

Subject

Introduction of the outcomes of MSC 81

ClassNK

Technical Information

No. TEC-0668
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To whom it may concern

This is a summary report of the decisions and discussions taken at the eighty-first session of the Maritime Safety Committee (MSC 81) held on 10 - 19 May 2006.

1. Adoption of Mandatory Instruments

The following amendments adopted at this session. Please be informed that each amendment is mentioned to put as per each estimated date of entry into force in order as follows.

1.1 Estimated date of entry into force: 1 January 2008

(1) Relating amendments to SOLAS Reg. V/19

- (i) Amendments to SOLAS reg. V/19-1 - Long-range Identification and Tracking system (refer to Attachment 1, MSC.202(81))

SOLAS Reg. V/19-1 that prescribed to provide Long-range Identification and Tracking system will be added. This regulation is applied to all ships (cargo ships of 300gross tonnages and upward). Each ship shall be fitted with the system not later than the first survey of the radio installation after 31 December 2008.

- (ii) Performance Standards and Functional Requirements (refer to Attachment 2, MSC.210(81))
Performance Standards and Functional Requirements for the Long-range Identification and Tracking of Ships was also adopted with the regulation as mentioned above (1)(i).

(2) Amendments to STCW Convention and the Code (refer to Attachment 3, MSC.203(81))

Amendments to STCW Convention and STCW Code regarding Ship Security Officer (SSO) prescribed International Code for the Security of Ships and of Port Facilities (ISPS Code) were adopted. Although these amendments should enter into force on 1 January 2008, the transitional date of 1 July 2009 will be allowed for a transitional period of 18 months after the entry into force of these amendments.

(3) Amendments to IMDG Code (refer to Attachment 4, MSC.205(81))

Amendments to IMDG Code in accordance with the periodicity reviewing and amendments to the UN Model Regulations were adopted.

(To be continued)

NOTES:

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1.2 Estimated date of entry into force: 1 July 2010

- (1) Amendments to SOLAS reg. II-1/9.4.1.3.3.3 - Windows and sidescuttles for Passenger Ships
(refer to Attachment 5, MSC.201(81))

In the current regulation, for passenger ships, “A-0” windows with automatic dedicated sprinkler heads may be accepted as equivalent to windows with fire integrity. It will be added water-mist nozzles that have been tested and approved in accordance with the guidelines approved by the Organization (resolution A.800(19)), as one of options of sprinkler head, in the draft regulation.

- (2) Amendments to SOLAS Regulation III/7 – Personal life-saving appliance
(refer to Attachment 5, MSC.201(81))

Following amendments to SOLAS Reg. III/7 for carriage requirements on lifejacket will be added.

- (i) For passenger ships, the carriage requirement for the number of infant lifejacket will be added.
(ii) The requirements on performance of the adult lifejacket for extra large persons (breast girth up to 1,750 mm) will be added.

- (3) Amendments to SOLAS chapter IV (refer to Attachment 5, MSC.201(81))

As Inmarsat-E services should be ceased on 1 December 2006 (refer to MSC/Circ.1171), SOLAS Chapter IV will be amended.

- (4) Amendments to SOLAS reg. V/22 - Navigation bridge visibility
(refer to Attachment 5, MSC.201(81))

Regarding requirements on Navigation bridge visibility in accordance with SOLAS reg. V/22, it will be added new regulations to allow that ships deviate from those requirements transiently when ships conduct their ballast water exchange.

2. Approved Mandatory Instruments – expected to adopt at the next session (MSC82)

The following mandatory instruments are approved, at this session, which are expected to adopt at the next session (MSC82, November 2006), as follows.

- (1) Relating draft amendments to SOLAS Reg. II-1/3-2 – Corrosion prevention of seawater ballast tanks

The draft amendments to SOLAS Reg. II-1/3-2 to be mandatory requirements for coating standard and the draft performance standard for protective coatings of dedicated seawater ballast tanks on all new ship and double-side skin spaces of bulk carriers were approved.

- (2) Draft amendments to SOLAS chapter III and LSA Code

Draft amendments to SOLAS chapter III and LSA Code to coordinate with inconsistencies between regulations for requirements on life saving appliance of current SOLAS Chapter III were approved.

- (3) Draft amendments to IBC Code

Draft amendments to chapter 11 of IBC Code to coordinate with inconsistencies on applications to SOLAS chapter II-2 (fire protection) as amended at 2000 were approved.

(To be continued)

(4) Draft amendments to IGC Code and GC Code

Draft amendments to IGC Code and GC Code to coordinate with inconsistencies on applications to SOLAS chapter II-2 (fire protection) as amended 2000 and to incorporate new provisions for carriage/arrangement on “Dimethyl ether(DME)” and ”Carbon Dioxide”.

(5) Draft amendments to ILLC Protocol of 1998

Draft amendments to ILLC Protocol of 1998, as amended 2003, to editorial change were approved.

(6) Draft amendments to FSS Code

Draft amendments to FSS Code regarding engineering specifications for portable foam applicator, fixed foam fire-extinguishing systems and fixed pressure water-spraying fire-extinguishing systems were approved.

For any questions about the above, please contact:

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Attachment:

1. Attachment 1
2. Attachment 2
3. Attachment 3
4. Attachment 4
5. Attachment 5

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 – Definitions¹

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 requirements² 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 tonnage³ and upwards; and
- .3 mobile offshore drilling units.

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 A1, 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 A1, 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 requirements⁴ 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 Organization⁵, 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.”

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

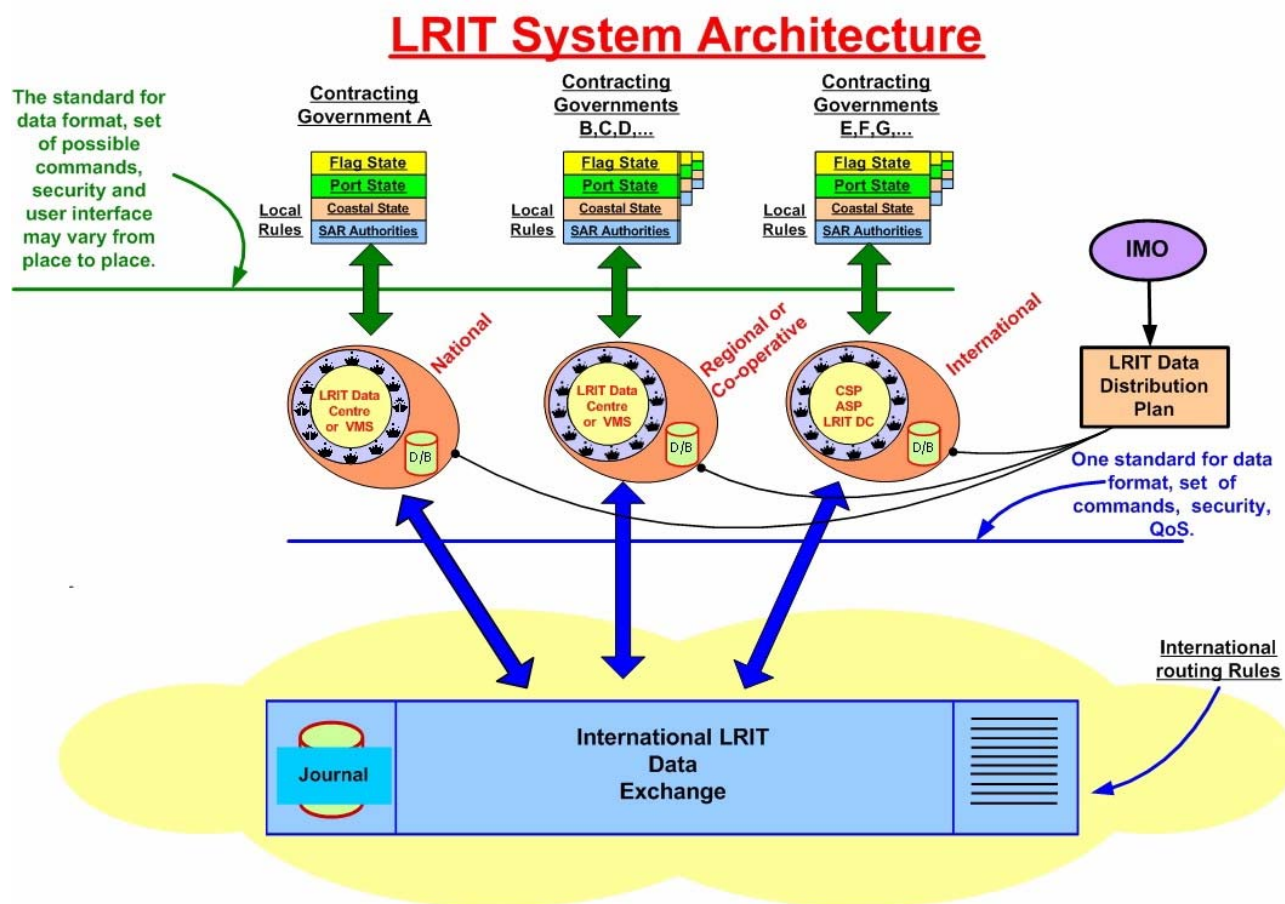
**PERFORMANCE STANDARDS AND FUNCTIONAL REQUIREMENTS FOR THE
 LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS**

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 services¹ 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 power²; 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 recommendations³ 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	<p>The GNSS position (latitude and longitude) of the ship (based on the WGS84 datum).</p> <p><i>Position:</i> 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.</p> <p><i>On-demand⁽¹⁾ position reports:</i> 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.</p> <p><i>Pre-scheduled⁽²⁾ position reports:</i> 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.</p>
Time Stamp 1	<p>The date and time⁽³⁾ associated with the GNSS position.</p> <p>The equipment should be capable of transmitting the time⁽³⁾ associated with the GNSS position with each transmission of LRIT information.</p>

- 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 routing; 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 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.”

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 Varembe, 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 $\leq 25\%$ flash composition, as loose powder and/ or report effects	1.3G
			Colour shell: ≤ 50 mm, or ≤ 60 g pyrotechnic composition, with $\leq 2\%$ 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 $\leq 25\%$ 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 \leq 25g flash composition per report unit, with \leq 33% flash composition and \geq 60% inert materials and designed to be projected from a mortar	\leq 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 \leq 70mm and/or pyrotechnic units, with \leq 25% flash composition and \leq 60% pyrotechnic composition and designed to be projected from a mortar	> 200 mm and \leq 300 mm	1.3G
		Device with propellant charge, with delay fuse and bursting charge, containing colour shells \leq 70 mm and/or pyrotechnic units, with \leq 25% flash composition and \leq 60% pyrotechnic composition and designed to be projected from a mortar	\leq 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	<p>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:</p> <p>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</p>	> 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 $\leq 3\%$ flash composition as report effects, or whistle composition ≤ 5 g	1.3G
			Pyrotechnic composition per item ≤ 20 g, containing $\leq 3\%$ 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	Concentration (%)	Packing method	Control temperature (°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 “61°C” to read “60°C”.

Chapter 2.5

2.5.3.2.4 Amend the following entries in the table as follows:

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent Type B (%)	Inert solid (%)	Water (%)	Packing Method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary risks and remarks
3101	2,5 DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY)-HEXYNE-3	> 86-100					OP5			(3)
3107	POLYETHER POLY- <i>tert</i> -BUTYLPEROXY CARBONATE	≤ 52		≥ 48			OP8			
3115	ISOPROPYL <i>sec</i> -BUTYL PEROXYDICARBONATE + DI- <i>sec</i> -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, secretions, 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 hemorrhagic 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-lives 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 Add at the end: “except under the provisions of 2.7.8.5”.

(d) and (e)

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 1l 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:

UN No.	Name and description	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited quantities	Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and segregation	Properties and observations	UN No.
							Instruc-tions	Provi-sions	Instruc-tion	Provi-sions	IMO	UN	Provi-sions				
(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

UN No.	Name and description	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited quantities	Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and segregation	Properties and observations	UN No.
							Instructions	Provisions	Instruction	Provisions	IMO	UN	Provisions				
(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

UN No.	Name and description	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited quantities	Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and segregation	Properties and observations	UN No.
							Instructions	Provisions	Instruction	Provisions	IMO	UN	Provisions				
(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	HYDROGEN DIFLUORIDE 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

UN No.	Name and description	Class or division	Subsidiary risk(s)	Packing group	Special provisions	Limited quantities	Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and segregation	Properties and observations	UN No.
							Instructions	Provisions	Instruction	Provisions	IMO	UN	Provisions				
(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, pressure receptacles may be provided with an emergency pressure relief device designed to avoid bursting in case of overflow 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:

Special provision “k”: 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 LC₅₀ less than or equal to 200 ml/m³ 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 LC₅₀ less than or equal to 200 ml/m³ (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

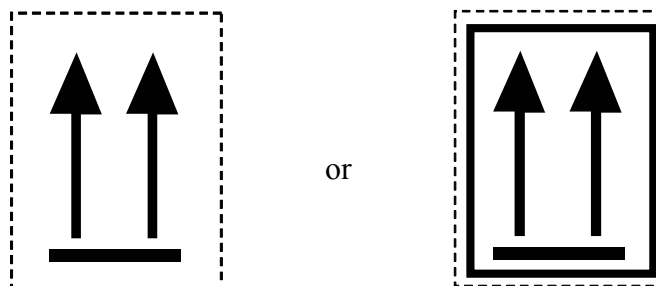
- 5.1.2.1 Add at the end of the last sentence “unless markings and labels representatives of all dangerous goods, as required by chapter 5.2, in the overpack are visible.”.
- 5.1.2.3 Add a new paragraph to read as follows:
“5.1.2.3 Each package bearing package orientation markings as prescribed in 5.2.1.7 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

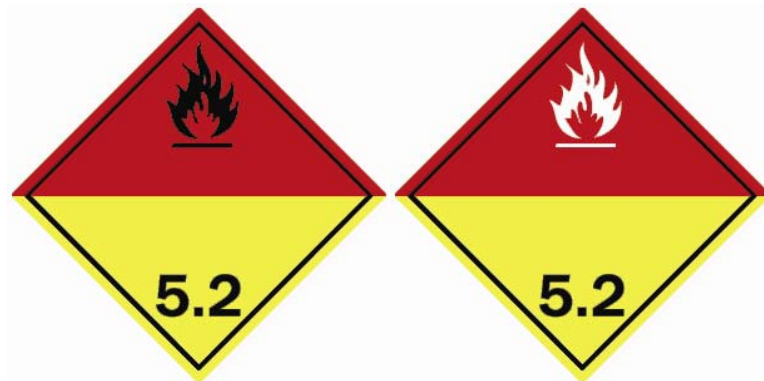
Organic peroxides

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), Amend “porous mass” to read “porous material”.
(k) and (l)

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 insulation,”.
- 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) Amend to read as follows:
and (b)
- “(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
$d \times 1.0$ m	$d \times 0.67$ 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 ALKYL	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 División 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 2 nd 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@mobilite.fgov.be Website: www.mobilite.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)	<p><i>Packaging and Certification Institute</i> Safety Technology Authority (TUKES) P.O Box 123 FI-00181 Helsinki FINLAND Telephone: +358 961671 Telefax: +358 96167466 Email: kirjaamo@tukes.fi</p>
FRANCE	<p>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</p>
GAMBIA	<p>The Managing Director Gambia Ports Authority Banjul THE GAMBIA Telephone: +220 27266 Telefax: +220 27268 Telex: 2235 GAMPORTS GV</p>
GERMANY	<p>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</p>
GREECE	<p>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</p>

Country	Contact information for the main designated national competent authority
GUYANA	<p>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</p>
ICELAND	<p>Iceland Maritime Administration Verturvör 2 IS-202 Kópavogur ICELAND Telephone: +354 560 0000 Telefax: +354 560 0060 E-mail: skrifstofa@vh.is</p>
INDIA	<p>The Directorate General of Shipping Jahz Bhawan Walchand Hirachand Marg Bombay 400 001 INDIA Telephone: +91 22 263651 Telex: +DEGESHIP 2813-BOMBAY</p>
INDONESIA	<p>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</p>
IRAN	<p>Ports and Shipping Organization 751 Enghelab Avenue Tehran IRAN Telephone: +98 21 8809280 to 89 Telefax: +98 21 8804100 Telex: 212271 BNDR-IR</p>

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 4 th 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

Country	Contact information for the main designated national competent authority
JAPAN	Inspection and Measurement Division Maritime Bureau Ministry of Land, Infrastructure and Transport 2-1-3 Kasumigaseki, Chiyoda-ku Tokyo JAPAN Telephone: +81 3 5253 8639 Telefax: +81 3 5253 1644 Email: MRB_KSK@mlit.go.jp
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@lisrc.com Website: www.lisrc.com

Country	Contact information for the main designated national competent authority
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	<p>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</p> <p>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</p>
NEW ZEALAND	<p>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</p>
NORWAY	<p>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</p>

Country	Contact information for the main designated national competent authority
PAKISTAN	Mercantile Marine Department 70/4 Timber Hard N.M. Reclamation Keamari, Post Box No. 4534 Karachi 75620 PAKISTAN Telephone: +92 21 2851306 +92 21 2851307 Telefax: +92 21 4547472 (24 hours) +92 21 4547897 Telex: 29822 DGPS PK (24 hours)
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

Country	Contact information for the main designated national competent authority
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	Direcção-Geral de Navegação e dos Transportes Marítimos Praça Luis de Camoes, 22 -2º 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

Country	Contact information for the main designated national competent authority
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 “HYDROGEN DIFLUORIDE, SOLID, N.O.S.”, and add a new entry under Specific entries “8” “6.1” “3471” “HYDROGEN DIFLUORIDE 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 “●”.

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.

* 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."
