標題

MSC94 の審議結果の紹介

ClassNK
テクニカル
インフォメーション

No. TEC-1024
発行日 2015 年 3 月 9 日

各位

2014 年 11 月 17 日から 21 日にかけて開催された IMO の第 94 回海上安全委員会（MSC94）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は、次の通りです。

(1) 閉鎖区域の雰囲気を測定するための持運び式計測器の搭載（SOLAS 条約 XI-1 章第 7 規則及び MODU コード第 15 章）（添付 1、3、4 及び 5 参照）
閉鎖区域の雰囲気（酸素濃度、可燃性ガス濃度、硫化水素濃度及び一酸化炭素濃度）を測定するための持運び式計測器の搭載を要求する SOLAS 条約 XI-1 章（第 7 規則の新設）及び MODU コード（第 15 章の新設）の改正が採択されました。また、同改正の早期履行を促すサーキュラー（MSC.1/Circ.1485（添付 8 参照））も併せて承認されました。

適用： 2016 年 7 月 1 日以降

(2) 極海コードの安全要件（SOLAS 条約 XIV 章）（添付 6 及び 7 参照）
極海を航行する船舶に対する要件を定める極海コード（新コード）及び同コードを強制化するための SOLAS 条約（XIV 章の新設）の改正があわせて採択されました。詳細については、3.項をご参照ください。

適用： （新造船）2017 年 1 月 1 日以降の起工船
（現存船）2018 年 1 月 1 日以降の最初の中間又は定期検査のいずれか早い時期まで

(3) コンテナ重量の検証（SOLAS 条約 VI 章第 2 規則）（添付 1 参照）
荷主がコンテナ重量を検証し、船長及び港湾ターミナルの代表者に情報を提供することを強制化する SOLAS 条約 VI 章第 2 規則の改正が採択されました。

適用： 2016 年 7 月 1 日以降

（次頁に続く）

(4) 2011ESP コードの改正 （添付 2 参照）
ばら積貨物船及び油タンカーの検査強化規則を定める IACS UR Z10 シリーズの改正に伴い、貨物タンクの圧力試験等に関する 2011ESP コードの改正が採択されました。

適用： 2016 年 7 月 1 日以降

(5) 消火装置の適用区域の明確化（SOLAS 条約 II-2 章第 10 規則）（添付 1 参照）
持ち運び式泡消火器等が要求される内燃機関のある機関区域を内燃機関のある A 類機関区域のみに適用することを明確化する SOLAS 条約 II-2 章第 10 規則の改正が採択されました。

適用： 2016 年 7 月 1 日以降

(6) SOLAS 条約証書様式（様式 C 及び様式 E）の改訂（添付 1 参照）
救命艇の収容人数等の情報を進水方式（ダビット進水式及び自由降下式）毎に記載するよう SOLAS 条約証書の記録様式 C 及び様式 E を改訂する SOLAS 条約付録 1 の改正が採択されました。

適用： 2016 年 7 月 1 日以降

2. 今回承認された強制要件
次回 MSC95（2015 年 6 月開催）で採択が予定される強制要件が、次のとおり今回の MSC94 で承認されました。MSC95 での採択を経て、2017 年 1 月 1 日発効の見込みです。
(1) ガス又はその他の低引火点燃料を使用する船舶の安全に関するコード（IGF コード）及び同コードを強制化するための SOLAS 条約 II-1 章及び II-2 章の改正。詳細については、4. 項をご参照ください。
(2) 貨物タンクの通気装置の二次的手段として各貨物タンクに P/V 弁の設置を要求する SOLAS 条約 II-2 章第 4 規則及び第 11 規則の改正。なお、各貨物タンクに圧力センサーを設置する代替措置は引き続き認められます。
(3) 雰囲気管理装置を導入した場合におけるロールオン・ロールオフ区域等の換気回数（換気量）を減らすことを認める SOLAS 条約 II-2 章第 20 規則の改正。

3. 極海コード
IMO では、極海域を航行する船舶の安全確保及び環境保護等を目的とする極海コードの策定作業が 2009 年から行われています。
これまで各委員会では、Part 1 の安全要件（船体強度、復原性、機関設備、航海設備、通信設備等）及び Part 2 の環境要件の二部構成となる極海コードが作成され、同コードを強制化するための SOLAS 条約改正案及び MARPOL 条約改正案と併せて審議されてきました。
今回の会合では、極海コード Part 1 及び SOLAS 条約の改正（XIV 章の新設）が、採択されました。2017 年 1 月 1 日以降の起工船は完工日、同日前に起工する現存船は、2018 年 1 月 1 日以降の最初の中間検査又は更新検査のいずれか早い時期までに適合することが要求されます。

（次頁に続く）

なお、海洋環境保護に関する要件を規定した極海コード Part 2 及び MARPOL 条約改正案は、MEPC68（2015 年 5 月開催）において採択される見込みです。
極海コードの対象海域については、図 1 をご参照下さい。また、同コードの構成及び概要については、表 1-1 及び表 1-2 をご参照下さい。

4. ガス又はその他の低引火点燃料を使用する船舶の安全に関するコード（IGF コード）
IMO では、2009 年に発行した「天然ガス機関を使用する船舶の安全に関する暫定ガイドライン（決議 MSC.285(86)）」をもとに、2010 年からガス又はその他の低引火点燃料を使用する船舶に適用する強制コード（IGF コード）の策定作業が行われています。これまで各小委員会において IGF コードの要件について審議が行われ、同コードを強制化するための SOLAS 条約改正案も併せて作成されてきました。
今回の会合では、IGF コード案及び同コードを強制化する SOLAS 条約 II-1 章及び II-2 章の改正案が原則承認され、次回 MSC95 において採択される見込みです。
MSC95 で採択された場合、最短で 2017 年 1 月 1 日以降に建造契約する新造船及び低引火点燃料を使用するために同日以降に改造を行う現存船に対し、IGF コードの適用が見込まれます。
なお、IGF コードは、第一段階として天然ガスを燃料として使用する船舶に対する詳細要件等が、次回 MSC95 で採択される予定であり、第二段階としてメタノール、エタノール及び低引火点燃料油を燃料として使用する船舶に対する詳細要件が、将来の同コードへの取り入れに向けて貨物輸送小委員会（CCC）で審議されています。

5. 各種ガイドラインの承認等
MSC94 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（添付 9 参照）。以下で参照されている IACS 統一解釈（UI）については、弊会のウェブサイト（http://www.classnk.or.jp/hp/ja/info_service/iacs_ur_and_ui/index.aspx#UI）及び IACS ウェブサイト（http://www.iacs.org.uk/publications/publications.aspx?pageid=4&sectionid=4）にてご覧いただくことができます。

(1) MSC91（2012 年 11 月開催）において採択された FSS コード 3 章の改正により、消防員装具用の自蔵圧縮空気呼吸具には、シリンダ内の空気量が 200 リットル以下に低下する前に、使用者に対して警告を発する可聴警報及び可視装置もしくはその他の装置を備えるよう要求されています。この「可視装置もしくはその他の装置」として、圧力指示器を認める統一解釈が承認されました。（MSC.1/Circ.1499）
(2) 固定式ガス消火装置から消火ガスを放出する際の可視可聴警報が不要とされる「通常の貨物区域」を、ロールオン・ロールオフ区域や冷蔵コンテナ倉以外の貨物区域とする統一解釈が、IACS UI SC132 を基に作成され、承認されました。（MSC.1/Circ.1487）
(3) 試料抽出式煙探知装置用制御盤の CO2 室への設置に関する統一解釈が承認されました。本解釈は IACS UI SC260 を基に作成されましたが、CO2 室に制御盤を設置するための条件として、同 UI で規定されている船橋への表示盤の追設に加え、試料検出管と CO2 消火ガス放出管の兼用が規定されました。（MSC.1/Circ.1487）

（次頁に続く）

(4) 貫通部に薄肉の鋼製スリーブ等を使用する特殊な A 級仕切りについて、耐摩耗性や気密性を評価するための追加要件を規定した火災試験方法に関する統一解釈が承認されました。本解釈は IACS UI FTP6 を基に作成されましたが、同 UI で規定されている貫通部の確認に 6mm ギャップゲージを使用するよう変更が行われています。(MSC.1/Circ.1488)

(5) 船首部等居住区から離れた位置にある救命いかだの積み付け場所と乗艇場所が異なる配置を認める統一解釈が承認されました。本解釈は IACS UI SC213 を基に作成されましたが、同 UI に規定されている乗艇用はしごの長さを算定するための解釈は削除されました。(MSC.1/Circ.1490)

(6) 貨物タンクに隣接する燃料油タンクの上方に固定式甲板泡装置用モニターの設置を認める統一解釈が、MSC.1/Circ.1120 の改正として承認されました。(MSC.1/Circ.1491)

(7) タンカーの消火主管ラインに設置される遮断弁の保護に関する統一解釈が、MSC.1/Circ.1456 の改正として承認されました。(MSC.1/Circ.1492)

(8) 水先人用移乗設備における水先人の乗降距離に関する統一解釈が承認されました。本解釈は IACS UI SC257 を基に作成されましたが、同 UI からの変更点として、水先人用はしご単体の設備とする際の乗降距離の上限 9m に、船体横傾斜 15 度を考慮することが規定されました。(MSC.1/Circ.1495)

6. GBS(目標指向型基準)

油タンカー及びバルクキャリアを対象とする「新造船の構造に関する GBS(ゴールベースの新造船構造基準)」は、2004 年 5 月開催の MSC78 において検討が開始されました。2010 年 5 月開催の MSC87 では、GBS 及び GBS を導入するための条約改正等が採択され、2016 年 7 月 1 日以降の建造契約船に適用されます。なお、具体的な技術要件については、IMO GBS に適合していると IMO が判断した船級協会等の規則に従うことが要求されています。

今回の会合では、IMO 事務局より、以下のとおり 12 の IACS メンバー等に対する GBS 適合検証作業(監査)の進捗状況の報告がありました。

- 調和 CSR 以外の IACS 統一規則等に基づく IACS 共通の技術資料等を監査するチームが 2014 年 3 月に作業を開始した。
- 弊会等より個別に提出された申請書類を監査するチームが、2014 年 7 月から作業を開始した。
- IACS は IMO 事務局と協議の上、調和 CSR に基づく IACS 共通の技術資料を 2014 年 6 月末に提出、当該資料担当の監査チームが同年 7 月に作業を開始した。

なお、各監査チーム(5 チーム)の検証結果を基に最終レポートが作成され、2016 年開催予定の MSC96 にて GBS に適合した規則が、承認される見込みとなっています。

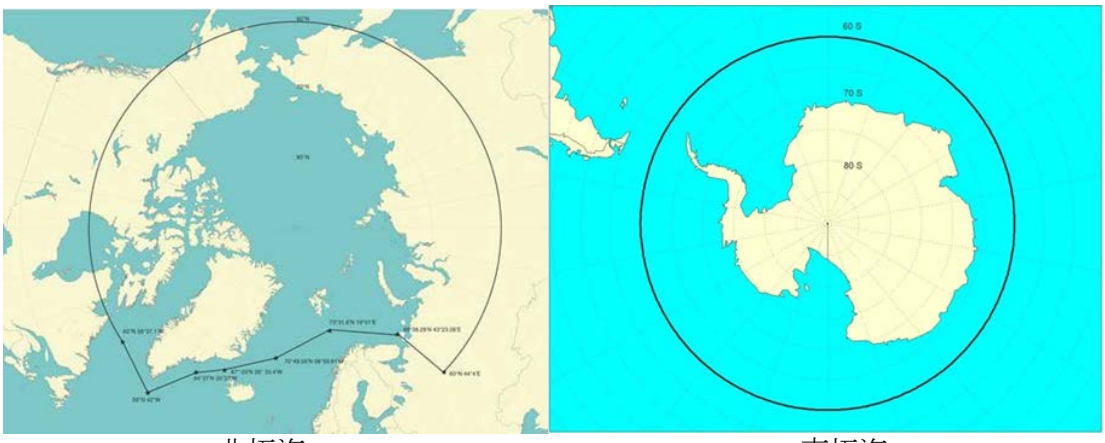
7. 液化水素運搬船の安全基準策定計画

現在、オーストラリアで水素を製造及び液化し日本に輸送するプロジェクトが計画されており、このプロジェクトの実現に向け、ばら積み液化水素運搬に関する安全基準策定が必要となっています。これまで、IMO における当該国際基準の早期策定のため日豪間で協議が行われていました。

今回の会合では、液化水素運搬船の安全基準の検討を要請する新規作業計画が、日豪共同で提案され、2015 年の貨物運送小委員会(CCC)から作業を開始し、2016 年までに作業を完了する作業計画が承認されました。

(次頁に続く)

なお、MSC94 の審議概要は、IMO ウェブサイトにも掲載されていますのでご参照下さい。
(http://www.imo.org/MediaCentre/MeetingSummaries/MSC/Pages/Default.aspx)
また、弊会では、今後、MSC94 で採択された強制要件等に基づいた鋼船規則等の改正を検討する予定です。鋼船規則等制定改廃計画については、弊会のウェブサイト(http://www.classnk.or.jp/)にて「マイページ」のご登録をいただくことでご覧いただけます。



北極海　　南極海

図 1 極海コードの対象海域

表 1-1 極海コード(安全要件)の構成と概要

章	項目	概要
Part I-A 強制要件		
1	総則	定義、検査及び証書等
2	極海域運航手順書	極海を航行する際の条件、手順等
3	船体構造	航行する氷海域に応じた船体強化等
4	復原性及び区画	氷の付着等を考慮した復原性等(損傷時・非損傷時)
5	水密及び風雨密	閉鎖装置等の凍結防止、低温時の操作性等
6	機関設備	機関設備・非常電源の凍結防止等
7	防火設備	消火管系統の凍結防止等
8	救命設備	救命設備の凍結防止等
9	航行安全	氷・気象情報の受信設備、探照灯の追加等
10	通信	極海域の遠隔性を考慮した通信設備の追加、支援船との連絡等
11	航海計画	航海計画策定にあたり考慮すべき事項等
12	船員・配乗・訓練	船員の配乗、資格、訓練の上乗せ要件
Part I-B 推奨及び Part I-A 実施のためのガイダンス		

(次頁に続く)

表 1-2 極海コード（環境保護要件）の構成と概要

章	項目	概要
Part II-A 強制要件		
1	油汚染防止	油排出全面禁止、 油を積載するタンクの保護等
2	有害液体物質汚染防止	有害液体物質排出禁止等
3	容器に収納した有害物質による汚染防止	（現時点で要件なし）
4	汚水による汚染防止	汚水排出の棚氷や定着氷からの距離要件等
5	廃物による汚染防止	食物くず排出の陸地からの距離要件等
Part II-B 推奨及び Part II-A 実施のためのガイダンス		

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 管理センター別館 国際室
住所: 東京都千代田区紀尾井町 3-3（郵便番号 102- 0094）
Tel.: 03-5226-2038
Fax: 03-5226-2734
E-mail: xad@classnk.or.jp

添付:

1. SOLAS 条約 II-2, VI 章, XI-1 章及び Appendix の改正 (決議 MSC.380(94))
2. 2011ESP コードの改正 (決議 MSC.381(94))
3. MODU コードの改正（第 15 章の新設） (決議 MSC.382(94))
4. 1989MODU コードの改正（第 15 章の新設） (決議 MSC.383(94))
5. 2009MODU コードの改正（第 15 章の新設） (決議 MSC.384(94))
6. 極海コード (決議 MSC.385(94))
7. SOLAS 条約の改正（XIV 章の新設） (決議 MSC.386(94))
8. SOLAS 条約 XI-1 章第 7 規則の早期履行に関するサーキュラー (MSC.1/Circ.1485)
9. 5.項において参照される IMO サーキュラー

ANNEX 1

RESOLUTION MSC.380(94)
(adopted on 21 November 2014)

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA (SOLAS), 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 ALSO article VIII(b)(vi)(2) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"), concerning the amendment procedure applicable to the annex to the Convention, other than to the provisions of chapter I,

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

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

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 January 2016 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments, the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified to the Secretary-General of the Organization their objections to the amendments;

3 INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2016 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of 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; and

5 ALSO 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 (SOLAS), 1974, AS AMENDED

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

Part C
Suppression of fire

Regulation 10 – Fire fighting

1 The title of existing paragraph 5.2 is replaced as follows:

"**5.2 Machinery spaces of category A containing internal combustion machinery**"

CHAPTER VI
CARRIAGE OF CARGOES AND OIL FUELS

Part A
General Provisions

Regulation 2 – Cargo information

2 The following new paragraphs 4 to 6 are added after existing paragraph 3:

"4 In the case of cargo carried in a container*, except for containers carried on a chassis or a trailer when such containers are driven on or off a ro-ro ship engaged in short international voyages as defined in regulation III/3, the gross mass according to paragraph 2.1 of this regulation shall be verified by the shipper, either by:

.1 weighing the packed container using calibrated and certified equipment; or

.2 weighing all packages and cargo items, including the mass of pallets, dunnage and other securing material to be packed in the container and adding the tare mass of the container to the sum of the single masses, using a certified method approved by the competent authority of the State in which packing of the container was completed.

5 The shipper of a container shall ensure the verified gross mass** is stated in the shipping document. The shipping document shall be:

.1 signed by a person duly authorized by the shipper; and

.2 submitted to the master or his representative and to the terminal representative sufficiently in advance, as required by the master or his representative, to be used in the preparation of the ship stowage plan***.

6 If the shipping document, with regard to a packed container, does not provide the verified gross mass and the master or his representative and the terminal representative have not obtained the verified gross mass of the packed container, it shall not be loaded on to the ship.

---

* The term "container" should be considered as having the same meaning as defined and applied in the International Convention for Safe Containers (CSC), 1972, as amended, taking into account the *Guidelines for the approval of offshore containers handled in open seas* (MSC/Circ.860) and the *Revised recommendations on harmonized interpretation and implementation of the International Convention for Safe Containers, 1972, as amended* (CSC.1/Circ.138/Rev.1).

** Refer to the *Guidelines regarding the verified gross mass of a container carrying cargo* (MSC.1/Circ.1475).

*** This document may be presented by means of EDP or EDI transmission techniques. The signature may be an electronic signature or may be replaced by the name, in capitals, of the person authorized to sign."

CHAPTER XI-1
SPECIAL MEASURES TO ENHANCE MARITIME SAFETY

3 The following new regulation 7 is added after existing regulation 6:

"**Regulation 7 – Atmosphere testing instrument for enclosed spaces**

Every ship to which chapter I applies shall carry an appropriate portable atmosphere testing instrument or instruments*. As a minimum, these shall be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces**. Instruments carried under other requirements may satisfy this regulation. Suitable means shall be provided for the calibration of all such instruments.

---

* Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7* (MSC.1/Circ.1477).

** Refer to the *Revised recommendations for entering enclosed spaces aboard ships* (resolution A.1050(27)).

APPENDIX

CERTIFICATES

Record of Equipment for Cargo Ship Safety (Form C)
Record of Equipment for Cargo Ship Safety (Form E)

4 Section 2 of the Record of Equipment for Cargo Ship Safety (Form C) and the Record of Equipment for Cargo Ship Safety (Form E), is replaced with the following:

"2 ***Details of life-saving appliances***

1	Total number of persons for which life-saving appliances are provided ……		
		Port Side	Starboard Side
2	Total number of davit launched lifeboats	……	……..
2.1	Total number of persons accommodated by them	……	……..
2.2	Number of self-righting partially enclosed lifeboats (regulation III/43[1])	……	……
2.3	Number of totally enclosed lifeboats (regulation III/31 and LSA Code, section 4.6)	……	……
2.4	Number of lifeboats with a self-contained air support system (regulation III/31 and LSA Code, section 4.8)	……	……
2.5	Number of fire-protected lifeboats (regulation III/31 and LSA Code, section 4.9)	……	……
2.6	Other lifeboats		
2.6.1	Number	……	……
2.6.2	Type	……	……
3	Total number of free-fall lifeboats	……	
3.1	Total number of persons accommodated by them	……	
3.2	Number of totally enclosed lifeboats (regulation III/31 and LSA Code, section 4.7)	……	
3.3	Number of lifeboats with a self-contained air support system (regulation III/31 and LSA Code, section 4.8)	……	
3.4	Number of fire-protected lifeboats (regulation III/31 and LSA Code, section 4.9)	……	
4	Number of motor lifeboats (included in the total lifeboats shown in 2 and 3 above)	……	
4.1	Number of lifeboats fitted with searchlights	……	
5	Number of rescue boats	……	
5.1	Number of boats which are included in the total lifeboats shown in 2 and 3 above	……	
6	Liferafts	……	
6.1	Those for which approved launching appliances are required	……	
6.1.1	Number of liferafts	……	

1 Refer to the 1983 amendments to SOLAS (MSC.6(48)), applicable to ships constructed on or after 1 July 1986, but before 1 July 1998.

2 ***Details of life-saving appliances*** (continued)

1	Total number of persons for which life-saving appliances are provided ……		
		Port Side	Starboard Side
6.1.2	Number of persons accommodated by them	……	
6.2	Those for which approved launching appliances are not required	……	
6.2.1	Number of liferafts	……	
6.2.2	Number of persons accommodated by them	……	
6.3	Number of liferafts required by regulation III/31.1.4	……	
7	Number of lifebuoys	……	
8	Number of lifejackets	……	
9	Immersion suits	……	
9.1	Total number	……	
9.2	Number of suits complying with the requirements for lifejackets	……	
10	Number of anti-exposure suits	……	
11	Radio installations used in life-saving appliances	……	
11.1	Number of search and rescue locating devices	……	
11.1.1	Radar search and rescue transponders (SART)	……	
11.1.2	AIS search and rescue transmitters (AIS-SART)	……	
11.2	Number of two-way VHF radiotelephone apparatus	……	

"

***

ANNEX 2

RESOLUTION MSC.381(94)
(adopted on 21 November 2014)

AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP 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 A.1049(27), by which the Assembly adopted the International Code on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers, 2011 ("the 2011 ESP Code"), will become effective upon entry into force of the associated amendments to chapter XI-1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

HAVING CONSIDERED, at its ninety-fourth session, amendments to the 2011 ESP 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 2011 ESP Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2016 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified to the Secretary-General of the Organization their objections to the amendments;

3 INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2016 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of 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 ALSO 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 ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

ANNEX A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING SINGLE-SIDE SKIN CONSTRUCTION

1 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

2 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

3 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

4 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

5 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

6 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:

"6.1.3 For bulk carriers subject to SOLAS regulation II-1/3-10, the owner should arrange the updating of the Ship Construction File (SCF) throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF should be included within the Safety Management System."

7 The existing text under paragraph 6.3 is numbered as paragraph 6.3.1 and the following new paragraph 6.3.2 is added at the end of paragraph 6.3:

"6.3.2 For bulk carriers subject to SOLAS regulation II-1/3-10, the Ship Construction File (SCF), limited to the items to be retained on board, should be available on board."

8 The existing text under paragraph 6.4 is numbered as paragraph 6.4.1 and the following new paragraphs 6.4.2 and 6.4.3 are added at the end of paragraph 6.4:

"6.4.2 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify that the update of the Ship Construction File (SCF) has been done whenever a modification of the documentation included in the SCF has taken place.

6.4.3 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials."

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING DOUBLE-SIDE SKIN CONSTRUCTION

9 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

10 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

11 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

12 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

13 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

14 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:

"6.1.3 For bulk carriers subject to SOLAS regulation II-1/3-10, the Owner should arrange the updating of the Ship Construction File (SCF) throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF should be included within the Safety Management System."

15 The existing text under paragraph 6.3 is numbered as paragraph 6.3.1 and the following new paragraph 6.3.2 is added at the end of paragraph 6.3:

"6.3.2 For bulk carriers subject to SOLAS regulation II-1/3-10, the Ship Construction File (SCF), limited to the items to be retained on board, should be available on board."

16 The existing text under paragraph 6.4 is numbered as paragraph 6.4.1 and the following new paragraphs 6.4.2 and 6.4.3 are added at the end of paragraph 6.4:

"6.4.2 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify that the update of the Ship Construction File (SCF) has been done whenever a modification of the documentation included in the SCF has taken place.

6.4.3 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials."

ANNEX B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF DOUBLE-HULL OIL TANKERS

17 The text in paragraph 2.6.1 is replaced by the following new text:

"2.6.1 The minimum requirements for ballast tank pressure testing at the renewal survey are given in 2.6.3 and in annex 3.

The minimum requirements for cargo tank testing at the renewal survey are given in 2.6.4 and annex 3.

Cargo tank testing carried out by the vessel's crew under the direction of the master may be accepted by the surveyor provided the following conditions are complied with:

.1 the tank testing procedure has been submitted by the owner and reviewed by the Administration or recognized organization prior to the testing being carried out;

.2 there is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;

.3 the tank testing has been satisfactorily carried out within special survey window not more than 3 months prior to the date of the survey on which the overall or close up survey is completed;

.4 the satisfactory results of the testing is recorded in the vessel's logbook; and

.5 the internal and external condition of the tanks and associated structure are found satisfactory by the surveyor at the time of the overall and close up survey."

18 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

19 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

20 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

21 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

22 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

23 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:

"6.1.3 For oil tankers subject to SOLAS regulation II-1/3-10, the Owner should arrange the updating of the Ship Construction File (SCF) throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF should be included within the Safety Management System."

24 The existing text under paragraph 6.3 is numbered as paragraph 6.3.1 and the following new paragraph 6.3.2 is added at the end of paragraph 6.3:

"6.3.2 For oil tankers subject to SOLAS regulation II-1/3-10, the Ship Construction File (SCF), limited to the items to be retained on board, should be available on board."

25 The existing text under paragraph 6.4 is numbered as paragraph 6.4.1 and the following new paragraphs 6.4.2 and 6.4.3 are added at the end of paragraph 6.4:

"6.4.2 For oil tankers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify that the update of the Ship Construction File (SCF) has been done whenever a modification of the documentation included in the SCF has taken place.

6.4.3 For oil tankers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials."

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS OTHER THAN DOUBLE-HULL OIL TANKERS

26 The text in paragraph 2.6.1 is replaced by the following new text:

"2.6.1 The minimum requirements for ballast tank pressure testing at the renewal survey are given in 2.6.3 and in annex 3.

The minimum requirements for cargo tank testing at the renewal survey are given in 2.6.4 and annex 3.

Cargo tank testing carried out by the vessel's crew under the direction of the master may be accepted by the surveyor provided the following conditions are complied with:

.1 the tank testing procedure has been submitted by the owner and reviewed by the Administration or recognized organization prior to the testing being carried out;

.2 there is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;

.3 the tank testing has been satisfactorily carried out within special survey window not more than 3 months prior to the date of the survey on which the overall or close up survey is completed;

.4 the satisfactory results of the testing is recorded in the vessel's logbook; and

.5 the internal and external condition of the tanks and associated structure are found satisfactory by the surveyor at the time of the overall and close up survey."

27 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

28 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

29 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

30 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

31 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

***

ANNEX 3

RESOLUTION MSC.382(94)
(adopted on 21 November 2014)

AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF MOBILE OFFSHORE DRILLING UNITS (MODU CODE)

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO that the Assembly, when adopting resolution A.414(XI) on the *Code for the Construction and Equipment of Mobile Offshore Drilling Units* (MODU Code), authorized the Committee to amend the Code as necessary after due consultation with relevant organizations as the Committee deems necessary,

RECOGNIZING the need for introduction into this Code of provisions for enclosed space entry and rescue drills,

HAVING CONSIDERED, at its ninety-fourth session, the recommendations made by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its eighteenth session,

1 ADOPTS amendments to the MODU Code, set out in the annex to the present resolution;

2 INVITES all Governments concerned to take appropriate steps to give effect to the annexed amendments to the Code by 1 July 2016.

ANNEX

AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF MOBILE OFFSHORE DRILLING UNITS (MODU CODE)

1 After chapter 14 "Operation requirements", insert new chapter 15 as follows:

"**CHAPTER 15**

SPECIAL MEASURES TO ENHANCE SAFETY

15.1 Atmosphere testing instrument for enclosed spaces

15.1.1 Each unit should carry an appropriate portable atmosphere testing instrument or instruments*. As a minimum, these should be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces**. Instruments carried under other requirements may satisfy this regulation. Suitable means should be provided for the calibration of all such instruments.

15.1.2 Such instruments should be in addition to those provided with the unit's firemen's outfits.

---

* Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7* (MSC.1/Circ.1477).

** Refer to the *Revised recommendations for entering enclosed spaces aboard ships* (resolution A.1050(27)).**"**

***

ANNEX 4

RESOLUTION MSC.383(94)
(adopted on 21 November 2014)

AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF MOBILE OFFSHORE DRILLING UNITS, 1989 (1989 MODU CODE)

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO that the Assembly, when adopting resolution A.649(16) on the *Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1989* (1989 MODU Code), authorized the Committee to amend the Code, when appropriate, taking into consideration the developing design and safety features after due consultation with appropriate organizations,

RECOGNIZING the need for introduction into this Code of provisions for enclosed space entry and rescue drills,

HAVING CONSIDERED, at its ninety-fourth session, the recommendations made by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its eighteenth session,

1 ADOPTS amendments to the 1989 MODU Code, set out in the annex to the present resolution;

2 INVITES all Governments concerned to take appropriate steps to give effect to the annexed amendments to the 1989 MODU Code by 1 July 2016.

ANNEX

AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF MOBILE OFFSHORE DRILLING UNITS, 1989 (1989 MODU CODE)

1 After chapter 14 "Operating requirements", insert new chapter 15 as follows:

"**CHAPTER 15**

SPECIAL MEASURES TO ENHANCE SAFETY

15.1 Atmosphere testing instrument for enclosed spaces

15.1.1 Each unit should carry an appropriate portable atmosphere testing instrument or instruments*. As a minimum, these should be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces**. Instruments carried under other requirements may satisfy this regulation. Suitable means should be provided for the calibration of all such instruments.

15.1.2 Such instruments should be in addition to those provided with the unit's firemen's outfits.

---

* Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7* (MSC.1/Circ.1477).

** Refer to the *Revised recommendations for entering enclosed spaces aboard ships* (resolution A.1050(27)).**"**

***

ANNEX 5

RESOLUTION MSC.384(94)
(adopted on 21 November 2014)

AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF MOBILE OFFSHORE DRILLING UNITS, 2009 (2009 MODU CODE)

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO that the Assembly, when adopting resolution A.1023(26) on the *Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code)*, authorized the Committee to amend the Code as appropriate, taking into consideration development in the design and technologies, in consultation with appropriate organizations,

RECOGNIZING the need for introduction into this Code of provisions for enclosed space entry and rescue drills,

HAVING CONSIDERED, at its ninety-fourth session, the recommendations made by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its eighteenth session,

1 ADOPTS amendments to the 2009 MODU Code, set out in the annex to the present resolution;

2 INVITES all Governments concerned to take appropriate steps to give effect to the annexed amendments to the 2009 MODU Code by 1 July 2016.

ANNEX

AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF MOBILE OFFSHORE DRILLING UNITS, 2009 (2009 MODU CODE)

1 After chapter 14 "Operating requirements", insert new chapter 15 as follows:

"**CHAPTER 15**

SPECIAL MEASURES TO ENHANCE SAFETY

15.1 Atmosphere testing instrument for enclosed spaces

15.1.1 Each unit should carry an appropriate portable atmosphere testing instrument or instruments*. As a minimum, these should be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces**. Instruments carried under other requirements may satisfy this regulation. Suitable means should be provided for the calibration of all such instruments.

15.1.2 Such instruments should be in addition to those provided with the unit's firefighter's outfits.

---

* Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7* (MSC.1/Circ.1477).

** Refer to the *Revised recommendations for entering enclosed spaces aboard ships* (resolution A.1050(27))."

***

ANNEX 6

RESOLUTION MSC.385(94)
(adopted on 21 November 2014)

INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS (POLAR CODE)

THE MARITIME SAFETY COMMITTEE,

RECALLING article 28(b) of the Convention on the International Maritime Organization concerning the function of the Committee,

RECOGNIZING the need to provide a mandatory framework for ships operating in polar waters due to the additional demands on ships, their systems and operation, which go beyond the existing requirements of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended ("the Convention"), and other relevant binding IMO instruments,

NOTING resolution MSC.386(94), by which it adopted, inter alia, the new chapter XIV of the Convention,

NOTING ALSO that the Marine Environment Protection Committee, at its sixty-seventh session, approved with a view to adoption, at its sixty-eighth session, the Introduction, as it relates to environmental protection, and parts II-A and II-B of the International Code for Ships Operating in Polar Waters (Polar Code), and also considered for adoption relevant amendments to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol,

HAVING CONSIDERED, at its ninety-fourth session, the draft International Code for Ships Operating in Polar Waters,

1 ADOPTS the safety-related provisions of the Introduction, and the whole of parts I-A and I-B of the Polar Code, the text of which is set out in the annex to the present resolution;

2 AGREES that amendments to the Introduction of the Polar Code that address both safety and environmental protection shall be adopted in consultation with the Marine Environment Protection Committee;

3 INVITES Contracting Governments to the Convention to note that the Polar Code will take effect on 1 January 2017 upon entry into force of the new chapter XIV of the Convention;

4 INVITES ALSO Contracting Governments to consider the voluntary application of the Polar Code, as far as practicable, also to ships not covered by the Polar Code and operating in polar waters.

5 REQUESTS the Secretary-General of the Organization, for the purposes of article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the Polar Code, contained in the annex, to all Contracting Governments to the Convention;

6 REQUESTS ALSO the Secretary-General of the Organization to transmit copies of the present resolution and the text of the Code contained in the annex to all Members of the Organization which are not Contracting Governments to the SOLAS Convention;

7 REQUESTS FURTHER the Secretary-General to prepare a consolidated text of the Polar Code upon adoption of the environmental protection related provisions by the Marine Environment Protection Committee.

INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS (POLAR CODE)

CONTENTS

PREAMBLE

1 The International Code for Ships Operating in Polar Waters has been developed to supplement existing IMO instruments in order to increase the safety of ships' operation and mitigate the impact on the people and environment in the remote, vulnerable and potentially harsh polar waters.

2 The Code acknowledges that polar water operation may impose additional demands on ships, their systems and operation beyond the existing requirements of the International Convention for the Safety of Life at Sea (SOLAS), 1974, the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol relating thereto (MARPOL), as amended, and other relevant binding IMO instruments.

3 The Code acknowledges that the polar waters impose additional navigational demands beyond those normally encountered. In many areas, the chart coverage may not currently be adequate for coastal navigation. It is recognized even existing charts may be subject to unsurveyed and uncharted shoals.

4 The Code also acknowledges that coastal communities in the Arctic could be, and that polar ecosystems are, vulnerable to human activities, such as ship operation.

5 The relationship between the additional safety measures and the protection of the environment is acknowledged as any safety measure taken to reduce the probability of an accident, will largely benefit the environment.

6 While Arctic and Antarctic waters have similarities, there are also significant differences. Hence, although the Code is intended to apply as a whole to both Arctic and Antarctic, the legal and geographical differences between the two areas have been taken into account.

7 The key principles for developing the Polar Code have been to use a risk-based approach in determining scope and to adopt a holistic approach in reducing identified risks.

INTRODUCTION

1 Goal

The goal of this Code is to provide for safe ship operation and the protection of the polar environment by addressing risks present in polar waters and not adequately mitigated by other instruments of the Organization.

2 Definitions

For the purpose of this Code, the terms used have the meanings defined in the following paragraphs. Terms used in part I-A, but not defined in this section shall have the same meaning as defined in SOLAS. Terms used in part II-A, but not defined in this section shall have the same meaning as defined in article 2 of MARPOL and the relevant MARPOL Annexes.

2.1 *Category A ship* means a ship designed for operation in polar waters in at least medium first-year ice, which may include old ice inclusions.

2.2 *Category B ship* means a ship not included in category A, designed for operation in polar waters in at least thin first-year ice, which may include old ice inclusions.

2.3 *Category C ship* means a ship designed to operate in open water or in ice conditions less severe than those included in categories A and B.

2.4 *First-year ice* means sea ice of not more than one winter growth developing from young ice with thickness from 0.3 m to 2.0 m[1].

2.5 *Ice free waters* means no ice present. If ice of any kind is present this term shall not be used[1].

2.6 *Ice of land origin* means ice formed on land or in an ice shelf, found floating in water[1].

2.7 *MARPOL* means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol relating thereto (MARPOL), as amended.

2.8 *Medium first-year ice* means first-year ice of 70 cm to 120 cm thickness.[1]

2.9 *Old ice* means sea ice which has survived at least one summer's melt; typical thickness up to 3 m or more. It is subdivided into residual first-year ice, second-year ice and multi-year ice[1].

2.10 *Open water* means a large area of freely navigable water in which sea ice is present in concentrations less than 1/10. No ice of land origin is present[1].

2.11 *Organization* means the International Maritime Organization.

2.12 *Sea ice* means any form of ice found at sea which has originated from the freezing of sea water[1].

[1] Refer to the WMO Sea Ice Nomenclature.

2.13 *SOLAS* means the International Convention for the Safety of Life at Sea, 1974, as amended.

2.14 *STCW Convention* means the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended.

2.15 *Thin first-year ice* means first-year ice 30 cm to 70 cm thick.

3 Sources of hazards

3.1 The Polar Code considers hazards which may lead to elevated levels of risk due to increased probability of occurrence, more severe consequences, or both:

.1 Ice, as it may affect hull structure, stability characteristics, machinery systems, navigation, the outdoor working environment, maintenance and emergency preparedness tasks and malfunction of safety equipment and systems;

.2 experiencing topside icing, with potential reduction of stability and equipment functionality;

.3 low temperature, as it affects the working environment and human performance, maintenance and emergency preparedness tasks, material properties and equipment efficiency, survival time and performance of safety equipment and systems;

.4 extended periods of darkness or daylight as it may affect navigation and human performance;

.5 high latitude, as it affects navigation systems, communication systems and the quality of ice imagery information;

.6 remoteness and possible lack of accurate and complete hydrographic data and information, reduced availability of navigational aids and seamarks with increased potential for groundings compounded by remoteness, limited readily deployable SAR facilities, delays in emergency response and limited communications capability, with the potential to affect incident response;

.7 potential lack of ship crew experience in polar operations, with potential for human error;

.8 potential lack of suitable emergency response equipment, with the potential for limiting the effectiveness of mitigation measures;

.9 rapidly changing and severe weather conditions, with the potential for escalation of incidents; and

.10 the environment with respect to sensitivity to harmful substances and other environmental impacts and its need for longer restoration.

3.2 The risk level within polar waters may differ depending on the geographical location, time of the year with respect to daylight, ice-coverage, etc. Thus, the mitigating measures required to address the above specific hazards may vary within polar waters and may be different in Arctic and Antarctic waters.

4 Structure of the Code

This Code consists of Introduction, parts I and II. The Introduction contains mandatory provisions applicable to both parts I and II. Part I is subdivided into part I-A, which contains mandatory provisions on safety measures, and part I-B containing recommendations on safety. Part II is subdivided into part II-A, which contains mandatory provisions on pollution prevention, and part II-B containing recommendations on pollution prevention.

5 Figures illustrating the Antarctic area and Arctic waters, as defined in SOLAS regulations XIV/1.2 and XIV/1.3, respectively, and MARPOL Annex I, regulations 11.46.2; Annex II, regulations 10.21.2; Annex IV, regulation 7.17.3; and Annex V, regulation 3.13.2

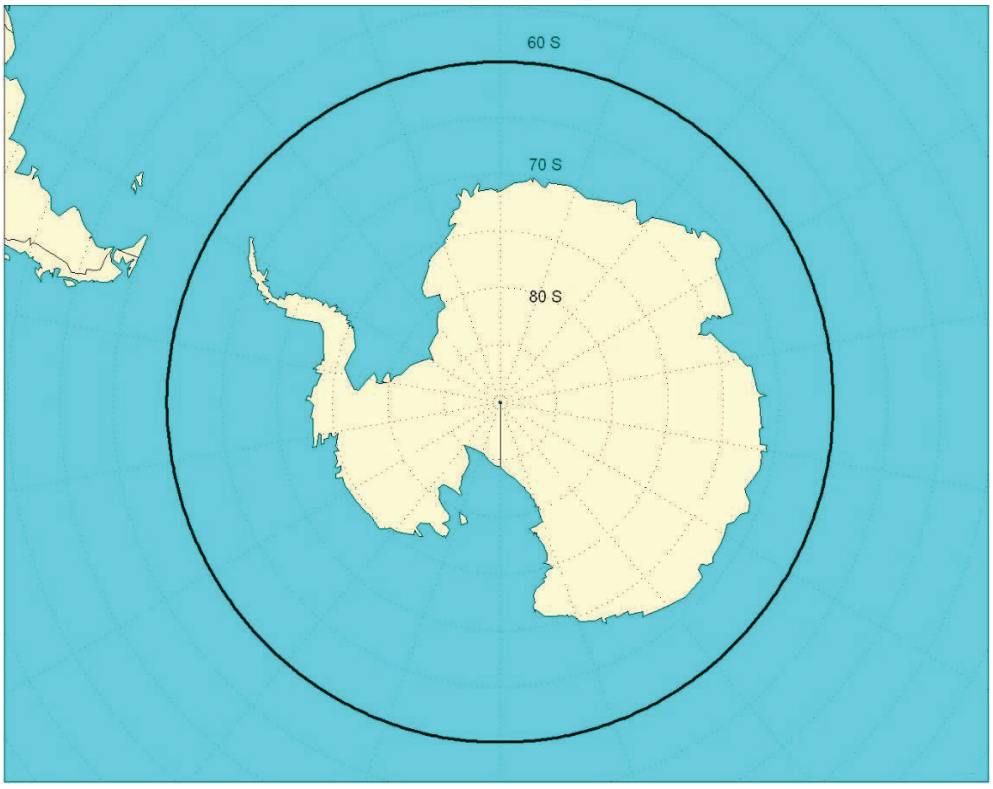


Figure 1 – Maximum extent of Antarctic area application[2]

[2] It should be noted that this figure is for illustrative purposes only.

Figure 2 – Maximum extent of Arctic waters application[3]

[3] It should be noted that this figure is for illustrative purposes only.

PART I-A

SAFETY MEASURES

CHAPTER 1 – GENERAL

1.1 Structure of this part

Each chapter in this part consists of the overall goal of the chapter, functional requirements to fulfil the goal, and regulations. A ship shall be considered to meet a functional requirement set out in this part when either:

.1 the ship's design and arrangements comply with all the regulations associated with that functional requirement; or

.2 part(s) or all of the ship's relevant design and arrangements have been reviewed and approved in accordance with regulation 4 of SOLAS chapter XIV, and any remaining parts of the ship comply with the relevant regulations.

1.2 Definitions

In addition to the definitions included in the relevant SOLAS chapters and the introduction of this Code, the following definitions are applicable to this part.

1.2.1 *Bergy waters* mean an area of freely navigable water in which ice of land origin is present in concentrations less than 1/10. There may be *sea ice* present, although the total concentration of all ice shall not exceed 1/10.

1.2.2 *Escort* means any ship with superior ice capability in transit with another ship.

1.2.3 *Escorted operation* means any operation in which a ship's movement is facilitated through the intervention of an escort.

1.2.4 *Habitable environment* means a ventilated environment that will protect against hypothermia.

1.2.5 *Icebreaker* means any ship whose operational profile may include escort or ice management functions, whose powering and dimensions allow it to undertake aggressive operations in ice-covered waters.

1.2.6 *Ice Class* means the notation assigned to the ship by the Administration or by an organization recognized by the Administration showing that the ship has been designed for navigation in sea-ice conditions.

1.2.7 *Maximum expected time of rescue* means the time adopted for the design of equipment and system that provide survival support. It shall never be less than 5 days.

1.2.8 *Machinery Installations* means equipment and machinery and its associated piping and cabling, which is necessary for the safe operation of the ship.

1.2.9 *Mean Daily Low Temperature* (MDLT) means the mean value of the daily low temperature for each day of the year over a minimum 10 year period. A data set acceptable to the Administration may be used if 10 years of data is not available[4].

1.2.10 *Polar Class (PC)* means the ice class assigned to the ship by the Administration or by an organization recognized by the Administration based upon IACS Unified Requirements.

1.2.11 *Polar Service Temperature (PST) means* a temperature specified for a ship which is intended to operate in low air temperature, which shall be set at least 10°C below the lowest MDLT for the intended area and season of operation in polar waters.

1.2.12 *Ship intended to operate in low air temperature* means a ship which is intended to undertake voyages to or through areas where the lowest Mean Daily Low Temperature (MDLT) is below -10°C.

1.2.13 *Tankers* mean oil tankers as defined in SOLAS regulation II-1/2.22, chemical tankers as defined in SOLAS regulation II-1/3.19 and gas carriers as defined in SOLAS regulation VII/11.2.

1.2.14 *Upper ice waterline* means the waterline defined by the maximum draughts forward and aft for operation in ice.

1.3 Certificate and survey

1.3.1 Every ship to which this Code applies shall have on board a valid Polar Ship Certificate.

1.3.2 Except as provided for in paragraph 1.3.3, the Polar Ship Certificate shall be issued after an initial or renewal survey to a ship which complies with the relevant requirements of this Code.

1.3.3 For category C cargo ships, if the result of the assessment in paragraph 1.5 is that no additional equipment or structural modification is required to comply with the Polar Code, the Polar Ship Certificate may be issued based upon documented verification that the ship complies with all relevant requirements of the Polar Code. In this case, for continued validity of the certificate, an on board survey should be undertaken at the next scheduled survey.

1.3.4 The certificate referred to in this regulation shall be issued either by the Administration or by any person or organization recognized by it in accordance with SOLAS regulation XI-1/1. In every case, that Administration assumes full responsibility for the certificate.

1.3.5 The Polar Ship Certificate shall be drawn up in the form corresponding to the model given in appendix 1 to this Code. If the language used is neither English, nor French nor Spanish, the text shall include a translation into one of these languages.

1.3.6 Polar Ship Certificate validity, survey dates and endorsements shall be harmonized with the relevant SOLAS certificates in accordance with the provisions of regulation I/14 of the SOLAS Convention. The certificate shall include a supplement recording equipment required by the Code.

[4] Refer also to additional guidance in part I-B.

1.3.7 Where applicable, the certificate shall reference a methodology to assess operational capabilities and limitations in ice to the satisfaction of the Administration, taking into account the guidelines developed by the Organization[5].

1.4 Performance standards

1.4.1 Unless expressly provided otherwise, ship systems and equipment addressed in this Code shall satisfy at least the same performance standards referred to in SOLAS.

1.4 2 For ships operating in low air temperature, a polar service temperature (PST) shall be specified and shall be at least 10°C below the lowest MDLT for the intended area and season of operation in polar waters. Systems and equipment required by this Code shall be fully functional at the polar service temperature.

1.4.3 For ships operating in low air temperature, survival systems and equipment shall be fully operational at the polar service temperature during the maximum expected rescue time.

1.5 Operational assessment

In order to establish procedures or operational limitations, an assessment of the ship and its equipment shall be carried out, taking into consideration the following:

.1 the anticipated range of operating and environmental conditions, such as:

.1 operation in low air temperature;

.2 operation in ice;

.3 operation in high latitude; and

.4 potential for abandonment onto ice or land;

.2 hazards, as listed in section 3 of the Introduction, as applicable; and

.3 additional hazards, if identified.

CHAPTER 2 – POLAR WATER OPERATIONAL MANUAL (PWOM)

2.1 Goal

The goal of this chapter is to provide the owner, operator, master and crew with sufficient information regarding the ship's operational capabilities and limitations in order to support their decision-making process.

2.2 Functional requirements

2.2.1 In order to achieve the goal set out in paragraph 2.1 above, the following functional requirements are embodied in the regulations of this chapter.

2.2.2 The Manual shall include information on the ship-specific capabilities and limitations in relation to the assessment required under paragraph 1.5.

2.2.3 The Manual shall include or refer to specific procedures to be followed in normal operations and in order to avoid encountering conditions that exceed the ship's capabilities.

[5] Refer to guidance to be developed by the Organization.

2.2.4 The Manual shall include or refer to specific procedures to be followed in the event of incidents in polar waters.

2.2.5 The Manual shall include or refer to specific procedures to be followed in the event that conditions are encountered which exceed the ship's specific capabilities and limitations in paragraph 2.2.2.

2.2.6 The Manual shall include or refer to procedures to be followed when using icebreaker assistance, as applicable.

2.3 Regulations

2.3.1 In order to comply with the functional requirements of paragraphs 2.2.1 to 2.2.6, the Manual shall be carried on board.

2.3.2 In order to comply with the functional requirements of paragraph 2.2.2, the Manual shall contain, where applicable, the methodology used to determine capabilities and limitations in ice.

2.3.3 In order to comply with the functional requirements of paragraph 2.2.3, the Manual shall include risk-based procedures for the following:

.1 voyage planning to avoid ice and/or temperatures that exceed the ship's design capabilities or limitations;

.2 arrangements for receiving forecasts of the environmental conditions;

.3 means of addressing any limitations of the hydrographic, meteorological and navigational information available;

.4 operation of equipment required under other chapters of this Code; and

.5 implementation of special measures to maintain equipment and system functionality under low temperatures, topside icing and the presence of sea ice, as applicable.

2.3.4 In order to comply with the functional requirements of paragraph 2.2.4, the Manual shall include risk-based procedures to be followed for:

.1 contacting emergency response providers for salvage, search and rescue (SAR), spill response, etc., as applicable; and

.2 in the case of ships ice strengthened in accordance with chapter 3, procedures for maintaining life support and ship integrity in the event of prolonged entrapment by ice.

2.3.5 In order to comply with the functional requirements of paragraph 2.2.5, the Manual shall include risk-based procedures to be followed for measures to be taken in the event of encountering ice and/or temperatures which exceed the ship's design capabilities or limitations.

2.3.6 In order to comply with the functional requirements of paragraph 2.2.6, the Manual shall include risk-based procedures for monitoring and maintaining safety during operations in ice, as applicable, including any requirements for escort operations or icebreaker assistance. Different operational limitations may apply depending on whether the ship is operating independently or with icebreaker escort. Where appropriate, the PWOM should specify both options.

CHAPTER 3 – SHIP STRUCTURE

3.1 Goal

The goal of this chapter is to provide that the material and scantlings of the structure retain their structural integrity based on global and local response due to environmental loads and conditions.

3.2 Functional requirements

In order to achieve the goal set out in paragraph 3.1 above, the following functional requirements are embodied in the regulations of this chapter:

.1 for ships intended to operate in low air temperature, materials used shall be suitable for operation at the ships polar service temperature; and

.2 in ice strengthened ships, the structure of the ship shall be designed to resist both global and local structural loads anticipated under the foreseen ice conditions.

3.3 Regulations

3.3.1 In order to comply with the functional requirements of paragraph 3.2.1 above, materials of exposed structures in ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization[6] or other standards offering an equivalent level of safety based on the polar service temperature.

3.3.2 In order to comply with the functional requirements of paragraph 3.2.2 above, the following apply:

.1 scantlings of category A ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization[7] or other standards offering an equivalent level of safety;

.2 scantlings of category B ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization[8] or other standards offering an equivalent level of safety;

.3 scantlings of ice strengthened category C ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account acceptable standards adequate for the ice types and concentrations encountered in the area of operation; and

.4 a category C ship need not be ice strengthened if, in the opinion of the Administration, the ship's structure is adequate for its intended operation.

---

6 Refer to IACS UR S6 Use of Steel Grades for Various Hull Members – Ships of 90 m in Length and Above (latest version) or IACS URI Requirements concerning Polar Class (latest version), as applicable.

7 Refer to Polar Class 1-5 of IACS URI Requirements concerning Polar Class (latest version).

8 Refer to Polar Class 6-7 of IACS URI Requirements concerning Polar Class (latest version).

CHAPTER 4 –SUBDIVISION AND STABILITY

4.1 Goal

The goal of this chapter is to ensure adequate subdivision and stability in both intact and damaged conditions.

4.2 Functional requirements

In order to achieve the goal set out in paragraph 4.1 above, the following functional requirements are embodied in the regulations of this chapter:

.1 ships shall have sufficient stability in intact conditions when subject to ice accretion; and

.2 ships of category A and B, constructed on or after 1 January 2017, shall have sufficient residual stability to sustain ice-related damages.

4.3 Regulations

4.3.1 Stability in intact conditions

4.3.1.1 In order to comply with the functional requirement of paragraph 4.2.1, for ships operating in areas and during periods where ice accretion is likely to occur, the following icing allowance shall be made in the stability calculations:

.1 30 kg/m^2 on exposed weather decks and gangways;

.2 7.5 kg/m^2 for the projected lateral area of each side of the ship above the water plane; and

.3 the projected lateral area of discontinuous surfaces of rail, sundry booms, spars (except masts) and rigging of ships having no sails and the projected lateral area of other small objects shall be computed by increasing the total projected area of continuous surfaces by 5% and the static moments of this area by 10%.

4.3.1.2 Ships operating in areas and during periods where ice accretion is likely to occur shall be:

.1 designed to minimize the accretion of ice; and

.2 equipped with such means for removing ice as the Administration may require; for example, electrical and pneumatic devices, and/or special tools such as axes or wooden clubs for removing ice from bulwarks, rails and erections.

4.3.1.3 Information on the icing allowance included in the stability calculations shall be given in the PWOM.

4.3.1.4 Ice accretion shall be monitored and appropriate measures taken to ensure that the ice accretion does not exceed the values given in the PWOM.

4.3.2 Stability in damaged conditions

4.3.2.1 In order to comply with the functional requirements of paragraph 4.2.2, ships of categories A and B, constructed on or after 1 January 2017, shall be able to withstand flooding resulting from hull penetration due to ice impact. The residual stability following ice damage shall be such that the factor s_i, as defined in SOLAS regulations II-1/7-2.2 and II-1/7-2.3, is equal to one for all loading conditions used to calculate the attained subdivision index in SOLAS regulation II-1/7. However, for cargo ships that comply with subdivision and damage stability regulations in another instrument developed by the Organization, as provided by SOLAS regulation II-1/4.1, the residual stability criteria of that instrument shall be met for each loading condition.

4.3.2.2 The ice damage extents to be assumed when demonstrating compliance with paragraph 4.3.2.1 shall be such that:

.1 the longitudinal extent is 4.5% of the upper ice waterline length if centred forward of the maximum breadth on the upper ice waterline, and 1.5% of upper ice waterline length otherwise, and shall be assumed at any longitudinal position along the ship's length;

.2 the transverse penetration extent is 760 mm, measured normal to the shell over the full extent of the damage; and

.3 the vertical extent is the lesser of 20% of the upper ice waterline draught or the longitudinal extent, and shall be assumed at any vertical position between the keel and 120% of the upper ice waterline draught.

CHAPTER 5 – WATERTIGHT AND WEATHERTIGHT INTEGRITY

5.1 Goal

The goal of this chapter is to provide measures to maintain watertight and weathertight integrity.

5.2 Functional requirements

In order to achieve the goal set out in paragraph 5.1 above, all closing appliances and doors relevant to watertight and weathertight integrity of the ship shall be operable.

5.3 Regulations

In order to comply with the functional requirements of paragraph 5.2 above, the following apply:

.1 for ships operating in areas and during periods where ice accretion is likely to occur, means shall be provided to remove or prevent ice and snow accretion around hatches and doors; and

.2 in addition, for ships intended to operate in low air temperature the following apply:

.1 if the hatches or doors are hydraulically operated, means shall be provided to prevent freezing or excessive viscosity of liquids; and

.2 watertight and weathertight doors, hatches and closing devices which are not within an habitable environment and require access while at sea shall be designed to be operated by personnel wearing heavy winter clothing including thick mittens.

CHAPTER 6 – MACHINERY INSTALLATIONS

6.1 Goal

The goal of this chapter is to ensure that, machinery installations are capable of delivering the required functionality necessary for safe operation of ships.

6.2 Functional requirements

6.2.1 In order to achieve the goal set out in paragraph 6.1 above, the following functional requirements are embodied in the regulations of this chapter.

6.2.1.1 Machinery installations shall provide functionality under the anticipated environmental conditions, taking into account:

.1 ice accretion and/or snow accumulation;

.2 ice ingestion from seawater;

.3 freezing and increased viscosity of liquids;

.4 seawater intake temperature; and

.5 snow ingestion.

6.2.1.2 In addition, for ships intended to operate in low air temperatures:

.1 machinery installations shall provide functionality under the anticipated environmental conditions, also taking into account:

.1 cold and dense inlet air; and

.2 loss of performance of battery or other stored energy device; and

.2 materials used shall be suitable for operation at the ships polar service temperature.

6.2.1.3 In addition, for ships ice strengthened in accordance with chapter 3, machinery installations shall provide functionality under the anticipated environmental conditions, taking into account loads imposed directly by ice interaction.

6.3 Regulations

6.3.1 In order to comply with the functional requirement of paragraph 6.2.1.1 above, taking into account the anticipated environmental conditions, the following apply:

.1 machinery installations and associated equipment shall be protected against the effect of ice accretion and/or snow accumulation, ice ingestion from sea water, freezing and increased viscosity of liquids, seawater intake temperature and snow ingestion;

.2 working liquids shall be maintained in a viscosity range that ensures operation of the machinery; and

.3 seawater supplies for machinery systems shall be designed to prevent ingestion of ice,[9] or otherwise arranged to ensure functionality.

6.3.2 In addition, for ships intended to operate in low air temperatures, the following apply:

.1 in order to comply with the functional requirement of paragraph 6.2.1.2 above, exposed machinery and electrical installation and appliances shall function at the polar service temperature;

.2 in order to comply with the functional requirement of paragraph 6.2.1.2.1 above, means shall be provided to ensure that combustion air for internal combustion engines driving essential machinery is maintained at a temperature in compliance with the criteria provided by the engine manufacturer; and

.3 in order to comply with the functional requirements of paragraph 6.2.1.2.2 above, materials of exposed machinery and foundations shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization[10, 11] or other standards offering an equivalent level of safety based on the polar service temperature.

6.3.3 In addition, for ships ice strengthened in accordance with chapter 3, in order to comply with the functional requirements of paragraph 6.2.1.3 above, the following apply:

.1 scantlings of propeller blades, propulsion line, steering equipment and other appendages of category A ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization[10]or other standards offering an equivalent level of safety;

.2 scantlings of propeller blades, propulsion line, steering equipment and other appendages of category B ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization[11] or other standards offering an equivalent level of safety; and

.3 scantlings of propeller blades, propulsion line, steering equipment and other appendages of ice-strengthened category C ships shall be approved by the Administration, or a recognized organization accepted by it, taking into account acceptable standards adequate with the ice types and concentration encountered in the area of operation.

---

9 Refer to MSC/Circ.504, *Guidance on design and construction of sea inlets under slush ice conditions.*

10 Refer to Polar Class 1–5 of IACS URI Requirements concerning Polar Class (2011).

11 Refer to Polar Class 6–7 of IACS URI Requirements concerning Polar Class (2011).

CHAPTER 7 – FIRE SAFETY/PROTECTION

7.1 Goal

The goal of this chapter is to ensure that fire safety systems and appliances are effective and operable, and that means of escape remain available so that persons on board can safely and swiftly escape to the lifeboat and liferaft embarkation deck under the expected environmental conditions.

7.2 Functional requirements

7.2.1 In order to achieve the goal set out in paragraph 7.1 above, the following functional requirements are embodied in the regulations of this chapter:

.1 all components of fire safety systems and appliances if installed in exposed positions shall be protected from ice accretion and snow accumulation;

.2 local equipment and machinery controls shall be arranged so as to avoid freezing, snow accumulation and ice accretion and their location to remain accessible at all time;

.3 the design of fire safety systems and appliances shall take into consideration the need for persons to wear bulky and cumbersome cold weather gear, where appropriate;

.4 means shall be provided to remove or prevent ice and snow accretion from accesses; and

.5 extinguishing media shall be suitable for intended operation.

7.2.2 In addition, for ships intended to operate in low air temperature, the following apply:

.1 all components of fire safety systems and appliances shall be designed to ensure availability and effectiveness under the polar service temperature; and

.2 materials used in exposed fire safety systems shall be suitable for operation at the polar service temperature.

7.3 Regulations

7.3.1 In order to comply with the requirement of paragraph 7.2.1.1, the following apply:

.1 isolating and pressure/vacuum valves in exposed locations are to be protected from ice accretion and remain accessible at all time; and

.2 all two-way portable radio communication equipment shall be operable at the polar service temperature.

7.3.2 In order to comply with the requirement of paragraph 7.2.1.2, the following apply:

.1 fire pumps including emergency fire pumps, water mist and water spray pumps shall be located in compartments maintained above freezing;

.2 the fire main is to be arranged so that exposed sections can be isolated and means of draining of exposed sections shall be provided. Fire hoses and nozzles need not be connected to the fire main at all times, and may be stored in protected locations near the hydrants;

.3 firefighter's outfits shall be stored in warm locations on the ship; and

.4 where fixed water-based firefighting systems are located in a space separate from the main fire pumps and use their own independent sea suction, this sea suction is to be also capable of being cleared of ice accumulation.

7.3.3 In addition, for ships intended to operate in low air temperature, the following apply:

.1 In order to comply with the requirement of paragraph 7.2.2.1, portable and semi-portable extinguishers shall be located in positions protected from freezing temperatures, as far as practical. Locations subject to freezing are to be provided with extinguishers capable of operation under the polar service temperature.

.2 In order to comply with the functional requirements of paragraph 7.2.2.2 above, materials of exposed fire safety systems shall be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization[12] or other standards offering an equivalent level of safety based on the polar service temperature.

CHAPTER 8 – LIFE-SAVING APPLIANCES AND ARRANGEMENTS

8.1 Goal

The goal of this chapter is to provide for safe escape, evacuation and survival.

8.2 Functional requirements

In order to achieve the goal set out in paragraph 8.1 above, the following functional requirements are embodied in the regulations of this chapter:

8.2.1 *Escape*

8.2.1.1 Exposed escape routes shall remain accessible and safe, taking into consideration the potential icing of structures and snow accumulation.

8.2.1.2 Survival craft and muster and embarkation arrangements shall provide safe abandonment of ship, taking into consideration the possible adverse environmental conditions during an emergency.

8.2.2 *Evacuation*

All life-saving appliances and associated equipment shall provide safe evacuation and be functional under the possible adverse environmental conditions during the maximum expected time of rescue.

[12] Refer to IACS UR S6 Use of Steel Grades for Various Hull Members – Ships of 90 m in Length and Above (2013) or IACS URI Requirements concerning Polar Class (2011).

8.2.3 *Survival*

8.2.3.1 Adequate thermal protection shall be provided for all persons on board, taking into account the intended voyage, the anticipated weather conditions (cold and wind), and the potential for immersion in polar water, where applicable.

8.2.3.2 Life-saving appliances and associated equipment shall take account of the potential of operation in long periods of darkness, taking into consideration the intended voyage.

8.2.3.3 Taking into account the presence of any hazards, as identified in the assessment in chapter 1, resources shall be provided to support survival following abandoning ship, whether to the water, to ice or to land, for the maximum expected time of rescue. These resources shall provide:

.1 a habitable environment;

.2 protection of persons from the effects of cold, wind and sun;

.3 space to accommodate persons equipped with thermal protection adequate for the environment;

.4 means to provide sustenance;

.5 safe access and exit points; and

.6 means to communicate with rescue assets.

8.3 Regulations

8.3.1 *Escape*

In order to comply with the functional requirements of paragraphs 8.2.1.1 and 8.2.1.2 above, the following apply:

.1 for ships exposed to ice accretion, means shall be provided to remove or prevent ice and snow accretion from escape routes, muster stations, embarkation areas, survival craft, its launching appliances and access to survival craft;

.2 in addition, for ships constructed on or after 1 January 2017, exposed escape routes shall be arranged so as not to hinder passage by persons wearing suitable polar clothing; and

.3 in addition, for ships intended to operate in low air temperatures, adequacy of embarkation arrangements shall be assessed, having full regard to any effect of persons wearing additional polar clothing.

8.3.2 *Evacuation*

In order to comply with the functional requirement of paragraph 8.2.2 above, the following apply:

.1 ships shall have means to ensure safe evacuation of persons, including safe deployment of survival equipment, when operating in ice-covered waters, or directly onto the ice, as applicable; and

.2 where the regulations of this chapter are achieved by means of adding devices requiring a source of power, this source shall be able to operate independently of the ship's main source of power.

8.3.3 *Survival*

8.3.3.1 In order to comply with the functional requirement of paragraph 8.2.3.1 above, the following apply:

.1 for passenger ships, a proper sized immersion suit or a thermal protective aid shall be provided for each person on board; and

.2 where immersion suits are required, they shall be of the insulated type.

8.3.3.2 In addition, for ships intended to operate in extended periods of darkness, in order to comply with the functional requirements of paragraph 8.2.3.2 above, searchlights suitable for continuous use to facilitate identification of ice shall be provided for each lifeboat.

8.3.3.3 In order to comply with the functional requirement of paragraph 8.2.3.3 above, the following apply:

.1 no lifeboat shall be of any type other than partially or totally enclosed type;

.2 taking into account the assessment referred to in chapter 1, appropriate survival resources, which address both individual (personal survival equipment) and shared (group survival equipment) needs, shall be provided, as follows:

.1 life-saving appliances and group survival equipment that provide effective protection against direct wind chill for all persons on board;

.2 personal survival equipment in combination with life-saving appliances or group survival equipment that provide sufficient thermal insulation to maintain the core temperature of persons; and

.3 personal survival equipment that provide sufficient protection to prevent frostbite of all extremities; and

.3 in addition, whenever the assessment required under paragraph 1.5 identifies a potential of abandonment onto ice or land, the following apply:

.1 group survival equipment shall be carried, unless an equivalent level of functionality for survival is provided by the ship's normal life-saving appliances;

.2 when required, personal and group survival equipment sufficient for 110% of the persons on board shall be stowed in easily accessible locations, as close as practical to the muster or embarkation stations;

.3 containers for group survival equipment shall be designed to be easily movable over the ice and be floatable;

.4 whenever the assessment identifies the need to carry personal and group survival equipment, means shall be identified of ensuring that this equipment is accessible following abandonment;

.5 if carried in addition to persons, in the survival craft, the survival craft and launching appliances shall have sufficient capacity to accommodate the additional equipment;

.6 passengers shall be instructed in the use of the personal survival equipment and the action to take in an emergency; and

.7 the crew shall be trained in the use of the personal survival equipment and group survival equipment.

8.3.3.4 In order to comply with the functional requirement of paragraph 8.2.3.3.4 above, adequate emergency rations shall be provided, for the maximum expected time of rescue.

CHAPTER 9 – SAFETY OF NAVIGATION

9.1 Goal

The goal of this chapter is to provide for safe navigation.

9.2 Functional requirements

In order to achieve the goal set out in paragraph 9.1 above, the following functional requirements are embodied in the regulations of this chapter.

9.2.1 *Nautical information*

Ships shall have the ability to receive up-to-date information including ice information for safe navigation.

9.2.2 *Navigational equipment functionality*

9.2.2.1 The navigational equipment and systems shall be designed, constructed, and installed to retain their functionality under the expected environmental conditions in the area of operation.

9.2.2.2 Systems for providing reference headings and position fixing shall be suitable for the intended areas.

9.2.3 *Additional navigational equipment*

9.2.3.1 Ships shall have the ability to visually detect ice when operating in darkness.

9.2.3.2 Ships involved in operations with an icebreaker escort shall have suitable means to indicate when the ship is stopped.

9.3 Regulations

9.3.1 *Nautical information*

In order to comply with the functional requirement of paragraph 9.2.1 above, ships shall have means of receiving and displaying current information on ice conditions in the area of operation.

9.3.2 ***Navigational equipment functionality***

9.3.2.1 In order to comply with the functional requirement of paragraph 9.2.2.1 above, the following apply:

.1 ships constructed on or after 1 January 2017, ice strengthened in accordance with chapter 3, shall have either two independent echo-sounding devices or one echo-sounding device with two separate independent transducers;

.2 ships shall comply with SOLAS regulation V/22.1.9.4, irrespective of the date of construction and the size and, depending on the bridge configuration, a clear view astern;

.3 for ships operating in areas, and during periods, where ice accretion is likely to occur, means to prevent the accumulation of ice on antennas required for navigation and communication shall be provided; and

.4 in addition, for ships ice strengthened in accordance with chapter 3, the following apply:

.1 where equipment required by SOLAS chapter V or this chapter have sensors that project below the hull, such sensors shall be protected against ice; and

.2 in category A and B ships constructed on or after 1 January 2017, the bridge wings shall be enclosed or designed to protect navigational equipment and operating personnel.

9.3.2.2 In order to comply with the functional requirement of paragraph 9.2.2.2 above, the following apply:

.1 ships shall have two non-magnetic means to determine and display their heading. Both means shall be independent and shall be connected to the ship's main and emergency source of power; and

.2 ships proceeding to latitudes over 80 degrees shall be fitted with at least one GNSS compass or equivalent, which shall be connected to the ship's main and emergency source of power.

9.3.3 ***Additional navigational equipment***

9.3.3.1 In order to comply with the functional requirement of paragraph 9.2.3.1 ships, with the exception of those solely operating in areas with 24 hours daylight, shall be equipped with two remotely rotatable, narrow-beam search lights controllable from the bridge to provide lighting over an arc of 360 degrees, or other means to visually detect ice.

9.3.3.2 In order to comply with the functional requirement of paragraph 9.2.3.2, ships involved in operations with an icebreaker escort shall be equipped with a manually initiated flashing red light visible from astern to indicate when the ship is stopped. This light shall have a range of visibility of at least two nautical miles, and the horizontal and vertical arcs of visibility shall conform to the stern light specifications required by the International Regulations for Preventing Collisions at Sea.

CHAPTER 10 – COMMUNICATION

10.1 Goal

The goal of this chapter is to provide for effective communication for ships and survival craft during normal operation and in emergency situations.

10.2 Functional requirements

In order to achieve the goal set out in paragraph 10.1 above, the following functional requirements are embodied in the regulations of this chapter.

10.2.1 *Ship communication*

10.2.1.1 Two-way voice and/or data communications ship-to-ship and ship-to-shore shall be available at all points along the intended operating routes.

10.2.1.2 Suitable means of communications shall be provided where escort and convoy operations are expected.

10.2.1.3 Means for two-way on-scene and SAR coordination communications for search and rescue purposes including aeronautical frequencies shall be provided.

10.2.1.4 Appropriate communication equipment to enable telemedical assistance in polar areas shall be provided.

10.2.2 *Survival craft and rescue boat communications capabilities*

10.2.2.1 For ships intended to operate in low air temperature, all rescue boats and lifeboats, whenever released for evacuation, shall maintain capability for distress alerting, locating and on-scene communications.

10.2.2.2 For ships intended to operate in low air temperature, all other survival craft, whenever released, shall maintain capability for transmitting signals for location and for communication.

10.2.2.3 Mandatory communication equipment for use in survival craft, including liferafts, and rescue boats shall be capable of operation during the maximum expected time of rescue.

10.3 Regulations

10.3.1 *Ship communication*

10.3.1.1 In order to comply with the functional requirements of paragraph 10.2.1.1 above, communication equipment on board shall have the capabilities for ship-to-ship and ship-to-shore communication, taking into account the limitations of communications systems in high latitudes and the anticipated low temperature.

10.3.1.2 In order to comply with the functional requirements of paragraph 10.2.1.2 above, ships intended to provide icebreaking escort shall be equipped with a sound signaling system mounted to face astern to indicate escort and emergency manoeuvres to following ships as described in the International Code of Signals.

10.3.1.3 In order to comply with the functional requirements of paragraph 10.2.1.3 above, two-way on-scene and SAR coordination communication capability in ships shall include:

.1 voice and/or data communications with relevant rescue coordination centres; and

.2 equipment for voice communications with aircraft on 121.5 and 123.1 MHz.

10.3.1.4 In order to comply with the functional requirements of paragraph 10.2.1.4 above, the communication equipment shall provide for two-way voice and data communication with a Telemedical Assistance Service (TMAS).

10.3.2 *Survival craft and rescue boat communications capabilities*

10.3.2.1 For ships intended to operate in low air temperature, in order to comply with the functional requirements of paragraph 10.2.2.1 above, all rescue boats and lifeboats, whenever released for evacuation, shall:

.1 for distress alerting, carry one device for transmitting ship to shore alerts;

.2 in order to be located, carry one device for transmitting signals for location; and

.3 for on-scene communications, carry one device for transmitting and receiving on-scene communications.

10.3.2.2 For ships intended to operate in low air temperature, in order to comply with the functional requirements of paragraph 10.2.2.2 above, all other survival craft shall:

.1 in order to be located, carry one device for transmitting signals for location; and

.2 for on-scene communications, carry one device for transmitting and receiving on-scene communications.

10.3.2.3 In order to comply with the functional requirements of paragraph 10.2.2.3 above, recognizing the limitations arising from battery life, procedures shall be developed and implemented such that mandatory communication equipment for use in survival craft, including liferafts, and rescue boats are available for operation during the maximum expected time of rescue.

CHAPTER 11 – VOYAGE PLANNING

11.1 Goal

The goal of this chapter is to ensure that the Company, master and crew are provided with sufficient information to enable operations to be conducted with due consideration to safety of ship and persons on board and, as appropriate, environmental protection.

11.2 Functional requirement

In order to achieve the goal set out in paragraph 11.1 above, the voyage plan shall take into account the potential hazards of the intended voyage.

11.3 Requirements

In order to comply with the functional requirement of paragraph 11.2 above, the master shall consider a route through polar waters, taking into account the following:

.1 the procedures required by the PWOM;

.2 any limitations of the hydrographic information and aids to navigation available;

.3 current information on the extent and type of ice and icebergs in the vicinity of the intended route;

.4 statistical information on ice and temperatures from former years;

.5 places of refuge;

.6 current information and measures to be taken when marine mammals are encountered relating to known areas with densities of marine mammals, including seasonal migration areas;[13]

.7 current information on relevant ships' routing systems, speed recommendations and vessel traffic services relating to known areas with densities of marine mammals, including seasonal migration areas;[14]

.8 national and international designated protected areas along the route; and

.9 operation in areas remote from search and rescue (SAR) capabilities.[15]

CHAPTER 12 – MANNING AND TRAINING

12.1 Goal

The goal of this chapter is to ensure that ships operating in polar waters are appropriately manned by adequately qualified, trained and experienced personnel.

12.2 Functional requirements

In order to achieve the goal set out in paragraph 12.1 above, companies shall ensure that masters, chief mates and officers in charge of a navigational watch on board ships operating in polar waters shall have completed training to attain the abilities that are appropriate to the capacity to be filled and duties and responsibilities to be taken up, taking into account the provisions of the STCW Convention and the STCW Code, as amended.

---

13 Refer to MEPC/Circ.674 on *Guidance document for minimizing the risk of ship strikes with cetaceans*.

14 Refer to MEPC/Circ.674 on *Guidance document for minimizing the risk of ship strikes with cetaceans*.

15 Refer to MSC.1/Circ.1184 on *Enhanced contingency planning guidance for passenger ships operating in areas remote from SAR facilities* and A.999(25) *on Guidelines on voyage planning for passenger ships operating in remote areas.*

12.3 Regulations

12.3.1 In order to meet the functional requirement of paragraph 12.2 above while operating in polar waters, masters, chief mates and officers in charge of a navigational watch shall be qualified in accordance with chapter V of the STCW Convention and the STCW Code, as amended, as follows:

Ice conditions	Tankers	Passenger ships	Other
Ice Free	Not applicable	Not applicable	Not applicable
Open waters	Basic training for master, chief mate and officers in charge of a navigational watch	Basic training for master, chief mate and officers in charge of a navigational watch	Not applicable
Other waters	Advanced training for master and chief mate. Basic training for officers in charge of a navigational watch	Advanced training for master and chief mate. Basic training for officers in charge of a navigational watch	Advanced training for master and chief mate. Basic training for officers in charge of a navigational watch.

12.3.2 The Administration may allow the use of a person(s) other than the master, chief mate or officers of the navigational watch to satisfy the requirements for training, as required by paragraph 12.3.1, provided that:

.1 this person(s) shall be qualified and certified in accordance with regulation II/2 of the STCW Convention and section A-II/2 of the STCW Code, and meets the advance training requirements noted in the above table;

.2 while operating in polar waters the ship has sufficient number of persons meeting the appropriate training requirements for polar waters to cover all watches;

.3 this person(s) is subject to the Administration's minimum hours of rest requirements at all times;

.4 when operating in waters other than open waters or bergy waters, the master, chief mate and officers in charge of a navigational watch on passenger ships and tankers shall meet the applicable basic training requirements noted in the above table; and

.5 when operating in waters with ice concentration of more than 2/10, the master, chief mate and officers in charge of a navigational watch on cargo ships other than tankers shall meet the applicable basic training requirements noted in the above table.

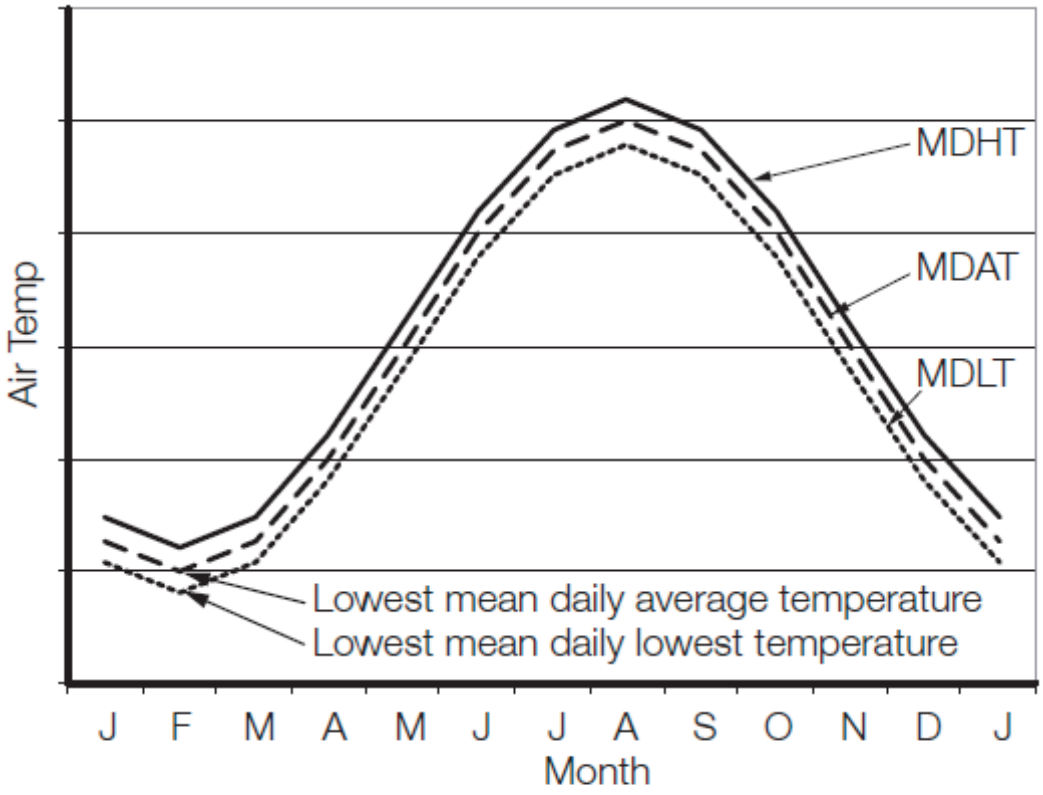
12.3.3 The use of a person other than the officer of the navigational watch to satisfy the requirements for training does not relieve the master or officer of the navigational watch from their duties and obligations for the safety of the ship.

12.3.4 Every crew member shall be made familiar with the procedures and equipment contained or referenced in the PWOM relevant to their assigned duties.

PART I-B

ADDITIONAL GUIDANCE REGARDING THE PROVISIONS OF THE INTRODUCTION AND PART I-A

1 ADDITIONAL GUIDANCE TO SECTION 2 (DEFINITIONS) OF THE INTRODUCTION



Definitions used in the figure above

MDHT – Mean Daily High Temperature

MDAT – Mean Daily Average Temperature

MDLT – Mean Daily Low Temperature

Guidance instructions for determining MDLT:

1 Determine the daily low temperature for each day for a 10 year period.

2 Determine the average of the values over the 10 year period for each day.

3 Plot the daily averages over the year.

4 Take the lowest of the averages for the season of operation.

2 ADDITIONAL GUIDANCE TO CHAPTER 1 (GENERAL)

1 Limitations for operating in ice

1.1 Limitations for operation in ice can be determined using systems, tools or analysis that evaluate the risks posed by the anticipated ice conditions to the ship, taking into account factors such as its ice class, seasonal changing of ice strength, icebreaker support, ice type, thickness and concentration. The ship's structural capacity to resist ice load and the ship's planned operations should be considered. The limitations should be incorporated into an ice operational decision support system.

1.2 Limitations for operating in ice should be determined using an appropriate methodology, such methodologies exist, have been in use for a number of years and have been validated with service experience. Existing methodologies and other systems may be acceptable to the Administration.

1.3 Operation in ice should take into account any operational limitations of the ship; extended information on the ice operational methodology contained in the PWOM; the condition of the ship and ship's systems, historical weather/ice data and weather/ice forecasts for the intended area of operation, current conditions including visual ice observations, sea state, visibility and the judgment of qualified personnel.

2 Operational assessment

2.1 This guidance is intended to support shipowners carrying out, and Administrations reviewing, the assessment required in part I-A, section 1.5, for operational limitations and procedures for the Polar Ship Certificate.

2.2 Steps for an operational assessment:

.1 identify relevant hazards from section 3 of the Introduction and other hazards based on a review of the intended operations;

.2 develop a model[16] to analyse risks considering:

.1 development of accident scenarios;

.2 probability of events in each accident scenario; and

.3 consequence of end states in each scenario;

.3 assess risks and determine acceptability:

.1 estimate risk levels in accordance with the selected modelling approach; and

.2 assess whether risk levels are acceptable; and

[16] Reference is made to the techniques in appendix 3 of the *Revised guidelines for Formal Safety Assessment (FSA) for use in the IMO Rule-Making Process* (MSC-MEPC.2/Circ.12) and standard IEC/ISO 31010 "Risk management – Risk assessment techniques"

.4 in the event that risk levels determined in steps 1 to 3 are considered to be too high, identify current or develop new risk control options that aim to achieve one or more of the following:

.1 reduce the frequency of failures through better design, procedures, training, etc.;

.2 mitigate the effect of failures in order to prevent accidents;

.3 limit the circumstances in which failures may occur; or

.4 mitigate consequences of accidents; and

.5 incorporate risk control options for design, procedures, training and limitations, as applicable.

3 Performance standards

A system previously accepted based on manufacturer certifications, classification society certifications and/or satisfactory service of existing systems may be acceptable for installation on new and existing ships if no performance or testing standards are accepted by the Organization.

3 ADDITIONAL GUIDANCE TO CHAPTER 2 (POLAR WATER OPERATIONAL MANUAL (PWOM))

3.1 Recommendation on the content of the Polar Water Operational Manual

The Polar Water Operational Manual (PWOM) is intended to address all aspects of operations addressed by chapter 2 of part I-A. When appropriate information, procedures or plans exist elsewhere in a ship's documentation, the PWOM itself does not need to replicate this material, but may instead cross-reference the relevant reference document.

A model Table of Contents is found in appendix 2.

The model follows the general structure of chapter 2. Not every section outlined below will be applicable to every polar ship. Many category C ships that undertake occasional or limit polar voyages will not need to have procedures for situations with a very low probability of occurrence. However, it may still be advisable to retain a common structure for the PWOM as a reminder that if assumptions change then the contents of the manual may also need to be updated. Noting an aspect as "not applicable" also indicates to the Administration that this aspect has been considered and not merely omitted.

3.2 Guidance on navigation with icebreaker assistance

With respect to navigation with icebreaker assistance, the following should be considered:

.1 while approaching the starting point of the ice convoy to follow an icebreaker/icebreakers or in the case of escorting by icebreaker of one ship to the point of meeting with the icebreaker, ships should establish radio communication on the VHF channel 16 and act in compliance with the icebreaker's instructions;

.2 the icebreaker rendering the icebreaker assistance of ship ice convoy should command ships in the ice convoy;

.3 position of a ship in the ice convoy should be determined by the icebreaker rendering the assistance;

.4 ship within the ice convoy, in accordance with the instructions of the icebreaker rendering the assistance, should establish communication with the icebreaker by VHF channel indicated by the icebreaker;

.5 the ship, while navigating in the ice convoy, should ensure compliance with the instructions of the icebreaker;

.6 position in the ice convoy, speed and distance to a ship ahead should be as instructed by the icebreaker;

.7 the ship should immediately notify the icebreaker of any difficulties to maintain the position within the ice convoy, speed and/or distance to any other ship in the ice convoy; and

.8 the ship should immediately report to the icebreaker of any damage.

3.3 Guidance on the development of contingency plans

In developing the ship's contingency plans ships should consider damage control measures arrangements for emergency transfer of liquids and access to tanks and spaces during salvage operations.

See also additional guidance to chapter 9.

4 ADDITIONAL GUIDANCE TO CHAPTER 3 (SHIP STRUCTURE)

Method for determining equivalent ice class

1 The guidance presented below is intended to assist in determining equivalency with standards acceptable to the Organization, as referenced in chapters 3 and 6 of the Code. The methodology is consistent with guidance developed by the Organization[17] while allowing for the use of a simplified approach.

2 The basic approach for considering equivalency for categories A and B ships can be the same for both new and existing ships. It involves comparing other ice classes to the IACS Polar Classes. For ice classes under category C, additional information on comparisons of strengthening levels is available for the guidance of owners and Administrations.[18] The responsibility for generating the equivalency request and supporting information required should rest with the owner/operator. Review/approval of any equivalency request should be undertaken by the flag State Administration, or by a recognized organization acting on its behalf under the provisions of the Code for Recognized Organizations (RO Code). Several classification societies have developed easy-to-use tools for determination of compliance with the IACS Polar Class structural requirements, as have some Administrations and other third parties.

3 The scope of a simplified equivalency assessment (referring to paragraphs 6.1 to 6.3 below) is expected to be limited to materials selection, structural strength of the hull and propulsion machinery.

---

17 Refer to the *Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments* (MSC.1/Circ.1455).

18 Refer to the annex to HELCOM Recommendation 25/7, Safety of Winter Navigation in the Baltic Sea Area, available at www.helcom.fi

4 If there is not full and direct compliance, then an equivalent level of risk can be accepted in accordance with guidance provided by the Organization. An increase in the probability of an event can be balanced by a reduction in its consequences. Alternatively, a reduction in probability could potentially allow acceptance of more serious consequences. Using a hull area example, a local shortfall in strength level or material grade could be accepted if the internal compartment is a void space, for which local damage will not put the overall safety of the ship at risk or lead to any release of pollutants.

5 For existing ships, service experience can assist in risk assessment. As an example, for an existing ship with a record of polar ice operations a shortfall in the extent of the ice belt (hull areas) may be acceptable if there is no record of damage to the deficient area; i.e. a ship that would generally meet PC 5 requirements but in limited areas is only PC 7 could still be considered as a category A, PC 5 ship. In all such cases, the ship's documentation should make clear the nature and scope of any deficiencies.

6 The process includes the following stages of assessment:

.1 select the target Polar Class for equivalency;

.2 compare materials used in the design with minimum requirements under the IACS Polar Class URs; identify any shortfalls; and

.3 compare strength levels of hull and machinery components design with requirements under the IACS Polar Class URs; quantify levels of compliance.

7 Where gaps in compliance are identified in steps 1 to 3, additional steps should be necessary to demonstrate equivalency, as outlined below:

.4 identify any risk mitigation measures incorporated in the design of the ship (over and above the requirements of the Code and IACS URs);

.5 where applicable, provide documentation of service experience of existing ships, in conditions relevant to the target ice class for equivalency; and

.6 undertake an assessment, taking into account information from steps 1 to 5, as applicable, and on the principles outlined in paragraphs 2 to 6 above.

8 Documentation provided with an application for equivalency should identify each stage that has been undertaken, and sufficient supporting information to validate assessments.

9 Where a ship in categories A or B is provided with an equivalency for ice class by its flag State, this should be noted in its Polar Ship Certificate.

5 ADDITIONAL GUIDANCE TO CHAPTER 4 (SUBDIVISION AND STABILITY)

No additional guidance

6 ADDITIONAL GUIDANCE TO CHAPTER 5 (WATERTIGHT AND WEATHERTIGHT INTEGRITY)

No additional guidance.

7 ADDITIONAL GUIDANCE TO CHAPTER 6 (MACHINERY INSTALLATIONS)

Refer to additional guidance to chapter 3.

8 ADDITIONAL GUIDANCE TO CHAPTER 7 (FIRE SAFETY/PROTECTION)

No additional guidance.

9 ADDITIONAL GUIDANCE TO CHAPTER 8 (LIFE-SAVING APPLIANCES AND ARRANGEMENTS)

9.1 Sample personal survival equipment

When considering resources to be included with the personal survival equipment, the following should be taken into account:

Suggested Equipment
Protective clothing (hat, gloves, socks, face and neck protection, etc.)
Skin protection cream
Thermal protective aid
Sunglasses
Whistle
Drinking mug
Penknife
Polar survival guidance
Emergency food
Carrying bag

9.2 Sample group survival equipment

When considering resources to be included in the group survival equipment, the following should be taken into account:

Suggested Equipment
Shelter – tents or storm shelters or equivalent – sufficient for maximum number of persons
Thermal protective aids or similar – sufficient for maximum number of persons
Sleeping bags – sufficient for at least one between two persons
Foam sleeping mats or similar – sufficient for at least one between two persons
Shovels – at least 2
Sanitation (e.g. toilet paper)
Stove and fuel – sufficient for maximum number of persons ashore and maximum anticipated time of rescue
Emergency food – sufficient for maximum number of persons ashore and maximum anticipated time of rescue

Suggested Equipment
Flashlights – one per shelter
Waterproof and windproof matches – two boxes per shelter
Whistle
Signal mirror
Water containers & water purification tablets
Spare set of personal survival equipment
Group survival equipment container (waterproof and floatable)

10 ADDITIONAL GUIDANCE TO CHAPTER 9 (SAFETY OF NAVIGATION)

10.1 Radars equipped with enhanced ice detection capability should be promoted used, in particular, in shallow waters.

10.2 As the chart coverage of polar waters in many areas may not currently be adequate for coastal navigation, navigational officers should:

.1 exercise care to plan and monitor their voyage accordingly, taking due account of the information and guidance in the appropriate nautical publications;

.2 be familiar with the status of hydrographic surveys and the availability and quality of chart information for the areas in which they intend to operate;

.3 be aware of potential chart datum discrepancies with GNSS positioning; and

.4 aim to plan their route through charted areas and well clear of known shoal depths, following established routes whenever possible.

10.3 Any deviations from the planned route should be undertaken with particular caution. For example, and when operating on the continental shelf:

.1 the echo-sounder should be working and monitored to detect any sign of unexpected depth variation, especially when the chart is not based on a full search of the sea floor; and

.2 independent cross-checking of positioning information (e.g. visual and radar fixing and GNSS) should be undertaken at every opportunity. Mariners should ensure to report to the relevant charting authority (Hydrographic Office) any information that might contribute to improving the nautical charts and publications.

10.4 Ships should be fitted with:

.1 a suitable means to de-ice sufficient conning position windows to provide unimpaired forward and astern vision from conning positions; and

.2 an efficient means of clearing melted ice, freezing rain, snow, mist and spray from outside and accumulated condensation from inside. A mechanical means to clear moisture from the outside face of a window should have operating mechanisms protected from freezing or the accumulation of ice that would impair effective operation.

11 ADDITIONAL GUIDANCE TO CHAPTER 10 (COMMUNICATION)

11.1 Limitations of communication systems in high latitude

11.1.1 Current maritime digital communication systems were not designed to cover polar waters.

11.1.2 VHF is still largely used for communication at sea, but only over short distances (line of sight) and normally only for voice communication. HF and MF are also used for emergency situations. Digital VHF, mobile phone systems and other types of wireless technology offer enough digital capacity for many maritime applications, but only to ships within sight of shore-based stations, and are, therefore, not generally available in polar waters. AIS could also be used for low data-rate communication, but there are very few base stations, and the satellite-based AIS system is designed for data reception only.

11.1.3 The theoretical limit of coverage for GEO systems is 81.3° north or south, but instability and signal dropouts can occur at latitudes as low as 70° north or south under certain conditions. Many factors influence the quality of service offered by GEO systems, and they have different effects depending on the system design.

11.1.4 Non-GMDSS systems may be available and may be effective for communication in polar waters.

11.2 Advice for the operation of multiple alerting and communication devices in the event of an incident

A procedure should be developed to ensure that when survival craft are in close proximity, not more than two alerting or locating devices are activated (as required by regulation 10.3.2) at the same time. This is to:

.1 preserve battery life;

.2 enable extended periods of time for the transmission of alerting or locating signals; and

.3 avoid potential interference.

11.3 For satellite distress beacons, although multiple beacon transmissions can be detected successfully by the satellite system, it is not recommended to activate multiple beacons, unless the survival craft operating the beacons are widely dispersed, as this can cause interference on direction-finding equipment.

11.4 Advice on location and communication equipment to be carried by rescue boats and survival craft

In determining the equipment to be carried for transmitting signals for location, the capabilities of the search and rescue resources likely to respond should be borne in mind. Responding ships and aircraft may not be able to home to 406/121.5 MHz, in which case other locating devices (e.g. AIS-SART) should be considered.

12 ADDITIONAL GUIDANCE TO CHAPTER 11 (VOYAGE PLANNING)

In developing and executing a voyage plan ships should consider the following:

.1 in the event that marine mammals are encountered, any existing best practices should be considered to minimize unnecessary disturbance; and

.2 planning to minimize the impact of the ship's voyage where ships are trafficking near areas of cultural heritage and cultural significance.

See also additional guidance to chapter 9.

13 ADDITIONAL GUIDANCE TO CHAPTER 12 (MANNING AND TRAINING)

No additional guidance

[PART II-A*
POLLUTION PREVENTION MEASURES

CHAPTER 1
PREVENTION OF POLLUTION BY OIL

1.1 Operational requirements

1.1.1 In Arctic waters any discharge into the sea of oil or oily mixtures from any ship shall be prohibited.

1.1.2 The provisions of paragraph 1.1.1 shall not apply to the discharge of clean or segregated ballast.

1.1.3 Subject to the approval of the Administration, a category A ship constructed before [date of entry into force] that cannot comply with paragraph 1.1.1 for oil or oily mixtures from machinery spaces and is operating continuously in Arctic waters for more than 30 days shall comply with paragraph 1.1.1 not later than the first intermediate or renewal survey, whichever comes first, one year after [the date of entry into force]. Until such date these ships shall comply with the discharge requirements of MARPOL Annex I, regulation 15.3.

1.1.4 Operation in polar waters shall be taken into account, as appropriate, in the Oil Record Books, manuals and the shipboard oil pollution emergency plan or the shipboard marine pollution emergency plan as required by MARPOL Annex I.

1.2 Structural requirements

1.2.1 For category A and B ships constructed on or after [date of entry into force] with an aggregate oil fuel capacity of less than 600 m^3, all oil fuel tanks shall be separated from the outer shell by a distance of not less than 0.76 m. This provision does not apply to small oil fuel tanks with a maximum individual capacity not greater than 30 m^3.

1.2.2 For category A and B ships constructed on or after [date of entry into force] of less than 600 tonnes deadweight, all cargo tanks constructed and utilized to carry oil shall be separated from the outer shell by a distance of not less than 0.76 m.

1.2.3 For category A and B ships constructed on or after [date of entry into force] all oil residue (sludge) tanks and oily bilge water holding tanks shall be separated from the outer shell by a distance of not less than 0.76 m. This provision does not apply to small tanks with a maximum individual capacity not greater than 30 m^3.

CHAPTER 2
CONTROL OF POLLUTION BY NOXIOUS LIQUID SUBSTANCES IN BULK

2.1 Operational requirements

2.1.1 In Arctic waters any discharge into the sea of noxious liquid substances, or mixtures containing such substances, shall be prohibited.

* It should be noted that parts II-A and II-B are expected to be adopted by MEPC 68 (11 to 15 May 2015).

2.1.2 Operation in polar waters shall be taken into account, as appropriate, in the Cargo Record Book, the Manual and the shipboard marine pollution emergency plan for noxious liquid substances or the shipboard marine pollution emergency plan as required by MARPOL Annex II.

2.1.3 For category A and B ships constructed on or after [date of entry into force] the carriage of noxious liquid substances (NLS) identified in chapter 17, column e, as ship type 3 or identified as NLS in chapter 18 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk in cargo tanks of type 3 ships shall be subject to the approval of the Administration. The results shall be reflected on the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk or Certificate of Fitness identifying the operation in polar waters.

CHAPTER 3
PREVENTION OF POLLUTION BY HARMFUL SUBSTANCES CARRIED BY SEA IN PACKAGED FORM

Kept blank intentionally.

CHAPTER 4
PREVENTION OF POLLUTION BY SEWAGE FROM SHIPS

4.1 Definitions

4.1.1 *Constructed* means a ship the keel of which is laid or which is at a similar stage of construction.

4.1.2 *Ice-shelf* means a floating ice sheet of considerable thickness showing 2 to 50 m or more above sea-level, attached to the coast.[19]

4.1.3 *Fast ice* means sea ice which forms and remains fast along the coast, where it is attached to the shore, to an ice wall, to an ice front, between shoals or grounded icebergs.[4]

4.2 Operational requirements

4.2.1 Discharges of sewage within polar waters are prohibited except when performed in accordance with MARPOL Annex IV and the following requirements:

.1 the ship is discharging comminuted and disinfected sewage in accordance with regulation 11.1.1 of MARPOL Annex IV at a distance of more than 3 nautical miles from any ice-shelf or fast ice and shall be as far as practicable from areas of ice concentration exceeding 1/10; or

.2 the ship is discharging sewage that is not comminuted or disinfected in accordance with regulation 11.1.1 of MARPOL Annex IV and at a distance of more than 12 nautical miles from any ice-shelf or fast ice and shall be as far as practicable from areas of ice concentration exceeding 1/10; or

[19] Refer to the WMO Sea-Ice Nomenclature.

.3 the ship has in operation an approved sewage treatment plant[20] certified by the Administration to meet the operational requirements in either regulation 9.1.1 or 9.2.1 of MARPOL Annex IV, and discharges sewage in accordance with regulation 11.1.2 of Annex IV and shall be as far as practicable from the nearest land, any ice-shelf, fast ice or areas of ice concentration exceeding 1/10.

4.2.2 Discharge of sewage into the sea is prohibited from category A and B ships constructed on or after [date of entry into force], and all passenger ships constructed on or after [date of entry into force], except when such discharges are in compliance with paragraph 4.2.1.3 of this chapter.

4.2.3 Notwithstanding the requirements of paragraph 4.2.1, category A and B ships that operate in areas of ice concentrations exceeding 1/10 for extended periods of time, may only discharge sewage using an approved sewage treatment plant certified by the Administration to meet the operational requirements in either regulation 9.1.1 or 9.2.1 of MARPOL Annex IV. Such discharges shall be subject to the approval by the Administration.

CHAPTER 5
PREVENTION OF POLLUTION BY GARBAGE FROM SHIPS

5.1 Definitions

5.1.1 *Ice-shelf* means a floating ice sheet of considerable thickness showing 2 to 50 m or more above sea-level, attached to the coast[21].

5.1.2 *Fast ice* means sea ice which forms and remains fast along the coast, where it is attached to the shore, to an ice wall, to an ice front, between shoals or grounded icebergs[6].

5.2 Operational requirements

5.2.1 In Arctic waters, discharge of garbage into the sea permitted in accordance with regulation 4 of MARPOL Annex V, shall meet the following additional requirements:

.1 discharge into the sea of food wastes is only permitted when the ship is as far as practicable from areas of ice concentration exceeding 1/10, but in any case not less than 12 nautical miles from the nearest land, nearest ice-shelf, or nearest fast ice;

.2 food wastes shall be comminuted or ground and shall be capable of passing through a screen with openings no greater than 25 mm. Food wastes shall not be contaminated by any other garbage type;

.3 food wastes shall not be discharged onto the ice;

.4 discharge of animal carcasses is prohibited; and

[20] Refer to resolution MEPC.2(VI), resolution MEPC.159(55) or resolution MEPC.227(64) as applicable.

[21] Refer to the WMO Sea-Ice Nomenclature.

.5 discharge of cargo residues that cannot be recovered using commonly available methods for unloading shall only be permitted while the ship is en route and where all the following conditions are satisfied:

.1 cargo residues, cleaning agents or additives, contained in hold washing water do not include any substances classified as harmful to the marine environment, taking into account guidelines developed by the Organization;

.2 both the port of departure and the next port of destination are within Arctic waters and the ship will not transit outside Arctic waters between those ports;

.3 no adequate reception facilities are available at those ports taking into account guidelines developed by the Organization; and

.4 where the conditions of subparagraphs 5.2.1.5.1, 5.2.1.5.2 and 5.2.1.5.3 of this paragraph have been fulfilled, discharge of cargo hold washing water containing residues shall be made as far as practicable from areas of ice concentration exceeding 1/10, but in any case not less than 12 nautical miles from the nearest land, nearest ice shelf, or nearest fast ice.

5.2.2 In the Antarctic area, discharge of garbage into the sea permitted in accordance with regulation 6 of MARPOL Annex V, shall meet the following additional requirements:

.1 discharges under regulation 6.1 of MARPOL Annex V shall be as far as practicable from areas of ice concentration exceeding 1/10, but in any case not less than 12 nautical miles from the nearest fast ice; and

.2 food waste shall not be discharged onto ice.

5.2.3 Operation in polar waters shall be taken into account, as appropriate, in the Garbage Record Book, Garbage Management Plan and the placards as required by MARPOL Annex V.]

[PART II-B

ADDITIONAL GUIDANCE REGARDING THE PROVISIONS OF THE INTRODUCTION AND PART II-A

1 Additional guidance to chapter 1

.1 Ships are encouraged to apply regulation 43 of MARPOL Annex I when operating in Arctic waters.

1.2 Non-toxic biodegradable lubricants or water-based systems should be considered in lubricated components located outside the underwater hull with direct seawater interfaces, like shaft seals and slewing seals.

2 Additional guidance to chapter 2

Category A and B ships, constructed on or after [date of entry into force] and certified to carry noxious liquid substances (NLS), are encouraged to carry NLS identified in chapter 17, column e, as ship type 3 or identified as NLS in chapter 18 of the *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk*, in tanks separated from the outer shell by a distance of not less than 760 mm.

3 Additional guidance to chapter 5

In order to minimize the risks associated with animal cargo mortalities, consideration should be given to how animal carcasses will be managed, treated, and stored on board when ships carrying such cargo are operating in polar waters. Reference is made in particular to the *2012 Guidelines for the implementation of MARPOL Annex V* (resolution MEPC.219(63)) and the *2012 Guidelines for the development of garbage management plans* (resolution MEPC.220(63)).

4 Additional guidance under other environmental Conventions and guidelines

4.1 Until the *International Convention for the Control and Management of Ships' Ballast Water and Sediments* enters into force, the ballast water management provisions of the ballast water exchange standard, set out in regulation D-1, or the ballast water performance standard, set out in regulation D-2 of the Convention should be considered as appropriate. The provisions of the *Guidelines for ballast water exchange in the Antarctic treaty area* (resolution MEPC.163(56)) should be taken into consideration along with other relevant guidelines developed by the Organization.

4.2 In selecting the ballast water management system, attention should be paid to limiting conditions specified in the appendix of the Type Approval Certificate and the temperature under which the system has been tested, in order to ensure its suitability and effectiveness in polar waters.

4.3 In order to minimize the risk of invasive aquatic species transfers via biofouling, measures should be considered to minimize the risk of more rapid degradation of anti-fouling coatings associated with polar ice operations. Reference is made in particular to the *2011 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species* (resolution MEPC.207(62)).

Table: Example of matters related to anti-fouling systems taken into consideration by some ice-going ships (This table is used by some operators of ice-going ships.)

	Hull	**Sea chest**
Year round operation in ice-covered polar waters	Abrasion resistant low friction ice coating. No anti-fouling system.	Abrasion resistant coating. Compliant with the AFS Convention. Thickness of anti-fouling system to be decided by shipowner.
Intermittent operation in ice-covered polar waters	Abrasion resistant low friction ice coating. In sides, above bilge keel, max thickness of anti-fouling system 75 µm, to protect hull between application of anti-fouling system and next anticipated voyage to ice-covered waters. In bottom area thickness to be decided by shipowner. Composition of anti-fouling system should also be decided by the shipowner.	Compliant with the AFS Convention. Thickness of anti-fouling system to be decided by shipowner.
Category B and C vessels	Compliant with the AFS Convention. Thickness of anti-fouling system to be decided by shipowner.	Compliant with the AFS Convention. Thickness of anti-fouling system to be decided by shipowner.

]

APPENDIX 1

Form of Certificate for Ships operating in Polar Waters

POLAR SHIP CERTIFICATE

This Certificate shall be supplemented by a Record of Equipment for the Polar Ship Certificate

(Official seal)

(State)

Issued under the provisions of the

International Convention for the Safety of Life at Sea, 1974, as amended

under the authority of the Government of

(name of the State)

by _____
(person or organization authorized)

Particulars of ship[1]

Name of ship……
Distinctive number or letters……..
Port of registry……..
Gross tonnage……..
IMO Number[2]…….....

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

[2] In accordance with *IMO ship identification number scheme* adopted by the Organization by resolution A.1078(28).

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with the applicable safety-related provisions of the International Code for Ships Operating in Polar Waters.

2 That the survey[3] showed that the structure, equipment, fittings, radio station arrangements, and materials of the ship and the condition thereof are in all respects satisfactory and that the ship complies with the relevant provisions of the Code.

Category A/B/C[4] ship as follows:

Ice Class and Ice Strengthened Draft Range

Ice class	Maximum draft		Minimum draft	
	Aft	Fwd	Aft	Fwd

2.1 Ship type: tanker/passenger ship/other[4]

2.2 Ship restricted to operate in ice free waters/open waters/other ice conditions[4]

2.3 Ship intended to operate in low air temperature: Yes/No[4]

2.3.1 Polar Service Temperature: ……..°C/Not Applicable[4]

2.4 Maximum expected time of rescue …….days

3 The ship was/was not[4] subjected to an alternative design and arrangements in pursuance of regulation(s) XIV/4 of the International Convention for the Safety of Life at Sea, 1974, as amended.

4 A Document of approval of alternative design and arrangements for structure, machinery and electrical installations/fire protection/life-saving appliances and arrangements[4] is/is not[4] appended to this Certificate.

5 Operational limitations

The ship has been assigned the following limitations for operation in polar waters:

5.1 Ice conditions: .....

.....

5.2 Temperature: .....

5.3 High latitudes: .....

[3] Subject to regulation 1.3 of the International Code for Ships Operating in Polar Waters.

[4] Delete as appropriate.

This certificate is valid until . . . . subject to the annual/periodical/intermediate surveys in accordance with section 1.3 of the Code[5]

Completion date of the survey on which this certificate is based:. . . . .
(dd/mm/yyyy)

Issued at . . . .
(Place of issue of certificate)

. . . .

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

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

[5] Delete as applicable

Endorsement for annual, periodical and intermediate surveys[6]

THIS IS TO CERTIFY that, at a survey required by regulation 1.3 of the Code, the ship was found to comply with the relevant requirements of the Code.

Annual survey:

Signed: …….
(Signature of authorized official)

Place: …….

Date: …….

(Seal or stamp of the authority, as appropriate)

Annual/Periodical/Intermediate[6] survey:

Signed: …….
(Signature of authorized official)

Place: …….

Date: …….

(Seal or stamp of the authority, as appropriate)

Annual/Periodical/Intermediate[6] survey:

Signed: …….
(Signature of authorized official)

Place: …….

Date: …….

(Seal or stamp of the authority, as appropriate)

Annual survey:

Signed: …….
(Signature of authorized official)

Place: …….

Date: …….

(Seal or stamp of the authority, as appropriate)

[6] Delete as appropriate.

Endorsement to extend the certificate if valid for less than 5 years where regulation I/14(c) of the Convention applies[7]

The ship complies with the relevant requirements of the Convention, and this certificate shall, in accordance with regulation I/14(c) of the Convention, be accepted as valid until.....

Signed: .....
(Signature of authorized official)

Place: .....

Date: .....
(Seal or stamp of the authority, as appropriate)

Endorsement where the renewal survey has been completed and regulation I/14(d) of the Convention applies[7]

The ship complies with the relevant requirements of the Convention, and this certificate shall, in accordance with regulation I/14(d) of the Convention, be accepted as valid until.....

Signed: .....
(Signature of authorized official)

Place: .....

Date: .....
(Seal or stamp of the authority, as appropriate)

Endorsement to extend the validity of the certificate until reaching the port of survey or for a period of grace where regulation I/14(e) or I/14(f) of the Convention applies[7]

This certificate shall, in accordance with regulation I/14(e)/I/14(f)[7] of the Convention, be accepted as valid until.....

Signed: .....
(Signature of authorized official)

Place: .....

Date: .....
(Seal or stamp of the authority, as appropriate)

[7] Delete as appropriate.

Endorsement for advancement of anniversary date where regulation I/14(h) of the Convention applies[7]

In accordance with regulation I/14(h) of the Convention, the new anniversary date is .....

Signed: .....
(Signature of authorized official)

Place: .....

Date: .....
(Seal or stamp of the authority, as appropriate)

In accordance with regulation I/14(h) of the Convention, the new anniversary date is .....

Signed: .....
(Signature of authorized official)

Place: .....

Date: .....
(Seal or stamp of the authority, as appropriate)

[7] Delete as appropriate.

Record of Equipment for the Polar Ship Certificate

This record shall be permanently attached to the
Polar Ships Certificate

RECORD OF EQUIPMENT FOR COMPLIANCE WITH THE INTERNATIONAL CODE
FOR SHIPS OPERATING IN POLAR WATERS

1 Particulars of ship:

Name of ship:……
Distinctive number or letters:……..

2 Record of equipment

2.1 *Life-saving appliances*

1	Total number of immersion suits with insulation:	.....
1.1	for crew	.....
1.2	for passengers	.....
2	Total number of thermal protective aids	.....
3	Personal and Group Survival Equipment	.....
3.1	Personal survival equipment – for number of persons	.....
3.2	Group survival equipment – for number persons	.....
3.3	Total capacity of liferafts in compliance with chapter 8 of the Polar Code	.....
3.4	Total capacity of lifeboats in compliance with chapter 8 of the Polar Code	.....

2.2 *Navigation equipment*

1	Two independent echo-sounding devices or a device with two separate independent transducers	.....
2	Remotely rotatable, narrow-beam search lights controllable from the bridge or other means to visually detect ice	.....
3	Manually initiated flashing red light visible from astern (for ships involved in icebreaking operations)	.....
4	Two or more non-magnetic independent means to determine and display heading	.....
5	GNSS compass or equivalent (for ships proceeding to latitudes over 80 degrees)	.....

2.3 ***Communication equipment***

1	Sound signaling system mounted to face astern to indicate escort and emergency manoeuvres to following ships as described in the International Code of Signals (for ships intended to provide ice breaking escort).	……...
2	Voice and/or data communications with relevant rescue coordination centres.	.....
3	Equipment for voice communications with aircraft on 121.5 and 123.1 MHz.	.....
4	Two-way voice and data communication with a Telemedical Assistance Service (TMAS).	.....
5	All rescue boats and lifeboats, whenever released for evacuation, have a device (for ships certified to operate in low air temperature):	
5.1	for transmitting vessel to shore alerts;	.....
5.2	for transmitting signals for location;	.....
5.3	for transmitting and receiving on-scene communications.	……..
6	All other survival craft have a device:	
6.1	for transmitting signals for location; and	.....
6.2	for transmitting and receiving on-scene communications.	……

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

Issued at……
(Place of issue of the Record)

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

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

APPENDIX 2

Model Table of Contents for the Polar Water Operational Manual (PWOM)

SAFETY MEASURES

1 – Operational capabilities and limitations

Chapter 1 Operation in ice

1.1 Operator guidance for safe operation

Guidance: The PWOM should establish the means by which decisions as to whether ice conditions exceed the ship's design limits should be made, taking into account the operational limitations on the Polar Ship Certificate. An appropriate decision support system, such as the Canada's Arctic Ice Regime Shipping System, and/or the Russian Ice Certificate as described in the Rules of Navigation on the water area of the Northern Sea Route, can be used... Bridge personnel should be trained in the proper use of the system to be utilized. For ships that will operate only in ice-free waters, procedures to ensure that will keep the ship from encountering ice should be established.

1.2 Icebreaking capabilities

Guidance: The PWOM should provide information on the ice conditions in which the ship can be expected to make continuous progress. This may be drawn, for example from numerical analysis, model test or from ice trials. Information on the influence of ice strength for new or decayed ice and of snow cover may be included.

1.3 Manoeuvring in ice

1.4 Special features

Guidance: Where applicable, the PWOM should include the results of any equivalency analyses made to determine Polar Ship category/ice class. The manual should also provide information on the use of any specialized systems fitted to assist in ice operations.

Chapter 2 Operation in low air temperatures

2.1 System design

Guidance: The PWOM should list all ship systems susceptible to damage or loss of functionality by exposure to low temperatures, and the measures to be adopted to avoid malfunction.

Chapter 3 Communication and navigation capabilities in high latitudes

Guidance: The PWOM should identify any restrictions to operational effectiveness of communications and navigational equipment that may result from operating in high latitudes.

Chapter 4 Voyage duration

Guidance: The PWOM should provide information on any limitations on ship endurance such as fuel tankage, fresh water capacity, provision stores, etc. This will normally only be a significant consideration for smaller ships, or for ships planning to spend extended periods in ice.

Division 2 – Ship operations

Chapter 1 Strategic planning

Assumptions used in conducting the analyses referred to below should be included in the Manual.

1.1 Avoidance of hazardous ice

Guidance: For ships operating frequently in polar waters, the PWOM should provide information with respect to periods during which the ship should be able to operate for intended areas of operation. Areas that pose particular problems, e.g. chokepoints, ridging, as well as worst recorded ice conditions should be noted. Where the available information is limited or of uncertain quality, this should be recognized and noted as a risk for voyage planning.

1.2 Avoidance of hazardous temperatures

Guidance: For ships operating frequently in polar waters, the PWOM should provide information with respect to, the daily mean daily low temperature as well as the minimum recorded temperature for each of the days during the intended operating period. Where the available information is limited or of uncertain quality, this should be recognized as a risk for voyage planning.

1.3 Voyage duration and endurance

Guidance: Procedures to establish requirements for supplies should be established, and appropriate safety levels for safety margins determined taking into account various scenarios, e.g. slower than expected steaming, course alterations, adverse ice conditions, places of refuge and access to provisions. Sources for and availability of fuel types should be established, taking into account long lead times required for deliveries.

1.4 Human resources management

Guidance: The PWOM should provide guidance for the human resources management, taking into account the anticipated ice conditions and requirements for ice navigation, increased levels of watch keeping, hours of rest, fatigue and a process that ensures that these requirements will be met.

Chapter 2 Arrangements for receiving forecasts of environmental conditions

Guidance: The PWOM should set out the means and frequency for provision of ice and weather information. Where a ship is intended to operate in or in the presence of ice, the manual should set out when weather and ice information is required and the format for the information.

When available, the information should include both global and localized forecasts that will identify weather and ice patterns/regimes that could expose the ship to adverse conditions.

The frequency of updates should provide enough advance notice that the ship can take refuge or use other methods of avoiding the hazard if the conditions are forecast to exceed its capabilities.

The PWOM may include use of a land-based support information provider an effective method of sorting through available information, thereby providing the ship only with information that is relevant, reducing demands on the ship's communications systems. The manual may also indicate instances in which additional images should be obtained and analysed, as well as where such additional information may be obtained.

2.1 Ice information

Guidance: The PWOM should include or refer to guidance on how radar should be used to identify ice floes, how to tune the radar to be most effective, instructions on how to interpret radar images, etc. If other technologies are to be used to provide ice information, their use should also be described.

2.2 Meteorological information

Chapter 3 Verification of hydrographic, meteorological and navigational information

Guidance: The PWOM should provide guidance on the use of hydrographic information as further described in the additional guidance to chapter 10.

Chapter 4 Operation of Special Equipment

4.1 Navigation systems

4.2 Communications systems

Chapter 5 Procedures to maintain equipment and system functionality

5.1 Icing prevention and de-icing

Guidance: The PWOM should provide guidance on how to prevent or mitigate icing by operational means, how to monitor and assess ice accretion, how to conduct de-icing using equipment available on the ship, and how to maintain the safety of the ship and its crew during all of these aspects of the operation.

5.2 Operation of seawater systems

Guidance: The PWOM should provide guidance on how to monitor, prevent or mitigate ice ingestion by seawater systems when operating in ice or in low water temperatures. This may include recirculation, use of low rather than high suctions, etc.

5.3 Procedures for low temperature operations

Guidance: The PWOM should provide guidance on maintaining and monitoring any systems and equipment that are required to be kept active in order to ensure functionality; e.g. by trace heating or continuous working fluid circulation.

Division 3 – Risk management

Chapter 1 Risk mitigation in limiting environmental condition

1.1 Measures to be considered in adverse ice conditions

Guidance: The PWOM should contain guidance for the use of low speeds in the presence of hazardous ice. Procedures should also be set for enhanced watchkeeping and lookout manning in situations with high risks from ice, e.g. in proximity to icebergs, operation at night, and other situations of low visibility. When possibilities for contact with hazardous ice exist, procedures should address regular monitoring, e.g. soundings/inspections of compartments and tanks below the waterline.

1.2 Measures to be considered in adverse temperature conditions

Guidance: The PWOM should contain guidance on operational restrictions in the event that temperatures below the ships polar service temperature are encountered or forecast. These may include delaying the ship, postponing the conduct of certain types of operation, using temporary heating, and other risk mitigation measures.

Chapter 2 Emergency response

Guidance: In general, where the possibility of encountering low air temperatures, sea ice, and other hazards is present, the PWOM should provide guidance on procedures that will increase the effectiveness of emergency response measures.

2.1 Damage control

Guidance: the PWOM should consider damage control measures arrangements for emergency transfer of liquids and access to tanks and spaces during salvage operations.

2.2 Firefighting

2.4 Escape and evacuation

Guidance: Where supplementary or specialized lifesaving equipment is carried to address the possibilities of prolonged durations prior to rescue, abandonment onto ice or adjacent land, or other aspects specific to polar operations, the PWOM should contain guidance on the use of the equipment and provision for appropriate training and drills.

Chapter 3 Coordination with emergency response services

3.1 Ship emergency response

Guidance: The PWOM should include procedures to be followed in preparing for a voyage and in the event of an incident arising.

3.2 Salvage

Guidance: The PWOM should include procedures to be followed in preparing for a voyage and in the event of an incident arising.

3.3 Search and rescue

Guidance: The PWOM should contain information on identifying relevant Rescue Coordination Centres for any intended routes, and should require that contact information and procedures be verified and updated as required as part of any voyage plan.

Chapter 4 Procedures for maintaining life support and ship integrity in the event of prolonged entrapment by ice.

Guidance: Where any ship incorporates special features to mitigate safety or environmental risks due to prolonged entrapment by ice, the PWOM should provide information on how these are to be set up and operated. This may include, for example, adding additional equipment to be run from emergency switchboards, draining systems at risk of damage through freezing, isolating parts of HVAC systems, etc.

4.1 System configuration

4.2 System operation

Division 4 – Joint operations

Chapter 1 Escorted operations

Guidance: The PWOM should contain or reference information on the rules and procedures set out by coastal States who require or offer icebreaking escort services. The manual should also emphasize the need for the master to take account of the ship's limitations in agreeing on the conduct of escort operations.

Chapter 2 Convoy operations

***

ANNEX 7

RESOLUTION MSC.386(94)
(adopted on 21 November 2014)

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 ALSO article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"), concerning the amendment procedure applicable to the annex to the Convention, other than to the provisions of chapter I,

RECOGNIZING the need to provide a mandatory framework for ships operating in polar waters due to the additional demands on ships, their systems and operation, which go beyond the existing requirements of the Convention, and other relevant binding IMO instruments,

NOTING resolution MSC.385(94), by which the Committee adopted the International Code for Ships Operating in Polar Waters (Polar Code) with respect to its provisions for safety,

NOTING ALSO that the Marine Environment Protection Committee, at its sixty-seventh session, approved with a view to adoption, at its sixty-eighth session, amendments to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978, and that it will also consider for adoption the environmental protection provisions of the Polar Code,

NOTING FURTHER the proposed amendments to the Convention to make use of the safety provisions of the Polar Code mandatory,

HAVING CONSIDERED, at its ninety-fourth 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 2016, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified to the Secretary-General of the Organization 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 2017 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of 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 ALSO 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

A new chapter XIV is added after chapter XIII, as follows:

**"CHAPTER XIV
SAFETY MEASURES FOR SHIPS OPERATING IN POLAR WATERS**

Regulation 1 – Definitions

For the purpose of this chapter:

1 *Polar Code* means the International Code for Ships Operating in Polar Waters, consisting of an introduction and parts I-A and II-A and parts I-B and II-B, as adopted by resolutions MSC.385(94) and of the Marine Environment Protection Committee*, as may be amended, provided that:

.1 amendments to the safety-related provisions of the introduction and part I-A of the Polar Code are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I; and

.2 amendments to part I-B of the Polar Code are adopted by the Maritime Safety Committee in accordance with its Rules of Procedure.

* Refer to the resolution of adoption of the International Code for Ships Operating in Polar Waters, by the Marine Environment Protection Committee.

2 *Antarctic area* means the sea area south of latitude 60º S.

3 *Arctic waters* means those waters which are located north of a line from the latitude 58º00´.0 N and longitude 042º00´.0 W to latitude 64º37´.0 N, longitude 035º27´.0 W and thence by a rhumb line to latitude 67º03´.9 N, longitude 026º33´.4 W and thence by a rhumb line to the latitude 70º49´.56 N and longitude 008º59´.61 W (Sørkapp, Jan Mayen) and by the southern shore of Jan Mayen to 73º31'.6 N and 019º01'.0 E by the Island of Bjørnøya, and thence by a great circle line to the latitude 68º38´.29 N and longitude 043º23´.08 E (Cap Kanin Nos) and hence by the northern shore of the Asian Continent eastward to the Bering Strait and thence from the Bering Strait westward to latitude 60º N as far as Il'pyrskiy and following the 60th North parallel eastward as far as and including Etolin Strait and thence by the northern shore of the North American continent as far south as latitude 60º N and thence eastward along parallel of latitude 60º N, to longitude 056º37´.1 W and thence to the latitude 58º00´.0 N, longitude 042º00´.0 W.

4 *Polar waters* means Arctic waters and/or the Antarctic area.

5 *Ship constructed* means a ship the keel of which is laid or which is at a similar stage of construction.

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

.1 construction identifiable with a specific ship begins; and

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

Regulation 2 – Application

1 Unless expressly provided otherwise, this chapter applies to ships operating in polar waters, certified in accordance with chapter I.

2 Ships constructed before 1 January 2017 shall meet the relevant requirements of the Polar Code by the first intermediate or renewal survey, whichever occurs first, after 1 January 2018.

3 In applying part I-A of the Polar Code, consideration should be given to the additional guidance in part I-B of the Polar Code.

4 This chapter shall not apply to ships owned or operated by a Contracting Government and used, for the time being, only in Government non-commercial service. However, ships owned or operated by a Contracting Government and used, for the time being, only in Government non-commercial service are encouraged to act in a manner consistent, so far as reasonable and practicable, with this chapter.

5 Nothing in this chapter shall prejudice the rights or obligations of States under international law.

Regulation 3 – Requirements for ships to which this chapter applies

1 Ships to which this chapter applies shall comply with the requirements of the safety-related provision of the introduction and with part I-A of the Polar Code and shall, in addition to the requirements of regulations I/7, I/8, I/9, and I/10, as applicable, be surveyed and certified, as provided for in that Code.

2 Ships to which this chapter applies holding a certificate issued pursuant to the provisions of paragraph 1 shall be subject to the control established in regulations I/19 and XI-1/4. For this purpose, such certificates shall be treated as a certificate issued under regulation I/12 or I/13.

Regulation 4 – Alternative design and arrangement

1 The goal of this regulation is to provide a methodology for alternative design and arrangements for structure, machinery, and electrical installations, fire safety and life-saving appliances and arrangements.

2 Structural arrangements, machinery and electrical installation, fire safety design and arrangement measures and as well as life-saving appliances and arrangements may deviate from the prescriptive requirements set out in chapters 3, 6, 7 and 8 of the Polar Code, provided that the alternative design and arrangements meet the intent of the goal and functional requirements concerned and provide an equivalent level of safety to the requirements in those chapters.

3 When alternative designs or arrangements deviate from the prescriptive requirements of chapters 3, 6, 7 and 8 of the Polar Code, an engineering analysis, evaluation and approval of the design and arrangements shall be carried out based on the guidelines approved by the Organization[1].

4 Any alternative designs or arrangement deviating from the prescriptive requirements shall be recorded in the Polar Ship Certificate and the ship's Polar Water Operational Manual, as required by the Polar Code, also defining the technical and operational measures and conditions for the allowed deviation.

---

[1] Refer to the *Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments* (MSC.1/Circ.1455), *the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III* (MSC.1/Circ.1212) and the *Guidelines on alternative design and arrangements for fire safety* (MSC/Circ.1002), as applicable."

***

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.1485
14 January 2015

EARLY IMPLEMENTATION OF SOLAS REGULATION XI-1/7 ON ATMOSPHERE TESTING INSTRUMENT FOR ENCLOSED SPACES

1 The Maritime Safety Committee, at its ninety-third session (14 to 23 May 2014), when approving the draft new SOLAS regulation XI-1/7 "Atmosphere testing instrument for enclosed spaces", recalled that MSC 92 had adopted, by resolution MSC.350(92), SOLAS regulation III/19 "Emergency training and drills" with an entry-into-force date of 1 January 2015, requiring that each enclosed space entry and rescue drill shall include checking and use of instruments for measuring the atmosphere in enclosed spaces.

2 MSC 93, having confirmed that paragraph 3.6.2.3 of SOLAS regulation III/19 does not introduce carriage requirements for atmosphere testing instruments for enclosed spaces, recognized the need to implement the draft new SOLAS regulation XI-1/7 early, in order to expedite the carriage of portable atmosphere testing instruments for enclosed spaces.

3 Consequently, the Maritime Safety Committee, at its ninety-fourth session (17 to 21 November 2014), in adopting resolution MSC.380(94) on *Amendments to the International Convention for the Safety of Life at Sea, 1974*, as amended, invited SOLAS Contracting Governments to voluntarily implement SOLAS regulation XI-1/7, as set out below, to ships entitled to fly their flags, as soon as practicable, taking into account that the entry-into-force date of the corresponding amendments to SOLAS is 1 July 2016:

"**Regulation 7 - Atmosphere testing instrument for enclosed spaces**

Every ship to which chapter I applies shall carry an appropriate portable atmosphere testing instrument or instruments[*]. As a minimum, these shall be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces[**]. Instruments carried under other requirements may satisfy this regulation. Suitable means shall be provided for the calibration of all such instruments.

[*] Refer to the *Guidelines to facilitate the selection of portable atmosphere testing instruments for enclosed spaces as required by SOLAS regulation XI-1/7* (MSC.1/Circ.1477).

[**] Refer to the *Revised recommendations for entering enclosed spaces aboard ships* (resolution A.1050(27))."

4 Member Governments are invited to bring this circular to the attention of all parties concerned.

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.1499
12 January 2015

UNIFIED INTERPRETATION OF CHAPTER 3 OF THE FSS CODE

1 The Maritime Safety Committee, at its ninety-fourth session (17 to 21 November 2014), with a view to providing more specific guidance for the application of the relevant requirements of the FSS Code, approved the following unified interpretation for paragraph 2.1.2.2 of chapter 3 of the FSS Code:

> "Paragraph 2.1.2.2 of chapter 3 of the FSS Code, adopted by resolution MSC.339(91), requires an audible alarm and a visual or other device which will alert the user. In this context, a pressure indicator, with which the user can read that the volume of remaining air in the cylinder has been reduced to no less than 200 litres, regardless of the need for supplemental lighting, may be regarded as a visual device."

2 Member Governments are invited to use the above unified interpretation as guidance when applying the relevant provision of the FSS Code and to bring it to the attention of all parties concerned.

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.1487
12 January 2015

UNIFIED INTERPRETATIONS OF CHAPTERS 5, 9 AND 10 OF THE FSS CODE

1 The Maritime Safety Committee, at its ninety-fourth session (17 to 21 November 2014), with a view to providing more specific guidance for release operation of the CO_2 system, fixed fire detection and fire alarm systems and sample extraction smoke detection systems, approved unified interpretations on chapters 5, 9 and 10 of the FSS Code, as prepared by the Sub-Committee on Ship Systems and Equipment at its first session (10 to 14 March 2014), as set out in the annex.

2 Member Governments are invited to use the annexed unified interpretations as guidance when applying paragraph 2.1.3.2 of chapter 5, paragraph 2.5.1.1 of chapter 9 and paragraph 2.4.1.2 of chapter 10 of the FSS Code to the systems to be installed on board ships constructed on or after 21 November 2014 and to bring the unified interpretation to the attention of all parties concerned.

***

ANNEX

UNIFIED INTERPRETATIONS OF CHAPTERS 5, 9 AND 10 OF THE FSS CODE

CHAPTER 5 – FIXED GAS FIRE-EXTINGUISHING SYSTEMS

Release operation of the CO_2 systems (paragraph 2.1.3.2, as amended by resolution MSC.339(91))

1 *Conventional cargo spaces* means cargo spaces other than ro-ro spaces or container holds equipped with integral reefer containers, which need not be provided with means for automatically giving audible and visual warning of the release.

2 The requirements of FSS Code, chapter 5, paragraph 2.2.2 apply to the spaces identified in paragraph 2.1.3.2 of chapter 5 of the FSS Code.

CHAPTER 9 – FIXED FIRE DETECTION AND FIRE ALARM SYSTEM

Power supply to the alarm sounder system when not an integral part of the detection system (paragraph 2.5.1.1)

3 The alarm sounder system utilized by the fixed fire detection and fire alarm system should be powered from no less than two sources of power, one of which should be an emergency source of power.

4 In vessels required by SOLAS regulation II-1/42 or II-1/43 to be provided with a transitional source of emergency electrical power, the alarm sounder system should also be powered from this power source.

CHAPTER 10 – SAMPLE EXTRACTION SMOKE DETECTION SYSTEMS

CO_2 room with control panel (paragraph 2.4.1.2, as amended by MSC.292(87))

5 If the CO_2 system discharge pipes are used for the sample extraction smoke detection system, the control panel can be located in the CO_2 room provided that an indicating unit* is located on the navigation bridge. Such arrangements are considered to satisfy the requirements of the FSS Code, chapter 10, paragraph 2.4.1.2, as amended by resolution MSC.292(87).

---

* Indicating unit has the same meaning as repeater panel and observation of smoke should be made either by electrical means or by visual on repeater panel.

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.1488
12 January 2015

UNIFIED INTERPRETATION OF PART 3 OF ANNEX 1 TO THE 2010 FTP CODE

1 The Maritime Safety Committee, at its ninety-fourth session (17 to 21 November 2014), with a view to providing more specific guidance for testing and approval of pipe penetrations and cable transits which do not utilize conventional components, for use in "A" class divisions, approved a unified interpretation on part 3 of annex 1 to the 2010 FTP Code, prepared by the Sub-Committee on Ship Systems and Equipment at its first session (10 to 14 March 2014), as set out in the annex.

2 Member Governments are invited to use the annexed unified interpretation as guidance when applying paragraph 1.13 of appendix 1 to the 2010 FTP Code, annex 1, part 3, for approvals to be granted on or after 21 November 2014 and to bring the unified interpretation to the attention of all parties concerned.

***

ANNEX

UNIFIED INTERPRETATION OF PART 3 OF ANNEX 1 TO THE 2010 FTP CODE

TEST FOR "A", "B" AND "F" CLASS DIVISIONS (ANNEX 1 TO PART 3)

1 Arrangement

1.1 "A" class pipe penetrations and cable transits that are:

.1 constructed without structural sleeves of minimum 3 mm thickness and minimum 60 mm length welded or bolted to the division; and/or

.2 constructed with removable, soft or intumescent filling material,

are "those types of constructions which do not utilize conventional components of horizontal and vertical divisions" (appendix 1, paragraph 1.13) and are to be subject to additional testing and/or design criteria as described below.

2 Additional testing/design criteria

2.1 Filling materials should be adequately secured by bonded materials or mechanical means that cannot be removed without the use of tools in order to prevent damage by normal ship vibrations and pressures.

2.2 The pipe penetration/cable transit should not have any visible openings. It should not be possible to manually penetrate any part of the penetration with a 6 mm gap gauge, as described in paragraph 7.10 of annex 1 to part 3 of the 2010 FTP Code.

3 Approval

3.1 Penetrations in structural divisions should not impair the structural strength of the division. The structural make-up of the penetration is to be fully described so that its use and the need for additional stiffening for the division can be fully assessed.

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.1490
12 January 2015

UNIFIED INTERPRETATION OF SOLAS REGULATION III/31.1.4

1 The Maritime Safety Committee, at its ninety-fourth session (17 to 21 November 2014), with a view to providing more specific guidance on arrangements for remotely located survival craft, approved a unified interpretation of SOLAS regulation III/31.1.4, prepared by the Sub-Committee on Ship Systems and Equipment at its first session (10 to 14 March 2014), as set out in the annex.

2 Member Governments are invited to use the annexed unified interpretation as guidance when applying SOLAS regulation III/31.1.4 to the liferafts to be installed on board ships constructed on or after 21 November 2014 and to bring the unified interpretation to the attention of all parties concerned.

3 This circular supersedes MSC.1/Circ.1243.

***

ANNEX

UNIFIED INTERPRETATION OF SOLAS REGULATION III/31.1.4

Arrangements for remotely located survival craft

1 Liferafts required by SOLAS regulation III/31.1.4 should be regarded as "remotely located survival craft" with regard to SOLAS regulation III/7.2.1.4.

2 The area where these remotely located survival craft are stowed should be provided with:

.1 a minimum number of two lifejackets and two immersion suits;

.2 adequate means of illumination complying with SOLAS regulation III/16.7, either fixed or portable, which should be capable of illuminating the liferaft stowage position, as well as the area of water into which the liferaft should be launched; portable lights, when used, should have brackets to permit their positioning on both sides of the vessel; and

.3 an embarkation ladder or other means of embarkation enabling descent to the water in a controlled manner[1] as per SOLAS regulation III/11.7.

3 With regard to the distance between the embarkation station and stowage location of the liferaft as required by SOLAS regulation III/31.1.4 (remotely located survival craft), the embarkation station should be so arranged that the requirements of regulation III/13.1.3 can be satisfied.

4 Exceptionally, the embarkation station and stowage position of the liferaft (remotely located survival craft) may be located on different decks provided that the liferaft can be launched from the stowage deck using the attached painter to relocate it to the embarkation ladder positioned on the other deck (traversing a stairway between different decks with the liferaft carried by crew members is not acceptable).

5 Notwithstanding paragraph 2, where the exceptional cases mentioned in paragraph 4 exist, the following provisions should be applied:

.1 the lifejackets and the immersion suits required by paragraph 2.1 may be stowed at the embarkation station;

.2 adequate means of illumination complying with paragraph 2.2 should also illuminate the liferaft stowage position, embarkation station and area of water where the liferaft is to be embarked;

.3 the embarkation ladder or other means of embarkation as required by paragraph 2.3 may be stowed at the embarkation station; and

.4 notwithstanding the requirements in paragraph 4.1.3.2 of the LSA Code, the painter should be long enough to reach the relevant embarkation station.

---

[1] Controlled manner: a knotted rope is not acceptable for this purpose.

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.1492
12 January 2015

AMENDMENTS TO THE UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2 AND THE FSS AND FTP CODES (MSC/Circ.1456)

1 The Maritime Safety Committee, at its ninety-fourth session (17 to 21 November 2014), with a view to facilitating consistent implementation of SOLAS regulation II-2/10.2.1.4.4, approved unified interpretations on the location of the fire main isolation valves in tankers, prepared by the Sub-Committee on Ship Systems and Equipment at its first session, as set out in the annex, in the form of amendments to MSC.1/Circ.1456.

2 Member Governments are invited to use the annexed unified interpretations as guidance when applying SOLAS regulation II-2/10.2.1.4.4 and to bring them to the attention of all parties concerned.

***

ANNEX

AMENDMENTS TO THE UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2 AND THE FSS AND FTP CODES (MSC/Circ.1456)

ANNEX 1

The existing paragraph 4 is replaced by the following:

"**4 Location of the fire main isolation valves in tankers (regulation II-2/10.2.1.4.4)**

The complete interpretation of the phrase "the isolation valves shall be fitted in the fire main at the poop front in a protected position" would be that the valve should be located within an accommodation space, service spaces or control station. However, the valve may be located on the open deck aft of the cargo area provided that the valve is located:

.1 at least 5 m aft of the aft end of the aftermost cargo tank; or

.2 if the above .1 is not practical, within 5 m aft of the aft end of the aftermost cargo tank provided the valve is protected by a permanent steel obstruction."

INTERNATIONAL MARITIME ORGANIZATION

E

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

MSC.1/Circ.1495
21 November 2014

UNIFIED INTERPRETATION OF SOLAS REGULATION V/23.3.3

1 The Maritime Safety Committee, at its ninety-fourth session (17 to 21 November 2014), approved a unified interpretation of SOLAS regulation V/23.3.3 on Pilot transfer arrangements, prepared by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its first session, as set out in the annex.

2 Member Governments are invited to use the unified interpretation as guidance when applying the relevant provisions of SOLAS regulation V/23.3.3 for pilot transfer equipment and arrangements, and to bring this unified interpretation to the attention of all parties concerned.

***

ANNEX

UNIFIED INTERPRETATION OF SOLAS REGULATION V/23.3.3

SOLAS regulation V/23.3.3 states:

Safe and convenient access to, and egress from, the ship shall be provided by either:

.1 *a pilot ladder requiring a climb of not less than 1.5 m and not more than 9 m above the surface of the water so positioned and secured that:*

.1.4 *the single length of pilot ladder is capable of reaching the water from the point of access to, or egress from, the ship and due allowance is made for all conditions of loading and trim of the ship, and for an adverse list of 15°; the securing strong point, shackles and securing ropes shall be at least as strong as the side ropes;* or

.2 *an accommodation ladder in conjunction with the pilot ladder (i.e. a combination arrangement), or other equally safe and convenient means, whenever the distance from the surface of the water to the point of access to the ship is more than 9 m.*

Interpretation

Subparagraphs 1 and 2 of SOLAS regulation V/23.3.3. address two different and distinct arrangements – the former when only a pilot ladder is provided; the latter when a combined arrangement of "an accommodation ladder used in conjunction with the pilot ladder" is provided.

1 SOLAS regulation V/23.3.3.1 limits the climb to not more than 9 m on a single ladder. If only a pilot ladder is to be used, the maximum height of 9 m from the "safe and convenient access to, and egress from, the ship" to the surface of the water is to include consideration of an adverse list of 15°.

2 SOLAS regulation V/23.3.3.2 and section 3 of resolution A.1045(27) applies to a combined arrangement of "an accommodation ladder used in conjunction with the pilot ladder" for "Safe and convenient access to, and egress from, the ship" for which a 15° list requirement does not apply.

3 Member Governments are invited to use the unified interpretation provided in paragraphs 1 and 2 above as guidance when applying the relevant provisions of SOLAS regulation V/23.3.3 for pilot transfer equipment and arrangements and to bring them to the attention of all parties concerned.