標題

MSC90 の審議結果の紹介

ClassNK
テクニカル
インフォメーション

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2012 年 5 月 16 日から 25 日にかけて開催された IMO の第 90 回海上安全委員会（MSC90）での情報及び審議結果について次の通りお知らせいたします。

1. 採択された強制要件
今回採択された強制要件のうち、主なものは次の通りです。

(1) SOLAS 条約 II-1 章 8-1 規則: 旅客船に対する復原性計算機の搭載、又は同等の陸上からの支援措置を義務付ける改正（添付 1 参照）
安全帰港要件の対象となる（全長 120m 以上又は 3 つの主垂直ゾーンを持つ）新造旅客船について、浸水時における安全帰港を実行するにあたっての必要な操船上の情報を船長に提供するために、復原性計算機の搭載、又は同等の陸上からの支援措置を義務付ける改正が採択されました。

適用：2014 年 1 月 1 日以降に起工される旅客船に適用される。

(2) SOLAS 条約 III 章 20 規則: 自由降下式救命艇の定期的な作動試験の方法を明確化する改正（添付 1 参照）
自由降下式救命艇の解放整備後（少なくとも 5 年に 1 回）に実施される作動試験について、同試験を模擬進水（シミュレーション）で実施しても良いことを明確化する改正が採択されました。また、当該改正の早期実施を促す MSC サーキュラー（添付 2 参照）も発行されております。

適用：2014 年 1 月 1 日以降に適用される。

(3) SOLAS 条約 V 章 14 規則: 主管庁が最低安全配員を定めることを規定する改正（添付 1 参照）
安全配員原則の実効性を確保する観点から、総会決議 A.1047(27)として採択された指針に基づき、主管庁が最小安全配員を定めることを規定する改正が採択されました。

適用：2014 年 1 月 1 日以降に適用される。

（次頁に続く）

(4) SOLAS 条約 VI 章 5-2 規則: ばら積み液体貨物の航海中の混合等を禁止する改正（添付 1 参照）
ばら積み液体貨物の航海中の混合、及び化学物質の投入による新たな物質の製造を禁止する改正が採択されました。

適用：2014 年 1 月 1 日以降に適用される。

(5) SOLAS 条約 VII 章 4 規則: IMDG コードとの整合性を確保する等の改正（添付 1 参照）
個品危険物の輸送書類要件を明確化するとともに、IMDG コード（国際海上危険物コード）との整合性を確保するための改正が採択されました。

適用：2014 年 1 月 1 日以降に適用される。

(6) SOLAS 条約 XI-1 章: ESP コードの名称変更に関連する改正（添付 1 参照）
ばら積み貨物船及びタンカーの検査強化の要件を定める IMO 総会決議 A.744(18)が、ESP コード（ばら積み貨物船及び油タンカーの検査強化に関する国際コード）と改められたことに伴う、SOLAS XI-1/2 の改正（編集上の修正）が採択されました。

適用：2014 年 1 月 1 日以降に適用される。

(7) 1988 年議定書 Load Line 条約: 南アフリカ南端海域における夏期帯域を拡大する改正（添付 3 参照）
南アフリカ南端海域において、夏期満載喫水線を標示した東回りと西回りの船舶で輻輳状態となっていることに鑑み、当該海域での船舶の安全航行確保のため、夏期帯域を拡大（現在の南部季節冬期帯域を、陸から遠方 35 海里から 50 海里に変更）する Load Line 条約の改正が採択されました。

適用：2014 年 1 月 1 日以降に適用される。

(8) 火災安全設備のための国際コード（FSS コード）の改正（添付 4 参照）
固定式泡消火装置の要件を定める第 6 章の全面的改正、及び水によりダメージを受ける装置のある制御場所における自動スプリンクラー装置を乾式としてよい旨を明確化する第 8 章の改正が採択されました。

適用：2014 年 1 月 1 日以降の起工船に搭載される消火装置に適用される。

(9) 国際海上危険物コード（IMDG コード）の改正
危険物輸送に関する国連勧告（第 17 訂版）の内容を取り入れ、新たに 11 品目が追加された他、輸送書類に関する緩和規定が適用される特定の危険物を明確化した IMDG コードの改正が採択されました。

適用：本改正は 2014 年 1 月 1 日に発効予定ですが、2013 年 1 月 1 日からボランタリーベースでの運用が推奨されています。

（次頁に続く）

(10) 高速船コード 2000（2000 HSC コード）の改正（添付 5 参照）
2000 HSC コードを適用する旅客船に搭載された EPIRB（非常用位置指示無線標識装置）について、毎年の検査を明確化する 14 規則の改正が採択されました。

適用：2014 年 1 月 1 日以降に適用される。

2. 今回承認された強制要件
次回 MSC91（2012 年 11 月）又は総会（2013 年末の A28）で採択が予定される強制要件が、次のとおり今回の MSC90 で承認されました。
(1) 1966 年 Load Line 条約の改正（上記 1.(7)の「1988 年議定書 Load Line 条約の改正」と同様の内容）
(2) 現行の船内騒音コード（総会決議 A.468(XII)）の一部の要件を強化する改正を行うとともに、改正後の騒音コードの適用を強制化する SOLAS 条約 II-1 章 3-12 規則の改正（以下、5. 参照）
(3) 消防員装具の備品として、通信装置を追加で要求する SOLAS 条約 II-2 章 10.4 規則の改正
(4) 訓練に用いる呼吸具を再充填する手段を船上に備え付けること、又は適切な数の予備シリンダーを備えることを要求する SOLAS 条約 II-2 章 15 規則の改正
(5) 各船舶の仕様及び事情にあった海上漂流者回収に関する計画及び手順の備え付けを義務化する SOLAS 条約 III 章 17-1 規則の改正
(6) ヒール角 5°未満での自由表面影響考慮の規定の削除、また、実際の自由表面影響を用いた場合の計算手法を明確化する Load Line 条約 27 規則の改正
(7) 次の火災安全設備のための国際コード（FSS コード）の改正
- 消防員装具の呼吸具について、空気残量警報装置の要件を追加（第 3 章）
- 消火剤の放出を知らせる自動式可聴警報装置の設置が要求される区画について、IACS 統一解釈に従い、明確化する（第 5 章）
- 火災表示盤が要求される場所に貨物制御室を追加（第 9 章）
- IBC コードに掲載された液体物質を輸送する船舶に係わる固定式甲板泡消火装置の要件を改正（第 14 章）

3. 旅客船の安全
本年 1 月にイタリアにて発生したコスタ・コンコルディア号事故を受け、旅客船の安全に関する基準の見直しを行うことを目的として、IMO 事務局長により、急遽、今回の MSC の議題として追加されました。
今次会合では、イタリアより、当該事故調査の進捗報告が行われるとともに、国際クルーズ船協会（CLIA）からは、業界として事故後に講じた自主的な緊急安全対策の紹介がありました。
これを踏まえ、旅客船の安全に関する今後の検討方針について審議されたところ、早急に実施すべき運航上の安全対策（短期的措置）と、事故調査結果を踏まえた検討後に実施する安全対策（長期的措置）に分けて検討を進めることが合意されました。
その上で、旅客船の安全の確保に関する MSC 決議が採択されると共に、旅客船の安全確保のための暫定推奨措置に関する MSC サーキュラーが承認されました。

（次頁に続く）

4. 海賊問題

昨今のソマリア沖、アデン湾における海賊事件の激化により、同海域を航行する船舶に民間の武装警備員を乗船させる事例が増加しています。現在、IMO では、同武装警備員を提供する民間警備会社及び警備員に関する国際的な指針について審議が行われております。
武装警備員が乗船した船舶については、旗国、寄港国、沿岸国等のそれぞれの法規制に従う必要があるという問題を抱えており、今次会合では、これらの諸問題について議論を行うためのハイレベル会合も開催されました。
審議の結果、武装警備サービスを提供する民間警備会社に対するガイダンスが採択され、締約国に周知されることとなりました。

5. 船内騒音コードの強制化

船員の健康保持のために機関室等から発生する騒音値及び船員の騒音暴露を一定以下に抑えることを勧告する船内騒音コード（総会決議 A.468(XII)）について、デンマークを中心とする欧州諸国より本コードの強化及び強制化について提案があり、設計設備小委員会（DE）において、騒音規制値、騒音の計測方法及び計測装置等について見直しが行われてきました。
今回の MSC90 では、本年 2 月に開催された DE56 にて合意された船内騒音コードの改正案が一部修正の上承認されました。また、同コードを強制化する SOLAS 条約 II-1 章第 3-12 規則の改正も承認されました。
次回 MSC91 で採択された場合、2014 年 7 月 1 日以降の建造船舶に対し船内騒音コードの遵守が義務付けられることとなります。なお、対象船舶は、総トン数 1,600 トン以上の船舶で、総トン数 10,000 トンを境目に騒音規制値が厳しくなっております。

6. 各種ガイドラインの承認等

MSC90 において主要なガイドラインが以下のとおり作成されました。
（以下で参照されている IACS 統一解釈（UI）については、弊会のホームページ（http://www.classnk.or.jp/）又は IACS ホームページ（http://www.iacs.org.uk/）に公開されています）

(1) IACS UI SC251 を基に作成された、浸水に対する保護要件を規定した SOLAS 条約 II-1/48.3 に規定される"bilge injection system"には、危急用ビルジシステムは含まれない旨を明確化する統一解釈が承認されました。
(2) IACS UI SC246 を基に作成された、操舵試験を最大航海喫水でない状態で行うことを認める統一解釈が承認されました。満載状態における舵にかかる荷重及びトルクを推定し、最大航海喫水においても十分な操舵能力を有することが主管庁又は RO により確認されることが条件とされています。
(3) 船上で使用する A 級仕切りの固定方法を当該仕切りの認定試験時に用いた方法と同一とすることを規定した IACS UI SC239、及び認定試験時の固定方法等の詳細を試験成績書に記載することを規定した IACS UI FTP5 を基に作成された統一解釈が承認されました。
(4) 通風装置の主吸気口及び排気口を規定する SOLAS 条約 II-2/5.2.1.1 に関し、蓄電池室の通風装置について特定の条件を満足する場合は当該装置を省略して差し支えないこと、及び閉鎖装置を備える場合は、非常時以外は閉鎖装置を開放する旨の銘板を掲げるよう規定する IACS UI SC240 を基に作成された統一解釈が承認されました。

（次頁に続く）

(5) IMSBC コードにおいて連続通風が要求される貨物を運送する船舶については、通風装置の開口に閉鎖装置を必要としないが、消火の観点から閉鎖装置の設置が禁止されていない旨明確化する統一解釈が承認されました。(IACS UI SC89)
(6) IACS UI SC243 を基に作成された、Ro-Ro 区域の通風閉鎖制御装置へのアクセスに関する統一解釈が承認されました。
(7) SOLAS 条約 Reg.II-1/3-5 規則によるアスベストの新規設置禁止に関し、船級協会は造船所、舶用品製造業者等から提出される宣言書及び必要な補足資料により、アスベストが使用されていないことを確認する旨の、UI SC249(Corr.1)を基に作成された統一解釈が承認されました。

なお、本MSC90の審議概要につきましてはIMO ホームページにも掲載されていますのでご参照下さい。(http://www.imo.org)

なお、本件に関してご不明な点は、以下の部署にお問い合わせください。

一般財団法人 日本海事協会 (ClassNK)
本部 管理センター 国際室
住所: 東京都千代田区紀尾井町 4-7(郵便番号 102-8567)
Tel.: 03-5226-2038
Fax: 03-5226-2024
E-mail: xad@classnk.or.jp

添付:

1. SOLAS 条約 II-1 章、III 章、V 章、VI 章、VII 章及び XI-1 章の改正 (Resolution MSC.325(90))
2. SOLAS 条約 III 章 20 規則の改正の早期実施を促すサーキュラー(MSC.1/Circ.1411)
3. 1988 年議定書 Load Line 条約の改正 (Resolution MSC.329(90))
4. 火災安全設備のための国際コード(FSS コード)の改正 (Resolution MSC.327(90))
5. 高速船コード 2000(2000 HSC コード)の改正 (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[**]."

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[*] 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)".

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INTERNATIONAL MARITIME ORGANIZATION

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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"

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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.

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* 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."

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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"

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