標題

マーシャル籍船の防火・消火設備の保守点検

ClassNK
テクニカル
インフォメーション

No. TEC-0997
発行日 2014 年 8 月 6 日

各位

マーシャル諸島主管庁より、同国籍船舶の防火・消火設備の保守点検に関する通知、Marine Notice No.2-011-14 Rev.6/14 「Maintenance and Inspection of Fire Protection Systems and Appliances」が発行されましたので、この要旨をお知らせ致します。

Marine Notice No.2-011-14 Rev.6/14 の目的
本通知は防火・消火設備及び非常用設備の一般的な保守点検・試験方法を示すものです。本通知は MSC.1/Circ.1432 の内容を包括したものとなっており、本通知には防火・消火設備の保守点検及び試験の間隔並びに点検実施者の指名について要約した表(Appendix 1)が含まれます。

Marine Notice No.2-011-14 Rev.6/14 の適用
1. 本通知は全ての船舶、Mobile Offshore Drilling Units（MODUs）及び Mobile Offshore Units（MOUs）に適用されます。
2. 本通知に沿った保守点検の実施記録は SE の定期的検査時に本会検査員により確認されます。
3. 特定の設備について、本通知に従った検査及び整備の実施が困難な場合、その代替手段による点検、整備については主管庁の指示に従う必要があります。(Marine Notice No.2-011-14 Rev.6/14, 2.4 節参照)

本通知の要約を、添付.1 に示します。添付.1 は保守点検に関する項目のみの要約となっておりますので、必要に応じまして適宜添付.2 の Marine Notice の原文及び同主管庁のホームページ(http://www.register-iri.com)をご参照願います。

本テクニカル・インフォメーションにより、ClassNK テクニカル・インフォメーション No.TEC-0935 を絶版と致します。

（次頁に続く）

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。

防火・消火設備の保守点検について:
一般財団法人　日本海事協会　（ClassNK）
本部　管理センター　検査本部
住所:　東京都千代田区紀尾井町 4-7（郵便番号　102-8567）
Tel.:　03-5226-2027
Fax:　03-5226-2029
E-mail:　svd@classnk.or.jp

防火・消火設備の搭載要件[5.3.1, 5.4, 5.5, 6.4, 8.5, 8.6, 10.5, 10.6 及び 11.1]について:
本部　管理センター　材料艤装部
住所:　東京都千代田区紀尾井町 4-7（郵便番号　102-8567）
Tel.:　03-5226-2020
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E-mail:　eqd@classnk.or.jp

添付:

1. Marine Notice No.2-011-14 Rev.6/14「Maintenance and Inspection of Fire Protection Systems and Appliances」(保守点検関連部分の要約)
2. Marine Notice No.2-011-14 Rev.6/14「Maintenance and Inspection of Fire Protection Systems and Appliances」(原文)

ClassNK テクニカル・インフォメーション No. TEC-0997
添付 1.

Marine Notice No.2-011-14 Rev.6/14「Maintenance and Inspection of Fire Protection Systems and Appliances」(保守点検関連部分の要約**)**

参照:
(a) Maritime Regulation 2.11
(b) SOLAS Chapter II-2, as amended
(c) International Code for Fire Safety Systems (FSS Code), as amended
(d) MSC/Circ.849, dated 8 June 1998
(e) MSC.1/Circ.1432, dated 31 May 2012
(f) MSC/Circ.1085, dated 13 June 2003
(g) Resolution A.951(23), adopted on 5 December 2003
(h) MSC.1/Circ.1275, dated 3 June 2008
(i) MSC.1/Circ.1312, dated 10 June 2009 and Corr.1, dated 22 November 2011
(j) MSC.1/Circ.1313, as amended by Resolutions MSC. 206(81) and MSC.217(82), dated 10 June 2009
(k) MSC.1/Circ.1318, dated 11 June 2009
(l) MSC.1/Circ.1395/Rev.1, dated 9 July 2013
(m) Marshall Islands Marine Notice 2-011-11
(n) MSC.1/Circ.1315, dated 10 June 2009
(o) MSC/Circ.1081, dated 13 June 2003
(p) Resolution MSC.338(91), dated 30 November 2012

＊上記参照資料は、マーシャル政府 WEB ページ(http://www.register-iri.com)から入手可能です。

本通知の目的:
本通知は防火・消火設備及び非常用設備の一般的な保守点検・試験方法を示すものである。本通知は MSC.1/Circ.1432 の内容を包括したものとなっている。加えて、本通知には防火・消火設備の保守点検及び試験の間隔並びに点検実施者の指名について要約した表(Appendix 1)を含む。本通知には MSC.1/Circ.1315 の内容もまた含まれる。本通知により前 Marine Notice No.2-011-14 Rev.12/13 を廃止すると共に、改正された SOLAS II-2/15 の 2.2.6 を反映させている。加えて 5.2.3 項にて制御弁の検査の項目を追加している。
本通知は適用され得る要求項目の網羅を目的とせず、マーシャル諸島海事局の要求の特異点及び当局が特に追加の説明を必要とする点、並びに特に重要な項目について示すものである。
本通知及び点検、整備及び試験の要求事項に関する質問は、直接(technical@register-iri.com)までお問い合わせ下さい。

適用:
本通知は全ての船舶、Mobile Offshore Drilling Units（MODUs）及び Mobile Offshore Units（MOUs）に適用する。

要件:

1.0 船上保守計画書

1.1 SOLAS II-2/14 にて、防火・消火設備の保守点検及び試験の詳細を計画した船上保守計画書を本船上に保管し、検査時に利用できることが要求される。この船上保守計画書は船の安全管理システムに調和したものでなければならない。

1.2 幾つかの保守手順及び点検は、少なくとも STCW 条約の Advanced Fire-fighting training course を完了した乗組員によって実施されるか、若しくはそれらの設備に関して特別な訓練を受けた作業員によって実施されるべきである。船上の保守計画書には **Appendix 1**（添付 2 参照）に従い、必要な点検及び整備が能力を有する乗組員によって実施されるか、若しくは他の訓練された者によって実施されるかを明示しなければならない。

1.3 あらゆる作業に先立ち、安全な保守点検及び試験の実施のため、船の安全管理システムに調和した計画に基づいて、全ての乗員に想定される危険が周知されなければならない。この計画には検査責任者と作業実施の乗組員との間の円滑なコミュニケーション方法を含まなければならない。

2.0 要件及び指針並びに推奨事項の適用

2.1 防火・消火設備の保守点検及び試験に関し、船主及び上級職員は、以下の適用し得る要件に精通していなければならない。

- 1974 SOLAS 及びその改定
- FSS コード及びその改定
- MODU コード（1979,1989 及び 2009 年版）
- 船級協会の要求事項

2.2 船上の保守計画書に含まれるべき最低限の推奨される保守点検及び試験の水準は IMO ガイダンス中に示されている（上述「参照」の項目）。本通知により代替される項目を除き、これらガイダンスが適用される。

2.3 設備の保守点検及び試験に関し製造者の推奨事項がある場合、船主及び上級職員はこれに従うこと。製造者の整備手引書は適宜船上で利用可能であること。

2.4 特定の設備についてその配置上検査及び整備の実施が困難な場合、その代替手段としての点検、整備は主管庁によって認められるべきである。

3.0 作業準備

3.1 運航状態にある船において、全ての防火･消火設備は常に良好な状態に維持され、いかなる場合においても即座に使用できる状態になければならない。ある防火･消火設備が保守、点検もしくは修理中の場合、代替の固定式消火装置、持ち運び式消火器もしくはその他の手段を用いて安全性を損なわないよう、船級協会及び船籍国政府に認められる代替の措置が取られなければならない。

3.2 一方で、出港前の船舶、或いは MODUs 及び MOUs にあって同設備を修理中のまま作業に従事している場合にあっては、その許可を主管庁から取得する必要がある。

4.0 保守・点検及び試験

4.1 船上における防火･消火設備の保守・点検及び試験は本船の保守計画書に従い、本通知の Appendix 1(添付 2 参照)に示す間隔で適宜実施されること。

4.2 保守・点検及び試験は必ずしも乗組員により実施される必要はないが、船上保守及び全ての消防設備の試験のためのインストラクションは容易に理解できるもので、可能な限り図解され、また各システム或いは装置ごとに次のことを含むものとする。

.1 保守及び修理のインストラクション

.2 定期的保守のスケジュール

.3 取替え可能な部品のリスト、及び、

.4 点検及び保守結果を記録するためのログブック（**12.0 記録**を併せて参照のこと）

5.0 固定式ガス消火装置

5.1 一般

造船所、船級協会、保険業者、船主/オペレーター、整備事業者及び全ての関係者は、固定式ガス消火装置が非常時に正常に作動することを確認するため、注意深く検査し、定期的に点検･保守、試験を行う。

5.1.1 フレキシブルホース

2013 年 5 月 31 日現在、MSC.1/Circ.1432, 10.1.2 に基づき、フレキシブルホースは製造者の推奨

する間隔で交換すること、但し 10 年を超えてはならない。

5.1.2 2 年毎の検査 / 整備

2 年毎（即ち定期検査時及び 2 回目と 3 回目の定期的検査の間）に、以下の 5.2 に示される固定式炭酸ガス消火装置以外の固定式ガス消火装置は、船級協会から適当と認められた整備業者により整備されること。

a. 全ての高圧消火剤シリンダー及びパイロットシリンダーは、充填物が定格充填量の 95%以上であることを確認するため重量計測するか、その他の信頼できる方法により内容量を評価すること。シリンダー内容物が定格充填量の 95%未満の場合には再充填すること。

b. 乾燥したエア、窒素ガス若しくは他の適切な方法で、全ての放出ノズルについて詰まりの無いことを確認する。上記の試験は可能な場合、放出ノズルを消火システムから切り離した状態での実施が要求される場合がある。

5.1.3 10 年毎の検査（水圧試験）

少なくとも 10 年を超えない間隔で、消火剤シリンダー及びパイロットシリンダーは、総数の 10 パーセント以上について内部点検及び水圧試験を実施し、結果が不良のものがあった場合、総数の 50 パーセントについて試験を実施する。さらに不良があった場合、全てのシリンダーについて試験を実施すること。

ハロンを除く固定式ガス消火装置のシリンダーに船の完工日以前の日付が刻印されている場合、その刻印の日付が完工日の 12 カ月より前でなければ、最初の 10 年目の水圧試験は 2 回目の定期検査に併せて行われる入渠時に実施できる。

5.2 固定式炭酸ガス消火装置

5.2.1 2 年毎に、固定式炭酸ガス消火装置は、船級協会から適当と認められた整備業者により整備されること。

5.2.2 固定式炭酸ガス消火装置は SOLAS 74 II-2/14, 2.1.2 に定める通り、常に良好な状態に保たれ、かつ直ちに利用できるよう、MSC.1/Circ.1318, Guidelines for the Maintenance and Inspection of Fixed Carbon Dioxide Fire-Extinguishing Systems (参照資料(k))に従い保守及び点検されなければならない。これらのガイドラインは固定式消火システムの製造者が承認した保守整備の指示の補足とする。

5.2.3 前 5.2.2 の整備及び検査の要求に加え、少なくとも 5 年に一度は固定式炭酸ガス消火装置の全ての制御弁について内部検査を実施すること。

5.2.4 MSC.1/Circ.1318, 6.1 にある貨物船に対する検査要件は、IMO の検査と証書の調和システムに従い、2 回目若しくは 3 回目の定期的検査時に合わせて実施すること。

5.3 ハロン消火装置

5.3.1 （TEC-0900 を参照のこと）

5.3.2 最低限推奨される保守

.1 シリンダー容量の確認

SE 検査の一部として少なくとも 2 年ごと（2 年±3 カ月の間隔）に、ハロンシリンダーは、充填物が定格充填量の 95%以上であることを確認するため重量計測するか、その他の信頼できる方法により内容物を評価すること。シリンダー内容物が定格充填量の 95%未満の場合には再充填すること。

.2 水圧試験

(a) 全てのハロン装置シリンダーの水圧試験を以下の通り行う。

- 製造後 20 年ごと
- 再充填する前
- 目視検査により潜在的な欠陥が疑われたとき

(b) 試験日をシリンダーに刻印する。同試験は政府機関或いは船級協会より認定された整備施設で行う。この整備施設は船級協会の検査員の立ち合いを受け入れなければならない。使用可能であるかどうかの確認後、同施設にてシリンダーの再充填を行う。

(c) 政府機関若しくは船級協会によって許可及び認証された整備業者によるハロンシリンダーの目視試験と非破壊検査(NDT)が水圧試験の代替として実施されても良い。

5.3.3 保守計画の緩和規定

.1 既存のハロン消火設備に対する試験及び保守を行う整備業者及び整備設備が減少しているため整備に対する困難さが増しており、本状況による運送上の困難さを考慮し、マーシャル諸島政府はハロン貯蔵シリンダーの水圧試験の保守計画を緩和する。

.2 固定式ハロン消火装置の貯蔵用シリンダーの水圧試験への緩和要件適用の考慮は個別に与えられるものであり、マーシャル諸島政府からの書面による承認が必要である。

.3 ハロン装置シリンダーの水圧試験の時期は以下に適合することを条件に 20 年から 5 年間延期することができる。

- シリンダーの内容物を過去に放出していないこと。
- シリンダーの内容物を重量計測或いは等方性測定にて検証すること。
- シリンダー圧或いは液面レベルが許容値であることを検証すること。
- シリンダーに対して詳細な外観検査を行い潜在的な欠陥が無いことを確認すること。
- シリンダーの必要と思われる範囲に対して板厚計測を行うこと。将来の比較参照のため結果を船上に保管すること。

.4 良好な状態であること及び漏れがないことを検証するため、制御弁及び接続部を含むハロン装置の全ての近づくことのできる部分に対して詳細検査を行うこと。必要に応じて選択された制御弁を内部検査のため開放すること。

.5 上記要件に適合していることが疑わしいシリンダーは水圧試験を行うか、或いは使用禁止とする。

.6 上記シリンダーに対する点検、板厚計測は延期期間 5 年の最後まで年次整備要件の一部として毎年行うこと。

5.4 固定式ガス消火装置の代替消火剤（TEC-0900 を参照のこと）

5.5 固定式ガス消火装置と同等の保護を与える消火装置 (TEC-0900 を参照のこと)

6.0 固定式ドライケミカル粉末消火装置

6.1 固定式ドライケミカル粉末消火装置の整備及び試験は、製造者及び船級協会の要件に従い実施すること。粉末の状態について、吸湿の兆候や性質の変化がないか特に注意を払うこと。

6.2 MSC.1/Circ.1432(参照資料(e))に基づいて、2 年毎の固定式ドライケミカル粉末消火装置の検査が実施される。この検査は、船級協会から適当と認められた整備業者若しくは、船級協会の検査員立ち合いの下実施され、消火装置の配管や設備の現状及び、当該システムが変更されていないことを確認すること。確認検査の一部として、少なくとも以下の項目も含むこと。

- 配管に詰まりがないことを確認するため窒素もしくは乾燥エアによる通気試験を実施する。通気試験中は、ノズルを取り外しておくこと。
- 現場/遠隔操作及び各バルブの作動試験を実施すること。
- 起動用ガスシリンダーに充填されている窒素ガスの容量を確認すること（遠隔操作場所も含む）。
- フレキシブル放出ホースが良好な状態を維持しており、劣化していないことを確認する（開放甲板にホースが位置する場合は、特に注意すること）。疑わしいホースは、最大使用圧力で圧力試験を実施すること。
- 粉末格納容器及びその安全弁は、装置の安全性に影響を及ぼすような腐食や損傷が生じていないことを確認すること。何らかの不具合が疑われる場合には、容器の試験及び安全弁の設定圧力の調整を陸上施設で実施すること。

6.3 窒素シリンダーを含む高圧シリンダーは、MSC.1/Circ.1318, 6.1.2(参照資料(k))にて示されるよう、10 年を超えない間隔で水圧試験が実施されなければならない。固定式ガス消火装置のシリンダーに船の完工日以前の日付が刻印されている場合、その刻印の日付が完工日の 12 カ月より前でなければ、最初の 10 年目の水圧試験は、2 回目の定期検査に併せて行われる入渠時に実施できる。

6.4 液化ガス運搬船に用いられる固定式ドライケミカル粉末消火装置

液化ガス運搬船に用いられる固定式ドライケミカル粉末消火装置の認定は、MSC.1/Circ. 1315, Guidelines for the Approval of Fixed Dry Chemical Powder Fire-Extinguishing Systems for the Protection of Ships Carrying Liquefied Gases in Bulk (参照資料 (n))による。

7.0 固定式泡消火装置及び持運び式泡消火器の泡原液

7.1 適用

以下に示す装置に用いる泡原液に対し、改定されたガイダンス MSC.1/Circ.1312, Performance and Testing Criteria, and Surveys of Foam Concentrates for Fixed Fire-Extinguishing Systems (参照資料(n))及び同 Corr.1 が適用される。

.1 以下の船種に要求される固定式甲板泡消火装置

- SOLAS 74, II-2 章 10.8 及び FSS Code14 章にて規定されるオイルタンカー;
- SOLAS II-2 章 1.6.2.1.2 及び IBC コードにて規定されるケミカルタンカー;

.2 以下に用いられる固定式泡消火装置

- FSS コード 6 章に基づく機関区域;
- FSS コード 4 章に基づく持ち運び式泡放射器

7.2 泡原液の型式承認

7.2.1 船上に備えられる全ての固定式泡消火システム及び持ち運び式泡放射器に用いられる泡原液は型式承認されたものとすること。初回試験を含む固定式泡消火装置の泡原液の試験は、Revised Guidelines for the Performance and Testing Criteria and Surveys of Foam Concentrates for Fixed Fire-Extinguishing Systems (参照資料(i))の 3.1 から 3.14 項に基づき、製造者により、船級協会から適当と認められた試験施設において実施されること。

7.2.2 型式承認は MSC/Circ.582 及び MSC/Circ.582/Corr.1, 並びに MSC/Circ.799 のガイダンスに従って実施されること。これらのガイダンスは 2012 年 7 月 1 日まで有効であり、 MSC.1/Circ.1312 により代替される。

7.3 泡原液の定期的分析

7.3.1 過度の貯蔵温度となるような設置状態、泡原液の汚染とタンクの不完全な充填は、原液の異常な劣化につながる可能性がある。よって、定期的な泡分析が必要となる。

7.3.2 最初の定期的な泡原液（タンパク質ベースの耐アルコール性泡原液は除く）の分析は、最初の充填日から 3 年以内、その後は毎年実施する。この分析は、製造者もしくは船級協会から適当と認められた整備業者によって行われなければならない。

7.3.3 タンパク質ベースの耐アルコール性泡原液は化学安定性テストを船舶への供給前とその後は毎年行う。(参照資料(i)の 3.14 参照)

7.3.4 低膨張、中膨張及び高膨張泡原液の性能、試験及び検査のためのガイダンスはそれぞれ、MSC.1/Circ. 1312, MSC/Circ.798 及び MSC/Circ. 670 による。

8.0 持運び式消火器

8.1 一般

8.1.1 すべての持運び式消火器は製造者のインストラクションに従い定期的な点検がされなければならない。

8.1.2 全ての消火器には、放出したことが判別可能な表示をすること。また、最充填のためのインストラクションが製造者から供給され、船上で利用可能であること。

8.1.3 整備・点検は、Resolution A.951(23)の表 9.1.3(参照資料(g))に基づいて有資格者、或いはそれらの監督下で実施されなければならない。

8.2 年次の点検整備

すべての持運び式消火器は、1 年を超えない間隔で整備されなければならない。

8.3 5 年毎の点検整備

同年に製造され、同時期に船上に備えられた消火器のうち、同形式毎に少なくとも 1 台について 5 年毎に防火操練の一環として放出試験を行うこと。

8.4 10 年毎の点検整備

すべての持運び式消火器は、起動用カートリッジと共に、10 年を超えない間隔で標準的な方法または製造者のインストラクションに従った方法で水圧試験を行う。これに関わらず、外観検査の結果、欠陥を有する疑いがある場合、船級検査員もしくはマーシャル諸島政府検査官は、水圧試験を要求して差支えない。水圧試験の実施日は、各消火器のボトルに恒久的かつ明確な方法でマークしなければならない。水圧試験は、マーシャル政府若しくは船級協会に認可されており、かつ船級協会により試験の実施が認められる機関、もしくは消火器の製造者によって実施されなければならない。消火器の水圧試験後、同じ機関により消火剤の最充填が実施されなければならない。

8.5 船上に備える持運び式消火器 (TEC-0900 を参照のこと)

8.6 追加の消火器、予備充填物及び充填 (TEC-0900 を参照のこと)

9.0 水煙消火装置、水噴霧消火装置及びスプリンクラー

9.1 10 年毎の点検

ガスシリンダー及び水圧容器について、EN 1968:2002 +A1 若しくは同等性のある船級協会規則に従い、水圧試験及び内部点検を実施すること。固定式ガス消火装置のシリンダーに船の完工日以前の日付が刻印されている場合、その刻印の日付が完工日の 12 カ月より前でなければ、最初の 10 年目の水圧試験は、2 回目の定期検査に併せて行われる入渠時に実施できる。

10.0　自蔵式呼吸具(SCBA)

10.1　週毎の点検

自蔵式呼吸具(SCBA) のシリンダーの圧力ゲージが適切であることを確認する。

10.2　月毎の点検

International Gas Carrier Code 及び IBC Code 若しくは BCH Code の適用対象である船舶に搭載されている自蔵式呼吸具は責任のある上級職員により少なくとも月に 1 度点検されること。

10.3　毎年の検査

全ての自蔵式呼吸具を SE 証書或いは MODU 証書の年次検査の一環として少なくとも毎年検査する。可能であれば、呼吸具の再充填システムの空気の良否も点検する。

10.4　自蔵式呼吸具用シリンダーの水圧試験

10.4.1　自蔵式呼吸具用シリンダーの水圧試験は 5 年に一度行い、試験日をボンベに消えないよう表示する。超軽量タイプのシリンダーの場合、水圧試験の間隔及び整備は同シリンダーの製造者及び船級協会の要件により異なる。シリンダーの整備の状態は船級協会検査員の認めるところとする。

10.4.2　自蔵式呼吸具シリンダーに船の完工日以前の日付が刻印されている場合、その刻印の日付が完工日の 6 カ月より前でなければ、最初の 5 年目の水圧試験は、1 回目の定期検査に併せて行われる入渠時に実施できる。

10.5　予備の補充物及び呼吸具の空気シリンダーの再充填

10.5.1　使用に適した予備の補充物を、要求される呼吸具に付き各 2 組備えること。

10.5.2　36 人以下の旅客を運送する旅客船及び貨物船において、清浄な空気を空シリンダーに再充填できる適当な手段を備えている場合には、予備の補充物は要求された呼吸具につき各 1 個備えることとして差し支えない。

10.5.3　36 人を超える旅客を運送する旅客船において 2010 年 7 月 1 日以後に建造されたものは、異物が混入することなく空気シリンダーを完全に再充填するための手段を適当な場所に備えるもの

とする。再充填するための手段は、次のいずれかとする。

.1 主配電盤及び非常配電盤から給電され、又は独立動力により駆動される空気圧縮機であって、要求される呼吸具ごとに 1 分間当たり 60 リットルの最小容量を有し、1 分間当たり 420 リットルを超えない容量を有するもの

.2 船舶内で使用される呼吸具を再充填するために適当な圧力を有する独立した高圧貯蔵装置であって、要求される呼吸具ごとに少なくとも 1200 リットル以上で 5 万リットルを超えない空気の容量を有するもの。

10.5.4 2014 年 7 月 1 日以後全ての船舶には、訓練に使用される呼吸具のシリンダーを再充填する装置又は使用されたシリンダーを交換するための適切な数の予備シリンダーを船上に備えなければならない。船の安全管理システムには、訓練に使用される呼吸具に対応した十分な予備シリンダーの準備を含める必要がある。

10.6 防煙ヘルメット

2002 年 7 月 1 日より前の要件である SOLAS II-2 (参考資料(f))の統一解釈(MSC/Cir.1085)で示されるように防煙ヘルメットに、その使用に伴う操作上の欠点や問題がある場合、2002 年改正 SOLAS II-2(参考資料(b))より前に防煙ヘルメットを備えることが許される船舶においてその使用は認められない。従って、少なくとも設置要件の一部を成す防煙ヘルメットと代替のために追加の呼吸具が備えられなければならない。

11.0 非常脱出用呼吸具（EEBD）

11.1 非常脱出用呼吸具の設置 (TEC-0900 を参照のこと)

11.2 保守及び手入れ

11.2.1 EEBD は製造者の指示（水圧試験を含む）に従って試験及び保守すること。EEBD に小容量の酸素容器（直径 2 インチ以下）が装備されている場合、一部の製造者は、定期的な水圧試験の必要がない一定の耐用年数を規定している。製造者の指示がなく、製造者による明確な禁止がなされていない場合、水圧試験は 5 年を超えない間隔で行う。

11.2.2 EEBD のシリンダーに船の完工日以前の日付が刻印されている場合、その刻印の日付が完工日の 6 カ月より前でなければ、最初の 5 年目の水圧試験は、1 回目の定期検査に併せて行われる入渠時に実施できる。

11.2.3 使用したユニットの交換の為、または有効期限に達するか、使用出来なくなった場合の為に、十分な予備の EEBD を船上に保管する。SOLAS II-2 章で要求される予備を含む EEBD の数に関して、MSC.1/Circ.1081 (参照資料 (h))を参照のこと。

11.2.4 保守要件、製造者の商標及び製造番号、有効期限のあるものには有効期限（製造年月日及び承認機関を含む）を各 EEBD に表示すること。

12.0 記録

12.1 点検の記録は船上に保管されなければならず、また電子データによる保管も可能とする。この記録には必要に応じて以下の項目が含まれること。

.1 週毎の点検;
.2 月毎の点検;
.3 四半期毎の点検;
.4 毎年の点検;
.5 隔年(2 年)毎の点検;
.6 5 年毎の点検;
.7 10 年毎の点検;
.8 20 年毎の点検;
.9 水圧試験の実施を含むその他の整備及び試験;
.10 泡原液の経過年数及びその後の措置;
.11 不具合及び是正手段

12.2 点検及び整備が乗組員以外の訓練された整備業者の手によって実施された場合、試験報告書が提出されなければならない。この報告書は点検の記録に含めること。

REPUBLIC OF THE MARSHALL ISLANDS

OFFICE OF THE MARITIME ADMINISTRATOR

Marine Notice

No. 2-011-14

Rev. 6/14

TO: **ALL SHIPOWNERS, OPERATORS, MASTERS AND OFFICERS OF MERCHANT SHIPS, AND RECOGNIZED ORGANIZATIONS**

SUBJECT: **Maintenance and Inspection of Fire Protection Systems and Appliances.**

References:

(a) **Maritime Regulation 2.11**
(b) **SOLAS Chapter II-2, as amended**
(c) **International Code for Fire Safety Systems (FSS Code), as amended**
(d) **MSC/Circ.849, dated 8 June 1998**
(e) **MSC.1/Circ.1432, dated 31 May 2012**
(f) **MSC/Circ.1085, dated 13 June 2003**
(g) **Resolution A.951(23), adopted on 5 December 2003**
(h) **MSC.1/Circ.1275, dated 3 June 2008**
(i) **MSC.1/Circ.1312, dated 10 June 2009 and Corr.1, dated 22 November 2011**
(j) **MSC.1/Circ.1313, as amended by Resolutions MSC. 206(81) and MSC.217(82), dated 10 June 2009**
(k) **MSC.1/Circ.1318, dated 11 June 2009**
(l) **MSC.1/Circ.1395/Rev.1, dated 9 July 2013**
(m) **Marshall Islands Marine Notice 2-011-11**
(n) **MSC.1/Circ.1315, dated 10 June 2009**
(o) **MSC/Circ.1081, dated 13 June 2003**
(p) **Resolution MSC.338(91), dated 30 November 2012**

PURPOSE:

This Notice addresses general maintenance, testing and inspection of fire protection systems, appliances and emergency equipment. It incorporates the provisions of MSC.1/Circ.1432, *Revised Guidelines for the Maintenance and Inspection of Fire Protection Systems and Appliances*, reference (e) above. It includes the addition of a chart (Appendix 1) that summarizes the intervals for maintenance, testing and inspection of the fire protection systems and appliances and designates the entity required to conduct the inspection. Reference (n) above has also been incorporated into this Notice. This Notice supersedes Rev. 12/13 and reflects the incorporation of amendment to SOLAS II-2/15, new paragraph 2.2.6, (reference (p) above) as well as the addition of a new paragraph 5.2.3 regarding control valve examinations with the rest renumbered.

Inquiries concerning the subject of this Notice should be directed to the Office of the Maritime Administrator, Republic of the Marshall Islands, c/o Marshall Islands Maritime and Corporate Administrators, Inc., 11495 Commerce Park Drive, Reston, VA 20191-1506 USA. The most current version of all Republic of the Marshall Islands Marine Notices may be found at www.register-iri.com.

MI-01, Rev. 1/12

This Notice is not intended as an exhaustive listing of applicable requirements, but addresses those provisions where the Republic of the Marshall Islands (RMI) Maritime Administrator (the "Administrator") requirements differ or where the Administrator has deemed additional clarification or emphasis necessary.

Any questions about the inspection, service or testing requirements of this Notice should be directed to: technical@register-iri.com.

APPLICABILITY:

This Notice applies to all ships, mobile offshore drilling units (MODUs) and mobile offshore units (MOUs).

REQUIREMENTS:

1.0 Safety Management-Onboard Maintenance Plan

1.1 SOLAS II-2/14 requires ships to carry on board, and available for inspection, a plan that details the maintenance, testing and inspection of fire protection systems and appliances. The Administrator requires the onboard maintenance plan to be consistent with the ship's safety management system.

1.2 Certain maintenance procedures and inspections may be performed by competent crewmembers who have completed an advanced fire-fighting training course, while others should be performed by persons specifically trained in the maintenance of such systems. The onboard maintenance plan shall indicate, in accordance with Appendix 1 of this Notice, the inspections and maintenance that are to be completed by competent crew members versus other trained personnel.

1.3 Prior to performing any work, a plan consistent with the ship's Safety Management System for carrying out safe maintenance, inspection and testing shall be developed to account for all personnel and all foreseeable hazards. The plan shall establish an effective communications system between the inspection personnel and on-duty crew.

2.0 Application of Requirements, Guidelines and Recommendations

2.1 With respect to the maintenance, testing and inspection of fire protection systems and appliances, ships' owners and officers shall be familiar with and follow the applicable requirements of the International Convention for Safety at Life at Sea, 1974, (SOLAS '74), as amended, the International Code for Fire Safety Systems (FSS Code), as amended, MODU Code (1979, 1989 and 2009 editions) and Classification Society requirements.

2.2 Minimum recommended levels of maintenance, testing and inspection to be included in an onboard maintenance plan are laid out in various International Maritime Organization (IMO) guidance documents (see References section above). This guidance has been adopted by the Administrator, except where superseded by this Notice.

2.3 Equipment manufacturers' recommendations, where existent, shall be followed by ships' owners and officers in the maintenance, testing and inspection of such equipment. Manufacturer maintenance manuals should be available on board where appropriate.

2.4 Where particular arrangements create practical difficulties, alternative testing and maintenance procedures shall be to the satisfaction of the Administrator.

3.0 Operational Readiness

3.1 All fire protection systems and appliances shall at all times be in good order and available for immediate use while the ship is in service. If a fire protection system is under maintenance, testing or repair, then suitable arrangements acceptable to the ship's Classification Society and the Administrator shall be made to ensure fire protection capability is not diminished through the provision of alternative fixed or portable fire protection equipment or other measures.

3.2 While underway or prior to sailing or in the case of MODUs and MOUs engaging in operations with a fire protection system under repair, a dispensation or short term certificate, as appropriate, must be obtained from the Administrator.

4.0 Maintenance, Testing and Inspection

4.1 Onboard maintenance, testing and inspections shall be carried out in accordance with the ship's maintenance plan at the intervals indicated in Appendix 1 of this Notice, as appropriate.

4.2 Instructions for on-board maintenance, not necessarily by the ship's crew, and testing of active and passive fire protection systems and appliances shall be easily understood. They should be illustrated wherever possible, and, as appropriate, include for each system or appliance:

.1 maintenance and repair instructions;

.2 schedule of periodic maintenance;

.3 list of replaceable parts; and

.4 log for records of inspections and maintenance (See also section 12.0 below).

5.0 Fixed Gas Fire-Extinguishing Systems

5.1 General

Shipbuilders/shipyards, Classification Societies, insurers, owners/operators, system service personal and all others involved shall carefully and critically review, routinely inspect and maintain, and verify and test their fixed gas fire-extinguishing systems to ensure that they will operate correctly during an emergency.

5.1.1 Flexible Hoses

As of 31 May 2013 and in accordance with MSC.1/Circ.1432 paragraph 10.1.2, flexible hoses should be replaced at the intervals recommended by the manufacturer and not exceeding every 10 years.

5.1.2 Two-year Inspection/Service

Every two (2) years (i.e., during the second or third periodical survey), fixed gas fire-extinguishing systems, except fixed CO_2 extinguishing systems which are addressed in section 5.2 below, shall be checked by an authorized service facility acceptable to the vessel's Classification Society

a. all high pressure extinguishing agents cylinders and pilot cylinders should be weighed or have their contents verified by other reliable means to confirm that the available charge in each is above 95 per cent of the nominal charge. Cylinders containing less than 95 per cent of the nominal charge could be refilled; and

b. blow dry compressed air or nitrogen through the discharge piping or otherwise confirm the pipe work and nozzles are clear of any obstructions. This may require the removal of nozzles, if applicable.

5.1.3 10-year (Hydrostatic Testing)

At least once every 10 years, a hydrostatic test and internal examination of 10% of the system's extinguishing agent and pilot cylinders shall be conducted. If one or more cylinders fail, a total of 50% of the onboard cylinders shall be tested. If further cylinders fail, all cylinders shall be tested.

In cases where cylinders for fixed-gas firefighting systems (except Halon systems) have been date stamped prior to delivery of a vessel, the first 10-year hydrostatic test may be harmonized with drydocking at the Second Special Survey under the IMO Harmonized System of Survey and Certification, provided that the initial date stamp (month/year) on the cylinder does not exceed 12 months before the vessel delivery date.

5.2 Fixed CO_2 Fire Extinguishing Systems

5.2.1 Every two (2) years, fixed CO_2 extinguishing systems shall be checked by an authorized service facility acceptable to the vessel's Classification Society

5.2.2 Fixed CO_2 fire-extinguishing systems shall be maintained and inspected in accordance with the guidelines contained in MSC.1/Circ.1318, *Guidelines for the Maintenance and Inspection of Fixed Carbon Dioxide Fire-Extinguishing Systems* (reference (k) above), which are intended to demonstrate that the system is kept in good working order and readily available for use as specified in SOLAS '74, regulation II-2/14.2.1.2. These guidelines supplement the fire-extinguishing system manufacturer's approved maintenance instructions.

5.2.3 In addition to the maintenance and inspection requirements of paragraph 5.2.2. above, at least once every five (5) years, all control valves of fixed CO_2 systems are to be internally examined.

5.2.4 The survey requirements for cargo ships under section 6.1 of MSC.1/Circ.1318 should be carried out during the second or third periodical survey under the IMO Harmonized System of Survey and Certification.

5.3 Halon Systems

5.3.1 Use of Halon Systems

SOLAS '74, regulation II-2/10 permits the use of Halons as fire extinguishing media on ships built before 1 October 1994. The Administrator has not established a phase-out date for existing Halon systems. However, it should be noted that the release of Halons into the atmosphere when testing existing systems is prohibited. In addition, the European Commission considers that supply of a non-EU flagged ship in an EU-port with Halon an illegal export. Therefore, in a case where Halon is discharged for whatever reason, refilling of such systems on non-EU flagged ships with Halon is not possible and that ship will be detained until a new fixed fire-fighting system is installed on board. See RMI Marine Notice 2-011-11, *Systems Using Halogenated Hydrocarbons (Halons) and Other Ozone Depleting Substances*, reference (m) above, for additional information.

5.3.2 Minimum Recommended Maintenance

.1 Verification of Cylinder Contents

At least biennially (intervals of two (2) years ± three (3) months) as part of the survey for issuance of the SOLAS SEC, the contents of the Halon cylinders should be weighed or have their contents verified by other reliable means to confirm that the available charge in each is above 95% of the nominal charge as far as reasonably practicable, as determined by the Administrator. Cylinders containing less than 95%of the nominal charge should be refilled.

.2 Hydrostatic Testing

(a) All Halon cylinders must be hydrostatically tested as follows:

- after each 20 years of service;
- prior to recharging a discharged cylinder; or
- when visual inspection reveals a potential defect.

(b) Hydrostatic test dates must be stamped on the cylinders. Hydrostatic testing must be performed by an authorized servicing facility which has been certified by a government agency or Classification Society. The facility must be acceptable to the attending Classification Society

surveyor. The same facility should recharge the cylinders after testing to demonstrate serviceability.

(c) Visual inspection and non-destructive testing (NDT) of Halon cylinders may be performed in lieu of hydrostatic testing by an authorized servicing facility which has been certified by a government agency or Classification Society.

5.3.3 Relaxed Maintenance Schedule

.1 Based on the logistical difficulties associated with locating servicing facilities and suppliers for the testing and maintenance of existing fixed Halon fire suppression systems and components, the Administrator will consider a relaxed maintenance schedule with regard to the hydrostatic testing of the Halon storage cylinders.

.2 Consideration for the application of the relaxed hydrostatic testing requirements for the fixed Halon system storage cylinders will be given on a case-by-case basis, and must be approved in writing by the Administrator.

.3 Under the relaxed maintenance schedule, the hydrostatic testing interval of 20 years for the Halon storage may be extended by five (5) years provided the following conditions are met:

- a cylinder has not been discharged during its service history;
- cylinder contents are verified by weighing or isotropic measurement;
- cylinder pressure/levels are verified to be acceptable;
- a thorough visual inspection of cylinders reveal no potential defects; and
- cylinders are gauged to the extent considered necessary, and the wall thickness readings kept on board for future comparative reference.

.4 In addition, a thorough examination shall be made of all accessible component parts of the Halon system, including control valves and connections, to verify satisfactory condition and freedom from leakage: and selected control valves shall be opened out for internal examination to the extent necessary.

.5 Any suspect cylinders that do not meet the provisions stated above must be tested, or taken out of service.

.6 The cylinder inspection and thickness gauging shall then be repeated annually as part of the annual servicing requirement of the system, until the end of the five (5) year period of extension.

5.4 Alternative Fixed Gas Fire-Fighting Media and Systems

The Administrator recognizes that there are other media (e.g., NOVEC™ 1230 fluid, INERGEN®, FM 200®, etc.) that can be used in fixed gas fire-extinguishing systems for machinery spaces and cargo pump rooms. Use of such alternatives shall be subject to

approval with any attached conditions, as appropriate, by the Administrator and in accordance with SOLAS Chapter II-2 requirements for alternative fire-fighting systems and relevant guidance[1]. Maintenance and inspection of these systems shall be carried out in accordance with manufacturer's instructions and/or Classification Society requirements.

5.5 Alternative to Ineffective Fixed Gas Fire-Fighting Systems

Water supplies as defined in SOLAS II-2/Reg.19.3.1.2 are considered as an acceptable alternative for the ineffective fixed gas fire-extinguishing system, for ships when allowed to carry any of the cargoes contained in table 2 of MSC.1/Circ.1395/Rev.1, *Lists of Solid Bulk Cargoes for Which a Fixed Gas Fire-Extinguishing System May be Exempted or for Which a Fixed Gas Fire-Extinguishing System is Ineffective*, reference (l), above. Such an arrangement when provided for the carriage of any of the above cargoes should be verified for compliance by the vessel's Classification Society.

6.0 Fixed Dry Chemical Powder Fire-Extinguishing Systems

6.1 Such system is to be serviced and tested in accordance with the Manufacturer's requirements and the Classification Society's requirements, should it have any. Particular attention is to be paid to the condition of the powder for any sign of moisture ingress and that its properties remain as per type approval.

6.2 In accordance with MSC.1/Circ. 1432 (reference (e) above), two-year inspections shall be carried out on fixed dry chemical powder systems. The inspections shall be conducted by an authorized service facility acceptable to the vessel's Classification Society or the attending Class Surveyor(s) who is (are) to perform a general examination of the distribution piping and installation of the dry chemical powder fire-extinguishing system to confirm, to the extent possible, that the system has not been modified from its original installation. Part of such verification should include also the following minimum requirements:

- The piping distribution system is to be blown through with Nitrogen (N_2) or dry air to ensure it is free of any obstruction. The nozzles, if any, are to be removed to ensure that they are free and not blocked during the blow-through operation.
- Operational test of local and remote controls and section valves.
- The contents verification of propellant gas cylinders containing Nitrogen (N_2) including remote operating stations is to be confirmed.

[1] Such guidance includes, but is not limited to, *Revised Guidelines for the Approval of Equivalent Fixed Gas Fire-Extinguishing Systems*, as referred to in SOLAS '74 for Machinery Spaces and Cargo Pump-Rooms (MSC/Circ.848, adopted 8 June 1998 and as amended by MSC.1/Circ.1267, adopted 4 June 2008); *Guidelines for the Approval of Fixed Aerosol Fire-Extinguishing Systems Equivalent to Fixed Gas Fire-Extinguishing Systems*, as referred to in SOLAS '74, for Machinery Spaces (MSC/Circ. 1007, adopted 26 June 2001) and *Revised Guidelines for the Approval of Equivalent Water-Based Fire Systems for Machinery Spaces and Cargo Pump-Rooms* (MSC.1/Circ. 1165 , adopted 10 June 2005 and as amended by MSC.1/Circ.1386, adopted 10 December 2010).

- Flexible discharge hoses are to be inspected to confirm that they are maintained in good condition and have not perished, especially when located on open decks. In case of any doubt the hoses are to be subjected to a full working pressure test.
- The dry chemical powder containment tank and its associate safety valves are to be inspected for signs of corrosion or deterioration which may affect the safety of the system. In case of any doubt the tank is to be tested and safety valve set points adjusted and confirmed at the shop.

6.3 High pressure cylinders, including N_2 cylinders, shall be subjected to periodical tests at intervals not exceeding 10 years as provided in paragraph 6.1.2 of MSC.1/Circ.1318, reference (k), above. See also 5.1.3 of this Notice, above, regarding harmonization with drydocking.

6.4 For ships carrying liquefied gases in bulk, the guidelines for the approval of fixed dry chemical powder fire-extinguishing systems are contained in MSC.1/Circ. 1315, *Guidelines for the Approval of Fixed Dry Chemical Powder Fire-Extinguishing Systems for the Protection of Ships Carrying Liquefied Gases in Bulk*, reference (n), above.

7.0 Foam Concentrates for Fixed Fire-Extinguishing Systems and Portable Foam Applications

7.1 Applicability

The revised guidelines contained in MSC.1/Circ.1312, *Performance and Testing Criteria, and Surveys of Foam Concentrates for Fixed Fire-Extinguishing Systems* (reference (i) above), with reference to MSC.1/Circ.1312/Corr.1 (reference (i) above), should be applied to the foam concentrates (not their generating equipment) used for:

.1 fixed deck foam fire-extinguishing systems required for:

- tankers by SOLAS ‘74, regulations II-2/10.8 and chapter 14 of the FSS Code;
- chemical tankers as specified by SOLAS regulation II-2/1.6.2.1.2 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk; and

.2 fixed foam fire-extinguishing systems in:

- machinery spaces according to chapter 6 of the FSS Code; and for
- portable foam applications according to chapter 4 of the FSS Code.

7.2 Type Approval of Foam Concentrates

7.2.1 Foam concentrates for all fixed systems and for portable foam applicators placed on ships should be type approved. Tests, including fire tests, should be performed in accordance with paragraphs 3.1 to 3.14 of the *Revised Guidelines for the Performance and Testing Criteria and Surveys of Foam Concentrates for Fixed Fire-Extinguishing Systems*

(reference (i) above) by the foam concentrate manufacturer at laboratories acceptable to the Classification Society.

7.2.2 Type approvals conducted in accordance with the Guidelines in MSC/Circ.582 and MSC/Circ.582/Corr.1, and MSC/Circ.799, which are superseded by MSC.1/Circ.1312 remained valid only until 1 July 2012.

7.3 Periodical Controls of Foam Concentrates Stored on Board

7.3.1 Certain installation conditions such as excessive ambient storage temperature, contamination of the foam concentrate and incomplete filling of the tank may lead to abnormal ageing of the concentrates. As a result, periodic testing of concentrates is necessary.

7.3.2 The first periodical control of foam concentrates (except for protein-based alcohol resistant foam concentrates) should be performed not more than three (3) years after being supplied to the ship, and after that, every year. These tests should be performed by laboratories or authorized service suppliers deemed acceptable to the Classification Society.

7.3.3 Protein-based alcohol-resistant foam concentrates should be subjected to a chemical stability test prior to delivery to the ship and annually thereafter. See paragraph 3.14 of reference (i) above.

7.3.4 Guidance on performance and testing criteria and surveys of low-expansion concentrates, medium-expansion concentrates and high-expansion concentrates for fixed fire-extinguishing systems are found in MSC/Circ. 1312, MSC/Circ.798 and MSC/Circ. 670, respectively.

8.0 Portable Fire Extinguishers

8.1 General

8.1.1 All portable fire extinguishers shall be subject to periodical inspections in accordance with the manufacturer's instructions.

8.1.2 All portable fire extinguishers should be provided with a visual indication of discharge and instructions for recharging should be provided by the manufacturer and be available onboard.

8.1.3 Service and inspection should only be undertaken by, or under the supervision of, a person with demonstrable competence, based upon the inspection guide (Table 9.1.3) contained in Resolution A.951(23),Improved Guidelines for Marine Portable Fire Extinguishers (reference (g) above).

8.2 Annual Inspection/Service

All portable fire extinguishers shall be serviced at intervals not exceeding one (1) year.

8.3 Five-year Inspection/Service

At least one (1) extinguisher of each type manufactured in the same year and kept on board a ship should be test discharged at five (5) year intervals as part of a fire drill.

8.4 Ten-year Inspection/Service

All fire extinguishers together with propellant cartridges shall be hydrostatically tested in accordance with the recognized standard or the manufacturer's instruction at intervals not exceeding 10 years. However, a hydrostatic test may be also required by the Classification Society Surveyor or RMI Nautical Inspector if visual examination indicates a potential defect in the cylinder. The hydrostatic test date must be permanently and clearly marked on the bottles. It must be performed by a servicing facility which has been certified by a government agency or Classification Society and is acceptable by the vessel's Classification Society, or by the extinguisher manufacturer to perform this type of work. The same facility should recharge the cylinder after testing to demonstrate serviceability

8.5 Number and Arrangement of Portable Fire Extinguishers on Board Ships

Vessels constructed on or after 1 January 2009 should use the table shown in MSC.1/Circ.1275, Unified Interpretation of SOLAS Chapter II-2 on the *Number and Arrangement of Portable Fire Extinguishers on Board Ships* (reference (h) above), as reference for determining the number and arrangement of portable fire extinguishers in accommodation spaces, service spaces, control spaces, control stations, machinery spaces of category A, other machinery spaces, cargo spaces, weather decks and other spaces onboard ships. Vessels which may not comply with the above should be brought into compliance by the first renewal or intermediate Safety Equipment survey coming after 1 November 2011.

For vessels constructed prior to 1 January 2009, shipowners/operators are encouraged to implement the unified interpretation of MSC.1/Circ.1275 (reference (h) above).

8.6 Spare Charges, Additional Fire Extinguishers, and Refilling of Extinguishers

8.6.1 For fire extinguishers of the same type, capable of being recharged on board, the spare charges shall be provided as follows:

- 100% for the first 10 extinguishers and 50% for the remaining extinguishers but not more than 60 (fractions to be rounded off to next whole number).

8.6.2 For extinguishers which cannot be recharged by the crew, additional portable fire extinguishers of the same quantity, type, capacity and number as determined in the paragraph above shall be provided in lieu of spare charges.

8.6.3 Instructions for recharging the extinguishers shall be carried on board. Periodic refilling of the cylinders shall be in accordance with the manufacturer's recommendations. Lacking same, refill is required when the extinguishing media starts to lose effectiveness. Partially emptied extinguishers should also be recharged. Only refills approved for the fire extinguisher in question may be used for recharging.

9.0 Water Mist, Water Spray and Sprinkler Systems

9.1 Ten-Year Service

The hydrostatic test and internal examination for gas and water pressure cylinders shall be conducted in accordance with EN 1968:2002 +A1 or equivalent Classification Society requirements. See also 5.1.3 of this Notice, above, regarding harmonization with drydocking.

10.0 Self-Contained Breathing Apparatus (SCBA)

10.1 Weekly Inspections

SCBA should be inspected weekly to ensure that they are in the correct pressure range.

10.2 Monthly Inspections

For ships subject to the *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk* (IGC Code), *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk* (IBC Code) and *Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk* (BCH Code), SCBAs shall be inspected at least once a month by a responsible ship's officer.

10.3 Annual Examination

All SCBAs shall be examined at least annually as part of the annual statutory survey for the SEC or MODU Code Certificate. If applicable, the SCBAs air recharging systems should be checked for air quality as part of the annual statutory survey for the SEC or MODU Code Certificate.

10.4 Hydrostatic Testing of SCBA Cylinders

10.4.1 Hydrostatic testing of SCBA cylinders shall be carried out once every five (5) years. The hydrostatic test date must be permanently marked on the bottles. Intervals for hydrostatically testing cylinders of the ultra lightweight type may vary and will depend upon the requirements of the cylinder manufacturer and the ship's Classification Society.

Servicing of the cylinders must be performed to the satisfaction of the Classification Society surveyor.

10.4.2 In cases where SCBA cylinders have been date stamped prior to delivery of a vessel, the first 5-year hydrostatic test may be harmonized with drydocking at the First Special Survey under the IMO Harmonized System of Survey and Certification, provided that the initial date stamp (month/year) on the cylinder does not exceed six (6) months before the vessel delivery date.

10.5 Spare Charges and Recharging of SCBA Cylinders

10.5.1 Two (2) interchangeable spare charges suitable for use with the SCBA should be provided for each required apparatus.

10.5.2 Passenger ships carrying not more than 36 passengers and cargo ships equipped with suitable located means for fully recharging the air cylinders free from contamination, only one (1) interchangeable spare charge is required for each required apparatus.

10.5.3 Passenger ships carrying more than 36 passengers constructed on or after 1 July 2010 shall be fitted with a suitably located means for fully recharging breathing air cylinders, free from contamination. The means for recharging shall be either:

.1 breather air compressors supplied from the main and emergency switchboard, or independently driven, with a minimum capacity of 60 *l*/min per required breathing apparatus, not to exceed 420 *l*/min; or

.2 self-contained high-pressure storage systems of suitable pressure to recharge the breathing apparatus used on board, with a capacity of at least 1,200 *l*/per required breathing apparatus, not to exceed 50,000 *l* of free air.

10.5.4 On or after 1 July 2014, all ships unless provided with an onboard means of recharging breathing apparatus cylinders, shall have a suitable number of spare cylinders to replace those used during training or drills. The Administrator does not prescribe any minimum number, however the shipboard safety management system needs to include provisions that sufficient spares corresponding to the number of breathing apparatus being used during drills, are available onboard.

10.6 Smoke Helmet

Recognizing the problems and operational drawbacks associated with the use of a smoke helmet type breathing apparatus as identified in Unified Interpretation of SOLAS Regulation II-2/15.2.11, in force before 1 July 2002 (reference (f) above), the use of such apparatus shall not be permitted onboard those ships which may still be able to carry this type of equipment as permitted prior to the 2002 amendments to SOLAS Chapter II-2 (reference (b) above). Accordingly, additional SCBAs shall be provided to replace any smoke helmet-type breathing apparatus where these devices may form part of the minimum equipment requirement.

11.0 Emergency Escape Breathing Devices (EEBDs)

11.1 Number and Locations

11.1.1 SOLAS '74 requires at least two (2) EEBDs to be located in the accommodations and additional EEBDs to be placed in the machinery spaces. The Administrator considers "machinery spaces" to mean Category A Machinery Spaces such as engine rooms and boiler rooms. Auxiliary Machinery Spaces such as Steering Gear Compartments, Refrigeration Machinery Rooms, Bow Thruster Compartments, and the like do not have to be fitted with EEBDs.

11.1.2 Inasmuch as MSC/Circ.849, *Guidelines for the Performance, Location, Use and Care of Emergency Escape Breathing Devices* (reference (d) above)**,** is referenced in SOLAS II-2/13.3.4 and 13.4.3, the Administrator is treating the guidelines contained in the Circular as mandatory.

11.1.3 For compliance with the last sentence in Paragraph 4.6 of MSC/Circ.849, only those control spaces and workshops that are remotely located from the machinery space escape routes need be considered.

11.1.4 In achieving compliance with paragraph 4.6 of MSC/Circ.849, a minimum of two (2) EEBDs should be located on each level of the machinery space. If a machinery space contains an enclosed primary escape trunk having a door at each level, only one (1) EEBD need be located on each level[2].

11.1.5 Under no circumstances shall an EEBD be used to enter an enclosed shipboard space in which the atmosphere is known or suspected to be oxygen-depleted, oxygen-enriched, toxic or flammable.

11.2 Maintenance and Care

11.2.1 The EEBD should be examined and maintained in accordance with the manufacturer's instructions, including any instructions for hydrostatic testing. It should be noted that when an EEBD is fitted with a small capacity oxygen cartridge (two (2) inches or less in diameter), some manufacturers specify a fixed service life without scheduled hydrostatic pressure testing. In the absence of manufacturer's instructions, hydrostatic testing should be carried out at intervals not exceeding five (5) years, unless specifically prohibited by the manufacturers.

[2] The term "level" should be interpreted as meaning a deck where watchstanding personnel reside, workshops and control stations are located, or the crew may be employed during routine maintenance. In essence, two (2) EEBDs are required only on those deck "levels" where people are likely to be employed. Platform decks that serve to divide long ladders into segments and partial decks where personnel are not likely to be employed for any significant period of time are not considered as "levels" and do not require EEBDs.

11.2.2 In cases where EEBD cylinders have been date stamped prior to delivery of a vessel, the first hydrostatic test may be harmonized with drydocking at the First Special survey under the IMO Harmonized System of Survey and Certification, provided that the initial date stamp (month/year) on the cylinder does not exceed sic (6) months before the vessel delivery date.

11.2.3 Sufficient spare EEBDs should be kept on board to replace units that are used, reach their expiry date, or otherwise become unserviceable. See MSC.1/Circ.1081 (reference (o) above) which addresses the number of EEBDs, including spares, required under SOLAS II-2.

11.2.4 Maintenance requirements, manufacturer's trademark and serial number, shelf life with accompanying manufacture date and name of approving authority should be printed on each EEBD.

12.0 Records

12.1 Records of the inspections shall be carried on board the ship, or may be computer based. They shall include as appropriate:

.1 Weekly inspections;

.2 Monthly inspections;

.3 Quarterly inspections;

.4 Annual inspections;

.5 Biennial (2-yearly) inspections;

.6 5-year inspections;

.7 10-year inspections:

.8 20-year inspections;

.9 Other maintenance and testing, including whether a pressure test was performed;

.10 Age of foam concentrates and subsequent controls; and

.11 Deficiencies identified and corrective actions taken.

12.2. In cases where the inspections and maintenance are carried out by trained service technicians other than the ship's crew, inspection reports shall be requested to be provided at the completion of the testing. These reports shall be included in the records of inspections.

Firefighting Systems and Appliances
Summary of Maintenance, Testing and Inspection Intervals
Appendix 1

Note: This chart is intended as reference tool and should not be substituted for an actual reading of circulars referred to within this Marine Notice. The numbers within parentheses under the inspection interval refer to the IMO Circular(s) noted in the first column.

	Weekly	**Monthly**	**Quarterly**	**Annually**	**Biennially (2-year intervals)**	**5-year**	**10-year (Hydrostatic testing)**	**20-year (Hydrostatic testing)**
Breathing Apparatus (includes SCBA) (MSC.1/Circ.1432)	Ship[2] (4.5)	Tanker: Ship[2], See MN § 10.2		Ship[2] (7.8)		Shore[3](9.4)		
EEBDs (MSC.1/Circ.1432)	Ship[2] (4.5)			Ship[2] (7.8)		hydrostatic testing- see MN § 11.2.1		
Ventilation system and fire dampers (MSC.1/Circ.1432)			Ship[2] (6.3)	Ship[2] (7.6)				
Fixed fire detection and alarm systems MSC.1/Circ.1432	Ship[2] (4.1)	Ship[2] (5.10)		Ship[2] (7.2)				
Fire doors (MSC.1/Circ.1432)	Ship[2] (4.3)		Ship[2] (6.4)	Ship[2] (7.7)				
Fire hoses, fire hydrants, fire main, fire nozzles and fire pumps (MSC.1/Circ.1432)		Ship[2] (5.1)	Ship[2] (6.1)	Ship[2] (7.1)		Ship[2] (7.1.4)		
International shore connections			Ship[2](6.1)					
Fireman's outfit MSC.1/Circ. 1432)		Ship[2] (5.5)						
Fire stations and lockers		Ship[2] (5.5)						
Fixed Gas fire extinguishing systems (except CO_2 & Halon) MSC.1/Circ. 1432)	Ship[2] (4.2)	Ship[2] (5.2)		Ship[2] (7.3)	Shore[3] (8.1) or Ship[2]	Shore[3] (9.1)	Shore[3] (10.1)	

	Weekly	Monthly	Quarterly	Annually	Biennially (2-year intervals)	5-year	10-year (Hydrostatic testing)	20-year (Hydrostatic testing)
Fixed CO_2 fire extinguishing systems (MSC.1/Circ.1318)		Ship[2] (4)		Ship[2] (5)	Passenger ships (± 3 months):Shore[3] (6.1) (6.2) Cargo ships (intermediate, periodical or renewal survey*): Shore[3] (6.1) Cargo ships (renewal survey*) Shore[3] (6.2)	Internal examination of all control valves (Shore[3])	Shore[3] (6.1.2)	
Fixed Halon fire extinguishing systems (MSC.1/Circ.1432/ MN 2-011-14)		Ship[2] (5.2)		Ship[2] (7.3)	Shore[1]	Shore[3] (9.1)		Shore[3] (10/§5.3))
Fixed Dry Chemical Powder fire extinguishing systems (MSC.1/Circ.1432)		Ship[2] (5.6)		Ship[2] (7.9)	Shore[3] (8.2)		Shore[3] (10.3)	
Fixed aerosol extinguishing systems (MSC.1/Circ.1432)		Ship[2] (5.7)		Ship[2] (7.10)			Shore[3] (10.4)	
Foam fixed fire-extinguishing systems (MSC.1/Circ.1432)		Ship[2] (5.3)	Ship[2] (6.2)	Ship[2] (7.4)		Shore[3] (9.2)		
Foam concentrates stored on board for the foam fixed fire-extinguishing system (MSC.1/Circ.1312)				Shore[4] (5); After first 3 years-; For alcohol resistant protein; prior to delivery and annually thereafter				

	Weekly	Monthly	Quarterly	Annually	Biennially (2-year intervals)	5-year	10-year (Hydrostatic testing)	20-year (Hydrostatic testing)
Portable foam applicators and foam concentrate stored on board for portable foam applicators (MSC.1/Circ.1432/ MSC.1/Circ.1312)		Ship[2](5.8)		Ship[2](7.11)				
				Concentrate: Prior to delivery and annually thereafter, Ship[4](7.11/,5)				
				Concentrate: Protein based /alcohol resistant, Ship[4](7.11/5)				
Portable fire extinguishers (A.951(23))				Ship[2] (9.1 & Table 9.1.3)		Ship[2] (9.1.1)	Shore[3] (9.1.2)	
PA + gen. alarm systems (MSC.1/Circ.1432)	Ship[2] (4.4)							
Water-mist, water spray and sprinkler systems (MSC.1/Circ.1432)	Ship[2] (4.7)	Ship[2] (5.4)		Ship[2] (7.5)		Shore[3] (9.3)	Shore[3] (10.2)	
Wheeled (mobile) fire extinguishers (MSC.1/Circ.1432)		Ship[2](5.9)		Ship[2] (7.12)		Shore[3] (9.6)	Shore[3] (10.5)	
Galley and deep fat cooking fire-extinguishing systems (MSC.1/Circ.1432)				Ship[2] (7.13)				
Low location lighting systems (MSC.1/Circ.1432)	Ship[2](4.6)					Shore [3](9.5)		

Key: Entity to Conduct Inspection

[1] = Shore service as part of the annual statutory survey for the Safety Equipment Certificate (SEC): The inspection and/or verification shall be to the satisfaction of the attending Classification Society surveyor.
[2] = Ships officers are responsible for performing tests and examinations of these firefighting systems or equipment, unless manufacturers require annual servicing by authorized agent. The tests and examinations may be required to be carried out in the presence of the Classification Society, if deemed necessary by either the Administrator or an entity acting for and on behalf of the Administrator.
[3] = checked by an authorized service facility acceptable to the vessel's Classification Society.
[4] = tests should be performed by the shipowner or operator via laboratories or authorized service suppliers deemed acceptable to the Classification Society.

*Refer to survey guidelines under the Harmonized System of Survey and Certification, 2007(resolution A. 1053(27)).

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