Subject

Summary of the outcomes of MSC90

ClassNK
Technical Information

No. TEC-0926
Date 14 September 2012

To whom it may concern

A summary of the decisions taken at the ninetieth session of the Maritime Safety Committee (MSC 90) held from 16 to 25 May 2012 is presented hereunder for your information.

1. Adopted mandatory requirements
   The main mandatory requirements adopted at the session are as follows.
   (1) Amendments to SOLAS II-1/8-1 (see Attachment 1)
   Amendments to SOLAS II-1/8-1 were adopted, in which new passenger ships with a length of 120 m or more, or having three or more main vertical zones are required to install a stability computer or to have access to shore-based support for the purpose of providing necessary operational information to the Master to achieve the safe return to port in case of flooding.

   Application:
   - new passenger ships keel laid on or after 1 January 2014

   (2) Amendments to SOLAS III/20 (see Attachment 1)
   Amendments to SOLAS III/20 were adopted, in which a simulated launching is accepted as a substitute for regular operational testing of free-fall lifeboats (free-fall testing), which are operated after an over-hauling (at least once every five years). An MSC Circular has since been issued to promote the early implementation of this amendment. (see Attachment 2)

   Application:
   - on or after 1 January 2014

   (3) Amendments to SOLAS V/14 (see Attachment 1)
   Amendments to SOLAS V/14 were adopted, in which the Administration is required to establish appropriate minimum safe manning levels following a transparent procedure, taking into account the guidelines adopted as Resolution A. 1047(27) in view of securing the effectiveness of Principles of Safe Manning.

   Application:
   - on or after 1 January 2014

(To be continued)

(4) Amendments to SOLAS VI/5-2 (see Attachment 1)
Amendments to SOLAS VI/5-2 were adopted, in which the blending of liquid bulk cargoes and the producing of new products by a chemical reaction onboard ship during voyages are prohibited.

Application:
- on or after 1 January 2014

(5) Amendments to SOLAS VII/4 (see Attachment 1)
Amendments to SOLAS VII/4 were adopted, in which requirements regarding transport documents for packaged dangerous goods are clarified and consistency with the IMDG Code are ensured.

Application:
- on or after 1 January 2014

(6) Amendments to SOLAS XI-1 (see Attachment 1)
Amendments to SOLAS XI-1/2 (editorial changes) were adopted in accordance with the changes incorporated in "A.744(18)" regarding the enhanced survey of bulk carriers and oil tankers to "ESP Code (International Code on the Enhanced Program of Inspections during Surveys of Bulk Carriers & Oil Tankers)".

Application:
- on or after 1 January 2014

(7) Amendments to the 1988 Load Line Protocol (see Attachment 3)
In view of the congestion of eastbound and westbound vessels with the summer load line at the South end of South Africa waters, amendments to the 1988 LL Protocol to enlarge the summer zones (current Southern Winter Seasonal Zone of 35 nautical miles from the shore will be shifted 50 nautical miles further southward at the South end of South Africa waters) were adopted to secure the safe navigation in the subject area.

Application:
- on or after 1 January 2014

(To be continued)

(8) Amendments to the International Code for Fire Safety Systems (FSS Code) (see Attachment 4)
Amendments to the FSS Code were adopted, in which Chapter 6 and Chapter 8 have been revised regarding the requirements for fixed foam fire extinguishing systems and the clarification of the availability of dry pipe sprinkler systems at control stations where water may cause damage to equipment, respectively.

Application:
- fire extinguishing systems installed onto new vessels keel laid on or after 1 January 2014

(9) Amendments to the International Maritime Dangerous Goods Code (IMDG Code)
Amendments to the IMDG Code were adopted, in which 11 new items are added based on the United Nations Recommendations on the Transport of Dangerous Goods (17th revised edition) and specific dangerous goods are clarified to which relaxation provisions regarding transport documents are applicable.

While the amendments will enter into force on 1 January 2014, Administrations may implement them in whole or in part on a voluntary basis from 1 January 2013.

(10) Amendments to the International Code of Safety for High-Speed Craft, 2000 (2000 HSC Code) (see Attachment 5)
Amendments to Regulation 14 of the 2000 HSC Code were adopted, in which the requirements for the annual survey for EPIRB installed on passenger ships are clarified.

Application:
- on or after 1 January 2014

2. Approved mandatory requirements
Mandatory requirements that are scheduled to be adopted at the next session MSC 91 (November 2012) or Assembly (A28 at the end of 2013) were approved at MSC 90 as follows.
(1) Amendments to the 1966 LL Convention (see above 1.(7) Amendments to the 1988 LL Protocol)
(2) Amendments to the Code on Noise Levels onboard Ship (Resolution A.468(XII)) enhancing a part of the requirements and corresponding amendments to SOLAS II-1/3-12 making the application of the amended Code mandatory (see section 5 below)
(3) Amendments to SOLAS II-2/10.4 requiring additional communication devices as equipment for fire-fighter's outfits
(4) Amendments to SOLAS II-2/15 requiring vessels to have instruments to refill breathing apparatuses for training or the appropriate number of auxiliary cylinders onboard
(5) Amendments to SOLAS III/17-1 making it mandatory to keep a plan and procedure regarding the rescue of persons in distress at sea in accordance with specifications and conditions of each vessel

(To be continued)

(6) Amendments to Regulation 27 of the Load Lines Protocol deleting requirements regarding the free surface effects at an angle of heel of not exceeding 5 degrees, and clarifying the calculation method using actual free surface effects

(7) Amendments to the FSS Code, which include the following:
- adding the requirements regarding a safety device warning the user of insufficient volume of remaining air for breathing apparatus (Chapter 3).
- in accordance with IACS UR, clarifying the areas where the installation of an automated audible alert system to notify of the discharge of fire-extinguishing medium is required (Chapter 5)
- requiring a cargo control room to be equipped with a fire indicating panel (Chapter 9)
- revising the requirements for a fixed deck foam system installed onboard vessels carrying the liquid substances listed in the IBC Code (Chapter 14)

3. Passenger ship safety

As a result of the Costa Concordia incident, which occurred in January 2012 in Italy, the subject item was hastily added to the agenda for this session by the Secretary-General of the IMO for the purpose of reviewing the standard regarding the safety of passenger ships.

The report on the investigation progress of the accident was provided by Italy, and Cruise Lines International Association (CLIA) introduced the emergency safety plans voluntarily implemented by the industry.

Based on the above, discussions were held on the future course of action regarding the safety of passenger ships. Consequently, it was agreed to classify the countermeasures into two categories: operational safety measures to be implemented immediately (short-term measures) and safety measures to be implemented after examination based on the results of the investigation into the accident (long-term measures).

In accordance with the above, an MSC Resolution was adopted regarding the securement of passenger ship safety, and an MSC Circular regarding the tentative recommendations for the securing of safety of passenger ships was approved.

4. Piracy issues

Against the backdrop of the recent escalation of piracy incidents off the coast of Somalia and the Gulf of Aden, the usage of Privately Contracted Armed Security Personnel onboard vessels sailing in the above areas is increasing. Currently, discussions are ongoing at the IMO about international guidelines regarding private security companies which supply such personnel as well as security personnel.

One of the problems the vessels with armed security personnel are facing is that they need to comply with the legal regulations of each flag state, port state, and coastal country. In this regard, a high-level meeting was also held to discuss such concerns at this session.

As a result, a Guidance for private security companies supplying armed security service was adopted and notified to member states.

(To be continued)

5. Code on Noise Levels onboard Ships made mandatory

Regarding the Code on Noise Levels onboard Ships (Resolution A.468(XII)), which recommends limiting the noise from machinery spaces and noise exposure of crews to a certain level, the Sub-Committee on Ship Design and Equipment has been reviewing noise levels, measurement of noise, and measurement apparatus, taking into account proposals that this code be tightened and made mandatory.

The revised Code on Noise Levels onboard Ship, which was agreed at DE56 in February 2012, was approved at this session with modifications. Amendments to SOLAS II-1/3-12 making the subject code mandatory were also approved.

If they are adopted at the MSC91, ships constructed on or after 1 July 2014 are scheduled to be complied with the Code on Noise Levels onboard Ships. Vessels of 1,600 GT or over are subject to the Code and limitations on noise levels will be tightened for those of over 10,000GT.

6. Approval of guidelines, etc.

The following guidelines were developed during MSC90. (The IACS UIs referred to below are available on the ClassNK website (http://www.classnk.or.jp/) or the IACS website (http://www.iacs.org.uk/)).

(1) Unified interpretations based on UI SC251 were approved clarifying that the "bilge injection system" stipulated in SOLAS II-1/48.3 requirements for protection against flooding does not include emergency bilge system.

(2) Unified interpretations based on IACS UI SC246 were approved, accepting for vessels to conduct sea trials not at the deepest seagoing draught, on the condition that the estimation of load and torque on steering under the full load condition is derived, to the satisfaction of the Administration or RO.

(3) Unified interpretations based on IACS UI SC239 regarding SOLAS II-2/3.2.3, which requests the "A" class insulation on board should be provided by the same way as that of approval test, and on IACS UI FTP5 regarding Chapter 3 of the FTP Code, which requests the details of approval test condition should be mentioned in the test report, were approved.

(4) Unified interpretations based on IACS UI SC240 were approved regarding SOLAS II-2/5.2.1.1, which clarifies the ventilation system of battery rooms may be omitted in the special cases.

(5) Unified interpretations were approved, clarifying that with regard to vessels carrying cargoes which require continuous ventilation under the IMSBC Code, the installation of a closing device is not prohibited in view of fire extinguishing, while a closing device is not required for the opening of ventilation. (IACS UI SC89)

(6) Unified interpretations based on IACS UI SC243 were approved regarding the access to controls for closing of ventilation of ro-ro spaces.

(To be continued)

(7) Unified interpretations based on IACS UI SC249 (Corr.1) were approved, clarifying the process to verify that materials which contain asbestos, prohibited under SOLAS regulation II-1/3-5, are not installed on ships by reviewing asbestos-free declarations and supporting documentation for the structure, machinery, electrical installations and equipment covered by the SOLAS Convention, which should be provided to the Administration or recognized organization by shipyards, repair yards, and equipment manufacturers.

A summary of the outcomes of MSC90 is also available on the IMO web-site (http://www.imo.org).

For any questions about the above, please contact:

NIPPON KAIJI KYOKAI (ClassNK)
External Affairs Division, Administration Center, Head Office
Address: 4-7 Kioi-cho, Chiyoda-ku, Tokyo 102-8567, Japan
Tel.: +81-3-5226-2038
Fax: +81-3-5226-2024
E-mail: xad@classnk.or.jp

Attachment:

1. Amendments to SOLAS II-1, III, V, VI, VII and XI-1 (Resolution MSC.325(90))
2. MSC Circular to promote the early implementation of Amendments to SOLAS III/20 (MC.1/Circ.1411)
3. Amendments to the 1988 Load Line Protocol (Resolution MSC.329(90))
4. Amendments to the International Code for Fire Safety Systems (FSS Code) (Resolution MSC.327(90))
5. Amendments to the International Code of Safety for High-Speed Craft, 2000 (2000 HSC Code) (Resolution MSC.326(90))

ANNEX 1

RESOLUTION MSC.325(90)
(adopted on 24 May 2012)

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 to the provisions of chapter I thereof,

HAVING CONSIDERED, at its ninetieth 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 2013, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50 per cent of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES 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 2014 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-1
CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Part B-1
Stability

Regulation 8-1 – System capabilities after a flooding casualty on passenger ships

1 The existing regulation II-1/8-1 is replaced by the following:

"**Regulation 8-1 – System capabilities and operational information after a flooding casualty on passenger ships**

1 Application

Passenger ships having length, as defined in regulation II-1/2.5, of 120 m or more or having three or more main vertical zones shall comply with the provisions of this regulation.

2 Availability of essential systems in case of flooding damage[*]

A passenger ship constructed on or after 1 July 2010 shall be designed so that the systems specified in regulation II-2/21.4 remain operational when the ship is subject to flooding of any single watertight compartment.

3 Operational information after a flooding casualty

For the purpose of providing operational information to the Master for safe return to port after a flooding casualty, passenger ships constructed on or after 1 January 2014 shall have:

.1 onboard stability computer; or

.2 shore-based support,

based on guidelines developed by the Organization[**]."

---

[*] Refer to the Interim Explanatory Notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369).

[**] Refer to the Guidelines on operational information for Masters of passenger ships for safe return to port by own power or under tow (MSC.1/Circ.1400).

CHAPTER III
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Part B
Requirements for ships and life-saving appliances

Regulation 20 – Operational readiness, maintenance and inspections

2 In paragraph 11.2, the following new subparagraph .4 is added after the existing subparagraph .3:

".4 notwithstanding subparagraph .3 above, the operational testing of free-fall lifeboat release systems shall be performed either by free-fall launch with only the operating crew on board or by a simulated launching carried out based on guidelines developed by the Organization[*]."

[*] Refer to Measures to prevent accidents with lifeboats (MSC.1/Circ.1206/Rev.1).

CHAPTER V
SAFETY OF NAVIGATION

Regulation 14 – Ships' manning

3 The existing paragraph 2 is replaced by the following new paragraph:

"2 For every ship to which chapter I applies, the Administration shall:

.1 establish appropriate minimum safe manning following a transparent procedure, taking into account the relevant guidance adopted by the Organization[*]; and

.2 issue an appropriate minimum safe manning document or equivalent as evidence of the minimum safe manning considered necessary to comply with the provisions of paragraph 1."

[*] Refer to the Principles of minimum safe manning, adopted by the Organization by resolution A.1047(27).

CHAPTER VI
CARRIAGE OF CARGOES

Part A
General provisions

4 The following new regulation 5-2 is added after the existing regulation 5-1:

"**Regulation 5-2 – Prohibition of the blending of bulk liquid cargoes and production processes during sea voyages**

1 The physical blending of bulk liquid cargoes during sea voyages is prohibited. Physical blending refers to the process whereby the ship's cargo pumps and pipelines are used to internally circulate two or more different cargoes with the intent to achieve a cargo with a new product designation. This prohibition does not preclude the master from undertaking cargo transfers for the safety of the ship or protection of the marine environment.

2 The prohibition in paragraph 1 does not apply to the blending of products for use in the search and exploitation of seabed mineral resources on board ships used to facilitate such operations.

3 Any production process on board a ship during sea voyages is prohibited. Production processes refer to any deliberate operation whereby a chemical reaction between a ship's cargo and any other substance or cargo takes place.

4 The prohibition in paragraph 3 does not apply to the production processes of cargoes for use in the search and exploitation of seabed mineral resources on board ships used to facilitate such operations.[*]

[*] Refer to the Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk in offshore support vessels (resolution A.673(16), as amended)."

CHAPTER VII
CARRIAGE OF DANGEROUS GOODS

Part A
Carriage of dangerous goods in packaged form

Regulation 4 – Documents

5 The text of the regulation is replaced by the following:

"1 Transport information relating to the carriage of dangerous goods in packaged form and the container/vehicle packing certificate shall be in accordance with the relevant provisions of the IMDG Code and shall be made available to the person or organization designated by the port State authority.

2 Each ship carrying dangerous goods in packaged form shall have a special list, manifest or stowage plan setting forth, in accordance with the relevant provisions of the IMDG Code, the dangerous goods on board and the location thereof. A copy of one of these documents shall be made available before departure to the person or organization designated by the port State authority."

CHAPTER XI-1
SPECIAL MEASURES TO ENHANCE MARITIME SAFETY

Regulation 2 – Enhanced surveys

6 The words "the guidelines adopted by the Assembly of the Organization by resolution A.744(18)" are replaced by the words "the International Code on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers, 2011 (2011 ESP Code), adopted by the Assembly of the Organization by resolution A.1049(27)".

***

INTERNATIONAL MARITIME ORGANIZATION

E

4 ALBERT EMBANKMENT
LONDON SE1 7SR
Telephone: +44 (0)20 7735 7611 Fax: +44 (0)20 7587 3210

MSC.1/Circ.1411
29 June 2012

EARLY IMPLEMENTATION OF THE AMENDMENTS TO SOLAS REGULATION III/20.11.2

1 The Maritime Safety Committee, at its ninetieth session (16 to 25 May 2012), adopted, by resolution MSC.325(90), amendments to SOLAS regulation III/20.11.2, concerning the operational testing of free-fall lifeboat release systems.

2 In adopting the aforementioned amendments, the Committee agreed to the recommendation by the Sub-Committee on Ship Design and Equipment, at its fifty-sixth session (13 to 17 February 2012), that parties concerned should be encouraged to implement the amendments to SOLAS regulation III/20.11.2 at the earliest possible opportunity.

3 Member Governments and shipowners are invited to take account of this circular and bring it to the attention of all parties concerned.

ANNEX 6

RESOLUTION MSC.329(90)
(adopted on 24 May 2012)

ADOPTION OF AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION ON LOAD LINES, 1966, 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 VI of the Protocol of 1988 relating to the International Convention on Load Lines, 1966 (hereinafter referred to as the "1988 Load Lines Protocol") concerning amendment procedures,

HAVING CONSIDERED, at its ninetieth session, amendments to the 1988 Load Lines Protocol proposed and circulated in accordance with paragraph 2(a) of article VI thereof,

1. ADOPTS, in accordance with paragraph 2(d) of article VI of the 1988 Load Lines Protocol, amendments to the 1988 Load Lines Protocol, the text of which is set out in the annex to the present resolution;

2. DETERMINES, in accordance with paragraph 2(f)(ii)(bb) of article VI of the 1988 Load Lines Protocol, that the said amendments shall be deemed to have been accepted on 1 July 2013, unless, prior to that date, more than one third of the Parties to the 1988 Load Lines Protocol or Parties the combined merchant fleets of which constitute not less than 50 per cent of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES the Parties concerned to note that, in accordance with paragraph 2(g)(ii) of article VI of the 1988 Load Lines Protocol, the amendments shall enter into force on 1 January 2014 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with paragraph 2(e) of article VI of the 1988 Load Lines Protocol, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Parties to the 1988 Load Lines Protocol;

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 1988 Load Lines Protocol.

ANNEX

AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION ON LOAD LINES, 1966, AS AMENDED

ANNEX B
ANNEXES TO THE CONVENTION AS MODIFIED BY THE PROTOCOL OF 1988 RELATING THERETO

ANNEX II
Zones, areas and seasonal periods

Regulation 47 – Southern Winter Seasonal Zone

The existing text of regulation 47 is replaced by the following:

"The northern boundary of the Southern Winter Seasonal Zone is:

the rhumb line from the east coast of the American continent at Cape Tres Puntas to the point latitude 34° S, longitude 50° W, thence the parallel of latitude 34° S to longitude 16° E, thence the rhumb line to the point latitude 36° S, longitude 20° E, thence the rhumb line to the point latitude 34° S, longitude 30° E, thence along the rhumb line to the point latitude 35° 30' S, longitude 118° E, and thence the rhumb line to Cape Grim on the north-west coast of Tasmania; thence along the north and east coasts of Tasmania to the southernmost point of Bruny Island, thence the rhumb line to Black Rock Point on Stewart Island, thence the rhumb line to the point latitude 47° S, longitude 170° E, thence along the rhumb line to the point latitude 33° S, longitude 170° W, and thence the parallel of latitude 33° S to the west coast of the American continent.

Seasonal periods:

WINTER: 16 April to 15 October
SUMMER: 16 October to 15 April"

***

ANNEX 3

RESOLUTION MSC.327(90)
(adopted on 25 May 2012)

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

THE MARITIME SAFETY COMMITTEE,

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

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

NOTING ALSO article VIII(b) and regulation II-2/3.22 of the Convention concerning the procedure for amending the FSS Code,

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

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the International Code for Fire Safety Systems, the text of which is set out in the annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 July 2013, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50 per cent of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES Contracting Governments to 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 2014, upon their acceptance in accordance with paragraph 2 above;

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

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

ANNEX

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

CHAPTER 6
FIXED FOAM FIRE-EXTINGUISHING SYSTEMS

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

"**1 Application**

This chapter details the specifications for fixed foam fire-extinguishing systems for the protection of machinery spaces in accordance with regulation II-2/10.4.1.1.2 of the Convention, cargo spaces in accordance with regulation II-2/10.7.1.1, cargo pump-rooms in accordance with regulation II-2/10.9.1.2 and vehicle, special category and ro-ro spaces in accordance with regulation II-2/20.6.1.3. This chapter does not apply to cargo pump-rooms of chemical tankers carrying liquid cargoes referred to in regulation II-2/1.6.2 of the Convention, unless the Administration specifically accepts the use of these systems based on additional tests with alcohol-based fuel and alcohol resistant foam. Unless expressly provided otherwise, the requirements of this chapter shall apply to ships constructed on or after 1 January 2014.

2 Definitions

2.1 *Design filling rate* is at least the minimum nominal filling rate used during the approval tests.

2.2 *Foam* is the extinguishing medium produced when foam solution passes through a foam generator and is mixed with air.

2.3 *Foam solution* is a solution of foam concentrate and water.

2.4 *Foam concentrate* is a liquid which, when mixed with water in the appropriate concentration forms a foam solution.

2.5 *Foam delivery ducts* are supply ducts for introducing high-expansion foam into the protected space from foam generators located outside the protected space.

2.6 *Foam mixing ratio* is the percentage of foam concentrate mixed with water forming the foam solution.

2.7 *Foam generators* are discharge devices or assemblies through which high-expansion foam solution is aerated to form foam that is discharged into the protected space. Foam generators using inside air typically consist of a nozzle or set of nozzles and a casing. The casing is typically made of perforated steel/stainless steel plates shaped into a box that enclose the nozzle(s). Foam generators using outside air typically consist of nozzles enclosed within a casing that spray onto a screen. An electric, hydraulic or pneumatically driven fan is provided to aerate the solution.

2.8 *High-expansion foam fire-extinguishing systems* are fixed total flooding extinguishing systems that use either inside air or outside air for aeration of the foam solution. A high-expansion foam system consists of both the foam generators and the dedicated foam concentrate approved during the fire testing specified in 3.1.3.

2.9 *Inside air foam system* is a fixed high-expansion foam fire-extinguishing system with foam generators located inside the protected space and drawing air from that space.

2.10 *Nominal flow rate* is the foam solution flow rate expressed in *l*/min.

2.11 *Nominal application rate* is the nominal flow rate per area expressed in *l*/min/m^2.

2.12 *Nominal foam expansion ratio* is the ratio of the volume of foam to the volume of foam solution from which it was made, under non-fire conditions, and at an ambient temperature of e.g. around 20ºC.

2.13 *Nominal foam production* is the volume of foam produced per time unit, i.e. nominal flow rate times nominal foam expansion ratio, expressed in m^3/min.

2.14 *Nominal filling rate* is the ratio of nominal foam production to the area, i.e. expressed in m^2/min.

2.15 *Nominal filling time* is the ratio of the height of the protected space to the nominal filling rate, i.e. expressed in minutes.

2.16 *Outside air foam system* is a fixed high-expansion foam system with foam generators installed outside the protected space that are directly supplied with fresh air.

3 Fixed high-expansion foam fire-extinguishing systems

3.1 Principal performance

3.1.1 The system shall be capable of manual release, and shall be designed to produce foam at the required application rate within 1 minute of release. Automatic release of the system shall not be permitted unless appropriate operational measures or interlocks are provided to prevent any local application systems required by regulation II-2/10.5.6 of the Convention from interfering with the effectiveness of the system.

3.1.2 The foam concentrates shall be approved by the Administration based on the guidelines developed by the Organization[*]. Different foam concentrate types shall not be mixed in a high-expansion foam system.

3.1.3 The system shall be capable of fire extinction and manufactured and tested to the satisfaction of the Administration based on the guidelines developed by the Organization[**].

[*] Refer to the Guidelines for the performance and testing criteria and surveys of high-expansion foam concentrates for fixed fire-extinguishing systems (MSC/Circ.670).

[**] Refer to the Guidelines for the approval of fixed high-expansion foam systems (MSC.1/Circ.1384).

3.1.4 The system and its components shall be suitably designed to withstand ambient temperature changes, vibration, humidity, shock, clogging and corrosion normally encountered on ships. Piping, fittings and related components inside the protected spaces (except gaskets) shall be designed to withstand 925°C.

3.1.5 System piping, foam concentrate storage tanks, components and pipe fittings in contact with the foam concentrate shall be compatible with the foam concentrate and be constructed of corrosion resistant materials such as stainless steel, or equivalent. Other system piping and foam generators shall be full galvanized steel or equivalent. Distribution pipework shall have self-draining capability.

3.1.6 Means for testing the operation of the system and assuring the required pressure and flow shall be provided by pressure gauges at both inlets (water and foam concentrate supply) and at the outlet of the foam proportioner. A test valve shall be installed on the distribution piping downstream of the foam proportioner, along with orifices which reflect the calculated pressure drop of the system. All sections of piping shall be provided with connections for flushing, draining and purging with air. All nozzles shall be able to be removed for inspection in order to prove clear of debris.

3.1.7 Means shall be provided for the crew to safely check the quantity of foam concentrate and take periodic control samples for foam quality.

3.1.8 Operating instructions for the system shall be displayed at each operating position.

3.1.9 Spare parts shall be provided based on the manufacturer's instruction.

3.1.10 If an internal combustion engine is used as a prime mover for the seawater pump for the system, the fuel oil tank to the prime mover shall contain sufficient fuel to enable the pump to run on full load for at least 3 h and sufficient reserves of fuel shall be available outside the machinery space of category A to enable the pump to be run on full load for an additional 15 h. If the fuel tank serves other internal combustion engines simultaneously, the total fuel tank capacity shall be adequate for all connected engines.

3.1.11 The arrangement of foam generators and piping in the protected space shall not interfere with access to the installed machinery for routine maintenance activities.

3.1.12 The system source of power supply, foam concentrate supply and means of controlling the system shall be readily accessible and simple to operate, and shall be arranged at positions outside the protected space not likely to be cut off by a fire in the protected space. All electrical components directly connected to the foam generators shall have at least an IP 54 rating.

3.1.13 The piping system shall be sized in accordance with a hydraulic calculation technique* to ensure availability of flows and pressures required for correct performance of the system.

3.1.14 The arrangement of the protected spaces shall be such that they may be ventilated as the space is being filled with foam. Procedures shall be provided to ensure that upper level dampers, doors and other suitable openings are kept open in case of a fire. For inside air foam systems, spaces below 500 m^3 need not comply with this requirement.

3.1.15 Onboard procedures shall be established to require personnel re-entering the protected space after a system discharge to wear breathing apparatus to protect them from oxygen deficient air and products of combustion entrained in the foam blanket.

3.1.16 Installation plans and operating manuals shall be supplied to the ship and be readily available on board. A list or plan shall be displayed showing spaces covered and the location of the zone in respect of each section. Instructions for testing and maintenance shall be available on board.

3.1.17 All installation, operation and maintenance instructions/plans for the system shall be in the working language of the ship. If the working language of the ship is not English, French, nor Spanish, a translation into one of these languages shall be included.

3.1.18 The foam generator room shall be ventilated to protect against overpressure, and shall be heated to avoid the possibility of freezing.

3.1.19 The quantity of foam concentrate available shall be sufficient to produce a volume of foam equal to at least five times the volume of the largest protected space enclosed by steel bulkheads, at the nominal expansion ratio, or enough for 30 min of full operation for the largest protected space, whichever is greater.

3.1.20 Machinery spaces, cargo pump-rooms, vehicle spaces, ro-ro spaces and special category spaces shall be provided with audible and visual alarms within the protected space warning of the release of the system. The alarms shall operate for the length of time needed to evacuate the space, but in no case less than 20 s.

3.2 Inside air foam systems

3.2.1 *Systems for the protection of machinery spaces and cargo pump-rooms*

3.2.1.1 The system shall be supplied by both main and emergency sources of power. The emergency power supply shall be provided from outside the protected space.

---

* Where the Hazen-Williams method is used, the following values of the friction factor *C* for different pipe types which may be considered should apply:

Pipe type	*C*
Black or galvanized mild steel	100
Copper or copper alloys	150
Stainless steel	150

3.2.1.2 Sufficient foam-generating capacity shall be provided to ensure the minimum design filling rate for the system is met and in addition shall be adequate to completely fill the largest protected space within 10 min.

3.2.1.3 The arrangement of foam generators shall in general be designed based on the approval test results. A minimum of two generators shall be installed in every space containing combustion engines, boilers, purifiers, and similar equipment. Small workshops and similar spaces may be covered with only one foam generator.

3.2.1.4 Foam generators shall be uniformly distributed under the uppermost ceiling in the protected spaces including the engine casing. The number and location of foam generators shall be adequate to ensure all high risk areas are protected in all parts and at all levels of the spaces. Extra foam generators may be required in obstructed locations. The foam generators shall be arranged with at least 1 m free space in front of the foam outlets, unless tested with less clearance. The generators shall be located behind main structures, and above and away from engines and boilers in positions where damage from an explosion is unlikely.

3.2.2 *Systems for the protection of vehicle, ro-ro, special category and cargo spaces*

3.2.2.1 The system shall be supplied by the ship's main power source. An emergency power supply is not required.

3.2.2.2 Sufficient foam-generating capacity shall be provided to ensure the minimum design filling rate for the system is met and in addition shall be adequate to completely fill the largest protected space within 10 min. However, for systems protecting vehicle and ro-ro spaces and special category spaces, with decks that are reasonably gas-tight and that have a deck height of 3 m or less, the filling rate shall be not less than two thirds of the design filling rate and in addition sufficient to fill the largest protected space within 10 min.

3.2.2.3 The system may be divided into sections, however, the capacity and design of the system shall be based on the protected space demanding the greatest volume of foam. Adjacent protected spaces need not be served simultaneously if the boundaries between the spaces are "A" class divisions.

3.2.2.4 The arrangement of foam generators shall in general be designed based on the approval test results. The number of generators may be different, but the minimum design filling rate determined during approval testing shall be provided by the system. A minimum of two generators shall be installed in every space. The foam generators shall be arranged to uniformly distribute foam in the protected spaces, and the layout shall take into consideration obstructions that can be expected when cargo is loaded on board. As a minimum, generators shall be located on every second deck, including movable decks. The horizontal spacing of the generators shall ensure rapid supply of foam to all parts of the protected space. This shall be established on the basis of full scale tests.

3.2.2.5 The foam generators shall be arranged with at least 1 m free space in front of the foam outlets, unless tested with less clearance.

3.3 Outside air foam systems

3.3.1 *Systems for the protection of machinery spaces and cargo pump-rooms*

3.3.1.1 The system shall be supplied by both main and emergency sources of power. The emergency power supply shall be provided from outside the protected machinery space.

3.3.1.2 Sufficient foam-generating capacity shall be provided to ensure the minimum design filling rate for the system is met and in addition shall be adequate to completely fill the largest protected space within 10 min.

3.3.1.3 The arrangement of foam delivery ducts shall in general be designed based on the approval test results. The number of ducts may be different, but the minimum design filling rate determined during approval testing shall be provided by the system. A minimum of two ducts shall be installed in every space containing combustion engines, boilers, purifiers, and similar equipment. Small workshops and similar spaces may be covered with only one duct.

3.3.1.4 Foam delivery ducts shall be uniformly distributed under the uppermost ceiling in the protected spaces including the engine casing. The number and location of ducts shall be adequate to ensure all high risk areas are protected in all parts and at all levels of the spaces. Extra ducts may be required in obstructed locations. The ducts shall be arranged with at least 1 m free space in front of the foam delivery ducts, unless tested with less clearance. The ducts shall be located behind main structures, and above and away from engines and boilers in positions where damage from an explosion is unlikely.

3.3.1.5 The arrangement of the foam delivery ducts shall be such that a fire in the protected space will not affect the foam-generating equipment. If the foam generators are located adjacent to the protected space, foam delivery ducts shall be installed to allow at least 450 mm of separation between the generators and the protected space, and the separating divisions shall be class "A-60" rated. Foam delivery ducts shall be constructed of steel having a thickness of not less than 5 mm. In addition, stainless steel dampers (single or multi-bladed) with a thickness of not less than 3 mm shall be installed at the openings in the boundary bulkheads or decks between the foam generators and the protected space. The dampers shall be automatically operated (electrically, pneumatically or hydraulically) by means of remote control of the foam generator related to them, and arranged to remain closed until the foam generators begin operating.

3.3.1.6 The foam generators shall be located where an adequate fresh air supply can be arranged.

3.3.2 *Systems for the protection of vehicle and ro-ro spaces and special category and cargo spaces*

3.3.2.1 The system shall be supplied by the ship's main power source. An emergency power supply is not required.

3.3.2.2 Sufficient foam-generating capacity shall be provided to ensure the minimum design filling rate for the system is met and in addition shall be adequate to completely fill the largest protected space within 10 min. However, for systems protecting vehicle and ro-ro spaces and special category spaces, with decks that are

reasonably gas-tight and that have a deck height of 3 m or less, the filling rate shall be not less than two thirds of the design filling rate and in addition sufficient to fill the largest protected space within 10 min.

3.3.2.3 The system may be divided into sections, however, the capacity and design of the system shall be based on the protected space demanding the greatest volume of foam. Adjacent protected spaces need not be served simultaneously if the boundaries between the spaces are "A" class divisions.

3.3.2.4 The arrangement of foam delivery ducts shall in general be designed based on the approval test results. The number of ducts may be different, but the minimum design filling rate determined during approval testing shall be provided by the system. A minimum of two ducts shall be installed in every space. The foam generators shall be arranged to uniformly distribute foam in the protected spaces, and the layout shall take into consideration obstructions that can be expected when cargo is loaded on board. As a minimum, ducts shall be led to every second deck, including movable decks. The horizontal spacing of the ducts shall ensure rapid supply of foam to all parts of the protected space. This shall be established on the basis of full scale tests.

3.3.2.5 The system shall be arranged with at least 1 m free space in front of the foam outlets, unless tested with less clearance.

3.3.2.6 The arrangement of the foam delivery ducts shall be such that a fire in the protected space will not affect the foam-generating equipment. If the foam generators are located adjacent to the protected space, foam delivery ducts shall be installed to allow at least 450 mm of separation between the generators and the protected space, and the separating divisions shall be class "A-60" rated. Foam delivery ducts shall be constructed of steel having a thickness of not less than 5 mm. In addition, stainless steel dampers (single or multi-bladed) with a thickness of not less than 3 mm shall be installed at the openings in the boundary bulkheads or decks between the foam generators and the protected space. The dampers shall be automatically operated (electrically, pneumatically or hydraulically) by means of remote control of the foam generator related to them, and arranged to remain closed until the foam generators begin operating.

3.3.2.7 The foam generators shall be located where an adequate fresh air supply can be arranged.

3.4 Installation testing requirements

3.4.1 After installation, the pipes, valves, fittings and assembled systems shall be tested to the satisfaction of the Administration, including functional testing of the power and control systems, water pumps, foam pumps, valves, remote and local release stations and alarms. Flow at the required pressure shall be verified for the system using orifices fitted to the test line. In addition, all distribution piping shall be flushed with freshwater and blown through with air to ensure that the piping is free of obstructions.

3.4.2 Functional tests of all foam proportioners or other foam mixing devices shall be carried out to confirm that the mixing ratio tolerance is within +30 to -0% of the nominal mixing ratio defined by the system approval. For foam proportioners using foam concentrates of Newtonian type with kinematic viscosity equal to or less than 100 cSt at 0ºC and density equal to or less than 1,100 kg/m^3, this test can be

performed with water instead of foam concentrate. Other arrangements shall be tested with the actual foam concentrate.

3.5 Systems using outside air with generators installed inside the protected space

Systems using outside air but with generators located inside the protected space and supplied by fresh air ducts may be accepted by the Administration provided that these systems have been shown to have performance and reliability equivalent to systems defined in 3.3. For acceptance, the Administration should consider the following minimum design features:

.1 lower and upper acceptable air pressure and flow rate in supply ducts;

.2 function and reliability of damper arrangements;

.3 arrangements and distribution of air delivery ducts including foam outlets; and

.4 separation of air delivery ducts from the protected space.

4 Fixed low-expansion foam fire-extinguishing systems

4.1 Quantity and foam concentrates

4.1.1 The foam concentrates of low-expansion foam fire-extinguishing systems shall be approved by the Administration based on the guidelines adopted by the Organization*. Different foam concentrate types shall not be mixed in a low-expansion foam system. Foam concentrates of the same type from different manufacturers shall not be mixed unless they are approved for compatibility.

4.1.2 The system shall be capable of discharging through fixed discharge outlets, in no more than 5 min, a quantity of foam sufficient to produce an effective foam blanket over the largest single area over which oil fuel is liable to spread.

4.2 Installation requirements

4.2.1 Means shall be provided for effective distribution of the foam through a permanent system of piping and control valves or cocks to suitable discharge outlets, and for the foam to be effectively directed by fixed sprayers onto other main fire hazards in the protected space. The means for effective distribution of the foam shall be proven acceptable to the Administration through calculation or by testing.

4.2.2 The means of control of any such systems shall be readily accessible and simple to operate and shall be grouped together in as few locations as possible at positions not likely to be cut off by a fire in the protected space."

* Refer to the Revised Guidelines for the performance and testing criteria and surveys of low-expansion foam concentrates for fixed fire-extinguishing systems (MSC.1/Circ.1312).

CHAPTER 8
AUTOMATIC SPRINKLER, FIRE DETECTION AND FIRE ALARM SYSTEMS

6 In paragraph 2.1.1, the following sentence is inserted between the existing first and second sentences:

> "Control stations, where water may cause damage to essential equipment, may be fitted with a dry pipe system or a pre-action system as permitted by regulation II-2/10.6.1.1 of the Convention."

***

ANNEX 2

RESOLUTION MSC.326(90)
(adopted on 24 May 2012)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 2000 (2000 HSC 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.97(73), by which it adopted the International Code of Safety for High-Speed Craft, 2000 (hereinafter referred to as "the 2000 HSC Code"), which has become mandatory under chapter X of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"),

NOTING ALSO article VIII(b) and regulation X/1.2 of the Convention concerning the procedure for amending the 2000 HSC Code,

HAVING CONSIDERED, at its ninetieth session, amendments to the 2000 HSC 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 2000 HSC Code, the text of which is set out in the annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 July 2013 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50 per cent of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES Contracting Governments to 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 2014 upon their acceptance in accordance with paragraph 2 above;

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

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

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR HIGH-SPEED CRAFT, 2000 (2000 HSC CODE)

Chapter 14 – Radiocommunications

In paragraph 14.15.10, subparagraph .1 is replaced by the following:

".1 annually tested for all aspects of operational efficiency, with special emphasis on checking the emission on operational frequencies, coding and registration, at intervals within 3 months before the expiry date, or 3 months before or after the anniversary date, of the High-Speed Craft Safety Certificate;

The test may be conducted on board the craft or at an approved testing station; and"

***