaces to which the pipes are led. Suitable provisions shall be made to prevent inadvertent release of the medium into the space. Where a cargo space fitted with a gas fire-extinguishing system is used as a passenger space, the gas connection shall be blanked during such use. The pipes may pass through accommodations providing that they are of substantial thickness and that their tightness is verified with a pressure test, after their installation, at a pressure head not less than 5 N/mm^2. In addition, pipes passing through accommodation areas shall be joined only by welding and shall not be fitted with drains or other openings within such spaces. The pipes shall not pass through refrigerated spaces.

2.1.3.2 Means shall be provided for automatically giving audible and visual warning of the release of fire-extinguishing medium into any ro-ro spaces and other spaces in which personnel normally work or to which they have access. The audible alarms shall be located so as to be audible throughout the protected space with all machinery operating, and the alarms should be distinguished from other audible alarms by adjustment of sound pressure or sound patterns. The pre-discharge alarm shall be automatically activated (e.g., by opening of the release cabinet door). The alarm shall operate for the length of time needed to evacuate the space, but in no case less than 20 s before the medium is released. Conventional cargo spaces and small spaces (such as compressor rooms, paint lockers, etc.) with only a local release need not be provided with such an alarm.

2.1.3.3 The means of control of any fixed gas fire-extinguishing system shall be readily accessible, simple to operate and shall be grouped together in as few locations as possible at positions not likely to be cut off by a fire in a protected space. At each location there shall be clear instructions relating to the operation of the system having regard to the safety of personnel.

2.1.3.4 Automatic release of fire-extinguishing medium shall not be permitted, except as permitted by the Administration.

2.2 *Carbon dioxide systems*

2.2.1 Quantity of fire-extinguishing medium

2.2.1.1 For cargo spaces, the quantity of carbon dioxide available shall, unless otherwise provided, be sufficient to give a minimum volume of free gas equal to 30% of the gross volume of the largest cargo space to be protected in the ship.

2.2.1.2 For machinery spaces, the quantity of carbon dioxide carried shall be sufficient to give a minimum volume of free gas equal to the larger of the following volumes, either:

.1 40% of the gross volume of the largest machinery space so protected, the volume to exclude that part of the casing above the level at which the horizontal area of the casing is 40% or less of the horizontal area of the space concerned taken midway between the tank top and the lowest part of the casing; or

.2 35% of the gross volume of the largest machinery space protected, including the casing.

2.2.1.3 The percentages specified in paragraph 2.2.1.2 above may be reduced to 35% and 30%, respectively, for cargo ships of less than 2,000 gross tonnage where two or more machinery spaces, which are not entirely separate, are considered as forming one space.

2.2.1.4 For the purpose of this paragraph the volume of free carbon dioxide shall be calculated at 0.56 m^3/kg.

2.2.1.5 For machinery spaces, the fixed piping system shall be such that 85% of the gas can be discharged into the space within 2 min.

2.2.2 Controls

Carbon dioxide systems shall comply with the following requirements:

.1 two separate controls shall be provided for releasing carbon dioxide into a protected space and to ensure the activation of the alarm. One control shall be used for opening the valve of the piping which conveys the gas into the protected space and a second control shall be used to discharge the gas from its storage containers. Positive means shall be provided so they can only be operated in that order; and

.2 the two controls shall be located inside a release box clearly identified for the particular space. If the box containing the controls is to be locked, a key to the box shall be in a break-glass-type enclosure conspicuously located adjacent to the box.

2.2.3 Testing of the installation

When the system has been installed, pressure-tested and inspected, the following shall be carried out:

.1 a test of the free air flow in all pipes and nozzles; and

.2 a functional test of the alarm equipment.

2.2.4 Low-pressure CO_2 system

Where a low pressure CO_2 system is fitted to comply with this regulation, the following applies.

2.2.4.1 The system control devices and the refrigerating plants shall be located within the same room where the pressure vessels are stored.

2.2.4.2 The rated amount of liquid carbon dioxide shall be stored in vessel(s) under the working pressure in the range of 1.8 N/mm^2 to 2.2 N/mm^2. The normal liquid charge in the container shall be limited to provide sufficient vapour space to allow for expansion of the liquid under the maximum storage temperatures than can be obtained corresponding to the setting of the pressure relief valves but shall not exceed 95% of the volumetric capacity of the container.

2.2.4.3 Provision shall be made for:

.1 pressure gauge;

.2 high pressure alarm: not more than setting of the relief valve;

.3 low pressure alarm: not less than 1.8 N/mm^2;

.4 branch pipes with stop valves for filling the vessel;

.5 discharge pipes;

.6 liquid CO_2 level indicator, fitted on the vessel(s); and

.7 two safety valves.

2.2.4.4 The two safety relief valves shall be arranged so that either valve can be shut off while the other is connected to the vessel. The setting of the relief valves shall not be less than 1.1 times working pressure. The capacity of each valve shall be such that the vapours generated under fire condition can be discharged with a pressure rise not more than 20% above the setting pressure. The discharge from the safety valves shall be led to the open.

2.2.4.5 The vessel(s) and outgoing pipes permanently filled with carbon dioxide shall have thermal insulation preventing the operation of the safety valve in 24 h after de-energizing the plant, at ambient temperature of 45°C and an initial pressure equal to the starting pressure of the refrigeration unit.

2.2.4.6 The vessel(s) shall be serviced by two automated completely independent refrigerating units solely intended for this purpose, each comprising a compressor and the relevant prime mover, evaporator and condenser.

2.2.4.7 The refrigerating capacity and the automatic control of each unit shall be so as to maintain the required temperature under conditions of continuous operation during 24 h at sea temperatures up to 32°C and ambient air temperatures up to 45°C.

2.2.4.8 Each electric refrigerating unit shall be supplied from the main switchboard busbars by a separate feeder.

2.2.4.9 Cooling water supply to the refrigerating plant (where required) shall be provided from at least two circulating pumps one of which being used as a stand-by. The stand-by pump may be a pump used for other services so long as its use for cooling would not interfere with any other essential service of the ship. Cooling water shall be taken from not less than two sea connections, preferably one port and one starboard.

2.2.4.10 Safety relief devices shall be provided in each section of pipe that may be isolated by block valves and in which there could be a build-up of pressure in excess of the design pressure of any of the components.

2.2.4.11 Audible and visual alarms shall be given in a central control station or, in accordance with regulation II-1/51, where a central control station is not provided, when:

.1 the pressure in the vessel(s) reaches the low and high values according to paragraph 2.2.4.2;

.2 any one of the refrigerating units fails to operate; or

.3 the lowest permissible level of the liquid in the vessels is reached.

2.2.4.12 If the system serves more than one space, means for control of discharge quantities of CO_2 shall be provided, e.g. automatic timer or accurate level indicators located at the control position(s).

2.2.4.13 If a device is provided which automatically regulates the discharge of the rated quantity of carbon dioxide into the protected spaces, it shall be also possible to regulate the discharge manually.

2.3 *Requirements of steam systems*

The boiler or boilers available for supplying steam shall have an evaporation of at least 1 kg of steam per hour for each 0.75 m^3 of the gross volume of the largest space so protected. In addition to complying with the foregoing requirements, the systems in all respects shall be as determined by, and to the satisfaction of, the Administration.

2.4 *Systems using gaseous products of fuel combustion*

2.4.1 General

Where gas other than carbon dioxide or steam, as permitted by paragraph 2.3, is produced on the ship and is used as a fire-extinguishing medium, the system shall comply with the requirements in paragraph 2.4.2.

2.4.2 Requirements of the systems

2.4.2.1 Gaseous products

Gas shall be a gaseous product of fuel combustion in which the oxygen content, the carbon monoxide content, the corrosive elements and any solid combustible elements in a gaseous product shall have been reduced to a permissible minimum.

2.4.2.2 Capacity of fire-extinguishing systems

2.4.2.2.1 Where such gas is used as the fire-extinguishing medium in a fixed fire-extinguishing system for the protection of machinery spaces, it shall afford protection equivalent to that provided by a fixed system using carbon dioxide as the medium.

2.4.2.2.2 Where such gas is used as the fire-extinguishing medium in a fixed fire-extinguishing system for the protection of cargo spaces, a sufficient quantity of such gas shall be available to supply hourly a volume of free gas at least equal to 25% of the gross volume of the largest space protected in this way for a period of 72 h.

2.5 *Equivalent fixed gas fire-extinguishing systems for machinery spaces and cargo pump-rooms*

Fixed gas fire-extinguishing systems equivalent to those specified in paragraphs 2.2 to 2.4 shall be approved by the Administration based on the guidelines developed by the Organization.[*]"

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[*] Refer to the Revised guidelines for the approval of equivalent fixed gas fire-extinguishing systems, as referred to in SOLAS 74, for machinery spaces and cargo pump rooms (MSC/Circ.848) and the Guidelines for the approval of fixed aerosol fire-extinguishing systems equivalent to fixed gas fire-extinguishing systems, as referred to in SOLAS 74, for machinery spaces (MSC/Circ.1007).

ANNEX 7

RESOLUTION MSC.207(81)
(adopted on 18 May 2006)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL LIFE-SAVING APPLIANCE (LSA) CODE

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution MSC.48(66), by which it adopted the International Life-Saving Appliance Code (hereinafter referred to as "the LSA Code"), which has become mandatory under chapter III of the International Convention for the Safety of Life at Sea, 1974 (hereinafter referred to as "the Convention"),

NOTING ALSO article VIII(b) and regulation III/3.10 of the Convention concerning the procedure for amending the LSA Code,

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

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the LSA Code, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2010, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2010 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL LIFE-SAVING APPLIANCE (LSA) CODE

CHAPTER I
GENERAL

1 The existing subparagraph .2 of paragraph 1.2.2 is replaced by the following:

".2 not be damaged in stowage throughout the air temperature range -30°C to +65°C and, in the case of personal life-saving appliances, unless otherwise specified, remain operational throughout the air temperature range -15°C to +40°C;"

2 The existing subparagraph .6 of paragraph 1.2.2 is replaced by the following:

".6 be of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea;"

CHAPTER II
PERSONAL LIFE-SAVING APPLIANCES

3 The words "sufficient to operate the quick-release arrangement" in paragraph 2.1.1.7 are replaced by the words "of not less than 4 kg".

4 In paragraph 2.1.3, the word "and" is moved from the end of subparagraph .4 to the end of subparagraph .5, and the following new subparagraph .6 is added:

".6 be provided with a quick-release arrangement that will automatically release and activate the signal and associated self-igniting light connected to a lifebuoy having a mass of not more than 4 kg."

5 The existing section 2.2 is replaced by the following:

"**2.2 Lifejackets**

2.2.1 *General requirements for lifejackets*

2.2.1.1 A lifejacket shall not sustain burning or continue melting after being totally enveloped in a fire for a period of 2 s.

2.2.1.2 Lifejackets shall be provided in three sizes in accordance with table 2.1. If a lifejacket fully complies with the requirements of two adjacent size ranges, it may be marked with both size ranges, but the specified ranges shall not be divided. Lifejackets shall be marked by either weight or height, or by both weight and height, according to table 2.1.

Table 2.1 – Lifejacket sizing criteria

Lifejacket marking	Infant	Child	Adult
User's size:			
Weight (kg)	less than 15	15 or more but less than 43	43 or more
Height (cm)	less than 100	100 or more but less than 155	155 or more

2.2.1.3 If an adult lifejacket is not designed to fit persons weighing up to 140 kg and with a chest girth of up to 1,750 mm, suitable accessories shall be available to allow it to be secured to such persons.

2.2.1.4 The in-water performance of a lifejacket shall be evaluated by comparison to the performance of a suitable size standard reference lifejacket, i.e. reference test device (RTD) complying with the recommendations of the Organization.*

2.2.1.5 An adult lifejacket shall be so constructed that:

.1 at least 75% of persons who are completely unfamiliar with the lifejacket can correctly don it within a period of 1 min without assistance, guidance or prior demonstration;

.2 after demonstration, all persons can correctly don it within a period of 1 min without assistance;

.3 it is clearly capable of being worn in only one way or inside-out and, if donned incorrectly, it is not injurious to the wearer;

.4 the method of securing the lifejacket to the wearer has quick and positive means of closure that do not require tying of knots;

.5 it is comfortable to wear; and

.6 it allows the wearer to jump into the water from a height of at least 4.5 m while holding on to the lifejacket, and from a height of at least 1m with arms held overhead, without injury and without dislodging or damaging the lifejacket or its attachments.

2.2.1.6 When tested according to the recommendations of the Organization on at least 12 persons, adult lifejackets shall have sufficient buoyancy and stability in calm fresh water to:

* Refer to the Revised Recommendation on testing of life-saving appliances (resolution MSC.81(70)), as amended.

.1 lift the mouth of exhausted or unconscious persons by an average height of not less than the average provided by the adult RTD;

.2 turn the body of unconscious, face-down persons in the water to a position where the mouth is clear of the water in an average time not exceeding that of the RTD, with the number of persons not turned by the lifejacket no greater than that of the RTD;

.3 incline the body backwards from the vertical position for an average torso angle of not less than that of the RTD minus 5°;

.4 lift the head above horizontal for an average faceplane angle of not less than that of the RTD minus 5°; and

.5 return the wearer to a stable face-up position after being destabilized when floating in the flexed foetal position.*

2.2.1.7 An adult lifejacket shall allow the person wearing it to swim a short distance and to board a survival craft.

2.2.1.8 An infant or child lifejacket shall perform the same as an adult lifejacket except as follows:

.1 donning assistance is permitted for small children and infants;

.2 the appropriate child or infant RTD shall be used in place of the adult RTD; and

.3 assistance may be given to board a survival craft, but wearer mobility shall not be reduced to any greater extent than by the appropriate size RTD.

2.2.1.9 With the exception of freeboard and self-righting performance, the requirements for infant lifejackets may be relaxed, if necessary, in order to:

.1 facilitate the rescue of the infant by a caretaker;

.2 allow the infant to be fastened to a caretaker and contribute to keeping the infant close to the caretaker;

.3 keep the infant dry, with free respiratory passages;

.4 protect the infant against bumps and jolts during evacuation; and

.5 allow a caretaker to monitor and control heat loss by the infant.

* Refer to the illustration on page 11 of the IMO Pocket Guide to Cold Water Survival and to the Revised Recommendation on testing of life-saving appliances (resolution MSC.81(70)), as amended.

2.2.1.10 In addition to the markings required by paragraph 1.2.2.9, an infant or child lifejacket shall be marked with:

.1 the size range in accordance with paragraph 2.2.1.2; and

.2 an "infant" or "child" symbol as shown in the "infant's lifejacket" or "child's lifejacket" symbol adopted by the Organization.*

2.2.1.11 A lifejacket shall have buoyancy which is not reduced by more than 5% after 24 h submersion in fresh water.

2.2.1.12 The buoyancy of a lifejacket shall not depend on the use of loose granulated materials.

2.2.1.13 Each lifejacket shall be provided with means of securing a lifejacket light as specified in paragraph 2.2.3 such that it shall be capable of complying with paragraphs 2.2.1.5.6 and 2.2.3.1.3.

2.2.1.14 Each lifejacket shall be fitted with a whistle firmly secured by a lanyard.

2.2.1.15 Lifejacket lights and whistles shall be selected and secured to the lifejacket in such a way that their performance in combination is not degraded.

2.2.1.16 A lifejacket shall be provided with a releasable buoyant line or other means to secure it to a lifejacket worn by another person in the water.

2.2.1.17 A lifejacket shall be provided with a suitable means to allow a rescuer to lift the wearer from the water into a survival craft or rescue boat.

2.2.2 *Inflatable lifejackets*

A lifejacket which depends on inflation for buoyancy shall have not less than two separate compartments, shall comply with the requirements of paragraph 2.2.1 and shall:

.1 inflate automatically upon immersion, be provided with a device to permit inflation by a single manual motion and be capable of having each chamber inflated by mouth;

.2 in the event of loss of buoyancy in any one compartment be capable of complying with the requirements of paragraphs 2.2.1.5, 2.2.1.6 and 2.2.1.7; and

.3 comply with the requirements of paragraph 2.2.1.11 after inflation by means of the automatic mechanism.

* Refer to Symbols related to life-saving appliances and arrangements, adopted by the Organization by resolution A.760(18), as amended.

2.2.3 *Lifejacket lights*

2.2.3.1 Each lifejacket light shall:

.1 have a luminous intensity of not less than 0.75 cd in all directions of the upper hemisphere;

.2 have a source of energy capable of providing a luminous intensity of 0.75 cd for a period of at least 8 h;

.3 be visible over as great a segment of the upper hemisphere as is practicable when attached to a lifejacket; and

.4 be of white colour.

2.2.3.2 If the light referred to in paragraph 2.2.3.1 is a flashing light, it shall, in addition:

.1 be provided with a manually operated switch; and

.2 flash at a rate of not less than 50 flashes and not more than 70 flashes per minute with an effective luminous intensity of at least 0.75 cd."

6 The word "The" in the beginning of paragraph 2.3.1.1 is replaced by the word "An".

7 The existing subparagraph .1 of paragraph 2.3.1.1 is replaced by the following:

".1 it can be unpacked and donned without assistance within 2 min, taking into account donning of any associated clothing*, donning of a lifejacket if the immersion suit must be worn in conjunction with a lifejacket to meet the requirements of paragraph 2.3.1.2, and inflation of orally inflatable chambers if fitted;"

8 The existing subparagraph .3 of paragraph 2.3.1.1 is replaced by the following:

".3 it will cover the whole body with the exception of the face, except that covering for the hands may be provided by separate gloves which shall be permanently attached to the suit;"

9 The existing paragraph 2.3.1.2 is replaced by the following:

"2.3.1.2 An immersion suit on its own, or worn in conjunction with a lifejacket if necessary, shall have sufficient buoyancy and stability in calm fresh water to:

.1 lift the mouth of an exhausted or unconscious person clear of the water by not less than 120 mm; and

* Refer to paragraph 3.1.3 of the Recommendation on testing of life-saving appliances, adopted by the Maritime Safety Committee of the Organization by resolution MSC.81(70), as amended.

.2 allow the wearer to turn from a face-down to a face-up position in not more than 5 s."

10 In paragraph 2.3.1.3.3, the words "or its attachments," are inserted between the words "the immersion suit" and "or being injured".

11 In paragraph 2.3.1.4, the number "2.2.1.8" is replaced by "2.2.1.14".

12 The following new paragraphs 2.3.1.5 and 2.3.1.6 are inserted after the existing paragraph 2.3.1.4:

"2.3.1.5 An immersion suit which has buoyancy and is designed to be worn without a lifejacket shall be provided with a releasable buoyant line or other means to secure it to a suit worn by another person in the water.

2.3.1.6 An immersion suit which has buoyancy and is designed to be worn without a lifejacket shall be provided with a suitable means to allow a rescuer to lift the wearer from the water into a survival craft or rescue boat."

13 The existing paragraph 2.3.1.5 is replaced by the following:

"2.3.1.7 If an immersion suit is to be worn in conjunction with a lifejacket, the lifejacket shall be worn over the immersion suit. Persons wearing such an immersion suit shall be able to don a lifejacket without assistance. The immersion suit shall be marked to indicate that it must be worn in conjunction with a compatible lifejacket."

14 The following new paragraph 2.3.1.8 is added:

"2.3.1.8 An immersion suit shall have buoyancy which is not reduced by more than 5% after 24 h submersion in fresh water and does not depend on the use of loose granulated materials."

15 The existing paragraph 2.3.3 is deleted.

16 The word "The" in the beginning of paragraph 2.4.1.1 is replaced by the word "An".

17 The existing subparagraph .3 of paragraph 2.4.1.1 is replaced by the following:

".3 covers the whole body except, where the Administration so permits, the feet; covering for the hands and head may be provided by separate gloves and a hood, both of which shall be permanently attached to the suit;"

18 The existing paragraph 2.4.1.2 is deleted and paragraphs 2.4.1.3 and 2.4.1.4 are renumbered as paragraphs 2.4.1.2 and 2.4.1.3 respectively.

19 The words "or its attachments," are inserted between the words "the suit" and "or being injured" in subparagraph .2 of the renumbered paragraph 2.4.1.2.

20 The renumbered paragraph 2.4.1.3 is replaced by the following:

"2.4.1.3 An anti-exposure suit shall be fitted with a light complying with the requirements of paragraph 2.2.3 such that it shall be capable of complying with paragraphs 2.2.3.1.3 and 2.4.1.2.2, and the whistle prescribed by paragraph 2.2.1.14."

21 The existing subparagraph .2 of paragraph 2.4.2.1 is replaced by the following:

".2 be so constructed that, when worn as marked and following one jump into the water which totally submerges the wearer, the suit continues to provide sufficient thermal protection to ensure that when it is worn in calm circulating water at a temperature of 5°C, the wearer's body core temperature does not fall at a rate of more than 1.5°C per hour, after the first 0.5 h."

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ANNEX 8

RESOLUTION MSC.208(81)
(adopted on 18 May 2006)

ADOPTION OF AMENDMENTS TO THE GUIDELINES FOR THE AUTHORIZATION OF ORGANIZATIONS ACTING ON BEHALF OF THE ADMINISTRATION (RESOLUTION A.739(18))

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution A.739(18) by which the Assembly adopted the Guidelines for the authorization of organizations acting on behalf of the Administration (herewith referred to as "the Guidelines"), which have become mandatory under chapter XI-1 of the International Convention for the Safety of Life at Sea, 1974 (hereinafter referred to as "the Convention"),

NOTING ALSO article VIII(b) and regulation XI-1/1 of the Convention concerning the procedure for amending the Guidelines,

HAVING CONSIDERED, at its eighty-first session, amendments to the Guidelines, proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Guidelines for the authorization of organizations acting on behalf of the Administration, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2010, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2010 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE GUIDELINES FOR THE AUTHORIZATION OF ORGANIZATIONS ACTING ON BEHALF OF THE ADMINISTRATION (RESOLUTION A.739(18))

APPENDIX 1

MINIMUM STANDARDS FOR RECOGNIZED ORGANIZATIONS ACTING ON BEHALF OF THE ADMINISTRATION

The following new paragraph 2-1 is added after the existing paragraph 2:

> "2-1 The organization should perform survey and certification functions of a statutory nature by the use of only exclusive surveyors and auditors, being persons solely employed by the organization, duly qualified, trained and authorized to execute all duties and activities incumbent upon their employer, within their level of work responsibility. While still remaining responsible for the certification on behalf of the flag State, the organization may subcontract radio surveys to non-exclusive surveyors in accordance with the relevant provisions of resolution A.789(19)."

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ANNEX 9

RESOLUTION MSC.209(81)
(adopted on 18 May 2006)

ADOPTION OF AMENDMENTS TO THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING CODE (STCW CODE)

THE MARITIME SAFETY COMMITTEE,

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

RECALLING FURTHER Article XII and regulation I/1.2.3 of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, hereinafter referred to as "the Convention", concerning the procedures for amending Part A of the Seafarers' Training, Certification and Watchkeeping (STCW) Code,

HAVING CONSIDERED, at its eighty-first session, amendments to Part A of the STCW Code, proposed and circulated in accordance with article XII(1)(a)(i) of the Convention,

1. ADOPTS, in accordance with article XII(1)(a)(iv) of the Convention, amendments to the STCW Code, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article XII(1)(a)(vii)(2) of the Convention, that the said amendments to the STCW Code shall be deemed to have been accepted on 1 July 2007, unless, prior to that date, more than one third of Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross tonnage or more, have notified their objections to the amendments;

3. INVITES Parties to the Convention to note that, in accordance with article XII(1)(a)(ix) of the Convention, the annexed amendments to the STCW Code shall enter into force on 1 January 2008 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article XII(1)(a)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Parties to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Parties to the Convention.

ANNEX

AMENDMENTS TO THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE

PART A
MANDATORY STANDARDS REGARDING PROVISIONS OF THE ANNEX TO THE STCW CONVENTION

1 The existing title of chapter VI is replaced by the following:

"**Standards regarding emergency, occupational safety, security, medical care and survival functions**"

2 In chapter VI, section A-VI/2, the existing table A-VI/2-2 is replaced by the following table:

"

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Understand the construction, maintenance, repair and outfitting of fast rescue boats	Construction and outfit of fast rescue boats and individual items of their equipment Knowledge of the maintenance, emergency repairs of fast rescue boats and the normal inflation and deflation of buoyancy compartments of inflated fast rescue boats	Assessment of evidence obtained from practical instruction	The method of carrying out routine maintenance and emergency repairs Identify components and required equipment for fast rescue boats
Take charge of the launching equipment and appliance, as commonly fitted during launch and recovery	Assessment of the readiness of launch equipment and launch appliance of fast rescue boats for immediate launch and operation Understand the operation and limitations of the winch, brakes, falls, painters, motion compensation and other equipment as commonly fitted Safety precautions during launch and recovery of a fast rescue boat Launching and recovery of fast rescue boat in prevailing and adverse weather and sea conditions	Assessment of evidence obtained from practical demonstration of ability to control safe launching and recovery of fast rescue boat, with equipment as fitted	Ability to prepare and take charge of the launch equipment and appliance during launching and recovery of fast rescue boat

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Take charge of the fast rescue boat as commonly fitted during launch and recovery	Assessment of the readiness of fast rescue boats and related equipment for immediate launch and operation Safety precautions during launch and recovery of a fast rescue boat Launch and recovery of fast rescue boat in prevailing and adverse weather and sea conditions	Assessment of evidence obtained from practical demonstration of ability to conduct safe launching and recovery of fast rescue boat, with equipment as fitted	Ability to take charge of the fast rescue boat during launching and recovery
Take charge of a fast rescue boat after launch	Particular characteristic, facilities and limitations of fast rescue boats Procedures for the righting of a capsized fast rescue boat How to handle a fast rescue boat in prevailing and adverse weather and sea conditions Navigational and safety equipment available in a fast rescue boat Search patterns and environmental factors affecting their execution	Assessment of evidence obtained from practical demonstration of ability to: .1 Right a capsized fast rescue boat .2 Handle a fast rescue boat in prevailing weather and sea conditions .3 Swim in special equipment .4 Use communications and signalling equipment between the fast rescue boat and helicopter and a ship .5 Use the emergency equipment carried .6 Recover a casualty from the water and transfer a casualty to a rescue helicopter or to a ship or to a place of safety	Demonstration of operation of fast rescue boats within equipment limitations in prevailing weather conditions

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
		.7 Carry out search patterns, taking account of environmental factors	
Operate a fast rescue boat engine	Methods of starting and operating a fast rescue boat engine and its accessories	Assessment of evidence obtained from practical demonstration of ability to start and operate a fast rescue boat engine	Engine is started and operated as required for manoeuvring

”

3 The following new section A-VI/5 and table are inserted after the existing table VI/4-2:

“**Section A-VI/5**

Mandatory minimum requirements for the issue of certificates of proficiency for ship security officers

Standard of competence

1 Every candidate for a certificate of proficiency as a ship security officer shall be required to demonstrate competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/5.

2 The level of knowledge of the subjects listed in column 2 of table A-VI/5 shall be sufficient to enable the candidate to act as the designated ship security officer.

3 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take into account the guidance in section B-VI/5 of this Code.

4 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-VI/5.

Transitional provisions

5 Determining professional competence for existing ship security officers who hold or can document qualifications before the entry into force of this regulation shall be established by:

.1 approved seagoing service as a ship security officer, for a period of at least six months in total during the preceding three years; or

.2 having performed security functions considered to be equivalent to the seagoing service required in paragraph 5.1; or

.3 passing an approved test; or

.4 successfully completing approved training.

6 Every person who has been found competent under section A-VI/5, paragraph 5, shall be issued a certificate of proficiency as a ship security officer.

Table A-VI/5

Specifications of minimum standards of proficiency for ship security officers

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Maintain and supervise the implementation of a ship security plan	Knowledge of international maritime security policy and responsibilities of Governments, Companies and designated persons Knowledge of the purpose for and the elements that make up a ship security plan, related procedures and maintenance of records Knowledge of procedures to be employed in implementing a ship security plan and reporting of security incidents Knowledge of maritime security levels and the consequential security measures and procedures aboard ship and in the port facility environment Knowledge of the requirements and procedures for conducting internal audits, on-scene inspections, control and monitoring of security activities specified in a ship security plan Knowledge of the requirements and procedures for reporting to the company security officer any deficiencies and non-conformities identified during internal audits, periodic reviews, and security inspections	Assessment of evidence obtained from approved training or examination	Procedures and actions are in accordance with the principles established by the ISPS Code and SOLAS as amended Legislative requirements relating to security are correctly identified Procedures achieve a state of readiness to respond to changes in maritime security levels Communications within the ship security officer's area of responsibility are clear and understood

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	Knowledge of the methods and procedures used to modify the ship security plan Knowledge of security related contingency plans and the procedures for responding to security threats or breaches of security including provisions for maintaining critical operations of the ship/port interface Working knowledge of maritime security terms and definitions		
Assess security risk, threat, and vulnerability	Knowledge of risk assessment and assessment tools Knowledge of security assessment documentation including the Declaration of Security Knowledge of techniques used to circumvent security measures Knowledge enabling recognition, on a non-discriminatory basis, of persons posing potential security risks Knowledge enabling recognition of weapons, dangerous substances, and devices and awareness of the damage they can cause Knowledge of crowd management and control techniques, where appropriate Knowledge in handling sensitive security related information and security related communications Knowledge of implementing and co-ordinating searches Knowledge of the methods for physical searches and non-intrusive inspections	Assessment of evidence obtained from approved training, or approved experience and examination, including practical demonstration of competence to: .1 conduct physical searches .2 conduct non-intrusive inspections	Procedures and actions are in accordance with the principles established by the ISPS Code and SOLAS Convention Procedures achieve a state of readiness to respond to changes in the maritime security levels Communications within the ship security officer's area of responsibility are clear and understood

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Undertake regular inspections of the ship to ensure that appropriate security measures are implemented and maintained	Knowledge of the requirements for designating and monitoring restricted areas Knowledge of controlling access to the ship and to restricted areas on board ship Knowledge of methods for effective monitoring of deck areas and areas surrounding the ship Knowledge of security aspects relating to the handling of cargo and ship's stores with other shipboard personnel and relevant port facility security officers Knowledge of methods for controlling the embarkation, disembarkation and access while on board of persons and their effects	Assessment of evidence obtained from approved training or examination	Procedures and actions are in accordance with the principles established by the ISPS Code and SOLAS Convention Procedures achieve a state of readiness to respond to changes in the maritime security levels Communications within the ship security officer's area of responsibility are clear and understood
Ensure that security equipment and systems, if any, are properly operated, tested and calibrated	Knowledge of the various types of security equipment and systems and their limitations Knowledge of the procedures, instructions, and guidance on the use of ship security alert systems Knowledge of the methods for testing, calibrating, and maintaining security systems and equipment, particularly whilst at sea	Assessment of evidence obtained from approved training or examination	Procedures and actions are in accordance with the principles established by the ISPS Code and SOLAS Convention

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Encourage security awareness and vigilance	Knowledge of training, drill and exercise requirements under relevant conventions and codes Knowledge of the methods for enhancing security awareness and vigilance on board Knowledge of the methods for assessing the effectiveness of drills and exercises	Assessment of evidence obtained from approved training or examination	Procedures and actions are in accordance with the principles established by the ISPS Code and SOLAS Convention Communications within the ship security officer's area of responsibility are clear and understood

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ANNEX 10

DRAFT AMENDMENTS TO SOLAS CHAPTERS II-1, II-2 AND III AND THE FSS CODE

DRAFT AMENDMENTS TO SOLAS CHAPTERS II-1, II-2 AND III

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

[1 The following new regulation 8-1 is added after the existing regulation 8:

"**Regulation 8-1**
Return to port capability for passenger ships in the damaged condition

1 A passenger ship shall be capable of returning to port in accordance with regulations II-2/21.4 and II-2/21.5 when subject to the damage extents prescribed in regulation 8.3.

2 Compliance with this return to port requirement shall be achieved as follows:

.1 for damage cases where propulsion is not lost and the ship can return to port under its own power, s_i, as defined in regulation 7-2, shall be not less than 1 for the three loading conditions on which is based the calculation of the subdivision index; and

.2 for damage cases where propulsion is lost and the ship can only return to port under tow, GZmax/0.2 x Range/30 shall be not less than 0.9 for the three loading conditions on which is based the calculation of the subdivision index."]*

[2 The following new regulation 22-1 is added after the existing regulation 22:

"**Regulation 22-1**
Water ingress detection and flood level monitoring system for passenger ships

Passenger ships shall have a water ingress detection and flood level monitoring system for all watertight spaces below the bulkhead deck based on the guidelines developed by the Organization.*"

* Refer to the guidelines to be developed by the Organization.]*

Regulation 41 – Main source of electrical power and lighting systems

3 The following new paragraph 6 is added after the existing paragraph 5:

"6 In passenger ships, auxiliary lighting shall be provided in all cabins to clearly indicate the exit so that occupants will be able to find their way to the door. Such lighting shall automatically illuminate when power to the normal cabin lighting is lost and remain on for a minimum of 30 min."

* Subject to further consideration by SLF 49.

4 The following new part F is added after the existing regulation 54:

"PART F
ALTERNATIVE DESIGN AND ARRANGEMENTS

Regulation 55
Alternative design and arrangements

1 Purpose

The purpose of this regulation is to provide a methodology for alternative design and arrangements for machinery and electrical installations.

2 General

2.1 Machinery and electrical installation design and arrangements may deviate from the requirements set out in parts C, D and E, provided that the alternative design and arrangements meet the intent of the requirements concerned and provide an equivalent level of safety to SOLAS chapter II-1.

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

3 Engineering analysis

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

.1 determination of the ship type, machinery, electrical installations and space(s) concerned;

.2 identification of the prescriptive requirement(s) with which the machinery and electrical installations will not comply;

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

.4 determination of the performance criteria for the ship, machinery, electrical installation or the space(s) concerned addressed by the relevant prescriptive requirement(s):

* Refer to the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC/Circ…).

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

.4.2 performance criteria shall be quantifiable and measurable;

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

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

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

4 Evaluation of the alternative design and arrangements

4.1 The engineering analysis required in paragraph 3 shall be evaluated and approved by the Administration, taking into account the guidelines developed by the Organization.*

4.2 A copy of the documentation, as approved by the Administration, indicating that the alternative design and arrangements comply with this regulation, shall be carried on board the ship.

5 Exchange of information

The Administration shall communicate to the Organization pertinent information concerning alternative design and arrangements approved by them for circulation to all Contracting Governments.

6 Re-evaluation due to change of conditions

If the assumptions and operational restrictions that were stipulated in the alternative design and arrangements are changed, the engineering analysis shall be carried out under the changed condition and shall be approved by the Administration."

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* Refer to the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC/Circ…).

CHAPTER II-2
CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Regulation 3 – Definitions

5 The following new paragraphs 51 and 52 are added after the existing paragraph 50:

"51 *Safe area in the context of a casualty* is, from the perspective of habitability, any area(s) which is not flooded or which is outside the main vertical zone(s) in which a fire has occurred such that it can safely accommodate all persons onboard to protect them from hazards to life or health and provide them with basic services.

52 *Safety centre* is a control station dedicated to the management of emergency situations. Safety systems' operation, control and/or monitoring are an integral part of the safety centre."

Regulation 7 – Detection and alarm

6 The following new paragraph 2.4 is added after the existing paragraph 2.3:

"2.4 A fixed fire detection and fire alarm system for passenger ships shall be capable of remotely and individually identifying each detector and manually operated call point."

7 In paragraphs 5.2 and 5.3.1, the following new text is added at the end of the paragraphs:

"Detectors fitted in cabins, when activated, shall also be capable of emitting, or cause to be emitted, an audible alarm within the space where they are located."

Regulation 8 – Control of smoke spread

8 In paragraph 2, the following new text is added at the end of the paragraph:

"The ventilation system serving safety centres may be derived from the ventilation system serving the navigation bridge, unless located in an adjacent main fire zone."

Regulation 9 – Containment of fire

9 In paragraph 2.2.3.2.2 (7), the words "Sale shops" are deleted.

10 In paragraph 2.2.3.2.2 (8), the words "Sale shops" are added.

11 In the notes for tables 9.3 and 9.4, the following sentence is added at the end of subscript "c":

"No fire rating is required for those partitions separating the navigating bridge and the safety centre when the latter is within the navigation bridge."

12 The following new paragraph 2.2.6 is added after the existing paragraph 2.2.5:

"2.2.6 *Protection of atriums*

2.2.6.1 Atriums shall be within enclosures formed of "A" class divisions having a fire rating determined in accordance with the tables for decks in paragraphs 2.2.3 or 2.2.4.

2.2.6.2 Decks separating spaces within atriums shall have a fire rating determined in accordance with the tables for decks in paragraphs 2.2.3 or 2.2.4."

13 The existing paragraph 7.5.1, the first paragraph is numbered as paragraph 7.5.1.1 and the following new subparagraph .2 is added to paragraph 7.5.1.2:

".2 exhaust ducts from ranges for cooking equipment installed on open decks shall conform to paragraph 7.5.1.1, as applicable, when passing through accommodation spaces or spaces containing combustible materials;"

14 The following new paragraph 7.6 is added after the existing paragraph 7.5:

"7.6 ***Ventilation systems for main laundries in ships carrying more than 36 passengers***

Exhaust ducts from main laundries shall be fitted with:

.1 filters readily removable for cleaning purposes;

.2 a fire damper located in the lower end of the duct which is automatically and remotely operated;

.3 remote-control arrangements for shutting off the exhaust fans and supply fans from within the space, for operating the fire damper mentioned in paragraph 7.6.2; and

.4 suitably located hatches for inspection and cleaning."

Regulation 10 – Fire fighting

15 In the first sentence of paragraph 10.6.4, between the words "equipment" and "shall", the words "installed in enclosed spaces or on open decks" are added.

Regulation 13 – Means of escape

16 In paragraph 3.2.3, the words "public spaces" in the third sentence are deleted and the following new sentence is added before the fourth sentence:

"Public spaces may also have direct access to stairway enclosures except for the backstage of a theatre."

17 The following new paragraph 3.2.5.3 is added after the existing paragraph 3.2.5.2:

"3.2.5.3 In place of the escape route lighting system required by paragraph 3.2.5.1, alternative evacuation guidance systems may be accepted if approved by the Administration based on the guidelines developed by the Organization*."

* Refer to the Functional requirements and performance standards for the assessment of evacuation guidance systems (MSC/Circ.1167) and the Interim guidelines for the testing, approval and maintenance of evacuation guidance systems used as an alternative to low-location lighting systems (MSC/Circ.1168).

18 The following new regulations 21, 22 and 23 are inserted after existing regulation 20:

"**Regulation 21**
Casualty threshold, safe return to port and safe areas

1 Application

Passenger ships having three or more main vertical zones and constructed on or after [1 July 2008] shall comply with the provisions of this regulation.

2 Purpose

The purpose of this regulation is to establish design criteria for a ship's safe return to port under its own propulsion after a casualty that does not exceed the casualty threshold[s] stipulated in paragraph 3 [or regulations II-1/8-1]* and also provides functional requirements and performance standards for safe areas.

3 Casualty threshold

The casualty threshold in the context of a fire includes:

.1 loss of space of origin up to the nearest "A" class boundaries, which may be a part of the space of origin, if the space of origin is protected by a fixed fire extinguishing system; or

.2 loss of the space of origin and adjacent spaces up to the nearest "A" class boundaries, which are not part of the space of origin.

4 Safe return to port**

When fire [or flooding] damage does not exceed [one of] the casualty threshold[s] indicated in paragraph 3 [or regulations II-1/8-1], the ship shall be capable of returning to port while providing a safe area as defined in regulation 3. To be deemed capable of returning to port, the following systems shall remain operational in the remaining part of the ship not affected by fire [or flooding]:

.1 propulsion;
.2 steering systems and steering-control systems;
.3 navigational systems;
.4 systems for fill, transfer and service of fuel oil;
.5 internal communication between the bridge, engineering spaces, safety centre, fire-fighting and damage control teams, and as required for passenger and crew notification and mustering;
.6 external communication;
.7 fire main system;
.8 fixed fire-extinguishing systems;

* Square brackets to be further considered by SLF 49.
** Refer to the Performance standards for the systems and services to remain operational for safe return to port and orderly evacuation and abandonment (MSC/Circ…).

.9 fire and smoke detection system;
.10 bilge and ballast system;
.11 power-operated watertight and semi-watertight doors;
.12 systems intended to support "safe areas" as indicated in paragraph 5.1.2;
.13 [water ingress detection and flood level monitoring system]; and
.14 [other systems integral to damage control efforts.]

5 Safe area(s)

5.1 *Functional requirements:*

.1 the safe area(s) shall generally be internal space(s); however, the use of an external space as a safe area may be allowed by the Administration taking into account any restriction due to the area of operation and relevant expected environmental conditions;

.2 the safe area(s) shall provide all occupants with the following basic services* to ensure that the health of the passengers and crew is maintained:

.1 sanitation;
.2 water;
.3 food;
.4 alternate space for medical care;
.5 shelter from the weather;
.6 means of preventing heat stress and hypothermia;
.7 light; and
.8 ventilation;

.3 ventilation design shall reduce the risk that smoke and hot gases could affect the use of the safe area(s); and

.4 means of access to life saving appliances shall be provided from each area identified or used as a safe area taking into account that a main vertical zone may not be available for internal transit.

5.2 *Alternate space for medical care*

Alternate space for medical care shall conform to a standard acceptable to the Administration.**

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* Refer to the Performance standards for the systems and services to remain operational for safety return to port and orderly evacuation and abandonment (MSC/Circ…).

** Refer to the Guidance on the establishment of medical and sanitation related programmes for passenger ships (MSC/Circ.1129).

Regulation 22
Design criteria for systems to remain operational after a fire casualty

1 Application

Passenger ships having three or more main vertical zones and constructed on or after [1 July 2008] shall comply with the provisions of this regulation.

2 Purpose

The purpose of this regulation is to provide design criteria for systems required to remain operational for supporting the orderly evacuation and abandonment of a ship, if the casualty threshold, as defined in regulation 21.3, is exceeded.

3 Systems*

3.1 In case any one main vertical zone is unserviceable due to fire, the following systems shall be so arranged and segregated as to remain operational:

.1 fire main;

.2 internal communications (in support of fire-fighting as required for passenger and crew notification and evacuation);

.3 means of external communications;

.4 bilge systems for removal of fire-fighting water; and

.5 lighting along escape routes, at assembly stations and at embarkation stations of life saving appliances.

3.2 The above systems shall be capable of operation for at least 3 h based on the assumption of no damage outside the unserviceable main vertical zone. These systems are not required to remain operational within the unserviceable main vertical zones.

3.3 Cabling and piping within a trunk constructed to an "A-60" standard shall be deemed to remain intact and serviceable while passing through the unserviceable main vertical zone for the purposes of regulation 3.1. An equivalent degree of protection for cabling and piping may be approved by the Administration.

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* Refer to the Performance standards for the systems and services to remain operational for safe return to port and orderly evacuation and abandonment (MSC/Circ…).

Regulation 23
Safety centre on passenger ships

1 Application

Passenger ships constructed on or after [1 July 2008] shall have on board a safety centre complying with the provisions of this regulation.

2 Purpose

The purpose of this regulation is to provide a space to assist with the management of emergency situations.

3 Location and arrangement

The safety centre shall either be a part of the navigating bridge or be located in a separate space adjacent to and having direct access to the navigating bridge, so that the management of emergencies can be performed without distracting watch officers from their navigational duties."

4 Layout and ergonomic design

The layout and ergonomic design of the safety centre shall take into account the guidelines developed by the Organization*, as appropriate.

5 Communications

Means of communication between the safety centre, the central control station, the navigating bridge, the engine control room, the storage room(s) for fire extinguishing system(s) and fire equipment lockers shall be provided.

6 Control and monitoring of safety systems

Notwithstanding the requirements set out elsewhere in the Convention, the full functionality (operation, control, monitoring or any combination thereof, as required) of the safety systems listed below shall be available from the safety centre:

.1 all powered ventilation systems;
.2 fire doors;
.3 general emergency alarm system;
.4 public address system;
.5 electrically powered evacuation guidance systems;
.6 watertight and semi-watertight doors;
.7 indicators for shell doors, loading doors and other closing appliances;
.8 water leakage of inner/outer bow doors, stern doors and any other shell door;
.9 television surveillance system;

* Refer to guidelines to be developed by the Organization.

.10 fire detection and alarm system;
.11 fixed fire-fighting local application system(s);
.12 sprinkler and equivalent systems;
.13 water-based systems for machinery spaces;
.14 alarm to summon the crew;
.15 atrium smoke extraction system;
.16 [flooding detection systems]; and
.17 fire pumps and emergency fire pumps."

CHAPTER III
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Regulation 4 – Evaluation, testing and approval of life-saving appliances and arrangements

19 The existing paragraph 3 is replaced by the following:

"3 Before giving approval to novel life-saving appliances or arrangements, the Administration shall ensure that such:

.1 appliances provide safety standards at least equivalent to the requirements of this chapter and the Code and have been evaluated and tested based on the guidelines developed by the Organization; or*"

.2 arrangements have successfully undergone an engineering analysis, evaluation and approval in accordance with regulation 38."

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

20 The following new part C is added after the existing regulation 37:

"PART C
ALTERNATIVE DESIGN AND ARRANGEMENTS

Regulation 38
Alternative design and arrangements

1 Purpose

The purpose of this regulation is to provide a methodology for alternative design and arrangements for life-saving appliances and arrangements.

2 General

2.1 Life-saving appliances and arrangements may deviate from the requirements set out in part B, provided that the alternative design and arrangements meet the intent of the requirements concerned and provide an equivalent level of safety to SOLAS chapter III.

2.2 When alternative design or arrangements deviate from the prescriptive requirements of part B of this chapter, an engineering analysis, evaluation and approval of the design and arrangements shall be carried out in accordance with this regulation.

3 Engineering analysis

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

.1 determination of the ship type and the life-saving appliance and arrangements concerned;

.2 identification of the prescriptive requirement(s) with which the life-saving appliance and arrangements will not comply;

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

.4 determination of the performance criteria for the ship and the life-saving appliance and arrangements concerned addressed by the relevant prescriptive requirement(s):

.4.1 performance criteria shall provide a level of safety not inferior to the relevant prescriptive requirements contained in part B of this chapter; and

.4.2 performance criteria shall be quantifiable and measurable;

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

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

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

4 Evaluation of the alternative design and arrangements

4.1 The engineering analysis required in paragraph 3 shall be evaluated and approved by the Administration, taking into account the guidelines developed by the Organization.*

4.2 A copy of the documentation, as approved by the Administration, indicating that the alternative design and arrangements comply with this regulation, shall be carried on board the ship.

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* Refer to the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC/Circ…).

5 Exchange of information

The Administration shall communicate to the Organization pertinent information concerning alternative design and arrangements approved by them for circulation to all Contracting Governments.

6 Re-evaluation due to change of conditions

If the assumptions and operational restrictions that were stipulated in the alternative design and arrangements are changed, the engineering analysis shall be carried out under the changed condition and shall be approved by the Administration."

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* Refer to the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC/Circ…).

FOOTNOTE TO REGULATION V/34

The following additional text should be added to the footnote for paragraph 1:

"and the Guidelines on voyage planning for passenger ships operating in remote areas adopted by the Organization by resolution [A….(25)]."

DRAFT AMENDMENTS TO THE INTERNATIONAL CODE FOR FIRE SAFETY SYSTEMS (FSS CODE)

CHAPTER 9
FIXED FIRE DETECTION AND FIRE ALARM SYSTEMS

21 The following new paragraph 2.1.5 is added after the existing paragraph 2.1.4:

"2.1.5 In passenger ships, the fixed fire detection and fire alarm system shall be capable of remotely and individually identifying each detector and manually operated call point."

22 The existing text of paragraph 2.4.1.4 is replaced by the following:

"2.4.1.4 A section of fire detectors and manually operated call points shall not be situated in more than one main vertical zone."

***

ANNEX 11

DRAFT ASSEMBLY RESOLUTION

GUIDELINES ON VOYAGE PLANNING FOR PASSENGER SHIPS OPERATING IN REMOTE AREAS

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO regulation 6 of chapter V of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, on the Ice patrol service, including the Appendix to chapter V on Rules for the management, operation and financing of the North Atlantic Ice Patrol,

RECALLING FURTHER resolution A.893(21) on Guidelines for voyage planning,

NOTING that the Maritime Safety Committee, at its seventy-third session, agreed to enhance the safety of passenger ships from a holistic perspective, including consideration of concerns related to operations in remote areas,

NOTING ALSO that the Maritime Safety Committee, at its seventy-sixth session, and the Marine Environment Protection Committee, at its forty-eighth session, approved Guidelines for ships operating in Arctic ice-covered waters, and issued as MSC/Circ.1056 and MEPC/Circ.399,

RECOGNIZING the need to develop guidelines which supplement resolution A.893(21) particularly for passenger ships operating in remote areas in order to prevent incidents of groundings and collision, and improve safety of life at sea,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its eighty-first session:

1. ADOPTS the Guidelines on voyage planning for passenger ships in remote areas, set out in the Annex to the present resolution;

2. INVITES Governments to bring the annexed Guidelines to the attention of masters of vessels flying their countries' flag, shipowners, ship operators, shipping companies, maritime pilots, training institutions, tour operators, ice patrol and ice breaking services and all other parties concerned, for information and action as appropriate; and

3. REQUESTS the Maritime Safety Committee to keep the said Guidelines under review and to amend them as appropriate.

ANNEX

GUIDELINES ON VOYAGE PLANNING FOR PASSENGER SHIPS OPERATING IN REMOTE AREAS

1 Introduction

1.1 The growing popularity of ocean travel for passengers and the desire for exotic destinations, has led to increasing numbers of passenger ships operating in remote areas. When developing a plan for voyages to remote areas, special consideration should be given to the environmental nature of the area of operation, limited resources, and navigational information.

1.2 Passenger ships operating in remote Arctic ice-covered waters should also refer to MSC/Circ.1056 (MEPC/Circ.399) for recommended construction provisions, equipment recommendations, and operational guidelines.

1.3 Guidance on voyage planning is given in resolution A.893(21). In addition to the guidance in resolution A.893(21), passenger ships operating in remote areas should include the following additional factors in their voyage planning.

2 Appraisal

2.1 The detailed voyage and passage plan should include the following factors:

.1 the source, age, and the quality of the hydrographic data on which the charts to be used are based;

.2 limitations of available maritime safety information (MSI) data and Search and Rescue resources;

.3 availability or lack of aids to navigation; and

.4 places of refuge.

2.2 In addition, the detailed voyage and passage plan for ships operating in Arctic or Antarctic waters should include the following factors:

.1 knowledge of ice and ice formations, in order to be able to navigate in it, and how environmental conditions such as current, wind, calm weather, fog and different seasons affect the ice and navigation in ice;

.2 current information on the extent and type of ice and icebergs in the vicinity of the intended route;

.3 statistical information on ice from former years;

.4 operational limitations for operating in ice-covered waters; and

.5 availability and use of ice navigators.

3 Planning

3.1 The detailed voyage and passage plan should include the following factors:

.1 safe areas and no-go areas;

.2 surveyed marine corridors, if available; and

.3 contingency plans for emergencies in view of limited support available for assistance in areas remote from SAR facilities.*

3.2 In addition, the detailed voyage and passage plan for ships operating in Arctic or Antarctic waters should include the following factors:

.1 conditions when it is not safe to enter areas with ice or icebergs because of darkness, swell, fog and pressure ice;

.2 safe distance to icebergs; and

.3 presence of ice and icebergs, and safe speed in such areas.

4 Execution

4.1 The detailed voyage and passage plan should include reporting changes to a previously advised voyage and passage plan, to the relevant authorities.

4.2 In addition, the detailed voyage and passage plan for ships operating in Arctic or Antarctic waters should include the following factors:

.1 existing ice conditions; and

.2 measures before entering waters where ice may be present. For example, abandon ship drill and preparation of special equipment.**

***

* Refer to the Enhanced contingency planning guidance for passenger ships operating in areas remote from SAR facilities (MSC/Circ.1184).

** Refer to the Guidelines for ships operating in Arctic ice covered waters (MSC/Circ.1065).

ANNEX 12

DRAFT AMENDMENTS TO SOLAS CHAPTER II-2 AND THE FSS CODE

DRAFT AMENDMENTS TO SOLAS CHAPTER II-2

CHAPTER II-2
CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Regulation 4 - Probability of ignition

1 In paragraph 4.4, the words "and cabin balconies on passenger ships" are added between the words "stations" and "shall".

Regulation 5 - Fire growth potential

2 In the second sentence of paragraph 3.1.2.1, the words "including cabin balconies" are added between the words "space" and "for" and the following new sentence is added at the end of the paragraph:

> "Cabin balconies on passenger ship constructed before [1 July 2008] shall comply with the provisions of this paragraph by the first survey after [1 July 2008]."

3 In the first sentence of paragraph 3.2.1.1, the words "and cabin balconies" are added between the words "spaces" and "which" and the following new sentence is added at the end of the paragraph:

> "In addition, the provisions of paragraph 3.2.3 need not be applied to cabin balconies."

4 The following new subparagraph is added to the existing paragraph 3.2.4.1:

> ".3 exposed surfaces of cabin balconies, except for natural hard wood decking systems."

5 The following new paragraph is added after the existing paragraph 3.3:

> "3.4 *Furniture and furnishings on cabin balconies of passenger ships*
>
> Furniture and furnishings on cabin balconies shall be of restricted fire risk, as defined in regulation 3.40, unless such spaces are protected by a fixed pressure water-spraying system and fixed fire detection and fire alarm system approved by the Administration complying with regulations 7.10 and 10.6.1.3. Passenger ships constructed before [1 July 2008] shall comply with the provisions of this paragraph by the first survey after [1 July 2008]."

Regulation 6 - Smoke generation potential and toxicity

6 In paragraph 2, the words "and exposed surfaces of cabin balconies on passenger ships, except for hard wood decking systems on cabin balconies," are added between the words "surfaces" and "shall".

7 In paragraph 3, the words "and on cabin balconies of passenger ships," are added between the words "stations" and "shall".

Regulation 7 - Detection and alarm

8 The following new paragraph 10 is added after the existing paragraph 9.4:

"**10 Protection of cabin balconies on passenger ships**

A fixed fire detection and fire alarm system shall be provided for cabin balconies where the furniture and furnishings for such balconies are not of restricted fire risk."

Regulation 10 - Fire-fighting

9 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:

"6.1.3 Passenger ships shall be equipped with a fixed pressure water-spraying fire-extinguishing system of an approved type complying with the requirements of the Fire Safety Systems Code for cabin balconies where furniture and furnishings are not of restricted fire risk."

10 The following new paragraph 11 is added after the existing paragraph 10.3.2:

"11 Partitions separating cabin balconies

Partitions not forming part of the ship's structure and separating cabin balconies shall be capable of being opened by the crew from each side for fire-fighting purposes."

DRAFT AMENDMENTS TO THE FSS CODE

CHAPTER 7
FIXED PRESSURE WATER-SPRAYING AND WATER-MIST FIRE-EXTINGUISHING SYSTEMS

1 The following new paragraph 2.3 is added after the existing paragraph 2.2:

"**2.3** *Fixed pressure water-spraying fire-extinguishing systems for cabin balconies*

Fixed pressure water-spraying fire-extinguishing systems for cabin balconies shall be approved by the Administration based on the guidelines developed by the Organization.*"

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

CHAPTER 9
FIXED FIRE DETECTION AND FIRE ALARM SYSTEMS

2 The following new paragraph 2.3.1.6 is added after the existing paragraph 2.3.1.5:

"2.3.1.6 Fixed fire detection and fire alarm systems for cabin balconies shall be approved by the Administration based on the guidelines developed by the Organization.*"

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

***

ANNEX 13

RESOLUTION MSC.210(81)
(adopted on 19 May 2006)

PERFORMANCE STANDARDS AND FUNCTIONAL REQUIREMENTS FOR THE LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO resolution A.886(21) on Procedure for the adoption of, and amendments to, performance standards and technical specifications, by which the Assembly resolved that the function of adopting performance standards and technical specifications, as well as amendments thereto shall be performed by the Maritime Safety Committee,

RECALLING FURTHER the provisions of the new regulation V/19-1 of the International Convention for the Safety of Life at Sea, 1974, as amended (the Convention), relating to the long-range identification and tracking of ships,

RECOGNIZING the need to adopt appropriate performance standards and functional requirements on long-range identification and tracking of ships,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Radiocommunications, Search and Rescue, at its tenth session,

1. ADOPTS the Performance standards and functional requirements for the long-range identification and tracking of ships, set out in the Annex to the present resolution;

2. RECOMMENDS Contracting Governments to the Convention to ensure that:

.1 shipborne systems and equipment used to meet the requirements of regulation V/19-1 of the Convention conform to performance standards not inferior to those specified in the Annex to the present resolution;

.2 all Long-range identification and tracking (LRIT) Data Centres and the International LRIT Data Exchange conform to functional requirements not inferior to those specified in the Annex to the present resolution; and

.3 they promptly submit to the Organization and to the LRIT Data Centres the required information to enable the establishment and the continuous functioning of the LRIT system and that they update such information as and when changes occur;

3. AGREES to review and amend, in the light of experience gained as necessary, the Performance standards and functional requirements for the long-range identification and tracking of ships, set out in the Annex to the present resolution.

ANNEX

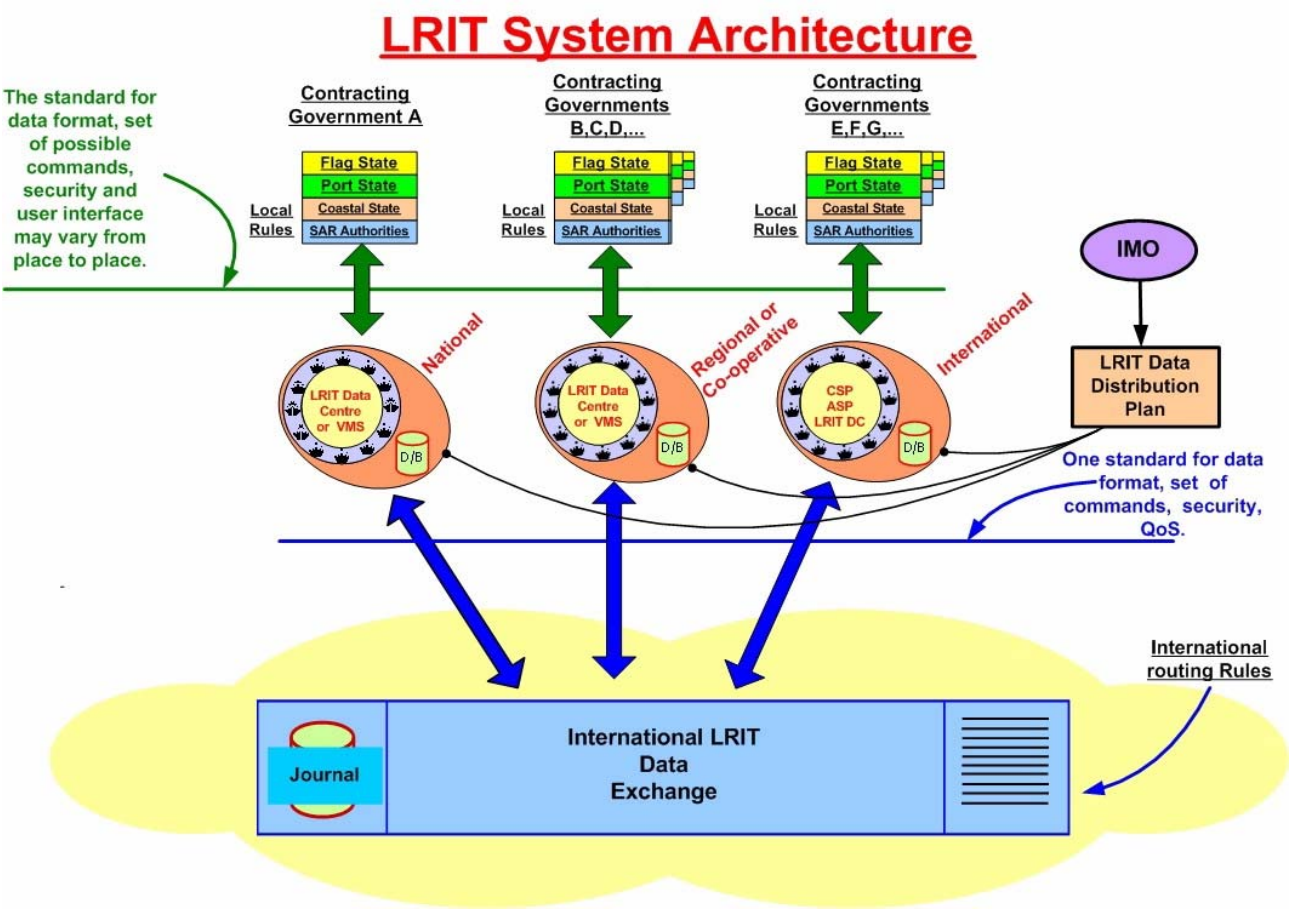
PERFORMANCE STANDARDS AND FUNCTIONAL REQUIREMENTS FOR THE LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS

1 Overview

1.1 The Long-Range Identification and Tracking (LRIT) system provides for the global identification and tracking of ships.

1.2 The LRIT system consists of the shipborne LRIT information transmitting equipment, the Communication Service Provider(s), the Application Service Provider(s), the LRIT Data Centre(s), including any related Vessel Monitoring System(s), the LRIT Data Distribution Plan and the International LRIT Data Exchange. Certain aspects of the performance of the LRIT system are reviewed or audited by an LRIT Co-ordinator acting on behalf of all Contracting Governments. Figure 1 provides an illustration of the LRIT system architecture.

FIGURE 1



1.3 LRIT information is provided to Contracting Governments and Search and rescue services[1] entitled to receive the information, upon request, through a system of National, Regional, Co-operative and International LRIT Data Centres, using where necessary, the LRIT International Data Exchange.

1.4 Each Administration should provide to the LRIT Data Centre it has selected, a list of the ships entitled to fly its flag, which are required to transmit LRIT information, together with other salient details and should update, without undue delay, such lists as and when changes occur. Ships should only transmit the LRIT information to the LRIT Data Centre selected by their Administration.

1.5 The obligations of ships to transmit LRIT information and the rights and obligations of Contracting Governments and of Search and rescue services to receive LRIT information are established in regulation V/19-1 of the 1974 SOLAS Convention.

2 Definitions

2.1 Unless expressly provided otherwise:

.1 *Convention* means the International Convention for the Safety of Life at Sea, 1974, as amended.

.2 *Regulation* means a regulation of the Convention.

.3 *Chapter* means a chapter of the Convention.

.4 *LRIT Data User* means a Contracting Government or a Search and rescue service which opts to receive the LRIT information it is entitled to.

.5 *Committee* means the Maritime Safety Committee.

.6 *High-speed craft* means a craft as defined in regulation X/1.3.

.7 *Mobile offshore drilling unit* means a mobile offshore drilling unit as defined in regulation XI-2/1.1.5.

.8 *Organization* means the International Maritime Organization.

.9 *Vessel Monitoring System* means a system established by a Contracting Government or a group of Contracting Governments to monitor the movements of the ships entitled to fly its or their flag. A Vessel Monitoring System may also collect from the ships information specified by the Contracting Government(s) which has established it.

.10 *LRIT information* means the information specified in regulation V/19-1.5.

[1] The term *search and rescue service* is defined in SOLAS regulation V/2.5 (see amendments to chapter V adopted on 20 May 2004, under cover of resolution MSC.153(78), which will enter into force on 1 July 2006).

2.2 The term "ship", when used in the present Performance standards and functional requirements for long-range identification and tracking of ships (the Performance standards), includes mobile offshore drilling units and high-speed craft as specified in regulation V/19-1.4.1 and means a ship which is required to transmit LRIT information.

2.3 Terms not otherwise defined should have the same meaning as the meaning attributed to them in the Convention.

3 General provisions

3.1 It should be noted that regulation V/19-1.1 provides that:

> *Nothing in this regulation or the provisions performance standards and functional requirements adopted by the Organization in relation to the long-range identification and tracking of ships shall prejudice the rights, jurisdiction or obligations of States under international law, in particular, the legal regimes of the high seas, the exclusive economic zone, the contiguous zone, the territorial seas or the straits used for international navigation and archipelagic sea lanes.*

3.2 In operating the LRIT system, recognition should be given to international conventions, agreements, rules or standards that provide for the protection of navigational information.

3.3 The present Performance standards should always be read together with regulation V/19-1.

4 Shipborne equipment

4.1 In addition to the general requirements contained in Assembly resolution A.694(17) on Recommendations on general requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids, the shipborne equipment should comply with the following minimum requirements:

.1 be capable of automatically and without human intervention on board the ship transmitting the ship's LRIT information at 6-hour intervals to an LRIT Data Centre;

.2 be capable of being configured remotely to transmit LRIT information at variable intervals;

.3 be capable of transmitting LRIT information following receipt of polling commands;

.4 interface directly to the shipborne global navigation satellite system equipment, or have internal positioning capability;

.5 be supplied with energy from the main and emergency source of electrical power[2]; and

[2] This provision should not apply to ships using for the transmission of LRIT information any of the radio communication equipment provided for compliance with the provisions of chapter IV. In such cases, the shipborne equipment should be provided with sources of energy as specified in regulation IV/13.

.6 be tested for electromagnetic compatibility taking into account the recommendations[3] developed by the Organization.

4.2 In addition to the provisions specified in paragraph 4.1 above, the shipborne equipment should provide the functionality specified in table 1.

TABLE 1

DATA TO BE TRANSMITTED FROM THE SHIPBORNE EQUIPMENT

Parameter	Comments
Shipborne equipment Identifier	The identifier used by the shipborne equipment.
Positional data	The GNSS position (latitude and longitude) of the ship (based on the WGS84 datum). *Position*: The equipment should be capable of transmitting the GNSS position (latitude and longitude) of the ship (based on WGS84 datum) as prescribed by regulation V/19-1, without human interaction on board the ship. *On-demand*(1) *position reports*: The equipment should be capable of responding to a request to transmit LRIT information on demand without human interaction onboard the ship, irrespective of where the ship is located. *Pre-scheduled*(2) *position reports*: The equipment should be capable of being remotely configured to transmit LRIT information at intervals ranging from a minimum of 15 min to periods of 6 h to the LRIT Data Centre, irrespective of where the ship is located and without human interaction on board the ship.
Time Stamp 1	The date and time(3) associated with the GNSS position. The equipment should be capable of transmitting the time(3) associated with the GNSS position with each transmission of LRIT information.

Notes: (1) *On-demand position reports* means transmission of LRIT information as a result of either receipt of polling command or of remote configuration of the equipment so as to transmit at interval other than the preset ones.

(2) *Pre-scheduled position reports* means transmission of LRIT information at the preset transmit intervals.

(3) All times should be indicated as Universal Co-ordinated Time (UTC).

4.3 The shipborne equipment should transmit the LRIT information using a communication system which provides coverage in all areas where the ship operates.

[3] Refer to the Assembly resolution A.813(19) on General requirements for electromagnetic compatibility of all electrical and electronic ship's equipment.

4.4 The shipborne equipment should be set to automatically transmit the ship's LRIT information at 6-hour intervals to the LRIT Data Centre identified by the Administration, unless the LRIT Data User requesting the provision of LRIT information specifies a more frequent transmission interval.

5 Application Service Providers

5.1 Application Services Provider(s) (ASPs) providing services to:

.1 a National LRIT Data Centre, should be recognized by the Contracting Government establishing the centre;

.2 a Regional or a Co-operative LRIT Data Centre, should be recognized by the Contracting Governments establishing the centre. In such a case, the arrangements for recognizing the ASPs should be agreed amongst the Contracting Governments establishing the centre; and

.3 an International LRIT Data Centre, should be recognized by the Committee.

5.2 Contracting Governments should provide to the Organization a list with the names and contact details of the ASPs they recognize together with any associated conditions of recognition and thereafter should, without undue delay, update the Organization as changes occur.

5.3 An ASP function should:

.1 provide a communication protocol interface between the Communication Service Providers and the LRIT Data Centre to enable the following minimum functionality:

.1 remote integration of the shipborne equipment into an LRIT Data Centre;

.2 automatic configuration of transmission of LRIT information;

.3 automatic modification of the interval of transmission of LRIT information;

.4 automatic suspension of transmission of LRIT information;

.5 on demand transmission of LRIT information; and

.6 automatic recovery and management of transmission of LRIT information;

.2 provide an integrated transaction management system for the monitoring of LRIT information throughput and routeing; and

.3 ensure that LRIT information is collected, stored and routed in a reliable and secure manner.

5.4 The ASP where used should add the data identified in table 2 to each transmission of LRIT information:

TABLE 2

DATA TO BE ADDED BY AN APPLICATION SERVICE PROVIDER AND AT THE LRIT DATA CENTRE

Parameters	Comments
Ship Identity(1)	The IMO ship identification number(1) and MMSI for the ship.
Time Stamp 2	The date and time(2) the position report is received by the ASP (if used).
Time Stamp 3	The date and time(2) the position report is forwarded from the ASP (if used) to the appropriate LRIT Data Centre.
LRIT Data Centre Identifier	The identity of the LRIT Data Centre to be clearly indicated by a Unique Identifier.
Time Stamp 4	The date and time(2) the position report is received by the LRIT Data Centre.
Time Stamp 5	The date and time(2) the position report is forwarded from the LRIT Data Centre to an LRIT Data User.

Notes: (1) See regulation XI-1/3 and Assembly resolution A.600(15) on IMO ship identification number scheme.

(2) All times should be indicated as Universal Co-ordinated Time (UTC).

5.5 In addition to the provisions of paragraph 5.3, Administrations, Contracting Governments and the Committee may establish, in relation to the ASPs seeking their recognition, specific requirements as a condition of recognizing a particular ASP.

6 Communications Service Providers

6.1 Communications Service Providers (CSPs) provide services which link the various parts of the LRIT system using communications protocols in order to ensure the end-to-end secure transfer of the LRIT information. This requirement precludes the use of non-secure broadcast systems.

6.2 A CSP may also provide services as an ASP.

7 LRIT Data Centre

7.1 All LRIT Data Centres should:

.1 establish and continuously maintain systems which ensure, at all times, that LRIT Data Users are only provided with the LRIT information they are entitled to receive as specified in regulation V/19-1;

.2 collect LRIT information from ships instructed by their Administrations to transmit the LRIT information to the centre;

.3 obtain, when requested to provide LRIT information transmitted by ships other than those which transmit the information to the centre, LRIT information from other LRIT Data Centres through the International LRIT Data Exchange;

.4 make available, when requested to provide LRIT information transmitted by ships other than those which transmit the information to the centre, LRIT information transmitted to the centre to other LRIT Data Centres through the International LRIT Data Exchange;

.5 execute requests received from LRIT Data Users for polling of LRIT information or for change(s) in the interval(s) of transmission of LRIT information by a ship or a group of ships transmitting the information to the centre;

.6 relay, when required, requests received from LRIT Data Users through the International LRIT Data Exchange to the other LRIT Data Centres for polling of LRIT information or for change(s) in the interval(s) of transmission of LRIT information by a ship or a group of ships not transmitting the information to the centre;

.7 execute requests received through the International LRIT Data Exchange from other LRIT Data Centres for polling of LRIT information or for change(s) in the interval(s) of transmission of LRIT information by a ship or a group of ships transmitting the information to the centre;

.8 upon request disseminate to LRIT Data Users the LRIT information they are entitled to receive in accordance with the agreed arrangements and notify the LRIT Data User and the Administration when a particular ship stops transmitting LRIT information;

.9 archive LRIT information from ships which transmit the information to the centre, for at least one year and until such time as the Committee reviews and accepts the annual report of the audit of its performance by the LRIT Co-ordinator. However, the archived LRIT information should provide a complete record of the activities of the centre between two consecutive annual audits of its performance;

.10 for LRIT information archived within the last 4 days, send the LRIT information within 30 min of receiving a request;

.11 for LRIT information archived between 4 and 30 days previously, send the LRIT information within 1 h of receiving a request;

.12 for LRIT information archived more than 30 days previously, send the LRIT information within 5 days of receiving a request;

.13 ensure using appropriate hardware and software, that LRIT information is backed-up at regular intervals, stored at suitable off-site location(s) and available as soon as possible in the event of disruption to ensure continuity of service;

.14 maintain a record of the ships which transmit LRIT information to the centre including name of ship, IMO Ship identification number, call sign and Maritime Mobile Service Identity (MMSI);

.15 use a standard protocol for communications with the International LRIT Data Exchange;

.16 use a standard secure transmission method with the International LRIT Data Exchange;

.17 use a secure authentication method with LRIT Data Users;

.18 use a standard and expandable message format for communicating with the International LRIT Data Exchange;

.19 use reliable connections (e.g. TCP) to ensure that the LRIT information is successfully received by the LRIT Data Centres; and

.20 add the appropriate data identified in table 2 to each transmission of LRIT information collect by the centre.

7.2 The performance of all LRIT Data Centres should be audited by the LRIT Co-ordinator.

7.2.1 All LRIT Data Centres should co-operate and make available to the LRIT Co-ordinator the information required to enable the satisfactory completion of an audit of their performance.

7.3 Notwithstanding the provisions of paragraph 7.1, all LRIT Data Centres should provide to Search and rescue services (SAR services), LRIT information transmitted by all ships located within the geographic area specified by the SAR service requesting the information so as to permit the rapid identification of ships which may be called upon to provide assistance in relation to the search and rescue of persons in distress at sea. The LRIT information should be provided irrespective of the location of the geographic area and should be provided even if the geographic area is outside the search and rescue region associated with the SAR service requesting the information (regulation V/19-1.12 refers).

8 National, Regional and Co-operative LRIT Data Centres

8.1 A Contracting Government may establish a National LRIT Data Centre. A Contracting Government establishing such a centre should provide relevant details to the Organization and thereafter should, without undue delay, update the information provided as and when changes occur.

8.2 A group of Contracting Governments may establish either a Regional or a Co-operative LRIT Data Centre. The arrangements for establishing such a centre should be agreed amongst the Contracting Governments concerned. One of the Contracting Governments establishing such a centre should provide relevant details to the Organization and thereafter should, without undue delay, update the information provided as and when changes occur.

8.3 Upon request, National, Regional and Co-operative LRIT Data Centres may provide services to Contracting Governments other than those establishing the centre.

8.3.1 The arrangements for providing services should be agreed between the LRIT Data Centre and the Contracting Government requesting the provision of the services.

8.3.2 The Contracting Government establishing the National LRIT Data Centre or one of the Contracting Governments establishing the Regional or Co-operative LRIT Data Centre should, if the centre provides services to Contracting Governments other than those which established the centre, provide relevant details to the Organization and thereafter should, without undue delay, update the information provided as and when changes occur.

8.4 National, Regional and Co-operative LRIT Data Centres may also serve as a National, Regional or Co-operative Vessel Monitoring System (VMS) and may require, as VMS, the transmission from ships of additional information, or of information at different intervals, or of information from ships which are not required to transmit LRIT information. VMSs may also perform other functions.

8.4.1 If a National, Regional or Co-operative LRIT Data Centre collects additional information from ships, it should transmit only the required LRIT information to the other LRIT Data Centres through the International LRIT Data Exchange.

9 International LRIT Data Centre

9.1 An International LRIT Data Centre recognized by the Committee should be established.

9.2 Contracting Governments not participating in a National, Regional or Co-operative LRIT Data Centre, or Contracting Governments having an interest in the establishment of an International LRIT Data Centre should co-operate, under the co-ordination of the Committee, with a view to ensuring its establishment.

9.3 Ships, other than those which are required to transmit LRIT information to either a National, Regional or Co-operative LRIT Data Centre, should transmit the required LRIT information to the International LRIT Data Centre.

9.4 An International LRIT Data Centre may, upon request, collect additional information from ships entitled to fly the flag of an Administration on the basis of specific arrangements concluded with the Administration concerned.

10 International LRIT Data Exchange

10.1 An International LRIT Data Exchange recognized by the Committee should be established.

10.2 Contracting Governments should co-operate, under the co-ordination of the Committee, with a view to ensuring the establishment of the International LRIT Data Exchange.

10.3 The LRIT International Data Exchange should:

.1 route LRIT information between LRIT Data Centres using the information provided in the LRIT Data Distribution Plan;

.2 be connected to all LRIT Data Centres;

.3 use a store and forward-buffer to ensure LRIT information is received;

.4 automatically maintain journal(s) containing message header information only which may be used for:

.1 invoicing functions and settlement of invoicing disputes; and

.2 audit purposes;

.5 archive journal(s), for at least one year and until such time as the Committee reviews and accepts the LRIT Co-ordinator's annual report of the audit of its performance. However, the archived journal(s) should provide a complete record of the activities of the exchange between two consecutive annual audits of its performance;

.6 prepare, as necessary, performance related statistical information based on the information contained in the journal(s);

.7 use a standard protocol for communications with LRIT Data Centres;

.8 use a standard secure access method with the LRIT Data Centres;

.9 use a standard and expandable message format for communicating with the LRIT Data Centres;

.10 use reliable connections (e.g. TCP) to ensure that the LRIT information is successfully received by the LRIT Data Centres;

.11 use agreed protocols to connect to LRIT Data Centres;

.12 not archive LRIT information; and

.13 have continuous access to current LRIT Data Distribution Plan.

11 LRIT Data Distribution Plan

11.1 The Organization should establish and maintain the LRIT Data Distribution Plan.

11.2 The LRIT Data Distribution Plan should include:

.1 a list of Contracting Governments and Search and rescue services entitled to receive LRIT information, and their points of contact;

.2 information on the boundaries of geographic areas within which each Contracting Government is entitled to receive LRIT information about ships in the area;

.3 information on any standing orders given by a Contracting Government pursuant to paragraphs 16.1.2, 16.1.3 and/or 16.1.4;

.4 information supplied by Administrations pursuant to the provisions of regulation V/19-1.8.1.4;

.5 information supplied by Administrations pursuant to the provisions of regulation V/19-1.9.2;

.6 a list of ports and port facilities together with the associated geographic co-ordinates (based on WGS 84 datum) located within the territory of each Contracting Government;

.8 a list of the National, Regional, Co-operative and International LRIT Data Centre(s) and their points of contact; and

.9 a record indicating which LRIT Data Centre is collecting and archiving LRIT information for each of the Contracting Governments.

12 LRIT system security

12.1 LRIT communications using land-line links should provide for data security using methods such as:

.1 authorization: Access should only be granted to those who are authorized to see the specific LRIT information;

.2 authentication: Any party exchanging information within the LRIT system should require authentication before exchanging information;

.3 confidentiality: Parties running an application server should protect the confidentiality of the LRIT information to ensure that it is not disclosed to unauthorized recipients when it travels across the LRIT system; and

.4 integrity: Parties exchanging LRIT information should ensure that the integrity of the LRIT information is guaranteed and that no data has been altered.

13 LRIT system performance

13.1 LRIT information should be available to an LRIT Data User within 15 min of the time it is transmitted by the ship.

13.2 On-demand LRIT information reports should be provided to an LRIT Data User within 30 min of the time the LRIT Data User requested the information.

13.3 The quality of service:

$$\frac{\text{Number of delivered reports meeting latency requirements}}{\text{Total number of report requests}} \times 100\%$$

should be:

.1 95% of the time over any 24-hour period; and

.2 99% over any 1 month.

14 LRIT Co-ordinator

14.1 The LRIT Co-ordinator should be appointed by the Committee.

14.2 The LRIT Co-ordinator should assist in the establishment of the International LRIT Data Centre and International LRIT Data Exchange by:

.1 participating in the development of any required technical specifications taking into account the present Performance standard and any relevant decisions of the Committee;

.2 issuing requests for the submission of proposals for the establishment and operation of the International LRIT Data Centre and International LRIT Data Exchange;

.3 evaluating the management, operational, technical and financial aspects of the proposals received taking into account the present Performance standard and any other related decisions of the Committee and submitting its recommendations in this respect for consideration by the Committee; and

.4 participating in the initial developmental testing of the LRIT system and reporting its findings in this respect for consideration by the Committee.

14.3 The LRIT Co-ordinator should perform the following administrative functions:

.1 upon request, investigation of disputes and operational, technical and invoicing difficulties and make recommendations for their settlement to the parties concerned;

.2 participation in the testing for the integration of new LRIT Data Centres into the LRIT system and providing relevant information to the Committee; and

.3 participation in the testing of new or modified procedures or arrangements for communications between the International LRIT Data Exchange and the LRIT Data Centres and providing relevant information to the Committee.

14.4 The LRIT Co-ordinator should undertake a review of the performance of the LRIT system taking into account the provisions of regulation V/19-1, the present Performance standard and any related decisions of the Committee and should report its findings to the Committee at least annually. In this respect, the LRIT Co-ordinator should:

.1 review the performance of Application Service Providers (or Communication Service Providers when they act as Application Services Providers) providing services to the International LRIT Data Centre;

.2 audit the performance of all LRIT Data Centres based on archived information and their fee structures;

.3 audit the performance of the International LRIT Data Exchange and its fee structure, if any; and

.4 verify that Contracting Governments and Search and rescue services receive the LRIT information they have requested and are entitled to receive.

14.5 The LRIT Co-ordinator should, for the purpose of reviewing the performance of the LRIT system:

.1 be given the required level of access, by the LRIT Data Centres and the International LRIT Data Exchange, to management, charging, technical and operational data;

.2 collect and analyse samples of LRIT information provided to LRIT Data Users; and

.3 collect and analyse statistics compiled by LRIT Data Centres and the International LRIT Data Exchange.

14.6 In addition to reporting to the Committee on the performance of the LRIT system including any identified non-conformities, the LRIT Co-ordinator may make recommendations to the Committee, based on an analysis of its findings, with a view to improving the efficiency, effectiveness and security of the LRIT system.

14.7 Neither the Organization nor any of the Contracting Governments should be responsible for making any direct payments to the LRIT Co-ordinator for the services it may provide. However, Contracting Governments may be required to pay fees to LRIT Data Centres for the LRIT information they request and receive which, for example, may contain elements to offset the costs associated with functions performed by the LRIT Co-ordinator. The LRIT Co-ordinator may recover its costs for the services it provides.

15 Administrations

15.1 Each Administration should decide to which LRIT Data Centre ships entitled to fly its flag are required to transmit LRIT information.

15.2 Each Administration should provide to the selected LRIT Data Centre the following information for each of the ships entitled to fly its flag which is required to transmit LRIT information:

.1 name of ship;

.2 IMO Ship identification number;

.3 call sign; and

.4 Maritime Mobile Service Identity.

15.3 Upon the transfer of the flag of a ship which is required to transmit LRIT information from another State, the Administration whose flag the ship is now entitled to fly should provide, without undue delay, to the selected LRIT Data Centre in addition to the information specified in paragraph 15.2 the following information:

.1 the effective date and time (UTC) of transfer; and

.2 the State whose flag the ship was formally entitled to fly, if known.

15.4 Administrations should, without undue delay, update the LRIT Data Centre as and when changes to the information they have provided under paragraphs 15.2 and 15.3 occur.

15.5 Upon the transfer of the flag of a ship which is required to transmit LRIT information to another State or when the ship is to be taken permanently out of service, the Contracting Government of the State whose flag the ship was entitled to fly hitherto should provide, without undue delay, to the LRIT Data Centre the following information:

.1 name of ship;

.2 IMO Ship identification number;

.3 the effective date and time (UTC) of the transfer, or when the ship was, or will be, taken permanently out of service; and

.4 the State to which the flag of the ship has been transferred, if known.

16 Contracting Governments

16.1 Each Contracting Government should:

.1 obtain the LRIT information to which it is entitled to under the provisions of regulation V/19-1, and has requested, from the LRIT Data Centre designated under paragraph 15.1. Contracting Governments which have no ships entitled to fly their flag may receive the LRIT information they are entitled to under the provisions of regulation V/19-1 from any one of the LRIT Data Centres but should select one LRIT Data Centre from which they wish to receive the information;

.2 if it wishes to receive LRIT information pursuant to the provisions of regulation V/19-1.8.1.1, indicate to the LRIT Data Centre the criteria for receiving such information. If so decided the Contracting Government may give the LRIT Data Centre a standing order regarding the criteria for receiving LRIT information;

.3 if it wishes to receive LRIT information pursuant to the provisions of regulation V/19-1.8.1.2, indicate to the LRIT Data Centre the name and the IMO Ship identification number of the particular ship and either:

.1 the distance from its coast; or

.2 the distance from a port; or

.3 a point in time,

from when it requires the provision of LRIT information transmitted by the ship. If so decided the Contracting Government may give the LRIT Data Centre a standing order regarding the criteria for receiving LRIT information. If the standing order is a distance from a port, the Contracting Government also has to inform the centre of the name of the port each ship is proceeding to;

.4 if it wishes to receive LRIT information pursuant to the provisions of regulation V/19-1.8.1.3, indicate the distance from its coast within which it requires the provision of LRIT information transmitted by ships. If so decided, the Contracting Government may give the LRIT Data Centre a standing order regarding the criteria for receiving LRIT information;

.5 co-operate with a view of resolving any issues in connection with which flag a particular ship is entitled to fly; and

.6 ensure either the destruction of all received LRIT information which is no longer in use or their archiving in a secure and protected manner.

17 Search and rescue services

17.1 Subject to the provisions of the national legislation of the Contracting Government concerned, search and rescue services should provide information when requested by the LRIT Co-ordinator to enable the holistic review of the performance of the LRIT system and for the investigation of any disputes.

17.2 Subject to the provisions of paragraph 7.3, search and rescue service when it wishes to receive LRIT information pursuant to the provisions of regulation V/19-1.12 should indicate to the LRIT Data Centre the criteria for receiving such information.

***

ANNEX 14

RESOLUTION MSC.211(81)
(adopted on 19 May 2006)

ARRANGEMENTS FOR THE TIMELY ESTABLISHMENT OF THE LONG-RANGE IDENTIFICATION AND TRACKING SYSTEM

THE MARITIME SAFETY COMMITTEE,

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

HAVING adopted amendments to the International Convention for the Safety of Life at Sea, 1974, as amended (the Convention) relating to the long-range identification and tracking of ships (SOLAS regulation V/19-1) which, upon acceptance on 1 July 2007, will enter into force on 1 January 2008,

HAVING ALSO adopted Performance standards and functional requirements for the long-range identification and tracking of ships (the Performance standards),

ALSO HAVING agreed with the establishment of *ad hoc* Working Group on engineering aspects of LRIT,

RECOGNIZING the need to put in place arrangements with a view to ensuring the prompt establishment of the International LRIT Data Centre and of the International LRIT Data Exchange as well as the need for testing and confirming the function of the LRIT system as envisaged in the LRIT architecture,

1. INVITES Contracting Governments to the Convention (Contracting Governments) to advise the Committee, at its eighty-second session, of their firm intentions in relation to the establishment of National, Regional and Co-operative LRIT Data Centre(s);

2. INVITES ALSO Contracting Governments to submit proposals on the issues which need to be addressed in relation to the establishment of the International LRIT Data Centre and of the International LRIT Data Exchange or on any other issues relating to the establishment, operation, performance review and audit of the LRIT system for consideration by the Committee at its eighty-second session;

3. AGREES that, at its eighty-second session, the Committee will make the necessary decisions in order to initiate the process for consideration, at its eighty-third session, of the proposals relating to the establishment of the International LRIT Data Centre and of the International LRIT Data Exchange;

4. ALSO AGREES that, at its eighty-second session, the Committee will make the necessary decisions in relation to the assignment of the performance of the functions of the LRIT Co-ordinator;

5. URGES Contracting Governments to promptly put in place the necessary arrangements:

.1 so as to be able to submit to:

.1 the Organization, the information required by SOLAS regulation V/19-1 and those needed for the establishment of the LRIT Data Distribution Plan not later than 1 January 2008; and

.2 the LRIT Data Centre they would be selecting, the information specified in the Performance standards not later than 1 July 2008;

and to update such information as and when changes occur;

.2 for the smooth integration of the ships entitled to fly their flag into the LRIT system;

6. ALSO INVITES Contracting Government to urge ships entitled to fly their flag to participate in trials and testing of the LRIT system;

7. AGREES ALSO that International LRIT Data Centre and the International LRIT Data Exchange should commence trials and testing of the LRIT system not later than the 1 July 2008;

8. AGREES FURTHER that LRIT Data Centres, other than the International LRIT Data Centre, should be in a position to commence the integration of ships into the LRIT system as soon as possible after 1 July 2008 and, preferably, not later than 1 October 2008;

9. REQUESTS the Secretariat to provide information for consideration by the Committee, at its eighty-second session, on the arrangements for the establishment and maintenance of the LRIT Data Distribution Plan so as to enable Contracting Governments to commence populating the plan with data as from 1 January 2008;

10. FURTHER RECOMMENDS that Contracting Governments to take early appropriate actions to ensure that all necessary infrastructures are in place, timely, for the establishment of the LRIT system;

11. ALSO URGES Contracting Governments, in consultation with the industry, to seek, if feasible, to implement the provisions of SOLAS regulation V/19-1 before the dates its provision are envisaged to become effective;

12. DECIDES to review, in the light of the developments, the aforesaid arrangements and to amend them as necessary.

***

ANNEX 15

DRAFT AMENDMENT TO SOLAS CHAPTER III

CHAPTER III
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Regulation 21 – Survival craft and rescue boats

1 In paragraph 1.4, the words "after all persons have been assembled, with lifejackets donned" are added at the end of the paragraph.

***

ANNEX 16*

DRAFT AMENDMENTS TO THE 2000 HSC CODE

CHAPTER 1
GENERAL COMMENTS AND REQUIREMENTS

1 The existing paragraph under 1.2 – General requirements – is numbered as 1.2.1 and a new paragraph 1.2.2 is added as follows:

> "1.2.2 On all craft new installation of materials containing asbestos used for the structure, machinery, electrical installations and equipment of a craft to which this Code applies shall be prohibited except for:
>
> .1 vanes used in rotary vane compressors and rotary vane vacuum pumps;
>
> .2 watertight joints and linings used for the circulation of fluids when, at high temperature (in excess of 350°C) or pressure (in excess of 7 x 10^6 Pa), there is a risk of fire, corrosion or toxicity; and
>
> .3 supple and flexible thermal insulation assemblies used for temperatures above 1,000°C."

2 In paragraph 1.3.4.1, the words "operational speed" are replaced by the words "90% of maximum speed".

3 In paragraph 1.3.4.2, the words "operational speed" are replaced by the words "90% of maximum speed".

4 In paragraph 1.4.16 the words "(main displays and controls for equipment specified in 13.2 to 13.7)" are inserted after "navigating equipment".

5 In paragraph 1.4.29, the word "food" is inserted between "cooking or" and "heating".

6 The existing paragraph 1.4.35 is replaced by the following:

> "1.4.35 *Machinery spaces* are spaces containing internal combustion engines either used for main propulsion or having an aggregate total power output of more than 110 kW, generators, oil fuel units, major electrical machinery and similar spaces and trunks to such spaces."

7 The existing paragraph 1.4.44 is deleted and the existing paragraphs 1.4.32 to 1.4.43 are renumbered accordingly as 1.4.33 to 1.4.44, with a new paragraph 1.4.32 being inserted as follows:

---

* The annex also contains at the end a list of footnotes to be added or to be amended in the 2000 HSC Code.

"1.4.32 *IMDG Code* means the International Maritime Dangerous Goods (IMDG) Code as defined in chapter VII of the Convention."

8 At end of paragraph 1.4.53, the following new sentence is inserted:

"Such spaces containing no cooking appliances may contain:

.1 coffee automat, toaster, dish washer, microwave oven, water boiler and similar appliances, each of them with a maximum power of 5 kW; and

.2 electrically heated cooking plates and hot plates for keeping food warm, each of them with a maximum power of 2 kW and a surface temperature not above 150°C."

9 In paragraph 1.4.54, the text after "the average" is deleted and replaced by the following:

"crest-to-trough height of the highest one third of the zero-upcrossing waves in a specified period."

10 At end of paragraph 1.8.1, the following text is inserted:

"On all craft, all certificates issued under this chapter, or certified copies thereof, shall be carried on the craft. Except where the flag State is a Party to the 1988 SOLAS Protocol, a copy of each of these certificates shall be posted up in a prominent and accessible place in the craft."

11 In paragraph 1.9.1, the second sentence is deleted and a new subparagraph 1.9.1.1 is inserted as follows:

"1.9.1.1 On all craft, transit voyages may be undertaken without a valid Permit to Operate High-Speed Craft provided the craft is not operating commercially with passengers or cargo on-board. For the purpose of this provision, a transit voyage includes delivery voyages, i.e. builder's port to base port, and voyages for repositioning purposes, i.e. change of base port and/or route. A transit voyage, which may involve long trans-ocean passage operating for periods in excess of those set out in this Code, e.g. 1.3.4, must not be undertaken unless:

.1 the craft has a valid High-Speed Craft Safety Certificate or similar before the start of such a voyage;

.2 the operator has developed a safety plan for the voyage including any temporary accommodation and all relevant matters listed in 18.1.3 to ensure that the craft is capable of safely completing the transit voyage;

.3 the master of the craft is provided with the materials and information necessary to operate the craft safely during the transit voyage; and

.4 the Administration is satisfied that arrangements have been made for the safe conduct of the voyage."

12 The following new paragraph 1.9.7 is added after the existing paragraph 1.9.6:

"1.9.7 In determining the worst intended conditions and the operational limitations on all craft for insertion in the Permit to Operate, Administrations shall give consideration to all the parameters listed in annex 12. The limitations assigned shall be those that enable compliance with all of these factors."

13 In paragraph 1.15.1 the words "four years" are replaced by the words "six years".

CHAPTER 2
BUOYANCY, STABILITY AND SUBDIVISION

14 Existing text of subparagraph.1 of paragraph 2.1.3 is deleted and replaced by the following:

".1 *Downflooding point* means any opening, irrespective of size, that would permit passage of water through a water/weathertight structure (e.g., opening windows), but excludes any opening kept closed to an appropriate standard of water/weathertightness at all times other than when required for access or for operation of portable submersible bilge pumps in an emergency (e.g. non-opening windows of similar strength and weathertight integrity to the structure in which they are installed)."

15 In paragraph 2.1.3, existing subparagraphs .2 to .6 are renumbered .3 to .7 and a new subparagraph .2 is inserted after subparagraph .1 as follows:

".2 *Elsewhere* when applied to sill and coaming heights in 2.2.7 and 2.2.8 is taken as applying to all weathertight and watertight closures located on or below the datum."

16 The following new paragraph 2.1.5 is inserted and the existing paragraphs 2.1.5 and 2.1.6 are renumbered as 2.1.6 and 2.1.7:

"2.1.5 The adequacy of mathematical simulations must first be demonstrated by correlation with full-scale or model tests for the appropriate type of craft. It may be appropriate to use mathematical simulations to help to identify the more critical scenarios for subsequent physical testing.

Some mathematical simulation methods are not well suited to accurate modelling of extreme events.

For safety level 3 or 4 it may be appropriate to use model testing as a precursor to or instead of full-scale testing."

17 The following text is inserted at the end of paragraph 2.1.7:

"Where calculations are employed, it shall first be shown that they correctly represent dynamic behaviour within the operational limitations of the craft."

18 The third and subsequent sentences of paragraph 2.2.9.3 are replaced by the following:

"In unmanned machinery spaces, main and auxiliary sea inlets and discharges in connection with the operation of machinery shall either:

.1 be located at least 50% of the significant wave height corresponding to the worst intended conditions above the deepest flooded waterline following damage specified in paragraphs 2.6.6 to 2.6.10; or

.2 be operable from the operating compartment."

19 In paragraph 2.3.4, the content of table 2.3.4 is replaced by the following:

"Table 2.3.4 – Application of annexes 7 and 8 to monohull and multihull craft

GM_T	Angle of maximum GZ	
	≤ 25º	> 25º
≤ 3	annex 7 or annex 8	annex 8
> 3	annex 7	annex 7 or annex 8

"

20 In paragraph 2.3.4, the definitions of B_{WL},, A_{WP} *and* ∇ which appear after "where:" are deleted and the definition "GZ = righting lever" inserted to replace them.

21 In paragraph 2.4.2, the words "chapter 18" are replaced by the words "chapters 17 and 18".

22 In paragraph 2.6.5, the following new subparagraph .5 is inserted after the existing subparagraph .4:

".5 void spaces filled with foam or modular buoyancy elements or any space without a venting system are considered to be void spaces for the purposes of this paragraph, provided such foam or elements fully comply with 2.6.4."

23 In paragraph 2.6.6, the final sentence is deleted.

24 The following new section of text is added in continuation of paragraph 2.6.7 after subparagraph 2.6.7.3:

"The damages described in this paragraph shall be assumed to have the shape of a parallelepiped (a parallelepiped is defined as "a solid contained by parallelograms" and a parallelogram is defined as "a four-sided rectilinear figure whose opposite sides are parallel"). Applying this to 2.6.7 a, the inboard face at its mid-length shall be tangential to, or otherwise touching in a least 2 places, the surface corresponding to the specified transverse extent of penetration, as illustrated in figure 2.6.7 a.

Side damage shall not transversely penetrate a greater distance than the extent of $0.2\nabla^{1/3}$ at the design waterline, except where a lesser extent is provided for in 2.6.7.2. Refer to figures 2.6.7 b and c.

If considering a multihull, the periphery of the craft is considered to only be the surface of the shell encompassed by the outboard surface of the outermost hull at any given section.

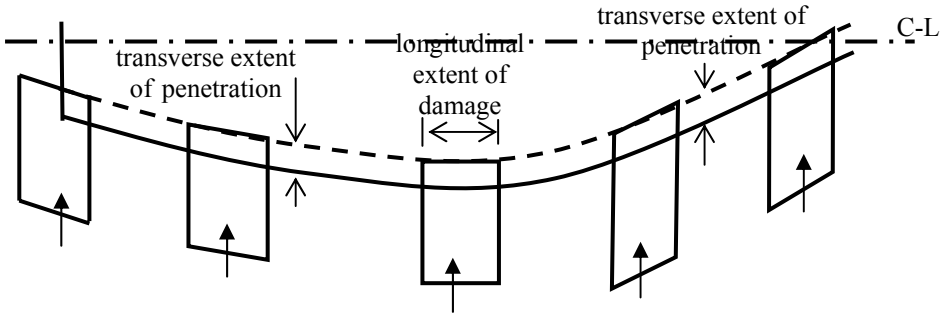


Figure 2.6.7 a

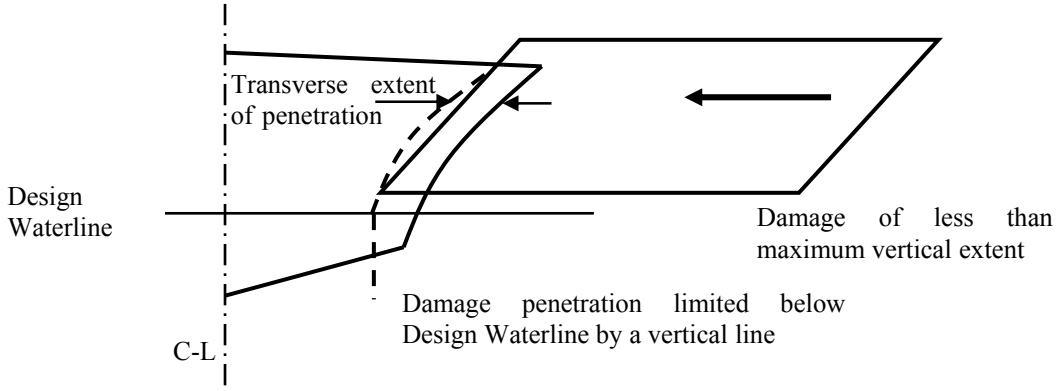


Figure 2.6.7 b

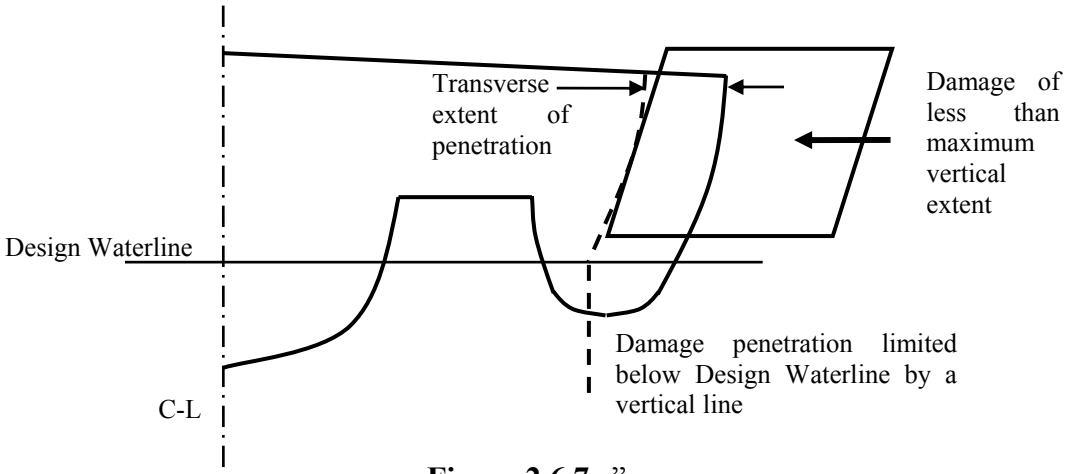


Figure 2.6.7 c”

25 In paragraph 2.6.7, the word "damages" is replaced by the word "damage".

26 Existing paragraphs 2.6.8 to 2.6.12 are renumbered as paragraphs 2.6.9 to 2.6.13 and the following new paragraph 2.6.8 is inserted after the existing paragraph 2.6.7:

"2.6.8 *Extent of bow and stern damage*

2.6.8.1 The following extents of damage are to be applied to bow and stern, as illustrated in Figure 2.6.8:

.1 at the fore end, damage to the area defined as A_{bow} in 4.4.1, the aft limit of which being a transverse vertical plane, provided that this area need not extend further aft from the forward extremity of the craft's watertight envelope than the distance defined in 2.6.7.1; and

.2 at the aft end, damage to the area aft of a transverse vertical plane at a distance $0.2\nabla^{1/3}$ forward of the aft extremity of the watertight envelope of the hull.

2.6.8.2 The provisions of 2.6.6 in relation to damage of lesser extent remain applicable to such damage.

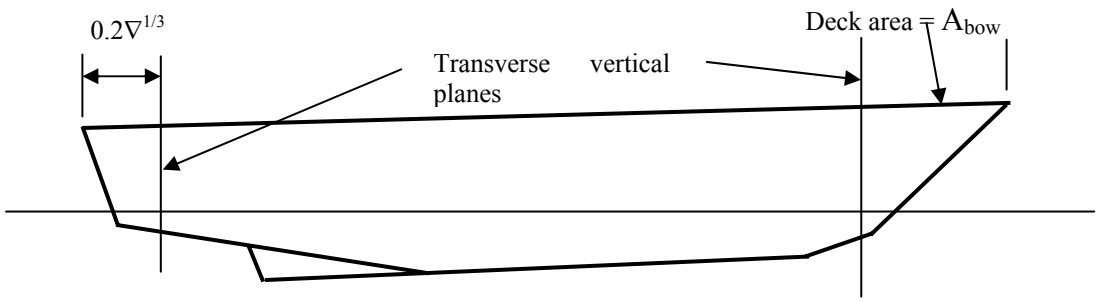


Figure 2.6.8"

27 In paragraph 2.6.9.1.1.1, the words "operational speed" are replaced by the words "90% of maximum speed".

28 In paragraph 2.6.9.1.2, the following text is inserted at the end of the definition of "T":

", provided that structures such as single plate skegs or solid metal appendages should be considered to be non-buoyant and thus excluded."

29 The following new paragraph 2.6.9.2.3 is inserted after the existing paragraph 2.6.9.2.2:

"2.6.9.2.3 The shape of damage shall be assumed to be rectangular in the transverse plane as illustrated in figure 2.6.9.2 below. Damage is to be assumed at a series of sections within the defined longitudinal extent in accordance with figure 2.6.9.2, the mid-point of the damaged girth being maintained at a constant distance from the centreline throughout that longitudinal extent.

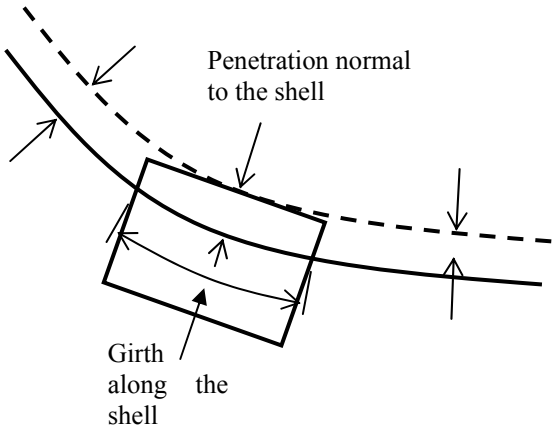


Figure 2.6.9.2"

30 In paragraph 2.6.10.1, the words "below the design waterline" are inserted between "hull(s)" and "which".

31 In paragraph 2.6.10.2, the following new subparagraph .4 is inserted after the existing subparagraph .3:

".4 the shape of damage should be assumed to be rectangular in the plane of the shell of the craft, and rectangular in the transverse plane as illustrated in figure 2.6.9.2."

32 Existing paragraphs 2.7.2 to 2.7.8 are renumbered as paragraphs 2.7.3 to 2.7.9 and the following new paragraph 2.7.2 is inserted after the existing paragraph 2.7.1:

"2.7.2 On all craft where an accurate inclining experiment is impractical owing to the height of the centre-of-gravity (VCG or KG) being less than one third of the transverse metacentric height (GM_T), the Administration may accept estimation of KG by detailed calculation in place of an inclining experiment. In such cases a displacement check shall be undertaken to confirm the calculated lightship characteristics, including LCG, which may be accepted if the measured lightship displacement and LCG are respectively within 2% and 1% L relative to the estimate."

33 In paragraph 2.7.7, the following new sentence is inserted at the end of the paragraph:

"For amphibious air-cushion vehicles this may be achieved by the use of draught gauges in conjunction with deck datum plates."

34 In paragraph 2.10, the following new subparagraphs .7 to .10 are inserted after the existing subparagraph .6:

".7 Passengers assumed to be occupying seats shall be taken as having a vertical centre-of-gravity corresponding to being seated, with all others standing.

.8 On the decks where assembly stations are located, the number of passengers on each should be that which generates the maximum heeling moment. Any remaining passengers should be assumed to occupy decks adjacent to those on which the assembly stations are located, and positioned such that the combination

of number on each deck and total heeling moment generate the maximum static heel angle.

.9 Passengers should not be assumed to gain access to the weather deck nor be assumed to crowd abnormally towards either end of the craft unless this is a necessary part of the planned evacuation procedure.

.10 Where there are seats in areas occupied by passengers, one passenger per seat should be assumed, passengers being assigned to the remaining free areas of deck (including stairways if appropriate) at the rate of four per square metre."

35 The following new paragraph 2.12.3 is inserted after paragraph 2.12.2 as follows:

"2.12.3 Demonstrating the effect of the passenger heeling moment calculated as given by 2.10 above, or a defined beam wind pressure when at speed, shall be established by conducting a trial or model test with an equivalent heeling moment applied by test weights. Passenger movement may only be neglected on craft where the safety announcement (see 8.4.1 and 18.7) expressly requires passengers to remain seated throughout the voyage."

CHAPTER 4
ACCOMMODATION AND ESCAPE MEASURES

36 In paragraph 4.3.4, the words "two-thirds of operational speed" are replaced by the words "60% of maximum speed".

37 In paragraph 4.3.7, the words "operational speed" are replaced by the words "90% of maximum speed".

38 In paragraph 4.4.1, the words "operational speed" are replaced by the words "90% of maximum speed".

39 In table 4.4.2, under Design Level 2:

.1 the existing text of paragraph 1.1 is replaced by the following:

"1.1 Seatbacks with protective deformation and padding."; and

.2 the text "unless satisfactorily tested without belts in that orientation and arrangement" is inserted at the end of paragraph 1.4.

40 The following new sentence is inserted at the end of paragraph 4.4.5:

"The armrests and backrests of seats furnished appropriately in public spaces may serve as handholds."

41 In paragraph 4.6.1, "3g" is replaced by "3".

42 In paragraph 4.7.10, the second sentence is replaced by the following:

"Clear markings, including the location of the fire control plan, shall be provided for the guidance of rescue personnel outside the craft."

43 In paragraph 4.7.12, the following text is added at the end of the paragraph:

"Doors providing escape from a space shall, where possible, be situated at opposite ends of the space. Where the doors providing escape from a space are situated in the same end of the space, the distance between those doors shall be greater than the maximum length of the space."

44 In paragraph 4.7.13, the following text is added at the end of the paragraph:

"Requirements of this paragraph do not apply to aisles (fore-aft passageways separating seating areas) or to spaces between adjacent rows of seats. However, the width of aisles and the seat pitch should be such as to allow the craft to comply with the provisions of section 4.8 on evacuation."

45 Existing paragraphs 4.7.14 to 4.7.16 are renumbered as paragraphs 4.7.15 to 4.7.17 respectively, and the following new paragraph 4.7.14 is inserted:

"4.7.14 Special category spaces used for stowage of motor vehicles should be provided with walkways leading to a safe means of escape, having a width of at least 600 mm."

46 In paragraph 4.7.17, the following new sentence is added at the end of the paragraph:

"At least one means of escape from a machinery space shall consist of either a ladder leading to a door or hatch (not being a horizontal flush-hatch) or a door located in the lower part of that space and giving access to an adjacent compartment from which a safe means of escape is provided."

47 The following new paragraph 4.7.18 is inserted after the existing paragraph 4.7.17:

"4.7.18 Spaces that are only entered occasionally by crew members may have only one means of escape provided that it is independent of watertight doors."

48 In paragraph 4.8.1, the following new sentence is added at the end of the paragraph:

"In determining the evacuation time, all means of escape are to be considered serviceable and they need not be dimensioned to take into account any additional number of persons that might be diverted from other means of escape if one or more of those other means of escape are lost or rendered unserviceable."

49 Existing paragraphs 4.8.10 and 4.8.11 are renumbered as paragraphs 4.8.11 and 4.8.12 and the following new paragraph 4.8.10 inserted:

"4.8.10 Where the Administration is satisfied that the evacuation time determined in accordance with 4.8.1 to 4.8.9 can thereby be accurately estimated, the Administration may accept an evacuation demonstration in which persons are not required to descend through MES or equivalent means of evacuation, provided the time required to embark into the survival craft can be determined using:

.1 data obtained from the type-approval tests of the equipment; or

.2 time extrapolated from trials using a limited number of participants; or

.3 a combination of 1 and 2."

CHAPTER 6
ANCHORING, TOWING AND BERTHING

50 The following new paragraph 6.1.4 is inserted after the existing paragraph 6.1.3:

"6.1.4 Under any operating load up to the breaking strength of the anchor cable or mooring lines, the loads on the bitts, bollards, etc. shall not result in damage to the hull structure that will impair its watertight integrity. A strength margin of at least 20% above the resultant load based on the minimum specified breaking strength of the relevant cable or warp shall be required."

CHAPTER 7
FIRE SAFETY

51 In paragraph 7.3.1.2, in the first bullet point, the term "1.4.4" is replaced by "1.4.5".

52 In paragraph 7.3.1.3, in the first bullet point, the term "1.4.5" is replaced by "1.4.6".

53 In paragraph 7.3.1.4, the words "as defined in 1.4.15" are replaced by the words "as defined in 1.4.16".

54 Existing paragraph 7.3.2 is renumbered as paragraph 7.3.3 and the following new paragraph 7.3.2 is inserted:

"7.3.2 In relation to the classification of spaces in 7.3.1, the following additional criteria shall be applied:

.1 If a space is divided by partial bulkheads into two (or more) smaller areas such that they form enclosed spaces, then the enclosed spaces shall be surrounded by bulkheads and decks in accordance with tables 7.4-1 and 7.4-2, as applicable. However, if the separating bulkheads of such spaces are at least 30% open, then the spaces may be considered as the same space.

.2 Cabinets having a deck area of less than 2 m^2 may be accepted as part of the space they serve, provided they have open ventilation to the space and do not contain any material or equipment that could be a fire risk.

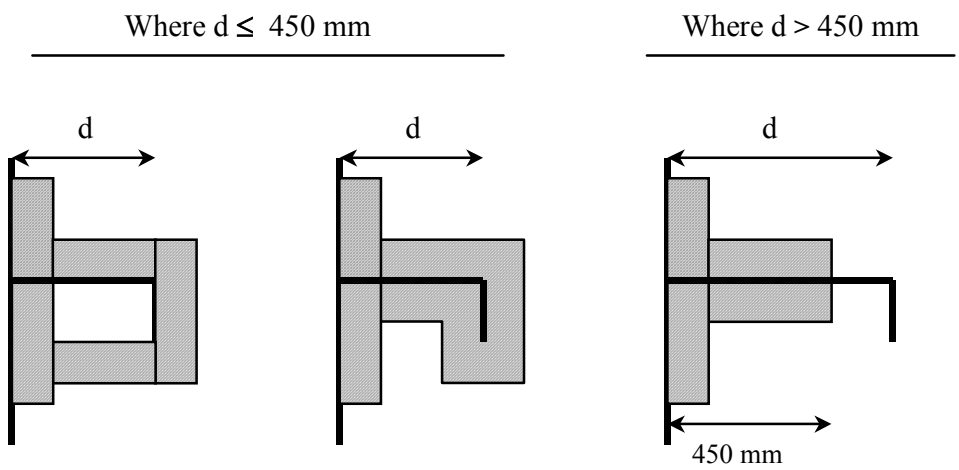
.3 Where a space has the special characteristics of two or more space groupings, the structural fire protection time of the divisions shall be the highest for the space groupings concerned. For example, the structural fire protection time of the divisions of emergency generator rooms shall be of the highest value for the space when the space is considered as being a control station (D) and a machinery space (A)."

55 The following new paragraphs 7.3.4 to 7.3.6 and associated figures 7.3.4 a, 7.3.4 b and 7.3.6 are inserted after the existing paragraph 7.3.3:

"7.3.4 To prevent heat transmission at intersections and terminal points, the insulation of the deck or bulkhead shall be carried past the intersection or terminal point for a distance of at least 450 mm in the case of steel or aluminium structures (refer to figures 7.3.4 a and 7.3.4 b).

7.3.5 If a space is divided by a deck or bulkhead and the fire insulation required for each space is different, the insulation with the higher structural fire protection time shall continue on the deck or bulkhead with the insulation of the lesser structural fire protection time for a distance of at least 450 mm beyond the boundary between the spaces.

7.3.6 Where the lower part of the fire insulation has to be cut for drainage, the construction shall be in accordance with the structural details shown in figure 7.3.6."



d = depth of stiffener on girder

Figure 7.3.4 a

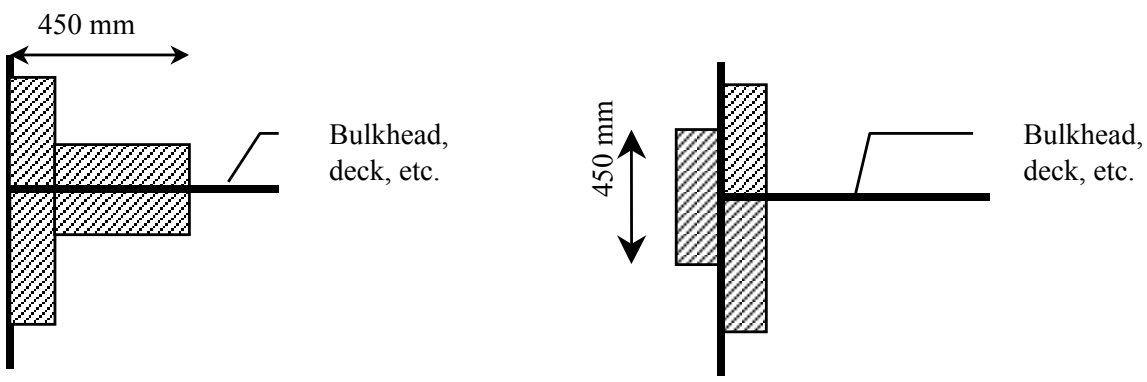


Figure 7.3.4 b

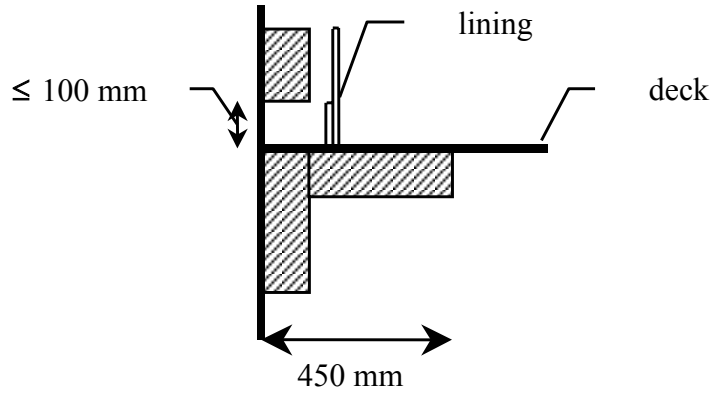


Figure 7.3.6

56 The following new paragraph 7.4.1.4 is inserted after the existing paragraph 7.4.1.3:

"7.4.1.4 Paragraph 7.4.1.3 does not apply to appendages such as air propellers, air ducts to propellers, transmission shafts, rudders and other control surfaces, struts, spars, flexible skirts, etc. which do not comprise part of the main structure of the craft."

57 In tables 7.4-1 and 7.4-2, Note 1 is replaced by the following:

"1 The upper side of decks within spaces protected by fixed fire-extinguishing systems need not be insulated."

58 In paragraph 7.4.2.1, in the second sentence, the words "at the lightweight condition" are replaced by the words "at least 300 mm below the craft's waterline in the lightweight condition in displacement mode".

59 At the end of paragraph 7.4.2.6, the following new sentence is added:

"Where machinery shafts penetrate fire-resisting watertight divisions, arrangements shall be made to ensure that the required watertight and fire-resisting integrity of the division is not impaired."

60 The following new paragraph 7.4.2.7 is inserted after existing paragraph 7.4.2.6:

"7.4.2.7 Ventilation openings may be accepted in entrance doors to public toilets, provided they are positioned in the lower portion of the door and fitted with closable grilles made of non-combustible or fire-restricting material and operable from outside the space."

61 At the end of paragraph 7.4.3.2, the following sentence is added:

"The fire insulation in such spaces may be covered by metal sheets (not perforated) or by vapour proof glass cloth accurately sealed at the joint."

62 In paragraph 7.4.3.3.1, the words "e.g. desks, wardrobes, dressing tables, bureaux and dressers" are inserted after the words "case furniture".

63 In paragraph 7.4.3.4, the words "Subject to paragraph 7.4.3.5" are inserted at the beginning of the paragraph.

64 The following new paragraph 7.4.3.5 is inserted after the existing paragraph 7.4.3.4 and the existing paragraphs 7.4.3.5 to 7.4.3.10 are renumbered as paragraphs 7.4.3.6 to 7.4.3.11:

"7.4.3.5 Paragraph 7.4.3.4 does not apply to partitions, windows and sidescuttles made of glass which are deemed to be non-combustible and to comply with the requirements for low-flame spread surfaces or to items and materials referred to in 7.4.3.3."*

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* Refer to paragraph 7.9.3.4 and the FTP Code, annex 2, paragraphs 1 and 5.1.

65 The last sentence of paragraph 7.4.4.1 is deleted.

66 The following new paragraph 7.4.4.2 is added after the existing paragraph 7.4.4.1 and the existing paragraphs 7.4.4.2 and 7.4.4.3 are renumbered as paragraphs 7.4.4.3 and 7.4.4.4:

"7.4.4.2 Stairways may be fitted in the open in a public space consisting of only two decks, providing they lie wholly within such public space and the following conditions are met:

.1 all levels are used for the same purpose;

.2 the area of the opening between the lower and upper part of the space is at least 10% of the deck area between the upper and lower part of the space;

.3 the design is such that persons within the space should be generally aware, or could easily be made aware of, a developing fire or other hazardous situation located within that space;

.4 sufficient means of escape are provided from both levels of the space directly leading to an adjacent safe area or compartment; and

.5 the whole space is served by one section of the sprinkler system."

67 The second sentence of paragraph 7.4.4.4 is replaced by the following:

"Draught stops are not required in public spaces of Category A craft having only one public space and on other craft in spaces with open ceilings (perforated ceilings) where the opening is 40% or more and the ceiling is arranged in such a way that a fire behind the ceiling can be easily seen and extinguished."

68 The following sentence is added at the end of paragraph 7.5.2:

"The use of aluminium in lubricating oil sump tanks for engines, or in lubricating oil filter housings fitted integral with the engines, is accepted."

69 In paragraph 7.6.1, the following sentence is inserted between the two existing sentences:

"The controls shall be easily accessible as well as prominently and permanently marked and shall indicate whether the shut-off is open or closed."

70 In paragraph 7.6.3.2, the words "(the junction between the duct and the galley range hood)" are inserted after the words "lower end of the duct".

71 In paragraph 7.6.3.4, the word "means" is replaced by the words "a remote means located with the above controls".

72 The following sentence is added at the end of the existing paragraph 7.6.3.5:

"At minimum, one hatch shall be provided close to the exhaust fan and others located in areas of high grease accumulation such as the lower end of the duct as referred to in 7.6.3.2."

73 The following text is added at the end of the existing paragraph 7.6.4:

"Fire and smoke dampers shall be arranged so as to be readily accessible. Where placed behind ceilings or linings, they shall be provided with an inspection door marked to identify the damper. Such identification shall also be placed on any required remote controls."

74 In paragraph 7.6.6, the following sentence is inserted before the last sentence:

"Manual closing may be achieved by mechanical means of release or by remote operation of the fire or smoke damper by means of a fail-safe electrical switch or pneumatic release (i.e. spring-loaded, etc.)."

75 In paragraph 7.7.1, the following sentence is inserted after the first sentence:

"Control stations not normally occupied (e.g. emergency generator rooms) need not be provided with manually operated call points."

76 In paragraph 7.7.1.1.4, the words ", each of which shall comprise a group of fire detectors and manually operated call points as displayed at the indicating unit(s) required by this paragraph." are added at the end of the first sentence.

77 In paragraph 7.7.1.1.9, in the first sentence, the text after "7.11.1" is deleted and a new sentence is added at the end of the paragraph as follows:

"Notwithstanding the preceding requirements of this paragraph, the Administration may accept that the same section of detectors may serve spaces on more than one deck if such spaces are located in the fore or aft end of the craft or they are so arranged that they constitute common spaces on different decks (e.g. fan rooms, galleys, public spaces, etc.)."

78 The following sentence is added at the end of paragraph 7.7.1.1.10:

"In the case of a fire detection system with remotely and individually identifiable fire detectors, this requirement is met if no machinery spaces of a major fire hazard are included in a loop (electrical circuit linking detectors of various sections in a sequence and connected (input and output) to the indicating unit(s)) covering accommodation spaces, service spaces and control stations."

79 In paragraph 7.7.1.1.14, the text following the words "except that" is replaced by the following:

"the control panel may be used to activate one or more of:

.1 paging system;

.2 fan stops;

.3 closure of fire doors;

.4 closure of fire and smoke dampers; and

.5 sprinkler system."

80 In paragraph 7.7.1.1.15, the text of the chapeau is replaced by the following:

"Fire-detection systems in which all fire detectors are individually identifiable (i.e. having zone address identification capability) shall be so arranged that:"

81 In paragraph 7.7.1.1.15.1, the following words are added at the end of the paragraph:

"and no loop shall pass through a space twice. When this is not practical (e.g. for large public spaces), the part of the loop which by necessity passes through the space for a second time shall be installed at the maximum possible distance from the other parts of the loop."

82 In paragraph 7.7.1.1.15.2, the word "not" is inserted between the words "shall" and "render".

83 The following new paragraph 7.7.1.1.16 is inserted after the existing paragraph 7.7.1.1.15:

"The fire detection system in vehicle deck spaces, excluding manual call points, may be switched off with a timer during loading/unloading of vehicles."

84 The last sentence of paragraph 7.7.1.2.3 is replaced by the following:

"Detectors which are located in the overhead shall be a minimum distance of 0.5 m away from bulkheads, except in corridors, lockers and stairways."

85 The following sentence is added at the end of paragraph 7.7.3.1:

"The system shall be remotely controlled in such a way that it is fully serviceable from the operating compartment without any intervention of personnel outside that space in normal conditions."

86 The following new paragraph 7.7.3.2 is inserted after the existing paragraph 7.7.3.1 and the existing paragraphs 7.7.3.2 and 7.7.3.3 are renumbered as paragraphs 7.7.3.3 and 7.7.3.4:

"Any fixed fire-extinguishing system fitted to the craft is to meet the requirements of this sub-section, whether or not the system is required by 7.7."

87 In paragraph 7.7.3.3.3, the following text is added after the first sentence:

"Pipelines may pass through accommodation spaces, provided they are of substantial thickness and their tightness is verified with a pressure test, after their installation, at a pressure head not less than 5 N/mm^2. In addition, pipelines passing through accommodation areas shall only be joined by welding and should not be fitted with drains or other openings within such spaces. Pipelines shall not pass through refrigerated spaces."

88 The following sentence is added at the end of paragraph 7.7.3.3.5:

"Openings that may admit air to, or allow gas to escape from, a protected space shall be capable of being closed from outside the protected space."

89 The following text is added at the end of paragraph 7.7.3.3.6:

"corresponding to the gross volume of the machinery space being increased by the volume of air receivers converted to free air volume. Alternatively, a discharge pipe connected to a safety valve may be fitted to each air receiver, provided it leads directly to the open air."

90 In paragraph 7.7.3.3.7, the words "which personnel can be expected to enter (e.g. ro-ro spaces) and where their access is facilitated by doors or hatches" are inserted after the words "work or" in the first sentence. In the second sentence, the word "operate" is replaced by the words "automatically operate (e.g. by opening of the release cabinet door)".

91 The following text is added at the end of paragraph 7.7.3.3.10:

"Spaces are considered as separated where divisions comply with tables 7.4-1 and 7.4-2, as appropriate, or the divisions are of steel construction."

92 The following text is added at the end of paragraph 7.7.3.3.12:

"without moving the containers completely from their fixing position."

93 The existing paragraph 7.7.3.3.14 is replaced by the following:

"7.7.3.3.14 When the fire-extinguishing medium is stored outside a protected space, it shall be stored in a room which shall be situated in a safe and readily accessible position. For the purpose of the application of tables 7.4-1 and 7.4-2, such storage rooms shall be treated as control stations. The following requirements are applicable only for the storage rooms for fire-extinguishing media of fixed gas fire-extinguishing systems:

.1 the storage room shall not be used for any other purposes;

.2 if the storage space is located below deck, it shall be located no more than one deck below the open deck and shall be directly accessible by a stairway or ladder from the open deck;

.3 spaces which are located below deck or spaces where access from the open deck is not provided, shall be fitted with a mechanical ventilation system designed to take exhaust air from the bottom of the space and shall be sized to provide at least 6 air changes per hour; and

.4 access doors shall open outwards, and bulkheads and decks including doors and other means of closing any opening therein, which form the boundaries between such rooms and adjacent enclosed spaces shall be gas tight."

94 The following text is added at the end of paragraph 7.7.4:

"Each portable fire extinguisher shall:

.1 not exceed 23 kg in total mass;

.2 have a capacity of at least 5 kg if of powder or carbon dioxide type;

.3 have a capacity of at least 9 litres if of foam type;

.4 be examined annually by a competent person;

.5 be provided with a sign indicating the date when was last examined;

.6 be hydraulic pressure tested (cylinders and propellant bottles) every 10 years;

.7 not be placed in accommodation spaces if of carbon dioxide type;

.8 where located in control stations and other spaces containing electrical or electronic equipment or appliances necessary for the safety of the craft, be provided with extinguishing media which are neither electrically conductive nor harmful to the equipment and appliances;

.9 be ready for use and located in easily visible places such that it can be reached quickly and easily at any time in the event of a fire;

.10 be located such that its serviceability is not impaired by the weather, vibration or other external factors; and

.11 be provided with a device to identify whether it has been used."

95 In paragraph 7.7.5.1, the words "independently driven pumps" are replaced by the words "pumps powered by independent sources of power".

96 The following sentence is inserted before the last sentence of paragraph 7.7.5.3:

"The fire main shall be capable of being drained and fitted with valves arranged so that fire main branches can be isolated when the main is used for purposes other than fire-fighting."

97 The following text is added at the end of paragraph 7.7.5.4:

"One hydrant shall be located in the vicinity of and outside each entrance to a machinery space."

98 In paragraph 7.7.5.5, the text after the words "non-perishable material" is replaced by the following:

"Fire hoses shall have a length of:

.1 at least 10 m;

.2 not more than 15 m in machinery spaces; and

.3 not more than 20 m for other spaces and open decks."

99 In paragraph 7.8.1.1, the words "Subject to 7.8.1.2" are inserted at the beginning and the second sentence is deleted. The words ", including open ro-ro space," are inserted after the words "ro-ro space".

100 The following new paragraph 7.8.1.2 is added after the existing paragraph 7.8.1.1 and the existing paragraphs 7.8.1.2 and 7.8.1.3 are renumbered as paragraphs 7.8.1.3 and 7.8.1.4:

"7.8.1.2 The vehicle deck of a special category space or a ro-ro space, including an open ro-ro space, need only be insulated on the underside if required. Vehicle decks located totally within ro-ro spaces may be accepted without structural fire protection, provided these decks are not part of, or do not provide support to, the craft's main load-carrying structure and provided satisfactory measures are taken to ensure that the safety of the craft, including fire-fighting abilities, integrity of fire resisting divisions and means of evacuation, is not affected by a partial or total collapse of these internal decks."

101 Insert the following text at the end of paragraph 7.8.2:

"7.8.2.1 The pumps of the system shall be capable of maintaining:

.1 half the total required application rate with any one pump unit out of function, for category A craft; and

.2 the total required application rate with any one pump unit room out of function, for category B craft.

7.8.2.2 Fixed fire-extinguishing systems shall fulfil the following requirements:

.1 the valve manifold should be provided with a pressure gauge and each of the valves should be marked;

.2 instructions for maintenance and operation of the installation shall be set up in the room where the valves are located; and

.3 the piping system shall be provided with a sufficient number of drainage valves."

102 The following text is added at the end of paragraph 7.8.4.1:

" – a water fog applicator consists of a metal L-shaped pipe, the long limb being approximately 2 m in length and capable of being fitted to a fire hose, and the short limb being approximately 250 mm in length and fitted with a fixed water fog nozzle or capable of being fitted with a water spray nozzle."

103 The following text is added at the end of paragraph 7.8.4.3:

"In addition to complying with 7.7.4, fire extinguishers shall be suitable for A and B class fires and have a capacity of 12 kg dry powder or equivalent."

104 Paragraph 7.8.6 is renumbered as paragraph 7.8.6.1 and the words "scuppers shall be fitted so" in the first sentence are replaced with the words "pumping and drainage arrangements should be such as to prevent such accumulation. Scuppers fitted for this purpose shall be so arranged".

105 The following new paragraph 7.8.6.2 is inserted after the existing paragraph 7.8.6.1:

"7.8.6.2 In respect of scuppers and drainage pumps fitted in accordance with 7.8.6.1:

.1 the amount of water for which drainage is provided shall take into account the capacity of both the water spraying system pumps and required number of fire hose nozzles;

.2 the drainage system shall have a capacity of not less than 125% of the capacity specified in .1 above; and

.3 bilge wells shall be of sufficient holding capacity and shall be arranged at the side shell of the ship at a distance from each other of not more than 40 m in each watertight compartment."

106 In paragraph 7.8.7.1, the text after the first sentence is replaced by the following:

"Electrical equipment installed more than 450 mm above the deck or platform shall be of a type enclosed and protected by an enclosure having an ingress protection based on an international standard acceptable to the Organization.* However, if the installation of electrical equipment and wiring less than 450 mm above the deck or platform is necessary for the safe operation of the craft, such electrical equipment and wiring may be installed provided that the equipment is certified "safe type" based on an international standard acceptable to the Organization.**

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* Refer to IEC publication 529 – Degrees of protection provided by enclosures, in particular, refer to the standards for an ingress protection of at least IP 55 or Refer to IEC publication 79 – Electrical apparatus for explosive gases suitable, in particular, refer to the standards for protection by an apparatus for use in zone 2 areas.

** Refer to IEC publication 79 – Electrical apparatus for explosive gases suitable, in particular, refer to the standards for equipment and wiring to be suitable for use in zone 1 areas."

107 The existing text of paragraph 7.8.7.2 is replaced by the following:

> "7.8.7.2 If installed in an exhaust ventilation duct, electrical equipment shall be certified "safe type". The equipment and wiring, if fitted, shall be suitable for use in zone 1 areas as defined in IEC publication 79 and the outlet from any exhaust duct shall be sited in a safe position, having regard to other possible sources of ignition."

108 In paragraph 7.10.1.2, the words "complying with the requirements of 7.8.4.1." are inserted after the words "water fog applicator".

109 In paragraph 7.10.2, the words "or sets of personal equipment shall be so stored as" are replaced by the words "and sets of personal equipment shall be stored in permanently and clearly marked locations arranged so as".

110 In paragraph 7.10.3.1.2, the words "and gloves" are deleted.

111 In paragraph 7.10.3.1.4, the word "type" is replaced by the words "explosion-proof type certified to gas group II A and temperature class T 3".

112 The words "having handle provided with high-voltage insulation." are added at the end of paragraph 7.10.3.1.5.

113 Paragraphs 7.10.3.2 and 7.10.3.2.1 are deleted, the remaining paragraph 7.10.3.2.2 is renumbered as 7.10.3.2 and the words "of an approved type" are inserted after the words "breathing apparatus".

114 The second sentence of paragraph 7.10.3.2 is replaced by the following:

> "Two spare charges suitable for use with the apparatus shall be provided for each required apparatus."

115 In paragraph 7.10.3.3, the words "sufficient length" are replaced by the words "approximately 30 m in length" and the following new sentence is added at the end:

> "The lifeline shall be subjected to a test by static load of 3.5 kN for 5 min."

116 In paragraph 7.11.1.3, the words "within the structural fire protection time for areas of major fire hazard." are added at the end.

117 In paragraph 7.13.1, the following sentence is inserted after the first sentence:

> "A stairway open at one deck shall be considered part of the space to which it is open and consequently shall be protected by any sprinkler system provided for that space."

118 In paragraph 7.13.3, the words "operational speed" are replaced by the words "90% of maximum speed".

119 The following sentence is inserted before the first sentence of paragraph 7.17.1:

"7.17.1 The carriage of dangerous goods in packaged form shall be in accordance with the relevant provisions of the IMDG Code."

120 The existing text of paragraph 7.17.2.2 is replaced by the following:

".2 purpose-built container craft and cargo spaces intended for the carriage of dangerous goods in freight containers and portable tanks. In this regard a purpose-built container space is a cargo space fitted with cell guides for stowage and securing containers;"

121 In paragraph 7.17.2.3, the words ", including special category spaces as defined in the IMDG Code," are inserted after the words "ro-ro spaces".

122 The following text is added at the end of paragraph 7.17.3:

"For the purpose of this section, "on deck" shall be taken to mean spaces on the weather deck."

123 In paragraph 7.17.3.1.2, the word "supplying" is replaced by the words "simultaneously supplying the arrangements required by 7.17.3.1.3 for the largest designated cargo space and the" and the following sentence is inserted after the first sentence:

"This requirement shall be met by the total capacity of the main fire pump(s) not including the capacity of the emergency fire pump, if fitted."

124 In the existing paragraph 7.17.3.1.3:

.1 the words "shall be provided" are deleted from the end of the first sentence and are re-inserted after the first word "Means";

.2 the words "copious quantities of water" are replaced by the words "with water at not less than 5 *l*/min/m^2 of the horizontal area of cargo spaces"; and

.3 the words "meet the requirements of 7.8.6 and" are inserted after the words "drainage and pumping arrangements shall".

125 The following sentence is added at the end of paragraph 7.17.3.1.4:

"Substitution by a high expansion foam system complying with regulation II-2/10.4.1.1.2 of the Convention is also acceptable."

126 The following new paragraphs 7.17.3.1.5 and 7.17.3.1.6 are added after existing paragraph 7.17.3.1.4:

"7.17.3.1.5 The requirements of 7.17.3.1.1 to 7.17.3.1.4 may be fulfilled by a water spray system complying with the standards developed by the Organization*, provided that the amount of water required for fire-fighting purposes in the largest cargo space allows simultaneous use of the water spray system plus four jets of water from hose nozzles in accordance with 7.17.3.1.2.

* Refer to paragraphs 9.2, 9.3 and 9.4 of the Interim guidelines for open-top container ships (MSC/Circ.6081/Rev.1).

7.17.3.1.6 Craft carrying dangerous goods shall be provided with three fire hoses and nozzles complying with 7.7.5.6 in addition to those required by 7.7.5.5."

127 In the first sentence of paragraph 7.17.3.2, the words "or vehicle decks" are added after the words "enclosed cargo spaces".

128 In paragraph 7.17.3.4.2, the sentence "Exhaust fans shall be of non-sparking type." is inserted after the first sentence and the text of the last sentence is replaced by the following:

"Suitable wire mesh guards having a mesh size not exceeding 13 mm x 13 mm shall be fitted over inlet and outlet ventilation openings to prevent foreign objects from entering into the casing."

129 Existing paragraph 7.17.3.4.3 is renumbered as 7.17.3.4.4; the relevant reference in table 7.17-2 is amended; and the following new paragraph 7.17.3.4.3 is inserted:

"7.17.3.4.3 If adjacent spaces are not separated from cargo spaces by gastight bulkheads or decks, ventilation requirements apply to the adjacent spaces as for the cargo space itself as required by regulation II-2/19.3.4.2 of the Convention and the guidance developed by the Organization."

130 The following new paragraph 7.17.3.4.5 is added after existing paragraph 7.17.3.4.4:

"7.17.3.4.5 For open-top container craft, power ventilation is required only for the lower part of the cargo hold for which purpose-built ducting is required. The ventilation rate shall be at least two air changes per hour based on the empty hold volume below the weather deck."

131 In table 7.17-1, the words "(includes cargoes of group B of the Bulk Cargo Code except for cargoes denoted Materials Hazardous in Bulk)" are added to the words "Solid dangerous goods in bulk" at the head of the right-hand column.

132 In table 7.17-1, the words "per hour" are added at the end of the second sentence of note 1.

133 In table 7.17-2, note 4, the words "residues of" are added after the word "containing".

134 In table 7.17-2, the following note 7 is inserted with references from row 7.17.3.4.2, columns 4.2 and 4.3, and existing notes 7 to 11 to table 7.17-3 together with their references in that table are renumbered as notes 8 to 12:

"7 For seedcake containing residues of solvent extraction and cargoes of IMDG Code Class 4.3, two separate fans shall be permanently fitted unless portable type fans have been adapted for being securely fitted (e.g. fixed) prior to loading and during the voyage. The ventilation system shall comply with the provisions of 7.17.3.4.1 and 7.17.3.4.2. Ventilation shall be such that any escaping gases cannot reach public spaces or crew accommodation on or under deck."

135 In tables 7.17-2 and 7.17-3, the word "Hazard" is inserted before "class" and "classes" wherever occurring.

136 In table 7.17-3, in column 7 and 8, the terms "3.1 3.2" and "3.3" are replaced by "3" and the following new note 13 is added to "x" in column "5.2", last and penultimate lines:

"Under the provisions of the IMDG Code, as amended, stowage of class 5.2 dangerous goods under deck or in enclosed ro-ro spaces is prohibited."

137 The following new subparagraphs .1 to .4 are added to paragraph 7.17.3.5:

".1 if the bilge drainage system for cargo spaces is additional to the system served by pumps in the machinery space, the capacity of the system shall be not less than 10 m^3/h per cargo space served. If the additional system is a common system, the capacity need not exceed 25 m^3/h. The additional bilge system need not be arranged with redundancy. Whenever flammable or toxic liquids are carried, the bilge line into the machinery space shall be isolated either by fitting a blank flange or by a closed lockable valve;

.2 if bilge drainage of cargo spaces is arranged by gravity drainage, the drainage shall be either lead directly overboard or to a closed drain tank located outside the machinery spaces. The tank shall be provided with vent pipe to a safe location on the open deck;

.3 enclosed spaces outside machinery spaces containing bilge pumps serving cargo spaces intended for carriage of flammable or toxic liquids shall be fitted with separate mechanical ventilation giving at least six air changes per hour. Electrical equipment in the space shall be of certified safe type.* If the space has access from another enclosed space, the door shall be self-closing; and

* Refer to special features – Ships carrying dangerous goods and materials hazardous only in bulk (IEC 60092-506).

.4 drainage from a cargo space into bilge wells in a lower space is only permitted if that space satisfies the same requirements as the cargo space above."

138 The following text is added at the end of the first sentence of paragraph 7.17.3.6.1:

"shall be selected taking into account the hazards associated with the chemicals being transported and the standards developed by the Organization according to the class and physical state."

139 The following new sentence is added at the end of paragraph 7.17.3.6.2:

"In addition to the requirements of 7.10.3.2.2, two spare charges suitable for use with the breathing apparatus shall be provided for each required apparatus."

140 In paragraph 7.17.3.8.2, the words "meet the requirements of 7.8.6, have its valves operable from outside the space at a position in the vicinity of the extinguishing system controls and" are inserted after the words "drainage and pumping arrangements shall".

CHAPTER 8
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

141 Existing paragraphs 8.7.6 to 8.7.10 are renumbered as 8.7.7 to 8.7.11 and a new paragraph 8.7.6 inserted as follows:

"8.7.6 Where an MES is provided for embarkation of survival craft on a Category B craft, an alternative means of evacuating passengers and crew into survival craft on the same side of the craft in conditions up to and including the worst intended conditions is to be provided for use if the MES is lost or rendered unserviceable in the event of damage of longitudinal extent specified in 2.6.7.1."

CHAPTER 10
AUXILIARY SYSTEMS

142 In paragraph 10.2.4.8, the words "the filling pipes" at the end of the first sentence are deleted and in its place inserted the words "bunkering pipes and any filling pipes served by on-board pumps". In addition, the words "and, for fuel of flashpoint less than 43°C," are replaced by the words "where there is no risk of fire or explosion from the emergence of oils and vapour and shall not lead into crew spaces, passenger spaces, special category spaces, ro-ro spaces (other than open ro-ro spaces), machinery spaces or similar spaces. For fuel of flashpoint less than 43°C such valves and pipes".

CHAPTER 11
REMOTE CONTROL, ALARM AND SAFETY SYSTEMS

143 In paragraph 11.3.3, in the first sentence, the words "in a station" are replaced by the words "at one or more stations".

144 In paragraph 11.4.1.2, subparagraphs .4 to .11 are renumbered as subparagraphs .5 to .12 and the following new subparagraph ".4" is inserted after the existing subparagraph ".3":

".4 detection of bilge water in each watertight compartment below the design waterline".

CHAPTER 13
SHIPBORNE NAVIGATIONAL SYSTEMS AND EQUIPMENT AND VOYAGE DATA RECORDERS

145 The existing paragraph 13.8.2 is renumbered as paragraph 13.8.3 and the following new paragraph 13.8.2 inserted:

"13.8.2 High-speed craft shall be fitted with an ECDIS as follows:

.1 craft constructed on or after [1 July 2008];

.2 craft constructed before [1 July 2008], not later than [1 July 2010]."

CHAPTER 14
RADIOCOMMUNICATIONS

146 The existing text of paragraph 14.15.10 is replaced by the following:

"14.15.10 Satellite EPIRBs on all craft shall be:

.1 annually tested for all aspects of operational efficiency, with special emphasis on checking the emission on operational frequencies, coding and registration, at intervals as specified below:

.1 on passenger craft, within 3 months before the expiry date of the High-Speed Craft Safety Certificate; and

.2 on cargo craft, within 3 months before the expiry date, or 3 months before or after the anniversary date, of the High-Speed Craft Safety Certificate;

The test may be conducted on board the craft or at an approved testing station; and

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

CHAPTER 18
OPERATIONAL REQUIREMENTS

147 The existing text of paragraph 18.1.3.4 is replaced by the following:

".4 provision in the area of operation of a base port having functions and facilities in accordance with the requirements of this Code."

ANNEX 1
FORM OF HIGH–SPEED CRAFT SAFETY CERTIFICATE AND RECORD OF EQUIPMENT

148 In Annex 1, Record of Equipment, Part 4, the words "Two-way on-scene radiocommunications 121.5 MHz & 123.1 MHz" are inserted as item 7.

149 The following new form "Standard Format for Document of Compliance – Special requirements for craft carrying dangerous goods" is inserted at the end of annex 1.

"APPENDIX

Standard Format for Document of Compliance – Special requirements for craft carrying dangerous goods

Issued in pursuance of the requirements of part D, chapter 7 of the International Code of Safety for High-Speed Craft, 2000, as amended, under the authority of the Government of …….

Name of craft: .....

Design type and hull No.: .....

Distinctive No. or lettering: .....

IMO No.:* .....

Port of registry: .....

Category: Category A craft/Category B craft/cargo craft**

Type of craft: hovercraft, surface effect ship, hydrofoil, single-hull vessel, multi-hull vessel, other (please state……..……)**

CERTIFICATE

1. The construction and equipment of the above-mentioned craft have been found to comply with the provisions of part D, chapter 7 of the International Code of Safety for High-Speed Craft, 2000, as amended;

2. The craft is suitable to carry the classes of dangerous goods indicated in the attached appendix, subject to concurrent application of the International Maritime Dangerous Goods Code (IMDG Code) and the Code of Safe Practice for Solid Bulk Cargoes (BC Code) in respect of the various materials or items.

This document is valid until …….

Place and date of issue: ……..…… 20….. …….……
(Signature of authorizing official)

Note: Part D of chapter 7 stipulates no special provisions for the carriage of dangerous goods of classes 6.2 and 7, nor for the carriage of dangerous goods in limited quantities as defined in chapter 3.4 of the IMDG Code.

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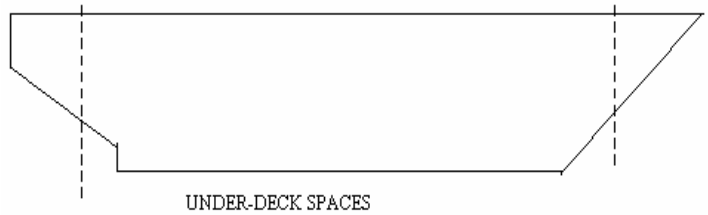
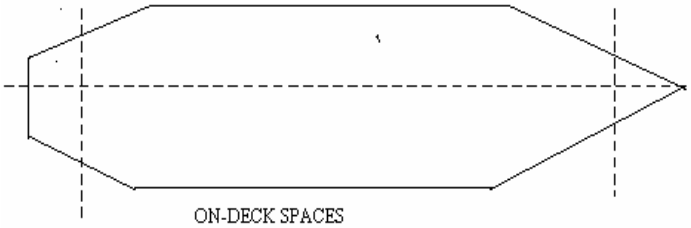
* IMO Ship Identification Number Scheme, adopted by the Organization through resolution A.600(15).
** Delete where applicable.

APPENDIX

Indicate spaces on plans using the corresponding numbers from the table below





Class \ Space		1	2	3	-	-	-	-	-	-
1.1 - 1.6										
1.4.S										
2.1										
2.2										
2.3										
3 Flashpoint <23ºC c.c.										
3 Flashpoint ≥23ºC - ≤61ºC c.c.										
4.1										
4.2										
4.3										
5.1										
5.2										
6.1 liquids										
6.1 liquids Flashpoint <23ºC c.c.										
6.1 liquids ≥23ºC - ≤61ºC c.c.										
6.1 solids										
8 liquids										
8 liquids Flashpoint < 23ºC c.c.										
8 liquids ≥23ºC - ≤61ºC c.c.										
8 solids										
9										

P indicates GOODS IN PACKAGING ONLY

A indicates PACKAGED AND BULK GOODS ALLOWED

X signifies NOT ALLOWED

Comments on the information contained in the table above as applicable:

NOTE : Bulk cargoes may be listed individually, by designation and class."

ANNEX 6
STABILITY OF HYDROFOIL CRAFT

150 In the preamble, the following new paragraphs are inserted after the existing introductory paragraph and prior to paragraph 1:

"As required by 2.3.1, the stability of hydrofoil craft shall be assessed under all permitted conditions of loading.

The term "hull-borne mode" has the same meaning as "displacement mode" defined in 1.4.22 of the Code.

The term "foil-borne mode" has the same meaning as "non-displacement mode" defined in 1.4.38 of the Code."

ANNEX 7
STABILITY OF MULTIHULL CRAFT

151 In paragraph 1.4.2, the following sentence is added to the first paragraph:

"Alternatively another method of assessment may be employed, as provided for in 2.1.4 of this Code."

152 At the end of paragraph 1.5, the following sentence is added:

"The determination of θ_r using model test or other data should be made using the method for determining θ_Z in 1.1.5.3 of annex 6."

153 At the end of the paragraph 2.3, the words ", as determined in 1.5 of this annex." are added.

ANNEX 8
STABILITY OF MONOHULL CRAFT

154 The existing text of paragraph 1.1 is replaced by the following:

"1.1 The weather criterion contained in paragraph 3.2 of the Intact Stability Code* shall apply. In applying the weather criterion, the value of wind pressure P (N/m2) shall be taken as:

$$500\{V_w/26\}^2$$

where V_w = wind speed (m/s) corresponding to the worst intended conditions.

The angle of heel due to wind, in applying paragraph 3.2.2.1.2 of the Intact Stability Code, should not exceed 16° or 80% of the angle of deck-edge immersion (whichever is lesser). Where the angle of heel due to wind exceeds 10° efficient non-slip deck surfaces and suitable holding points should be provided, in accordance with paragraph 2.13.1.1 of this Code. In applying the weather criterion, account shall also be taken of the roll damping characteristics of individual craft in assessing the assumed roll angle θ_1, which may alternatively be derived from model or full scale tests using the method for

determining θ_z in 1.1.5.3 of annex 6. Hulls with features which greatly increase damping, such as immersed sidehulls, substantial arrays of foils, or flexible skirts or seals, are likely to experience significantly smaller magnitudes of roll angle. For such craft, therefore, the roll angle shall be derived from model or full scale tests or in the absence of such data shall be taken as 15°."

* Refer to the Code on Intact Stability for All Types of Ships Covered by IMO Instruments, adopted by the Organization by resolution A.749(18), as amended by resolution MSC.75(69).

155 The following new sentence is added at the end of paragraph 2.1.1:

"The range shall be taken as the difference between the equilibrium heel angle and the heel angle at which the residual righting lever subsequently becomes negative or the angle at which progressive flooding occurs, whichever is less."

ANNEX 9
DEFINITIONS, REQUIREMENTS AND COMPLIANCE CRITERIA RELATED TO OPERATIONAL AND SAFETY PERFORMANCE

156 In second sentence of first paragraph the word "prototype" is replaced by the word "first".

157 In paragraphs 2.1.1, 2.1.2, 2.1.3 and 3.3.1, the words "maximum operational speed" are replaced by the words "90% of maximum speed".

158 In paragraph 3.2, the sentence "The worst intended conditions should not exceed 150% of the more severe of the two measured sea conditions" is inserted as the penultimate sentence.

ANNEX 10
CRITERIA FOR TESTING AND EVALUATION OF REVENUE AND CREW SEATS

159 In paragraph 3.4, the words "same strength and stiffness" are replaced by the words "equivalent strength and stiffness".

160 In the first sentence of paragraph 3.5, the words "suitable for the test being conducted" are replaced by the words "corresponding to the Hybrid III human surrogate (unless a more advanced test dummy is available)."

161 In paragraph 3.6, after the words "and measurement," the words "if possible" are deleted.

162 The following paragraphs 3.9.3.3 to 3.9.3.5 are inserted after paragraph 3.9.3.2 and the existing paragraph 3.9.3.3 is renumbered as paragraph 3.9.3.6:

".3.3 neck flexion does not exceed 88 Nm;

.3.4 neck extension does not exceed 48 Nm;

.3.5 in lieu of the requirements of subparagraphs .3.3 and .3.4 above, a seatback or headrest of at least 850 mm above the seat cushion is acceptable; and".

163 The following new annex 12 is added after the existing annex 11:

"**ANNEX 12**

FACTORS TO BE CONSIDERED IN DETERMINING CRAFT OPERATING LIMITATIONS*

1 Purpose and scope

The purpose of this annex is to identify all the parameters to which consideration should be given when determining the Worst Intended Conditions (defined in 1.4.61) and other Operational Limitations (defined in 1.4.41) for insertion into the Permit to Operate, in order to facilitate consistent application of the Code.

2 Factors to be considered

As a minimum, the following factors shall be considered:

.1 The maximum distance from refuge implied by 1.3.4.

.2 The availability of rescue resources to comply with 1.4.12.1 (Category A craft only).

.3 Minimum air temperature (susceptibility to icing), visibility and depth of water for safe operation as addressed by 1.4.61.

.4 The significant wave height and maximum mean wind speed used when applying the requirements for stability and buoyancy in chapter 2 and associated annexes.

.5 The safe seakeeping limitations (especially significant wave height) considering the known stability hazards listed in 2.1.5, the operating conditions on the intended route (see 18.1.3.2) and the motions experienced during operation defined in 3.3 of annex 9.

.6 The structural safety of the craft in Critical Design Conditions according to chapter 3.

.7 The safe deployment and operation of evacuation systems and survival craft as required by 8.6.5.

.8 The safe handling limitations determined in accordance with the sea trials required by chapter 17 and annexes 3 and 9, identifying any limitations on weight and centre-of-gravity position according to 17.3, and the effects of failures and malfunctions according to 17.4."

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

FOOTNOTES TO BE ADDED OR AMENDED IN THE 2000 HSC CODE

1 A footnote is inserted after "emergency source of power" in paragraph 1.4.16 with associated footnote reading:

"Spaces containing, for instance, the following battery sources should be regarded as control stations regardless of battery capacity:

.1 emergency batteries in separate battery room for power supply from black-out until start of emergency generator;

.2 emergency batteries in separate battery room as reserve source of energy to radiocommunications installations;

.3 batteries for start of emergency generator; and

.4 in general, all emergency batteries required by 12.3."

2 In paragraph 1.4.16, a footnote reference is inserted after the word "centralized" with associated footnote to read:

"Where in the sections of this Code relevant to fixed fire-extinguishing systems there are no specific requirements for the centralization within a control station of major components of a system, such major components may be placed in spaces which are not considered to be control stations."

3 The following footnote to the heading of paragraph 2.2.1 is inserted:

"These requirements encompass the need for all hull openings and their closures to be provided with satisfactory integrity."

4 In paragraph 2.2.3.2.2, a footnote to the words "model tests" is inserted as follows:

"Reference should be made to MSC/Circ.[…] which provides guidelines for the conduct of high-speed craft model testing."

5 In paragraph 2.2.7.3, a footnote to the word "elsewhere" is inserted as follows:

"Refer to paragraph 2.1.3.2."

6 In paragraph 2.2.8, the following footnote is inserted in relation to the word "elsewhere" in paragraphs 2.2.8.1.1, 2.2.8.2.2, 2.2.8.3.4, and 2.2.8.4.1:

"Refer to paragraph 2.1.3.2."

7 At the end of paragraph 2.2.8.2.1, the following footnote is inserted:

"Conformity with the requirements of organizations recognized by the Administration in accordance with regulation XI-1/1 of the Convention may be considered to possess adequate strength."

8 In paragraph 2.3.4, a footnote to the heading of Table 2.3.4 is inserted as follows:

"Table 2.3.4 is advisory, and accommodates cases where a monohull has stability characteristics like a multihull, and those of a multihull that are like a monohull."

9 At the end of paragraph 2.6.4.1, a footnote is inserted as follows:

"Reference may be made to Cellular plastics, rigid — Determination of water absorption for assessing water absorption properties (ISO 2896:1987).

The water absorption of low density material should not exceed 8 % by volume after being fully submerged for 8 days according to ISO 2896 should be considered to be "impervious to water absorption". Material complying with IMO resolution MSC.81(70) should also be deemed to satisfy this standard. Refer to: Small craft – Stability and buoyancy (ISO 12217)."

10 In paragraph 2.11, a footnote to the words "cases of loading" is inserted as follows:

"Attention is drawn to the longitudinal centre-of-gravity limitations established in compliance with 17.3."

11 In paragraph 2.13.1.1, the following footnote is added after the words "within 15 min":

"Refer to the Recommendations on a standard method for establishing compliance with the requirements for cross-flooding arrangements in passenger ships adopted by the Organization by resolution A.266(VIII) as amended."

12 In paragraph 2.15, the following footnote is added after the words "within 15 min":

"Refer to the Recommendations on a standard method for establishing compliance with the requirements for cross-flooding arrangements in passenger ships, adopted by the Organization by resolution A.266(VIII) as amended."

13 The footnote in paragraph 4.8.2 is replaced with the following:

"Refer to the Guidelines for a simplified evacuation analysis of high-speed passenger craft (MSC/Circ.1166)."

14 The following footnote to paragraph 4.8.10.2.1 is inserted:

"Refer to the Guidelines for a simplified evacuation analysis of high-speed passenger craft, paragraph 3.5.1 (MSC/Circ.1166)."

15 The following footnote is added to the chapeau of paragraph 7.4.3.3:

"Fire test procedures referenced in the FTP Code (resolution MSC.61(67), as amended by resolutions MSC.101(73) and MSC.173(79)) and MSC/Circ.916, 964, 1004, 1008, 1036 and 1120 should be applied to items and materials covered by this paragraph as follows:

.1 case furniture (FTP Code, annex 1, parts 1 and 10);

.2 frames of all other furniture (FTP Code, annex 1, parts 1 and 10);

.3 draperies, textiles and other suspended textile materials (FTP Code, annex 1, part 7);

.4 upholstered furniture, e.g. passenger seating (FTP Code, annex 1, part 8);

.5 bedding components (FTP Code, annex 1, part 9); and

.6 deck finish materials (FTP Code, annex 1, parts 2 and 6)."

16 The footnote to paragraph 7.7.3.3.1 is replaced with the following:

"Refer to the Guidelines for the approval of fixed water-based local application fire-fighting systems for use in category A machinery spaces (MSC/Circ.913), and the associated interpretations of MSC/Circ.1082."

17 The following footnote is added to paragraph 7.7.3.3.7:

"Refer to the Code on Alarms and Indicators, 1995 (resolution A.830(19))."

18 The following footnote is added to paragraph 7.7.4:

"Refer to the Improved guidelines for marine portable fire extinguishers (resolution A.951(23)), and Fire protection equipment – Portable fire extinguishers – Performance and construction (ISO 7165:1999)."

19 In paragraph 7.8.2, the following footnote is inserted after the words "approved fixed pressure water-spraying system":

"Refer to Recommendation on fixed fire-extinguishing systems for special category spaces (resolution A.123(V))."

20 The following footnote is inserted after the words "effective power ventilation system" in paragraph 7.8.5.1:

"Refer to on the Design guidelines and operational recommendations for ventilation systems in ro-ro cargo spaces (MSC/Circ.729)."

21 In paragraph 7.9.3.4, a footnote reference is inserted after the words "open spaces" to read "Refer to the definition in 7.3.1.6."

22 In paragraph 7.10.3.1.1, the following footnote reference is inserted after the words "protective clothing":

"Refer to Protective clothing – Protection against heat and fire – Evaluation of materials and material assemblies when exposed to source of radiant heat (ISO 6942:2002)."

23 In paragraph 7.10.3.1.4, the following footnote is inserted after the words "temperature class T 3":

"Refer to Electrical apparatus for explosive gas atmospheres (IEC Publication 60079)."

24 The words "and the associated interpretations of MSC/Circ.912." are added at the end of the footnote to paragraph 7.13.1.

25 The words "and the associated interpretations of MSC/Circ.912." are added at the end of the footnote to paragraph 7.16.1.

26 The footnote to the title of Part D of chapter 7 is deleted.

27 The following footnote is added to paragraph 7.17.3.1.3:

"Refer to Recommendation on fixed fire-extinguishing systems for special category spaces (resolution A.123(V))."

28 The footnote to paragraph 7.17.3.2 is amended to read:

"Refer to Electrical installations in ships – Part 506: Special features – Ships carrying specific dangerous goods and materials hazardous only in bulk (IEC Publication 60092-506) and Electrical apparatus for explosive gas atmospheres (IEC Publication 79)."

29 In paragraph 7.17.3.4.2, a footnote is inserted after the words "non-sparking type." as follows:

"Refer to IACS Unified Requirement F 29, as revised."

30 The following footnote is added to the first sentence of paragraph 7.17.3.6.1:

"For solid bulk cargoes, the protective clothing should satisfy the equipment provisions specified in the respective schedules of the BC Code for the individual substances. For packaged goods, the protective clothing should satisfy the equipment provisions specified in emergency procedures (EmS) of the Supplement to the IMDG Code for the individual substances."

31 The footnote to paragraph 7.17.3.8.1 is amended to refer to MSC/Circ.1146 instead of MSC/Circ.671.

32 In paragraph 7.17.3.8.2, the following footnotes are added after the words "water-spraying system" and at the end of the penultimate sentence, respectively:

"Refer to Recommendation on fixed fire-extinguishing systems for special category spaces (resolution A.123(V))."

"Refer to relevant provisions of regulation II-2/20.6.1.4 of the Convention."

33 In paragraph 7.17.4, the following footnote is added:

"Refer to "Standard Format for Document of Compliance – Special requirements for craft carrying dangerous goods" in Annex 1, and MSC/Circ.1148 – Issuing and renewal of document of compliance with the special requirements applicable to ships carrying dangerous goods."

34 In paragraph 8.1.10.10, a footnote is added at the end as follows:

"This definition does not include an appliance or device fitted to the craft (e.g. mini-slide fitted as an alternative to survival craft embarkation arrangements accepted under 8.7.5) the deployment of which is not taken into account in determining the evacuation time in accordance with 4.8."

35 In paragraph 8.4.2, a footnote having the same wording as for 8.4.1 is inserted at the end.

36 In paragraph 9.1.5, a footnote to the words "dead craft condition" is inserted stating "Refer to the Unified interpretation to the 2000 HSC Code (MSC/Circ.1177)."

37 After the words "approved material" in paragraph 10.2.4.9, a footnote is inserted as follows:

"For valves fitted to oil fuel tanks and which are under static pressure-head, steel or nodular cast iron may be accepted. However, ordinary cast iron valves may be used in piping systems where the design pressure is lower than 0.7 N/mm^2 and the design temperature is below 60ºC."

38 In paragraph 15.1.1, a footnote is inserted after the words "Operating area" as follows:

"Refer to Ship's Bridge Layout and Associated Equipment – Requirements and Guidelines (ISO 8468:1990); and the Guidelines on ergonomic criteria for bridge equipment and layout (MSC/Circ.982)."

39 In annex 3, table 1, footnote 1 is amended to read:

"The accelerometers used shall have an accuracy of at least 5% full scale and shall have a frequency response bandwidth of at least 0.2 Hz to 20 Hz. Sampling frequency shall not be lower than 40 Hz. Filtering is recommended to eliminate any influence from machinery vibrations."

40 In annex 3, table 1, the reference to footnote 2 is moved up to relate to the heading "Value".

***

ANNEX 17

DRAFT AMENDMENTS TO THE 1994 HSC CODE

CHAPTER 1
GENERAL COMMENTS AND REQUIREMENTS

1 The existing paragraph 1.2 is numbered as 1.2.1 and the following new paragraph 1.2.2 is added:

"1.2.2 New installation of materials containing asbestos used for the structure, machinery, electrical installations and equipment of a craft to which this Code applies shall be prohibited except for:

.1 vanes used in rotary vane compressors and rotary vane vacuum pumps;

.2 watertight joints and linings used for the circulation of fluids when, at high temperature (in excess of 350°C) or pressure (in excess of 7 x 106 Pa), there is a risk of fire, corrosion or toxicity; and

.3 supple and flexible thermal insulation assemblies used for temperatures above 1,000°C."

CHAPTER 8
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

2 In paragraph 8.9.7.1.2, the footnote is amended by inserting ", as amended by resolution MSC.55(66)" at the end after "resolution A.761(18)".

3 The following new paragraph 8.9.7.2 is inserted after the existing paragraph 8.9.7.1.2:

"8.9.7.2 In addition to or in conjunction with the servicing intervals of marine evacuation systems (MES) required above, each marine evacuation system should be deployed from the craft on a rotational basis at intervals to be agreed by the Administration provided that each system is to be deployed at least once every six years."

4 The heading "Operational readiness" in paragraph 8.9.1 is deleted and replaced by the word "General". The existing paragraph 8.9.1 is renumbered as paragraph 8.9.1.1 and the following paragraphs 8.9.1.2 and 8.9.1.3 with associated footnote inserted:

"8.9.1.2 Before giving approval to novel life-saving appliances or arrangements, the Administration should ensure that such appliances or arrangements:

.1 provide safety standards at least equivalent to the requirements of this chapter and have been evaluated and tested in accordance with the recommendations of the Organization;* or

.2 have successfully undergone, to the satisfaction of the Administration, evaluation and tests which are substantially equivalent to those recommendations.

8.9.1.3 An Administration which permits extension of liferaft service intervals in accordance with 8.9.1.2 should notify the Organization in accordance with regulation I/5(b) of the Convention.

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* Refer to the Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-Saving Appliances and Arrangements, adopted by the Organization by resolution A.520(13).”

5 The following new paragraph 8.9.10 with heading “Periodic servicing of launching appliances” is inserted after the existing paragraph 8.9.9:

“8.9.10 *Periodic servicing of launching appliances*

Launching appliances:

.1 should be serviced at recommended intervals in accordance with instructions for on-board maintenance as required by regulation III/36 of the Convention;

.2 should be subjected to a thorough examination at intervals not exceeding 5 years; and

.3 should upon completion of the examination in .2 be subjected to a dynamic test of the winch brake in accordance with paragraph 6.1.2.5.2 of the LSA Code (i.e. with a proof load of not less than 1.1 times the maximum working load at maximum lowering speed).”

6 The following new paragraph 8.9.11 with heading “Novel life-saving appliances or arrangements” is inserted after the existing paragraph 8.9.10:

“8.9.11 *Novel life-saving appliances or arrangements*

An Administration which approves new and novel inflatable liferaft arrangements pursuant to 8.9.1.2 may allow for extended servicing intervals under the following conditions:

.1 the new and novel liferaft arrangement should maintain the same standard, as required by testing procedures, throughout the extended servicing intervals;

.2 the liferaft system should be checked on board by certified personnel according to 8.7; and

.3 Service at intervals not exceeding five years should be carried out in accordance with the recommendations of the Organization.”

7 The following new paragraph 8.9.12 with associated footnote is inserted after the existing paragraph 8.9.11:

> "8.9.12 An Administration which permits extension of liferaft service intervals in accordance with 8.9.11 should notify the Organization in accordance with regulation I/5(b) of the Convention.*

* Refer to the Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-Saving Appliances and Arrangements, adopted by the Organization by resolution A.520(13)."

CHAPTER 13
NAVIGATIONAL EQUIPMENT

8 Existing paragraph 13.14.2 is renumbered as paragraph 13.14.3 and the following new paragraph 13.14.2 is inserted:

> "13.14.2 All craft, including existing craft, shall be fitted with an ECDIS not later than [1 July 2010]."

CHAPTER 14
RADIOCOMMUNICATIONS

9 The existing text after the heading is deleted and replaced by the following paragraph 14.1:

> "14.1 Craft should be provided with radiocomunications facilities as specified in chapter 14 of the 2000 HSC Code, as amended (resolution MSC.99(73) as amended up to and including resolution MSC.[…(…)]) that are fitted and operated in accordance with the provisions of that chapter."

ANNEX 7
STABILITY OF MULTIHULL CRAFT

10 The references to "2.9" in paragraph 1.4.1 and "2.4" in paragraph 2.5 are replaced by the references to "2.10" and "2.6" respectively.

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ANNEX 18

DRAFT AMENDMENTS TO THE DSC CODE

CHAPTER 1
GENERAL

1 The following new paragraph 1.1.5 is added after the existing paragraph 1.1.4:

"1.1.5 New installation of materials containing asbestos used for the structure, machinery, electrical installations and equipment of a craft to which this Code applies shall be prohibited except for:

.1 vanes used in rotary vane compressors and rotary vane vacuum pumps;

.2 watertight joints and linings used for the circulation of fluids when, at high temperature (in excess of 350°C) or pressure (in excess of 7 x 106 Pa), there is a risk of fire, corrosion or toxicity; and

.3 supple and flexible thermal insulation assemblies used for temperatures above 1,000°C."

CHAPTER 8
LIFE-SAVING APPLIANCES

2 The following new paragraph 8.2.9 is inserted after the existing paragraph 8.2.8:

"8.2.9 Periodic servicing of launching appliances

Launching appliances:

.1 should be serviced at recommended intervals in accordance with instructions for on-board maintenance as required by regulation III/36 of the Convention;

.2 should be subjected to a thorough examination at intervals not exceeding 5 years; and

.3 should upon completion of the examination in .2 be subjected to a dynamic test of the winch brake in accordance with paragraph 6.1.2.5.2 of the LSA Code (i.e. with a proof load of not less than 1.1 times the maximum working load at maximum lowering speed)."

3 The following new section 8.7 is inserted after the existing section 8.6:

"8.7 Servicing of inflatable liferafts, inflatable lifejackets, marine evacuation systems and inflatable rescue boats

Every inflatable liferaft, inflatable lifejacket and MES should be serviced:

.1 At intervals not exceeding 12 months, provided where in any case this is not practicable, the Administration may extend this period by one month.

.2 At an approved service station which is competent to service them, maintains proper servicing facilities and uses only properly trained personnel.*

* Refer to the Recommendations on conditions for the approval of servicing stations for inflatable liferafts, adopted by the Organization by resolution A.761(18), as amended by resolution MSC.55(66).”

4 The following new section 8.8 is inserted after the existing section 8.7:

“8.8 Rotational deployment of marine evacuation systems

In addition to, or in conjunction with, the servicing intervals of marine evacuation systems required above, each marine evacuation system should be deployed from the craft on a rotational basis at intervals to be agreed by the Administration provided that each system is to be deployed at least once every six years.”

5 The following new section 8.9 with associated footnote is inserted after the existing section 8.8:

“8.9 Novel life-saving appliances or arrangements

8.9.1 Before giving approval to novel life-saving appliances or arrangements, the Administration should ensure that such appliances or arrangements:

.1 provide safety standards at least equivalent to the requirements of this chapter and have been evaluated and tested in accordance with the recommendations of the Organization;* or

.2 have successfully undergone, to the satisfaction of the Administration, evaluation and tests which are substantially equivalent to those recommendations.

8.9.2 An Administration which approves new and novel inflatable liferaft arrangements pursuant to 8.9.1 may allow for extended servicing intervals under the following conditions:

.1 The new and novel liferaft arrangement should maintain the same standard, as required by testing procedures, throughout the extended servicing intervals.

.2 The liferaft system should be checked on board by certified personnel according to 8.7.

.3 Service at intervals not exceeding five years should be carried out in accordance with the recommendations of the Organization.

8.9.3 An Administration which permits extension of liferaft service intervals in accordance with 8.9.2 should notify the Organization in accordance with regulation I/5(b) of the Convention.

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* Refer to the Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-Saving Appliances and Arrangements, adopted by the Organization by resolution A.520(13)."

CHAPTER 13
RADIOCOMMUNICATION AND NAVIGATIONAL EQUIPMENT

6 In paragraph 13.1, the words "as amended (up to and including resolutions MSC.69(69), MSC.123(75) and MSC.152(78))." are inserted at the end of the paragraph.

7 The text of existing paragraph 13.2 under the heading "Navigation – General" is renumbered as paragraph 13.2.1 and the following new paragraph 13.2.2 is inserted:

"13.2.2 The navigation equipment and its installation should be to the satisfaction of the Administration. The Administration should determine to what extent the navigational equipment provisions of this chapter do not apply to craft below 150 gross tonnage."

8 The following new section 13.10 is inserted after the existing paragraph 13.9:

"13.10 Automatic identification system

13.10.1 Craft should be provided with an automatic identification system (AIS) as follows:

.1 in the case of passenger craft, no later than [1 July 2008];

.2 in the case of cargo craft of 3,000 gross tonnage and upwards, no later than [1 July 2008]; and

.3 in the case of cargo craft of less than 3,000 gross tonnage, no later than [1 July 2008].

13.10.2 AIS should:

.1 provide automatically to appropriately equipped shore stations, other vessels and aircraft information, including the craft's identity, type, position, course, speed, navigational status and other safety-related information;

.2 receive automatically such information from similarly fitted vessels;

.3 monitor and track vessels; and

.4 exchange data with shore based facilities.

13.10.3 The requirements of .2 should not apply where international agreements, rules or standards provide for the protection of navigational information.

13.10.4 AIS should be operated taking into account the guidelines adopted by the Organization.*

* Refer to Guidelines for the Onboard Operational Use of Shipborne Automatic Identification Systems (AIS) adopted by the Organization by resolution A.917(22)."

9 The following new section 13.11 is inserted after the existing paragraph 13.10:

"13.11 Voyage data recorders (VDR)*

13.11.1 To assist in casualty investigations, passenger craft should be fitted with a voyage data recorder (VDR) as follows:

.1 ro-ro passenger craft, not later than the first survey after 1 January 2003; and

.2 passenger craft other than ro-ro passenger craft, not later than 1 January 2004.

13.11.2 The Administration may exempt passenger craft, other than ro-ro passenger craft, from being fitted with a VDR where it can be demonstrated that interfacing a VDR with the existing equipment on the craft is unreasonable and impracticable.

13.11.3 The voyage data recorder system, including all sensors, should be subjected to an annual performance test. The test should be conducted by an approved testing or servicing facility to verify the accuracy, duration and recoverability of the recorded data. In addition, tests and inspections should be conducted to determine the serviceability of all protective enclosures and devices fitted to aid location. A copy of the certificate of compliance issued by the testing facility, stating the date of compliance and the applicable performance standards, should be retained on board the craft.

* Refer to Recommendation and Performance Standards for voyage data recorders (VDR's) adopted by the Organization by resolution A.861(20)."

10 The following new section 13.12 is inserted after the existing paragraph 13.11:

"13.12 Nautical charts and publications

13.12.1 Craft should be provided with nautical charts and nautical publications to plan and display the craft's route for the intended voyage and to plot and monitor positions throughout the voyage. An electronic chart display and information system (ECDIS) may be accepted as meeting the chart carriage requirements of this paragraph.

13.12.2 All craft, including existing craft, should be fitted with an ECDIS not later than [1 July 2010].

13.12.3 Backup arrangements should be provided to meet the functional requirements of 13.12.1, if this function is partly or fully fulfilled by electronic means.*

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* An appropriate portfolio of paper nautical charts may be used as a backup arrangement for ECDIS. Other backup arrangements for ECDIS are acceptable (see appendix 6 to resolution A.817(19), as amended."

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ANNEX 19

DRAFT AMENDMENTS TO SOLAS REGULATIONS XII/12.1.2 AND XII/13.1 AND THE FORM OF SAFETY CERTIFICATE FOR NUCLEAR PASSENGER SHIPS

CHAPTER XII
ADDITIONAL SAFETY MEASURES FOR BULK CARRIERS

Regulation 12 – Hold, ballast and dry space water ingress alarms

1 In paragraph 1.2, the words "regulation II-1/11" are replaced by the words "regulation II-1/12".

Regulation 13 – Availability of pumping systems

2 In paragraph 1, the words "regulation II-1/11.4" are replaced by the words "regulation II-1/12".

APPENDIX
CERTIFICATES

Form of Safety Certificate for Nuclear Passenger Ships

3 In the table of subparagraph 2.1.3, in the section commencing with the words "THIS IS TO CERTIFY:", the words "regulation II-1/13" are replaced by the words "regulation II-1/18".

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ANNEX 20

DRAFT AMENDMENTS TO SOLAS REGULATIONS II-1/3-2 AND XII/6.3 AND APPENDIX

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

PART A-1
STRUCTURE OF SHIPS

Regulation 3-2 – Corrosion prevention of seawater ballast tanks in oil tankers and bulk carriers

1 The existing text and the heading of regulation 3-2 are replaced by the following:

"**Protective coatings of dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers**

1 Paragraph 2 of this regulation shall apply to ships of not less than 500 gross tonnage:

.1 for which the building contract is placed on or after 1 July 2008, or

.2 in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 January 2009, or

.3 the delivery of which is on or after 1 July 2012.

2 All dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of 150 m in length and upwards shall be coated during construction in accordance with the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers, adopted by the Maritime Safety Committee by resolution MSC.(...), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.

3 All dedicated seawater ballast tanks arranged in oil tankers and bulk carriers constructed on or after 1 July 1998 but which are contracted, the keels of which are laid, or which are delivered before the dates referred to in paragraph 1 shall comply with the requirements of regulation II-1/3-2 adopted by resolution MSC.47(66).

4 Maintenance of the protective coating system shall be included in the overall ship's maintenance scheme. The effectiveness of the protective coating system shall be verified during the life of a ship by the Administration or an organization recognized by the Administration, based on the guidelines developed by the Organization*."

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

CHAPTER XII

ADDITIONAL SAFETY MEASURES FOR BULK CARRIERS

Regulation 6 – Structural and other requirements for bulk carriers

2 The existing paragraph 3 is deleted and existing paragraphs 4 and 5 are renumbered as paragraphs 3 and 4.

APPENDIX
CERTIFICATES

3 In the Passenger Ship Safety Certificate, Cargo Ship Safety Construction Certificate and Cargo Ship Safety Certificate, the phrase "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 ….." is replaced by the following:

"Date of build:

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

All applicable dates to be completed"

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ANNEX 21

DRAFT MSC RESOLUTION

PERFORMANCE STANDARD FOR PROTECTIVE COATINGS FOR DEDICATED SEAWATER BALLAST TANKS IN ALL TYPES OF SHIPS AND DOUBLE-SIDE SKIN SPACES OF BULK CARRIERS

THE MARITIME SAFETY COMMITTEE,

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

NOTING the amendments to regulations II-1/3-2 and XII/6 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended (hereinafter referred to as "the Convention") adopted by resolution MSC.[…(82)], concerning protective coatings of dedicated seawater ballast tanks and double-side skin spaces,

NOTING ALSO that the aforementioned regulation II-1/3-2 provides that the protective coatings referred to therein shall comply with the requirements of the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers (hereinafter referred to as "the Performance standard for protective coatings");

RECOGNIZING that the Performance standard for protective coatings referred to above is not intended to inhibit the development of new or novel technologies which provide for alternative systems,

HAVING CONSIDERED, at its [eighty-second] session, the text of the proposed Performance standard for protective coatings,

1. ADOPTS the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers, the text of which is set out in the annex to the present resolution;

2. INVITES Contracting Governments to the Convention to note that the Performance standard for protective coatings will take effect on 1 July 2008 upon entry into force of the amendments to regulations II-1/3-2 and XII/6 of the Convention;

3. REQUESTS the Secretary-General to transmit certified copies of this resolution and the text of the Performance standard for protective coatings contained in the annex to all Contracting Governments to the Convention;

4. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and the annex to all Members of the Organization which are not Contracting Governments to the Convention;

5. INVITES Governments to encourage the development of novel technologies aimed at providing for alternative systems and to keep the Organization advised of any positive results.

ANNEX

PERFORMANCE STANDARD FOR PROTECTIVE COATINGS FOR DEDICATED SEAWATER BALLAST TANKS IN ALL TYPES OF SHIPS AND DOUBLE-SIDE SKIN SPACES OF BULK CARRIERS

1 PURPOSE

This Standard provides technical requirements for protective coatings in dedicated seawater ballast tanks of all type of ships of not less than 500 gross tonnage and double-side skin spaces arranged in bulk carriers of 150 m in length and upward* for which the building contract is placed, the keels of which are laid or which are delivered on or after the dates referred to in SOLAS regulation II-1/3-2 as adopted by resolution MSC.[...](82).

2 DEFINITIONS

For the purpose of this Standard, the following definitions apply:

2.1 *Ballast tanks* are those as defined in resolutions A.798(19) and A.744(18).

2.2 *Dew point* is the temperature at which air is saturated with moisture.

2.3 *DFT* is dry film thickness.

2.4 *Dust* is loose particle matter present on a surface prepared for painting, arising from blast-cleaning or other surface preparation processes, or resulting from the action of the environment.

2.5 *Edge grinding* is the treatment of edge before secondary surface preparation.

2.6 "*GOOD*" *condition* is the condition with minor spot rusting as defined in resolution A.744(18).

2.7 *Hard coating* is a coating that chemically converts during its curing process or a non-convertible air drying coating which may be used for maintenance purposes. Can be either inorganic or organic.

2.8 *NDFT* is the nominal dry film thickness. 90/10 practice means that 90% of all thickness measurements shall be greater than or equal to NDFT and none of the remaining 10% measurements shall be below 0.9 x NDFT.

2.9 *Primer coat* is the first coat of the coating system applied in the shipyard after shop primer application.

2.10 *Shop-primer* is the prefabrication primer coating applied to steel plates, often in automatic plants (and before the first coat of a coating system).

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* This Standard applies only to dedicated seawater ballast tanks in all types of ships and double-side skin spaces in bulk carriers which are constructed of steel.

2.11 *Stripe coating* is painting of edges, welds, hard to reach areas, etc., to ensure good paint adhesion and proper paint thickness in critical areas.

2.12 *Target useful life* is the target value, in years, of the durability for which the coating system is designed.

2.13 *Technical Data Sheet* is paint manufacturers' Product Data Sheet which contains detailed technical instruction and information relevant to the coating and its application.

3 GENERAL PRINCIPLES

3.1 The ability of the coating system to reach its target useful life depends on the type of coating system, steel preparation, application and coating inspection and maintenance. All these aspects contribute to the good performance of the coating system.

3.2 Inspection of surface preparation and coating processes shall be agreed upon between the shipowner, the shipyard and the coating manufacturer and presented to the Administration or its recognized organization for review. Clear evidence of these inspections shall be reported and be included in the Coating Technical File (CTF) (see paragraph 3.4).

3.3 When considering the Standard provided in section 4, the following is to be taken into account:

.1 it is essential that specifications, procedures and the various different steps in the coating application process (including, but not limited to, surface preparation) are strictly applied by the shipbuilder in order to prevent premature decay and/or deterioration of the coating system;

.2 the coating performance can be improved by adopting measures at the ship design stage such as reducing scallops, using rolled profiles, avoiding complex geometric configurations and ensuring that the structural configuration permits easy access for tools and to facilitate cleaning, drainage and drying of the space to be coated; and

.3 the coating performance standard provided in this document is based on experience from manufacturers, shipyards and ship operators; it is not intended to exclude suitable alternative coating systems, providing a performance at least equivalent to that specified in this Standard is demonstrated. Acceptance criteria for alternative systems are provided in section 8.

3.4 Coating Technical File

3.4.1 Specification of the coating system applied to the seawater ballast tanks and double-side skin spaces, record of the shipyard's and shipowner's coating work, detailed criteria for coating selection, job specifications, inspection, maintenance and repair* shall be documented in the Coating Technical File (CTF), and the Coating Technical File shall be reviewed by the Administration or an organization recognized by the Administration.

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* Guidelines to be developed by the Organization.

3.4.2 New construction stage

The Coating Technical File shall contain at least the following items relating to this Standard and shall be delivered by the shipyard at new ship construction stage:

.1 copy of Statement of Compliance or Type Approval Certificate;

.2 copy of Technical Data Sheet, including:

- product name and identification mark and/or number;
- materials, components and composition of the coating system, colours;
- minimum and maximum dry film thickness;
- application methods, tools and/or machines;
- condition of surface to be coated (de-rusting grade, cleanness, profile, etc.); and
- environmental limitations (temperature and humidity);

.3 shipyard work records of coating application, including:

- applied actual space and area (in square metres) of each compartment;
- applied coating system;
- time of coating, thickness, number of layers, etc.;
- ambient condition during coating; and
- method of surface preparation;

.4 procedures for inspection and repair of coating system during ship construction;

.5 coating log issued by the coating inspector – stating that the coating was applied in accordance with the specifications to the satisfaction of the coating supplier representative and specifying deviations from the specifications (example of daily log and non-conformity report, see annex 2);

.6 shipyard's verified inspection report, including:

- completion date of inspection;
- result of inspection;
- remarks (if given); and
- inspector signature; and

.7 procedures for in-service maintenance and repair of coating system*.

3.4.3 Maintenance, repair and partial re-coating

Maintenance, repair and partial re-coating activities shall be recorded in the Coating Technical File in accordance with the relevant section of the Guidelines for coating maintenance and repair*.

* Guidelines to be developed by the Organization.

3.4.4 Re-coating

If full re-coating is carried out, the items specified in paragraph 3.4.2 shall be recorded in the Coating Technical File.

3.4.5 The Coating Technical File shall be kept on board and maintained throughout the life of the ship.

3.5 Health and safety

The shipyard is responsible for implementation of national regulations to ensure the health and safety of individuals and to minimize the risk of fire and explosion.

4 COATING STANDARD

4.1 Performance standard

This Standard is based on specifications and requirements which intend to provide a target useful coating life of 15 years, which is considered to be the time period, from initial application, over which the coating system is intended to remain in "GOOD" condition. The actual useful life will vary, depending on numerous variables including actual conditions encountered in service.

4.2 Standard application

Protective coatings for dedicated seawater ballast tanks of all ship types and double-side skin spaces arranged in bulk carriers of 150 m in length and upward shall at least comply with the requirements in this Standard.

4.3 Special application

4.3.1 This Standard covers protective coating requirements for the ship steel structure. It is noted that other independent items are fitted within the tanks to which coatings are applied to provide protection against corrosion.

4.3.2 It is recommended that this Standard is applied, to the extent possible, to those portions of permanent means of access provided for inspection not integral to the ship structure, such as rails, independent platforms, ladders, etc. Other equivalent methods of providing corrosion protection for the non-integral items may also be used, provided they do not impair the performance of the coatings of the surrounding structure. Access arrangements that are integral to the ship structure, such as increased stiffener depths for walkways, stringers, etc. are to fully comply with this Standard.

4.3.3 It is also recommended that supports for piping, measuring devices, etc., be coated in accordance with the non-integral items indicated in paragraph 4.3.2.

4.4 Basic coating requirements

4.4.1 The requirements for protective coating systems to be applied at ship construction for dedicated seawater ballast tanks of all ship types and double-side skin spaces arranged in bulk

carriers of 150 m in length and upward meeting the performance standard specified in paragraph 4.1 are listed in table 1.

4.4.2 Coating manufacturers shall provide a specification of the protective coating system to satisfy the requirements of table 1.

4.4.3 The Administration or an organization recognized by the Administration shall verify the Technical Data Sheet and Statement of Compliance or Type Approval Certificate for the protective coating system.

4.4.4 The shipyard shall apply the protective coating in accordance with the verified Technical Data Sheet and its own verified application procedures.

Table 1 – Basic coating system requirements for ballast tanks of all type of ships and double-side skin spaces of bulk carriers of 150 m and upwards

	Characteristic	Requirement	Reference standard
1	**Design of coating system**		
.1	Selection of the coating system	The selection of the coating system should be considered by the parties involved with respect to the service conditions and planned maintenance. The following aspects, among other things should be considered: .1 location of space relative to heated surfaces; .2 frequency of ballasting and deballasting operations; .3 required surface conditions; .4 required surface cleanliness and dryness; .5 supplementary cathodic protections, if any (where coating is supplemented by cathodic protection, the coating should be compatible with the cathodic protection system). Coating manufacturers shall have products with documented satisfactory performance records and technical data sheets. The manufacturers should also be capable of rendering adequate technical assistance. Performance records, technical data sheet and technical assistance (if given) shall be recorded in the Coating Technical File. Coatings for application underneath sun-heated decks or on bulkheads forming boundaries of heated spaces shall be able to withstand repeated heating and/or cooling without becoming brittle.	-

	Characteristic	Requirement	Reference standard
.2	Coating type	Epoxy based systems. Other coating systems with performance according to the test procedure in annex 1. A multi-coat system with each coat of contrasting colour is recommended. The top coat shall be of a light colour in order to facilitate in-service inspection.	–
.3	Coating pre-qualification test	Epoxy based systems tested prior to the date of entry into force of this Standard in a laboratory by a method corresponding to the test procedure in annex 1 or equivalent, which as a minimum meets the requirements for rusting and blistering; or which have documented field exposure for 5 years with a final coating condition of not less than "GOOD" may be accepted. For all other systems, testing according to the procedure in annex 1, or equivalent, is required.	– –
.4	Job specification	There shall be a minimum of two stripe coats and two spray coats, except that the second stripe coat, by way of welded seams only, may be reduced in scope where it is proven that the NDFT can be met by the coats applied in order to avoid unnecessary over thickness. Any reduction in scope of the second stripe coat shall be fully detailed in the CTF. Stripe coats shall be applied by brush or roller. Roller to be used for scallops, ratholes, etc. only. Each main coating layer shall be appropriately cured before application of the next coat, in accordance with coating manufacturer's recommendations. Surface contaminants such as rust, grease, dust, salt, oil, etc. shall be removed prior to painting with proper method according to the paint manufacturer's recommendation. Abrasive inclusions embedded in the coating shall be removed. Job specifications shall include the dry-to-recoat times and walk-on time given by the manufacturer.	–
.5	NDFT (nominal total dry film thickness)	NDFT 320 µm with 90/10 rule for epoxy based coatings, other systems to coating manufacturer's specifications. Maximum total dry film thickness according to manufacturer's detailed specifications. Care shall be taken to avoid increasing the thickness in an exaggerated way. Wet film thickness shall be regularly checked during application. Thinner shall be limited to those types and quantities recommended by the manufacturer.	Type of gauge and calibration in accordance with SSPC-PA2

	Characteristic	Requirement	Reference standard
2	**PSP (Primary Surface Preparation)**		
.1	Blasting and profile	Sa 2½; with profiles between 30-75 µm. Blasting should not be carried out when: .1 the relative humidity is above 85%; or .2 the surface temperature of steel is less than 3°C above the dew point. Checking of the steel surface cleanliness and roughness profile should be carried out at the end of the surface preparation and before the application of the primer, in accordance with the manufacturer's recommendations.	ISO 8501-1, ISO 8503-1/3
.2	Water soluble salt limit equivalent to NaCl	≤ 50 mg/m^2 of sodium chloride.	Conductivity measured in accordance with ISO 8502-9
.3	Shop primer	Zinc containing inhibitor free zinc silicate based or equivalent. Compatibility with main coating system shall be confirmed by the coating manufacturer.	–
3	**Secondary surface preparation**		
.1	Steel condition	The steel surface should be prepared so that the coating selected can achieve an even distribution at the required NDFT and have an adequate adhesion by removing sharp edges, grinding weld beads and removing weld spatter and any other surface contaminant in accordance with ISO 8501-3 grade P2. Edges to be treated to a rounded radius of minimum 2 mm, or subjected to three pass grinding or at least equivalent process before painting.	ISO 8501-3

	Characteristic	Requirement	Reference standard
.2	Surface treatment	Sa 2½ on damaged shop primer and welds. Sa 2 removing at least 70% of intact shop primer, which has not passed a pre-qualification certified by test procedures in 1.3. If the complete coating system comprising epoxy based main coating and shop primer has passed a pre-qualification certified by test procedures in 1.3, intact shop primer may be retained provided the same epoxy coating system is used. The retained shop primer shall be cleaned by sweep blasting, high pressure water washing or equivalent method. If a zinc silicate shop primer has passed the pre-qualification test of 1.3 as part of an epoxy coating system, it may be used in combination with other epoxy coatings certified under 1.3, provided that the compatibility has been confirmed by the manufacturer by the test in accordance with paragraph 1.7 of appendix 1 to annex 1 without wave movement.	ISO 8501-1
.3	Surface treatment after erection	Butts St 3 or better or Sa 2½ where practicable. Small damages up to 2% of total area: St 3. Contiguous damages over 25 m^2 or over 2% of the total area of the tank, Sa 2½ should be applied. Coating in overlap to be feathered.	ISO 8501-1
.4	Profile requirements	In case of full or partial blasting 30-75 μm, otherwise as recommended by the coating manufacturer.	ISO 8503-1/3
.5	Dust	Dust quantity rating "1" for dust size class "3", "4" or "5". Lower dust size classes to be removed if visible on the surface to be coated without magnification.	ISO 8502-3
.6	Water soluble salts limit equivalent to NaCl after blasting/ grinding	≤ 50 mg/m^2 of sodium chloride.	Conductivity measured in accordance with ISO 8502-9
.7	Oil contamination	No oil contamination.	–
4	**Miscellaneous**		
.1	Ventilation	Adequate ventilation is necessary for the proper drying and curing of coating. Ventilation should be maintained throughout the application process and for a period after application is completed, as recommended by the coating manufacturer.	–

	Characteristic	Requirement	Reference standard
.2	Environmental conditions	Coating shall be applied under controlled humidity and surface conditions, in accordance with the manufacturer's specifications. In addition, coating shall not be applied when: .1 the relative humidity is above 85%; or .2 the surface temperature is less than 3°C above the dew point.	–
.3	Testing of coating	Destructive testing should be avoided. Dry film thickness shall be measured after each coat for quality control purpose and the total dry film thickness shall be confirmed after completion of final coat, using appropriate thickness gauges.	ISO 19840 Annex 3
.4	Repair	Any defective areas, e.g. pin-holes, bubbles, voids, etc. should be marked up and appropriate repairs effected. All such repairs shall be re-checked and documented.	–

5 COATING SYSTEM APPROVAL

Results from prequalification tests (table 1, paragraph 1.1) of the coating system shall be documented, and a Statement of Compliance or Type Approval Certificate shall be issued if found satisfactory by a third party, independent of the coating manufacturer.

6 COATING INSPECTION REQUIREMENTS

6.1 General

6.1.1 To ensure compliance with this Standard, the following shall be carried out by the qualified coating inspectors certified to NACE Level II, FROSIO level Red or equivalent as verified by the Administration or the recognized organization.

6.1.2 Coating inspectors shall inspect surface preparation and coating application during the coating process by carrying out, as a minimum, those inspection items identified in section 6.2 to ensure compliance with this Standard. Emphasis shall be placed on initiation of each stage of surface preparation and coatings application as improper work is extremely difficult to correct later in the coating progress. Representative structural members shall be non-destructively examined for coating thickness. The inspector shall verify that appropriate collective measures have been carried out.

6.1.3 Results from the inspection shall be recorded by the inspector and shall be included in the CTF (refer to annex 2, Example of Daily Log and Non-conformity Report).

6.2 Inspection items

Construction stage		Inspection items
Primary surface preparation	1	The surface temperature of steel, the relative humidity and the dew point shall be measured and recorded before the blasting process starts and at times of sudden changes in weather.
	2	The surface of steel plates shall be tested for soluble salt checked for oil, grease and other contamination.
	3	The cleanliness of the steel surface shall be monitored in the shop primer application process.
	4	The shop primer material shall be confirmed to meet the requirements of 2.3 of table 1.
Thickness		If compatibility with the main coating system has been declared, then the thickness and curing of the zinc silicate shop primer to be confirmed to conform to the specified values.
Block assembly	1	After completing construction of the block and before secondary surface preparation starts, a visual inspection for steel surface treatment including edge treatment shall be carried out. Any oil, grease or other visible contamination to be removed.
	2	After blasting/grinding/cleaning and prior to coating, a visual inspection of the prepared surface shall be carried out. On completion of blasting and cleaning and prior to the application of the first coat of the system, the steel surface shall be tested for levels of remaining soluble salts in at least one location per block.
	3	The surface temperature, the relative humidity and the dew point shall be monitored and recorded during the coating application and curing.
	4	Inspection to be performed of the steps in the coating application process mentioned in table 1.
	5	DFT measurements shall be taken to prove that the coating has been applied to the thickness as specified and outlined in annex 3.
Erection	1	Visual inspection for steel surface condition, surface preparation and verification of conformance to other requirements in table 1, and the agreed specification to be performed.
	2	The surface temperature, the relative humidity and the dew point shall be measured and recorded before coating starts and regularly during the coating process.
	3	Inspection to be performed of the steps in the coating application process mentioned in table 1.

7 VERIFICATION REQUIREMENTS

The following shall be carried out by the Administration or recognized organization prior to reviewing the Coating Technical File for the ship subject to this Performance Standard:

.1 check that the Technical Data Sheet and Statement of Compliance or Type Approval Certificate comply with this Standard;

.2 check that the coating identification on representative containers is consistent with the coating identified in the Technical Data Sheet and Statement of Compliance or Type Approval Certificate;

.3 check that the inspector is qualified in accordance with the qualification standards in paragraph 6.1.1;

.4 check that the inspector's reports of surface preparation and the coating's application indicate compliance with the manufacturer's Technical Data Sheet and Statement of Compliance or Type Approval Certificate; and

.5 monitor implementation of the coating inspection requirements.

8 ALTERNATIVE SYSTEMS

8.1 All systems that are not an epoxy based system applied according to table 1 of this Standard are defined as an alternative system.

8.2 This Standard is based on recognized and commonly used coating systems. It is not meant to exclude other, alternative, systems with proven equivalent performance, for example non epoxy based systems.

8.3 Acceptance of alternative systems will be subject to documented evidence that they ensure a corrosion prevention performance at least equivalent to that indicated in this Standard.

8.4 As a minimum, the documented evidence shall consist of satisfactory performance corresponding to that of a coating system which conforms to the Coating Standard described in section 4, a target useful life of 15 years in either actual field exposure for 5 years with final coating condition not less than "GOOD" or laboratory testing. Laboratory test shall be conducted in accordance with the test procedure given in annex 1 of this Standard.

ANNEX 1

TEST PROCEDURES FOR COATING QUALIFICATION FOR BALLAST TANK OF ALL TYPES OF SHIPS AND DOUBLE-SIDE SKIN SPACES OF BULK CARRIERS COATING

1 Scope

These Procedures provide details of the test procedure referred to in paragraphs 5 and 8.3 of this Standard.

2 Definitions

Coating specification means the specification of coating systems which includes the type of coating system, steel preparation, surface preparation, surface cleanliness, environmental conditions, application procedure, acceptance criteria and inspection.

3 Testing

Coating specification shall be verified by the following tests. The test procedures shall comply with appendix 1 (Test on simulated ballast tank conditions) and appendix 2 (Condensation chamber tests) to this annex as follows:

.1 For protective coatings for dedicated seawater ballast tanks, appendix 1 and appendix 2 shall apply.

.2 For protective coatings for double-side spaces of bulk carriers of 150 m in length and upwards other than dedicated seawater ballast tanks, appendix 2 shall apply.

APPENDIX 1

TEST ON SIMULATED BALLAST TANK CONDITIONS

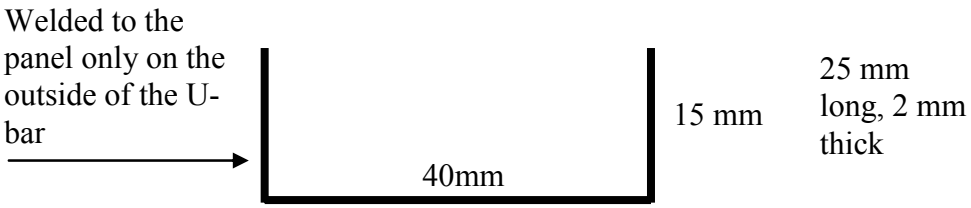
1 Test condition

Test on simulated ballast tank conditions shall satisfy each of the following conditions:

.1 The test shall be carried out for 180 days.

.2 There are to be 5 test panels.

.3 The size of each test panel is 200 mm x 400 mm x 3 mm. Two of the panels (Panel 3 and 4 below) have a U-bar welded on. The U-bar is welded to the panel in a 120 mm distance from one of the short sides and 80 mm from each of the long sides.



The panels are to be treated according to this Standard, table 1.1, 1.2 and 1.3, and coating system applied according to table 1, paragraphs 1.4 and 1.5. Shop primer to be weathered for at least 2 months and cleaned by low pressure washing or other mild method. Blast sweep or high pressure washing, or other primer removal methods not to be used. Weathering method and extent shall take into consideration that the primer is to be the foundation for a 15 year target life system. To facilitate innovation, alternative preparation, coating systems and dry film thicknesses may be used when clearly defined.

.4 The reverse side of the test piece shall be painted appropriately, in order not to affect the test results.

.5 As simulating the condition of actual ballast tank, the test cycle runs for two weeks with natural or artificial seawater and one week empty. The temperature of the seawater is to be kept at about 35°C.

.6 Test Panel 1: This panel is to be heated for 12 h at 50°C and cooled for 12 h at 20°C in order to simulate upper deck condition. The test panel is cyclically splashed with natural or artificial seawater in order to simulate a ship's pitching and rolling motion. The interval of splashing is 3 s or faster. The panel has a scribe line down to bare steel across width.

.7 Test Panel 2 has a fixed sacrificial zinc anode in order to evaluate the effect of cathodic protection. A circular 8 mm artificial holiday down to bare steel is introduced on the test panel 100 mm from the anode in order to evaluate the effect of the cathodic protection. The test panel is cyclically immersed with natural or artificial seawater.

.8 Test Panel 3: to be cooled on the reverse side, in order to give a temperature gradient in order to simulate a cooled bulkhead in a ballast wing tank, and splashed with natural or artificial seawater in order to simulate a ship's pitching and rolling motion. The gradient of temperature is approximately 20°C, and the interval of splashing is 3 s or faster. The panel has a scribe line down to bare steel across width.

.9 Test Panel 4 is to be cyclically splashed with natural or artificial seawater in order to simulate a ship's pitching and rolling motion. The interval of splashing is 3 s or faster. The panel has a scribe line down to bare steel across width.

.10 Test Panel 5 is to be exposed to dry heat for 180 days at 70°C to simulate boundary plating between heated bunker tank and ballast tank in double bottom.

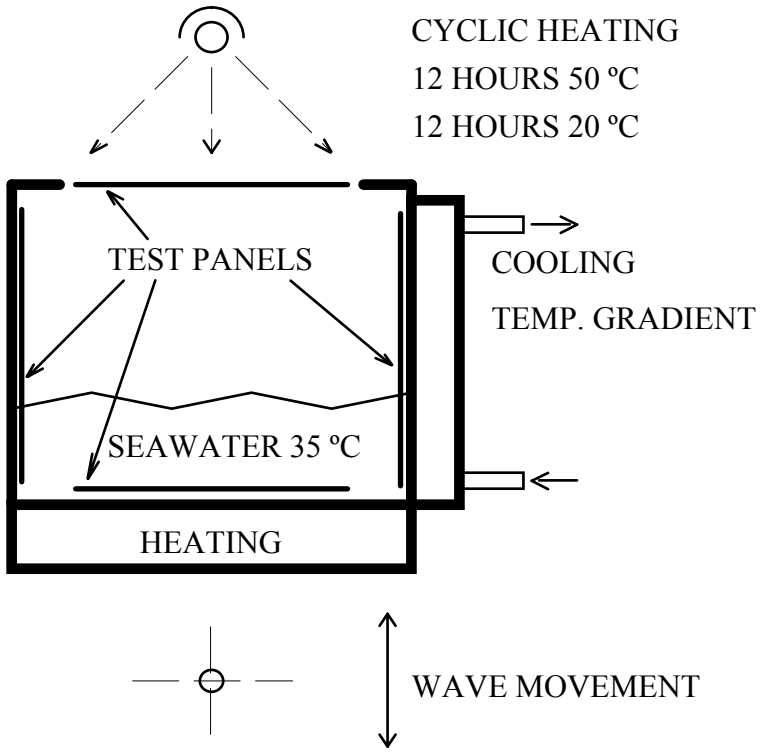


Figure 1
Wave tank for testing of ballast tank coatings

2 Test results

2.1 Prior to the testing, the following measured data of the coating system shall be reported:

.1 infrared (IR) identification of the base and hardener components of the coating;

.2 specific gravity, according to ISO 2811-74, of the base and hardener components of the paint; and

.3 number of pinholes, low voltage detector at 90 V.

2.2 After the testing, the following measured data shall be reported:

.1 blisters and rust according to ISO 4628/2 and ISO 4628/3;

.2 dry film thickness (DFT) (use of a template) (see annex 3);

.3 adhesion value according to ISO 4624;

.4 flexibility according to ASTM D4145, modified according to panel thickness (3 mm steel, 300 µm coating, 150 mm cylindrical mandrel gives 2% elongation) for information only;

.5 cathodic protection weight loss/current demand/disbondment from artificial holiday;

.6 undercutting from scribe. The undercutting along both sides of the scribe is measured and the maximum undercutting determined on each panel. The average of the three maximum records is used for the acceptance.

3 Acceptance criteria

3.1 The test results based on section 2 shall satisfy the following criteria:

Item	Acceptance criteria for epoxy based systems applied according to Table 1 of this Standard	Acceptance criteria for alternative systems
Blisters on panel	No blisters	No blisters
Rust on panel	Ri 0 (0%)	Ri 0 (0%)
Number of pinholes	0	0
Adhesive failure	> 3.5 MPa Adhesive failure between substrate and coating or between coats for 60% or more of the areas.	> 5 MPa Adhesive failure between substrate and coating or between coats for 60% or more of the areas.
Cohesive failure	≥ 3 MPa Cohesive failure in coating for 40% or more of the area.	> 5 MPa Cohesive failure in coating for 40% or more of the area.
Cathodic protection current demand calculated from weight loss	< 5 mA/m^2	< 5 mA/m^2
Cathodic protection; disbondment from artificial holiday	< 8 mm	< 5 mm
Undercutting from scribe	< 8 mm	< 5 mm
U-beam	Any defects, cracking or detachment at the angle or weld will lead to system being failed.	Any defects, cracking or detachment at the angle or weld will lead to system being failed.

3.2 Epoxy based systems tested prior to the date of entry into force of this Standard shall satisfy only the criteria for blistering and rust in the table above.

3.3 Epoxy based systems tested when applied according to table 1 of this Standard shall satisfy the criteria for epoxy based systems as indicated in the table above.

3.4 Alternative systems not necessarily epoxy based and/or not necessarily applied according to table 1 of this Standard shall satisfy the criteria for alternative systems as indicated in the table above.

4 Test report

The test report shall include the following information:

.1 name of the manufacturer;

.2 date of tests;

.3 product name/identification of both paint and primer;

.4 batch number;

.5 data of surface preparation on steel panels, including the following:

- surface treatment;
- water soluble salts limit;
- dust; and
- abrasive inclusions;

.6 application data of coating system, including the following:

- shop primed;
- number of coats;
- recoat interval*;
- dry film thickness (DFT) prior to testing*;
- thinner*;
- humidity*;
- air temperature*; and
- steel temperature;

* Both of actual specimen data and manufacturer's requirement/recommendation.

.7 test results according to section 2; and

.8 judgment according to section 3.

APPENDIX 2

CONDENSATION CHAMBER TEST

1 Test condition

Condensation chamber test shall be conducted in accordance with ISO 6270.

.1 The exposure time is 180 days.

.2 There are to be 2 test panels.

.3 The size of each test panel is 150 mm x 150 mm x 3 mm. The panels are to be treated according to the Performance Standard, table 1, paragraphs 1, 2 and 3 and coating system applied according to table 1, paragraphs 1.4 and 1.5. Shop primer to be weathered for at least 2 months and cleaned by low pressure washing or other mild method. Blast sweep or high pressure washing, or other primer removal methods not to be used. Weathering method and extent shall take into consideration that the primer is to be the foundation for a 15 year target life system. To facilitate innovation, alternative preparation, coating systems and dry film thicknesses may be used when clearly defined.

.4 The reverse side of the test piece shall be painted appropriately, in order not to affect the test results.

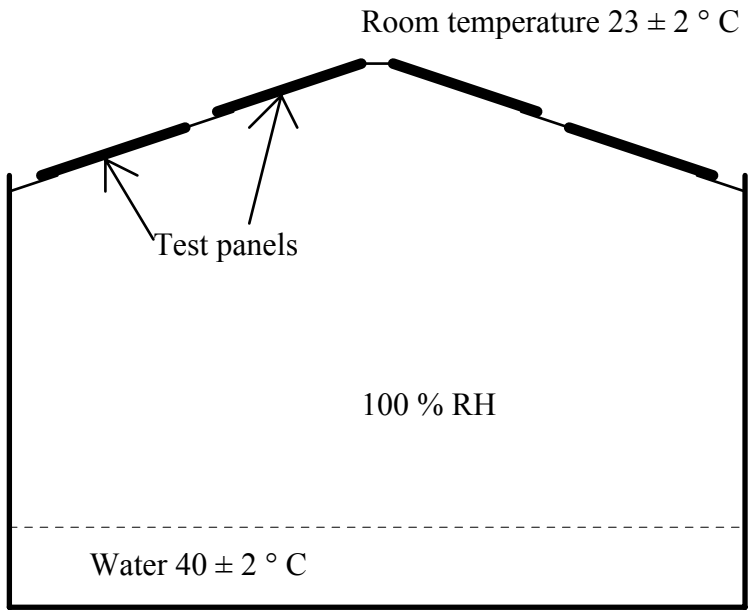


Figure 2
Condensation chamber

2 Test results

According to section 2 (except for paragraphs 2.2.5 and 2.2.6) of appendix 1.

3 Acceptance criteria

3.1 The test results based on section 2 shall satisfy the following criteria:

Item	Acceptance criteria for epoxy based systems applied according to table 1 of this standard	Acceptance criteria for alternative systems
Blisters on panel	No blisters	No blisters
Rust on panel	Ri 0 (0%)	Ri 0 (0%)
Number of pinholes	0	0
Adhesive failure	> 3.5 MPa Adhesive failure between substrate and coating or between coats for 60% or more of the areas.	> 5 MPa Adhesive failure between substrate and coating or between coats for 60% or more of the areas.
Cohesive failure	> 3 MPa Cohesive failure in coating for 40% or more of the area.	> 5 MPa Cohesive failure in coating for 40% or more of the area.

3.2 Epoxy based systems tested prior to the date of entry into force of this Standard shall satisfy only the criteria for blistering and rust in the table above.

3.3 Epoxy based systems tested when applied according to table 1 of this Standard shall satisfy the criteria for epoxy based systems as indicated in the table above.

3.4 Alternative systems not necessarily epoxy based and/or not necessarily applied according to table 1 of this Standard shall satisfy the criteria for alternative systems as indicated in the table above.

4 Test report

According to section 4 of appendix 1.

ANNEX 2

EXAMPLE OF DAILY LOG AND NON-CONFORMITY REPORT

DAILY LOG **Sheet No:**

Vessel:	**Tank/Hold No:**	**Database:**
Part of structure:		

SURFACE PREPARATION

Methode:	**Area (m^2):**
Abrasive:	**Grain size:**
Surface temp:	**Air temp.:**
Rel. humidity (max):	**Dew point:**
Standard achieved:	
Rounding of edges:	

Comments:

Job No:	**Date:**	**Signature:**

COATING APPLICATION

Methode:

Coat No	System	Batch No	Date	Air temp.	Surf. temp.	RH%	Dew Point	DFT* Meas. *	Speci-fied

*** Mesured min. and max. DFT. WFT and DFT readings to be attached to daily log.**

Comments:

Job No:	**Date:**	**Signature:**

Non-conformity report **Sheet No:**

Vessel:	**Tank/Hold No:**	**Database:**
Part of structure:		
CORRECTIVE DESCRIPTION OF THE INSPECTION FINDINGS		
Description of Findings:		
Reference document (daily log):		
Action taken:		
Job No:	**Date:**	**Signature:**

ANNEX 3

DRY FILM THICKNESS MEASUREMENTS

The following verification check points of DFT are to be taken:

.1 one gauge reading per 5 m^2 of flat surface areas;

.2 one gauge reading at 2 to 3 m intervals and as close as possible to tank boundaries, but not further than 15 mm from edges of tank boundaries;

.3 longitudinal and transverse stiffener members:

One set of gauge readings as shown below, taken at 2 to 3 m run and not less than two sets between primary support members;

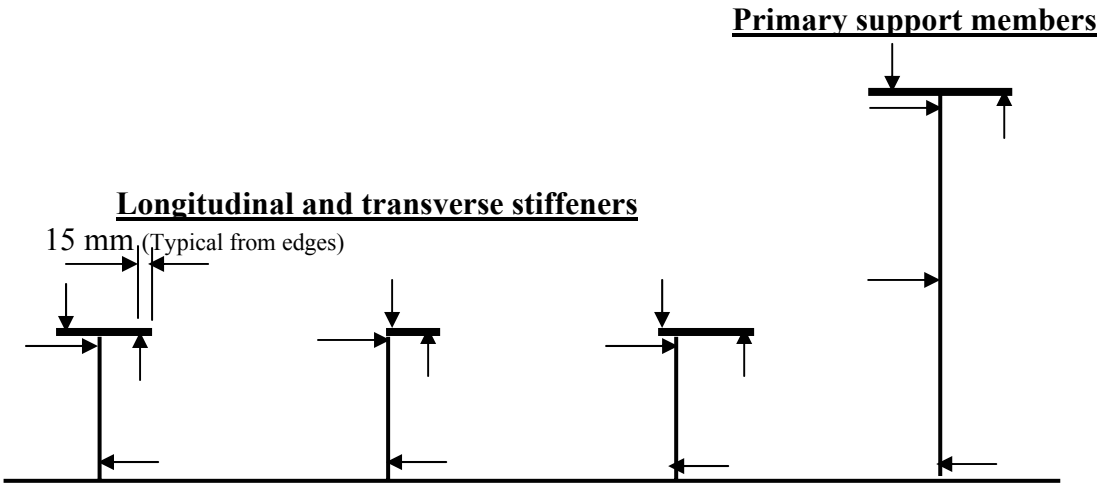


Figure 3

NOTE: Arrows of diagram indicate critical areas and should be understood to mean indication for both sides.

.4 3 gauge readings for each set of primary support members and 2 gauge readings for each set of other members as indicated by the arrows in the diagram;

.5 for primary support members (girders and transverses) one set of gauge readings for 2 to 3 m run as shown in figure 3 above but not less than three sets;

.6 around openings one gauge reading from each side of the opening;

.7 five gauge readings per square metre (m^2) but not less than three gauge readings taken at complex areas (i.e. large brackets of primary support members); and

.8 additional spot checks to be taken to verify coating thickness for any area considered necessary by the coating inspector.

ANNEX 4

STANDARDS REFERRED TO IN THE PERFORMANCE STANDARDS ON PROTECTIVE COATINGS

* Standards refers to PSPC standard

Standard No.	Description
ASTM D4145 : 1983	Standard Test Method for Coating Flexibility of Prepainted Sheet
SSPC-PA2 : 2004	PAINT APPLICATION SPECIFICATION NO.2
ISO 8501-1 : 1988/Suppl : 1994	Preparation of steel substrate before application of paints and related products - Visual assessment of surface cleanliness
ISO 8501-3 : 2001	Preparation of steel substrate before application of paints and related products - Visual assessment of surface cleanliness
ISO 8502-3 : 1993	Preparation of steel substrate before application of paints and related products - Tests for the assessment of surface cleanliness
ISO 8502-9 : 1998	Preparation of steel substrate before application of paints and related products - Tests for the assessment of surface cleanliness
ISO 8503-1 : 1988	Preparation of steel substrate before application of paints and related products - Surface roughness characteristics of blast-cleaned steel substrates
ISO 8503-3 : 1988	Preparation of steel substrate before application of paints and related products - Surface roughness characteristics of blast-cleaned steel substrates
ISO 2811-4 : 1997	Paints and varnishes - Determination of density
ISO 4624 : 2002	Paints and varnishes - Pull-off test for adhesion
ISO 4628-2 : 2003	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance- Part 2
ISO 4628-3 : 2003	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of common types of defect - Part 3 : Designation of degree of rusting
ISO 6270-2 : 2005	Paints and varnishes - Determination of resistance to humidity - Part 2 : Procedure for exposing test specimens in condensation water atmospheres
ISO 19840 : 2004	Paints and varnishes – Corrosion protection of steel structures by protective paint systems - Measurement of, and acceptance criteria for, the thickness of dry films on rough surfaces