標題

SOLAS II-1 章改正による揚貨装置の新要件について

ClassNK
テクニカル
インフォメーション

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各位

第 107 回海上安全委員会(MSC107)において、揚貨装置及びアンカーハンドリングウインチに関し SOLAS II-1 章の改正が採択され、3-13 規則が新設されました。
併せて、揚貨装置に関するガイドライン(MSC.1/Circ.1663)及びアンカーハンドリングウインチに関するガイドライン(MSC.1/Circ.1662)が新たに承認され、SOLAS II-1/3-13 より参照されております。

本テクニカルインフォメーションでは、揚貨装置に関する主な要件についてお知らせいたします。

1. 適用*
   総トン数 500 トン以上の国際航海に従事する船舶
   * 上記に該当しない船舶（日本籍船を含む）の適用につきましては、確認でき次第、弊会ホームページでお知らせいたします。

2. 揚貨装置の定義(SOLAS II-1/2.30)
   揚貨装置とは次のような船上設備をいう。
   (1) 貨物の積込、移動又は積降に使用される設備
   (2) 貨物艙ハッチカバー又は可搬式隔壁の上げ下ろしに使用される設備
   (3) 機関室クレーン
   (4) ストアクレーン
   (5) ホースハンドリングクレーン
   (6) テンダーボート等の進水、揚収に使用される設備
   (7) 人員移送用クレーン

   次の設備には適用しない。(SOLAS II-1/3-13.1.2)
   (1) MODU(Mobile Offshore Drilling Unit)として証明された船舶に搭載されている揚貨装置
   (2) 主管庁が認める基準に適合する、パイプやケーブルの敷設/修繕のような洋上における建設作業船又は撤去作業を含む洋上での設置作業船に搭載される揚貨装置
   (3) 貨物艙ハッチカバーの開閉装置（フォールディング式やサイドローリング式などのハッチカバーの開閉装置）
   (4) LSA コードに適合した救命設備用進水装置

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3. 主な要件

(1) 2026年1月1日以降に搭載される揚貨装置に適用される要件** (SOLAS II-1/3-13.2.1.1, MSC.1/Circ.1663, 3.1 & 3.3)

(i) 設計、構造及び搭載（SOLAS II-1/3-13.2.1.1, MSC.1/Circ.1663, 3.1 & 3.3）
主管庁が認める船級協会の規則又は主管庁が認めた基準に従うことが要求され、図面審査や製造工場での検査を実施すること。

(ii) 荷重試験及び詳細検査（SOLAS II-1/3-13.2.1.2, MSC.1/Circ.1663, 3.2.1.1）
船舶に搭載後初めて使用する前及び主要構造部の修理･改造･変更が行われた後に荷重試験及び詳細検査を実施すること。
また5年に1度の荷重試験及び詳細検査を実施すること。(MSC.1/Circ.1663, 3.2.1.4 & 3.2.2.1.1）

(iii) 制限荷重を恒久的に標示し、その制限荷重を証明するための証拠書類を保持すること。（SOLAS II-1/3-13.2.3, MSC.1/Circ.1663, 3.4.1）

制限荷重が 1,000kg 未満の揚貨装置については、主管庁が上記(i)及び(ii)の適用要否を決定する。(SOLAS II-1/3-13.1.3)
各主管庁から本取扱いなど関連のサーキュラーが発行されましたら、順次弊会ホームページに掲載する予定です。

** 「2026 年 1 月 1 日以降に搭載される揚貨装置」とは、次の(a)及び(b)をいう。(SOLAS II-1/2.33)

(a) 2026年1月1日以降の起工もしくはこれと同等の建造段階にある船舶に搭載される揚貨装置。

(b) (a)以外の船舶については(2009年1月1日より前に建造された船舶を含む)、契約上の納入日、或いは契約上の納入日がない場合には実際の納入日が 2026 年 1 月 1 日以降の揚貨装置。

(2) 2026 年 1 月 1 日より前に搭載された揚貨装置に適用される要件

(i) 2026 年 1 月 1 日以降の最初の Safety Construction 証書(以下、「SC」という)更新検査まで又は主要構造部の修理･改造･変更が行われた後、荷重試験及び詳細検査を実施、制限荷重を恒久的に標示し、その証拠書類を保持すること。(SOLAS II-1/3-13.2.4, MSC.1/Circ.1663, 3.2.1.2)
また、5 年に 1 度の荷重試験を実施すること。(MSC.1/Circ.1663, 3.2.1.4 & 3.2.2.1.1)
ただし、既存の揚貨装置で、主管庁が認める他の国際基準に基づいた有効な荷重試験及び詳細検査の証明書のある揚貨装置は本規定に適合しているものとみなされる。(MSC.1/Circ.1663, 3.3.3)
なお、制限荷重が 1,000kg 未満の揚貨装置に対する荷重試験及び荷重試験後の詳細検査については、主管庁がその適用要否を決定する。(SOLAS II-1/3-13.1.3)

(ii) 揚貨装置の制限荷重を証明するための書類がなく、設計情報が入手できない場合には、船舶所有者又は船舶管理者等の指定する制限荷重に基づき荷重試験を実施すること。(MSC.1/Circ.1663, 3.2.1.6)

（次頁に続く）

(3) すべての揚貨装置に適用される要件
  (i) 詳細検査は、SC 定期的検査時に実施すること。(SOLAS II-1/3-13.3, MSC.1/Circ.1663, 3.2.2.1.2)
  SC 定期的検査の時以外で詳細検査が実施されている場合、SC 定期的検査時に適切に詳細検査が実施された記録が確認されること。(MSC.1/Circ.1663, 3.2.2.2)
  (ii) 揚貨装置の保守、点検、作動試験は製造者の推奨、業界標準などに従って実施すること。(MSC.1/Circ.1663, 3.5.1.1)
  (iii) 揚貨装置の保守手引書は製造者により提供されること。既存の揚貨装置で製造者の保守手引書が入手できない場合には、十分な知識を有する第三者により提供されることが認められる。(MSC.1/Circ.1663, 3.5.2.1)
  (iv) 揚貨装置の保守手引書には、少なくとも次の情報が含まれていること。(MSC.1/Circ.1663, 3.5.2.2)
    (a) 点検体制や保守計画の記述、チェックリスト、点検や保守の際に使用する重要な工具リスト
    (b) 日常の修理、保守の指示
    (c) 技術的な保守情報
    (d) 推奨される潤滑剤、油やフィルター交換の情報
    (e) 旋回ベアリング保守の情報（必要な場合）
    (f) 交換部品のリスト及びこれらの点検、保守、交換手順
    (g) 予備品の供給元のリスト
    (h) 点検及び保守記録の標準書式
    (i) 作動試験手順及び作動試験前後の点検手順
    (j) 点検時に特段の注意を払うことが要求される構成部品のリスト及びこれらの点検、保守手順
    (k) 構成部品･機器の交換及び開放点検の推奨間隔
    (l) 塗装及び腐食保護の維持に関する情報
    (m) 揚貨装置が長期間作動されない場合の特別な点検及び保守に関する情報
  (v) 揚貨装置の日常点検及び保守の記録は船上に保管されること。(MSC.1/Circ.1663, 3.5.3.1)
  (vi) 揚貨装置の操作手引書は製造者により提供されること。既存の揚貨装置で製造者の操作手引書が入手できない場合には、十分な知識を有する第三者により提供されることが認められる。(MSC.1/Circ.1663, 3.6.2.1)
  (vii) 操作手引書には、少なくとも次の情報が含まれていること。(MSC.1/Circ.1663, 3.6.2.2)
    (a) 設計、操作及び環境上の制限
    (b) 互換性のある揚貨装具
    (c) 安全指示
    (d) 特殊な手順があればそれを含む操作手順

（次頁に続く）

(4) 揚貨装具

(i) SOLAS II-1/3-13.2.1 及び 2.4 の適用を受ける揚貨装置に利用される揚貨装具は、主管庁が認める船級協会又は主管庁が認める要件に従って、設計･製造されること。(MSC.1/Circ.1663, 4.1)

(ii) 揚貨装置に利用される全ての揚貨装具は、荷重試験の証拠書類を所持すること。(MSC.1/Circ.1663, 4.2.1)

(iii) 揚貨装具には製造番号及び制限荷重に加え、次の情報を標示すること。(MSC.1/Circ.1663, 4.4.1 & 4.4.2)

(a) 両かぎフック
- スリング角の範囲

(b) 滑車及びフックブロック
- ロープ径
- リギングプラン識別マーク（滑車用）（ある場合）

(c) 吊りビーム、スプレッダー、フレーム
- 自重
- 許容スリング角
- 通常と異なる方法で使用され得る複雑な装置の場合における制限荷重の詳細

(d) グラブ
- 自重

(e) その他
- 船級協会の要件又は主管庁が認める業界標準による

揚貨装具上に制限荷重以外を標示するための十分なスペースがない場合、省略された情報は証明書又は他の適当な手段によって確認可能であること。(MSC.1/Circ.1663, 4.4.3)

(5) 作動不能な揚貨装置及び揚貨装具の取扱い(SOLAS II-1/3-13.4, MSC.1/Circ.1663, 3.5.1.6 & 3.2.2.3 & 4.2.2.3 & 4.6.6 & 5)

作動不能な揚貨装置及び揚貨装具によるリスクを軽減するために、船長は次の対応を行うこと。

(i) 安全な航海計画及び実施にあたり当該揚貨装置を考慮する。

(ii) 当該揚貨装置の操作を禁止する。

(iii) 適切に固縛等を行うことで、当該揚貨装置や構成部品の制御されない動きを防止する。

(iv) 使用不可の揚貨装具は使用不可である旨を標示し、他の揚貨装具と分けて保管する。

(v) 必要な修理が完了し、適切に試験・検査が実施されるまで、当該揚貨装置又は揚貨装具が使用不可である旨を揚貨装置の検査記録簿に記録する。

安全な航海の計画及び実施にあたり、船長により作動不能な揚貨装置を考慮した措置がとられている場合には、揚貨装置の故障をもって、船舶の航行を不可能にする理由又は停泊中の船舶の出港を遅らせる理由としてはならない。

なお、一部の内容については IACS などで議論中のものもあることから、取扱いの変更や追加情報があった場合には本テクニカルインフォメーションの改訂もしくは弊会ホームページにてお知らせいたします。

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。

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添付:

1. MSC.532(107)
2. MSC.1/Circ. 1663

ANNEX 2

RESOLUTION MSC.532(107)
(adopted on 8 June 2023)

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

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, 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 107th session, amendments to the Convention 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 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 2025, 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 the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2026 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

CHAPTER II-1
CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Part A
General

Regulation 2
Definitions

1 The following new paragraphs are added after existing paragraph 29:

"30 *Lifting appliance* means any load-handling ship's equipment:

.1 used for cargo loading, transfer, or discharge;

.2 used for raising and lowering hold hatch covers or moveable bulkheads;

.3 used as engine-room cranes;

.4 used as stores cranes;

.5 used as hose handling cranes;

.6 used for launch and recovery of tender boats and similar applications; and

.7 used as personnel handling cranes.

31 *Anchor handling winch* means any winch for the purpose of deploying, recovering and repositioning anchors and mooring lines in subsea operations.

32 *Loose gear* means an article of ships equipment by means of which a load can be attached to a lifting appliance or an anchor handling winch but which does not form an integral part of the appliance or load.

33 The expression *installed on or after 1 January 2026*, as provided in regulation 3-13, means:

.1 for ships the keel of which is laid or which is at a similar stage of construction on or after 1 January 2026, any installation date on the ship; or

.2 for ships other than those specified in .1, including those constructed before 1 January 2009, a contractual delivery date for lifting appliance or anchor handling winches, or in the absence of a contractual delivery date, the actual delivery date of the lifting appliance or anchor handling winches to the ship on or after 1 January 2026."

Part A-1
Structure of ships

2 The following new regulation is added after existing regulation II-1/3-12, together with the associated footnotes:

"**Regulation 3-13**
Lifting appliances and anchor handling winches

1 Application

1.1 Unless expressly provided otherwise, this regulation shall apply to lifting appliances and anchor handling winches, and loose gear utilized with the lifting appliances and the anchor handling winches.

1.2 Notwithstanding the above, this regulation does not apply to:

.1 lifting appliances on ships certified as MODUs;[1]

.2 lifting appliances used on offshore construction ships, such as pipe/cable laying/repair or offshore installation vessels, including ships for decommissioning work, which comply with standards acceptable to the Administration;

.3 integrated mechanical equipment for opening and closing hold hatch covers; and

.4 life-saving launching appliances complying with the International Life-Saving Appliance (LSA) Code.

1.3 The Administration shall determine to what extent the provisions of paragraphs 2.1 and 2.4 do not apply to lifting appliances which have a safe working load below 1,000 kg.

2 Design, construction and installation

2.1 Lifting appliances installed on or after 1 January 2026 shall be:

.1 designed, constructed and installed in accordance with the requirements of a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1 or standards acceptable to the Administration which provide an equivalent level of safety; and

.2 load tested and thoroughly examined after installation and before being taken into use for the first time and after repairs, modifications or alterations of major character.

2.2 Anchor handling winches installed on or after 1 January 2026 shall be designed, constructed, installed and tested to the satisfaction of the Administration, based on the Guidelines developed by the Organization.[2]

2.3 Lifting appliances installed on or after 1 January 2026 shall be permanently marked and provided with documentary evidence for the safe working load (SWL).

2.4 Lifting appliances installed before 1 January 2026 shall be tested and thoroughly examined, based on the Guidelines developed by the Organization[3] and comply with paragraph 2.3 no later than the date of the first renewal survey on or after 1 January 2026.

2.5 Anchor handling winches installed before 1 January 2026 shall be tested and thoroughly examined, based on the Guidelines developed by the Organization[2] no later than the date of the first renewal survey on or after 1 January 2026.

3 Maintenance, operation, inspection and testing

All lifting appliances and anchor handling winches, regardless of installation date, and all loose gear utilized with any lifting appliances and anchor handling winches, shall be operationally tested, thoroughly examined, inspected, operated and maintained, based on the Guidelines developed by the Organization.[2,3]

4 Inoperative lifting appliances and anchor handling winches

Except as provided in regulation I/11(c), while all reasonable steps shall be taken to maintain lifting appliances, anchor handling winches and loose gear to which this regulation applies in working order, malfunctions of that equipment shall not be assumed as making the ship unseaworthy or as a reason for delaying the ship in ports, provided that action has been taken by the master to take the inoperative lifting appliance or anchor handling winch into account in planning and executing a safe voyage.[2, 3]

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1 Ships certified as MODUs are those subject to the MODU Code and which carry a MODU Code Certificate on board issued by the Administration or a recognized organization. The carriage of this certificate includes authorized electronic versions available on board.

2 Refer to the *Guidelines for anchor handling winches* (MSC.1/Circ.1662).

3 Refer to the *Guidelines for lifting appliances* (MSC.1/Circ.1663)."

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

Part A
General

Regulation 1
Application

2 Applicable requirements to existing ships

3 The following new paragraph 2.10 is added after existing paragraph 2.9, together with the associated footnote:

"2.10 Ships constructed before 1 January 2026 shall comply with regulation 10.11.2, as adopted by resolution MSC.532(107), not later than the date of the first survey* on or after 1 January 2026.

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* Refer to the *Unified interpretation of the term "first survey" referred to in SOLAS regulations* (MSC.1/Circ.1290)."

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MSC.1/Circ.1663
28 June 2023

GUIDELINES FOR LIFTING APPLIANCES

1 The Maritime Safety Committee, at its 107th session (31 May to 9 June 2023), having considered a proposal by the Sub-Committee on Ship Systems and Equipment (SSE), at its eighth session, with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation II-1/3-13, adopted by resolution MSC.532(107), approved the *Guidelines for lifting appliances*, as set out in the annex.

2 Member States are invited to use the annexed Guidelines when applying SOLAS regulation II-1/3-13 and to bring it to the attention of ship designers, shipyards, shipowners, equipment manufacturers, other organizations and parties concerned.

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ANNEX

GUIDELINES FOR LIFTING APPLIANCES

1 Application

These Guidelines support the application of SOLAS regulation II-1/3-13 for lifting appliances and loose gear used in association with lifting appliances.

2 Definitions

For the purpose of these Guidelines, the following definitions apply:

.1 *Competent person* means a person possessing the knowledge and experience required for the performance of duties specified in these Guidelines and acceptable as such to the Administration.

.2 *Inspection* means an assessment carried out by a responsible person to ascertain if the lifting appliance or loose gear is in good working condition for continued safe use.

.3 *Responsible person* means a person appointed by the master or company as defined in SOLAS regulation IX/1, as appropriate, possessing the knowledge and experience required for the performance of duties specified in these Guidelines.

.4 *Thorough examination* means a detailed assessment carried out by a competent person in order to determine whether or not the lifting appliance or loose gear is in compliance with the applicable requirements of the Administration.

.5 *Certified* means that the lifting appliance or loose gear has been verified and documented as compliant to the satisfaction of the Administration or recognized organization acting on its behalf.

.6 *Maintenance* means any activity carried out by a responsible person to keep the lifting appliance or loose gear in good working condition for continued safe use.

.7 *Operational testing* means a test carried out by a responsible person to verify the correct functioning of a component or operation of the lifting appliance and/or associated loose gear.

.8 *Load test* means a test in excess of the SWL, carried out in the presence of a competent person in order to check the structural integrity of the lifting appliance and its attachment to and adequacy of its supporting structure.

.9 *Safe working load (SWL)* is the maximum static load at a specified radius which a lifting appliance or item of loose gear is certified to lift for a specified operating condition.

.10 *Certificate of test and thorough examination* means a certificate issued by a competent person upon satisfactory completion of the test and thorough examination of the lifting appliance and/or loose gear.

3 Lifting appliances

3.1 Design, construction and installation

As required by SOLAS regulation II-1/3-13.2.1.1, lifting appliances installed on or after 1 January 2026 should be designed, constructed and installed in accordance with the requirements of a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1 or standards acceptable to the Administration which provide an equivalent level of safety.

3.2 Load testing and thorough examination

3.2.1 Load test

3.2.1.1 Lifting appliances to which SOLAS regulation II-1/3-13.2.1 applies should be load tested to the satisfaction of the Administration after installation and before being taken into use for the first time and after repairs, modifications or alterations of a major character.

3.2.1.2 Lifting appliances to which SOLAS regulation 3-13.2.4 applies should be load tested to the satisfaction of the Administration no later than the date of the first renewal survey on or after 1 January 2026 or after repairs, modifications or alterations of a major character.

3.2.1.3 *Repairs, modifications or alterations of a major character* are those which:

.1 change the safe working load of the lifting appliance; or

.2 affect the strength, stability or service life of the lifting appliance; or

.3 affect the primary load bearing structure of the lifting appliance; or

.4 modify the functionality of the lifting appliance or any part thereof which may affect its strength or safety or structural integrity.

3.2.1.4 Lifting appliances to which SOLAS regulations II-1/3-13.2.1 and 3-13.2.4 apply should be retested at least once in every five years.

3.2.1.5 For load testing of lifting appliances intended for use while the ship is in port or sheltered waters, the test load, as set out in table 1 below, should be established using the SWL. For lifting appliances intended for open-sea operations, the test loads should be to the satisfaction of the Administration or a classification society which is recognized by it, taking into account the applicable dynamic loads.

Table 1: Lifting appliances minimum test loads

SWL of the lifting appliance, in tonnes	Test load, in tonnes
SWL ≤ 20 t	1.25 x SWL
20 t < SWL ≤ 50 t	SWL + 5 t
SWL > 50 t	1.10 x SWL

3.2.1.6 Where the safe working load of the lifting appliances is undocumented and design information is not available, e.g. for lifting appliances which are installed on board before 1 January 2026 and the manufacturer no longer exists, the test load should be calculated using table 1, based on a safe working load nominated by the company, to the satisfaction of the Administration.

3.2.2 Thorough examination

3.2.2.1 Lifting appliances should be subject to thorough examination to the satisfaction of the Administration:

.1 upon completion of any load test; and

.2 annually.

3.2.2.2 Where thorough examination does not form part of the renewal survey or annual survey, verification that thorough examination of lifting appliances has been conducted/completed to the satisfaction of the Administration should take place during the renewal survey under SOLAS regulation I/7 or the annual survey under SOLAS regulation I/10, as applicable.

3.2.2.3 If on completion of a thorough examination, the competent person considers the lifting appliance to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that lifting appliance should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The lifting appliance should be clearly marked "not to be used" and the status should be recorded in a register of lifting appliances. While out of service, the relevant actions for inoperative lifting appliances as outlined under section 5 of these Guidelines should be followed.

3.2.3 Records of thorough examination and testing

3.2.3.1 A record of thorough examination and load testing should be maintained in a register of lifting appliances and should be available on board.

3.2.3.2 Load testing and thorough examination may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a competent person. The minimum information to be included in the *Certificate of test and thorough examination*, as set out in the appendix 1, should be used. Alternatively, other formats may be used which are acceptable to the Administration, such as those of a classification society recognized by the Administration.

3.3 Demonstration of compliance

3.3.1 Before being put into use for the first time, lifting appliances installed on or after 1 January 2026 should be certified as compliant with SOLAS regulations II-1/3-13.2.1 and II-1/3-13.2.3 with the recommended scope for demonstration of compliance of lifting appliances comprising the following:

.1 a plan appraisal of the lifting appliance and foundation connections;

.2 verification of materials;

.3 survey, testing and examination during fabrication;

.4 verification of component certificates including its loose gear; and

.5 testing and thorough examination when installed on board.

3.3.2 Lifting appliances installed before 1 January 2026 should be certified as compliant with SOLAS regulation II-1/3-13.2.4 no later than the date of the first renewal survey on or after 1 January 2026.

3.3.3 Existing lifting appliances with valid certificates of test and thorough examination under another international instrument acceptable to the Administration and issued prior to the entry into force of SOLAS regulation II-1/3-13 should be considered compliant with SOLAS regulation II-1/3-13.2.4.

3.3.4 All certified lifting appliances on board a ship should be recorded in the *Register of Ship's Lifting Appliances and Cargo Handling Gear*, as set out in appendix 3, with the *Certificate of test and thorough examination* attached to it (see paragraph 3.2.3.2).

3.3.5 A rigging plan and block list showing the correct reeving and rigging arrangements for the lifting appliance and the associated loose gear positions is to be kept on board, if applicable.

3.4 Marking

3.4.1 The safe working load (SWL) and other information essential for the safe operation of the lifting appliance (e.g. maximum or minimum slewing radius or boom angle) should be permanently and clearly marked in a conspicuous place on the lifting appliance and should be available to the operator.

3.4.2 In all cases where the lifting appliance has a variable load radius rating, the SWLs corresponding to the minimum and maximum radius should be clearly marked in a conspicuous place on the lifting appliance and, in addition, a diagram of the permissible maximum loads over the entire range of use should be displayed in a position clearly visible to the operator.

3.4.3 If the safe working load is established in accordance with paragraph 3.2.1.6, this safe working load should be used for the purpose of compliance with SOLAS regulation II-1/3-13.2.3.

3.5 Maintenance, inspection and operational testing

3.5.1 General

3.5.1.1 Maintenance, inspection, operational testing and their respective intervals should be in accordance with the manufacturer's recommendations, industry standards and guidelines or classification society requirements and recommendations acceptable to the Administration, considering factors such as the operational profile of the ship and the lifting appliance.

3.5.1.2 All lifting appliances should be considered vulnerable to marine environmental conditions which may lead to significant and accelerated deterioration and corrosion, and the inspection and maintenance regime should be implemented accordingly.

3.5.1.3 The inspection and maintenance of lifting appliances may involve working at height, enclosed space entry and other hazards. These hazards should be considered when developing the relevant procedures for undertaking such tasks, including safe access.

3.5.1.4 Examples of items requiring particular attention may include:

.1 corrosion and damage of primary structural members, including crane jibs, crane housings (slewing column), pedestals and foundations/foundation connections, including welds and bolts;

.2 wear, corrosion and damage of mechanical components including winches, hydraulic cylinders, slew bearings, sheaves and pins;

.3 correct setting and functioning of safety, protection and limitation devices;

.4 condition and correct functioning of the lifting appliance as a whole and, in particular, hydraulic or pneumatic arrangements, hydraulic/pneumatic cylinders, motors, hoses, piping, winches, brakes and drums;

.5 corrosion and damage to all means of safe access to the lifting appliances including attached maintenance platforms and extensions, with particular attention to support brackets and welds; and

.6 certification and identification of ropes.

3.5.1.5 Damaged, broken, worn or corroded ropes, including their terminations, should be inspected and discarded according to manufacturers' recommendations, relevant industry standards, international standards (e.g. ISO 4309:2017 on Cranes – Wire ropes – Care and maintenance, inspection and discard) or requirements of classification societies acceptable to the Administration.

3.5.1.6 If, on completion of an inspection, the responsible person considers the lifting appliance to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that lifting appliance should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The lifting appliance should be clearly marked "not to be used" and the status should be recorded in a register of lifting appliances. While out of service, the relevant actions for inoperative lifting appliances as outlined under section 5 of these Guidelines should be followed.

3.5.2 Maintenance manual

3.5.2.1 A maintenance manual for a lifting appliance should be provided by the manufacturer. Where maintenance manuals for existing lifting appliances are not available from the manufacturer, these may be provided by competent third parties.

3.5.2.2 The maintenance manual should, as a minimum, include the following for each lifting appliance:

.1 description of the required inspection regime and maintenance schedules specific to the lifting appliance, checklists and a list of key tools or other items for use when carrying out inspections and maintenance;

.2 instructions for routine repairs/maintenance;

.3 technical maintenance information;

.4 information on recommended lubricants, oil and filter change;

.5 information on slewing bearing maintenance, if applicable;

.6 lists of replaceable parts/components, as well as the inspection/ maintenance/replacement procedures for these parts/components;

.7 lists of sources of spare parts;

.8 model forms for records of inspections and maintenance;

.9 operational test procedures, as well as the pre/post-operational test inspection procedures;

.10 list of components requiring particular attention during inspections, as well as the inspection/maintenance procedures for these components;

.11 recommended intervals for replacement and overhaul of components and equipment;

.12 information on the preservation of the coating and corrosion protection system; and

.13 information regarding special inspection and maintenance in cases where the lifting appliance is not operated for long periods of time.

3.5.3 Records of inspections and maintenance

3.5.3.1 Records of the routine inspection and maintenance of lifting appliances or their components or parts should be maintained and kept on board.

3.5.3.2 The records and particulars of inspection and maintenance may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a responsible person. Any recommendations of the manufacturer for such inspection and maintenance records should be used.

3.6 Operations

3.6.1 General

3.6.1.1 Personnel operating lifting appliances should be qualified, familiarized with the equipment and be authorized by the master.

3.6.1.2 All personnel involved in a lifting operation should understand their role during the operation and, in particular, the signals that may be required to commence, coordinate or stop the operation.

3.6.1.3 Personnel involved in lifting operations should be equipped with appropriate personal protective equipment for the task.

3.6.1.4 Lifting operations should be planned, supervised and carried out so that any identified risks are minimized.

3.6.1.5 Procedures and instructions should relate to the specific type of lifting appliance and should be provided in the operations manual.

3.6.1.6 Due consideration should be given to any limiting conditions such as ship's motion/inclination, wind speeds including wind gusts, environmental conditions such as ice and snow, limitations of the lifting appliance such as SWL and slew radius, etc. of the lifting appliance.

3.6.1.7 Effective communication should be established between ship's personnel and shore-based personnel involved in the lifting operation.

3.6.1.8 Safe means of access to lifting appliances and loads requiring attachment/detachment should be established. Safe areas for the signaller and slinger should be available.

3.6.1.9 When developing plans and procedures for lifting operations, consideration should be given to avoiding any part of the lifting appliances striking any person or other structures in close proximity.

3.6.1.10 Procedures and measures for the safe operation of lifting appliances should take account of applicable international and national instruments and best practices for occupational safety and health.

3.6.1.11 Lifting appliances should be restrained and stowed in order to avoid uncontrolled movement during sea voyages. The stowage and restraining arrangements should be as required by the manufacturer.

3.6.1.12 Personnel operating the lifting appliance should consult the operations manual for any specific instructions related to the lifting operations.

3.6.2 Operations manual

3.6.2.1 An operations manual for a lifting appliance should be provided by the manufacturer. Where operations manuals for existing lifting appliances are not available from the manufacturer, these may be provided by competent third parties.

3.6.2.2 An operations manual should, as a minimum, include the following for each lifting appliance:

.1 design, operational and environmental limitations;
.2 compatible loose gear;
.3 safety instructions; and
.4 operating procedures, including special procedures, if any.

3.6.2.3 For lifting appliances installed before the date of entry into force of SOLAS regulation II-1/3-13 operation manuals should be developed with original manufacture, design and build data and take into account any modifications since installation. Where original data or modification data is not available, operations manual should be developed on the current operational procedures and practices.

4 Loose gear

4.1 Design and manufacturing

Loose gear utilized with lifting appliances to which SOLAS regulations II-1/3-13.2.1 and II-1/3-13.2.4 apply should be designed and manufactured in accordance with requirements acceptable to the Administration or a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1.

4.2 Proof test and thorough examination

4.2.1 Proof test

All loose gear in use with lifting appliances to which SOLAS regulation II-1/3-13 applies should have documentary evidence of a proof test and be retested after repairs, modifications or alterations of a major character to the satisfaction of the Administration. Where an item of loose gear is tested, minimum test loads should be to the satisfaction of the Administration, based on table 2 below.

Table 2: Loose gear minimum test loads

Item	Test load, in tonnes
Single sheave block	4 x SWL
Multi-sheave blocks and hook blocks: SWL ≤ 25 t 25 t < SWL ≤ 160 t 160 t < SWL	 2 x SWL (0.993 x SWL) + 27 1.1 x SWL
Hooks, shackles, chains, rings, swivels, etc.: SWL ≤ 25 t 25 t < SWL	 2 x SWL (1.22 x SWL) + 20
Lifting beams, spreaders, frames, grabs: SWL ≤ 10 t 10 t < SWL ≤ 160 t 160 t < SWL	 2 x SWL (1.04 x SWL) + 9.6 1.1 x SWL
Note 1. Sheave blocks that are permanently attached to, or are integral with the hook, are called hook blocks. Hook blocks are to be tested with the load for multi-sheave blocks. The hook of the hook block is to be tested with the loads for hooks. Note 2. The SWL for a single sheave block, including single sheave blocks with beckets, is to be taken as one half of the resultant load on the head fitting. Note 3. The SWL of a multi-sheave block is to be taken as the resultant load on the head fitting.	

4.2.2 Thorough examination

4.2.2.1 Loose gear should be subject to thorough examination to the satisfaction of the Administration:

.1 upon completion of any proof test; and

.2 annually.

4.2.2.2 Where thorough examination does not form part of the renewal survey or annual survey, verification that thorough examination of loose gear has been conducted/completed to the satisfaction of the Administration should take place during the renewal survey under SOLAS regulation I/7 or the annual survey under SOLAS regulation I/10, as applicable.

4.2.2.3 If, on completion of a thorough examination, the competent person considers the item(s) of loose gear to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that loose gear should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The loose gear should be clearly marked "not to be used" and the status should be recorded in a register of lifting appliances. While out of service, the relevant actions for inoperative loose gear as outlined under section 5 of these Guidelines should be followed.

4.3 Demonstration of compliance

4.3.1 Before being put into use for the first time, loose gear utilized with lifting appliances which comply with SOLAS regulations II-1/3-13.2.1 and 3-13.2.4 should be certified to meet the provisions in section 4.

4.3.2 Certificates of test and thorough examination of certified loose gear should be attached to the *Register of ship's lifting appliances and cargo handling gear* (see paragraph 4.7.1.2).

4.4 Marking

4.4.1 Loose gear should be clearly and permanently marked with its unique identification (serial no.), the SWL and any additional marks required for safe use.

4.4.2 In addition, specific types of loose gear should be marked with the following minimum information:

.1 ramshorn hooks: range of sling angle;

.2 block and hook blocks;

.1 rope diameter;

.2 rigging plan identification mark (for blocks) if any;

.3 lifting beams, spreaders, frames;

.1 tare weight;

.2 allowable sling angles;

.3 details of the safe application of the SWL in case of complex equipment which can be utilized in different ways;

.4 grabs;

.1 tare weight; and

.5 other equipment as per the requirements of the classification society or industry standards acceptable to the Administration.

4.4.3 If there is insufficient space for the marking on the loose gear other than the SWL, the omitted information should be included in the certificate or be provided by other suitable means.

4.5 Operation

Personnel involved in lifting operations which utilize loose gear should be qualified, familiarized with the equipment and be authorized by the master.

4.6 Maintenance and inspection

4.6.1 Maintenance and inspections at respective intervals should be in accordance with the manufacturer's recommendations, industry standards and guidelines or classification society requirements and recommendations acceptable to the Administration considering factors such as the operational profile of the ship and the loose gear.

4.6.2 All loose gear should be considered vulnerable to marine environmental conditions which may lead to significant and accelerated deterioration and corrosion and the inspection and maintenance regime should be implemented accordingly.

4.6.3 The inspection and maintenance of loose gear may involve working at height, enclosed space entry and other hazards. These hazards should be considered when developing the relevant procedures for undertaking such tasks, including safe access.

4.6.4 Loose gear should be inspected by a responsible person before each use.

4.6.5 Examples of aspects requiring particular attention may include:

.1 wear, corrosion, damage and correct functioning of the loose gear;

.2 damaged, worn or corroded chains, including their terminations;

.3 certification and identification of loose gear; and

.4 physical or chemical degradation, including degradation due to the exposure to the environment.

4.6.6 If on completion of an inspection the responsible person considers the loose gear to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then the loose gear should not be used until any deficiency is rectified to the satisfaction of a competent person. The loose gear should be clearly marked "not to be used" and the status should be recorded in a register of lifting appliances. While out of service, the relevant actions for inoperative loose gear as outlined in section 5 should be followed.

4.7 Records of inspection, maintenance, testing and thorough examination

4.7.1 Records of thorough examination and testing

4.7.1.1 A record of thorough examination and evidence of proof testing of loose gear should be maintained in a register of lifting appliances and kept on board.

4.7.1.2 Records of thorough examination may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a competent person. The minimum information to be included in the *Certificate of test and thorough examination of loose gear*, as set out in appendix 2, should be used. Alternatively, other formats may be used which are acceptable to the Administration, such as those of a classification society recognized by the Administration.

4.7.2 Records of inspection and maintenance

4.7.2.1 Records of the routine inspection and maintenance of loose gear should be maintained and kept on board.

4.7.2.2 The records and particulars of inspection and maintenance may be documented in any convenient form, provided each entry contains the necessary information, is clearly legible and is authenticated by a responsible person. Any recommendations of the manufacturer for such inspection and maintenance records should be used.

5 Inoperative lifting appliances and loose gear

For the implementation of SOLAS regulation II-1/3-13.4, the following actions should be taken by the master to mitigate risks posed by inoperative lifting appliances:

.1 take the inoperative lifting appliance into account in planning and executing a safe voyage;

.2 prevent operation of inoperative lifting appliances;

.3 prevent uncontrolled movement of inoperative lifting appliances or their components using appropriate restraining and preventing arrangements, if required;

.4 store inoperative loose gear separately from in-service loose gear and mark it as being inoperative; and

.5 record a particular lifting appliance or loose gear that is inoperative in the register of ship's lifting appliances until necessary repairs have been completed and it has been load tested or proof tested, as necessary, and thoroughly examined.

APPENDIX 1

SAMPLE CERTIFICATE
OF TEST AND THOROUGH EXAMINATION OF LIFTING APPLIANCES

(Official seal) Certificate No. _____

Name of Ship:

IMO Number:

Call Sign:

Port of Registry:

Name of Owner:

This is to certify that the lifting appliances listed below have been tested and thoroughly examined as required by SOLAS regulation II-1/3-13.

Situation and description of lifting appliance (with distinguishing number or mark, if any) which has been tested and thoroughly examined	Angle to the horizontal or radius at which test load is applied		Test load (tonnes)	Safe working load at angle or radius shown (tonnes)
	Angle (degrees)	Radius (metres)		

This certificate is valid until …… *(dd/mm/yyyy)*

Completion date of the testing and thorough examination on which this certificate is based:

Issued at …… *(place of issue of the certificate)*

Date of issue …… *(dd/mm/yyyy)*

Signature of competent person issuing the certificate …….

(Seal or stamp of the issuing authority)

APPENDIX 2

SAMPLE CERTIFICATE
OF TEST AND THOROUGH EXAMINATION OF LOOSE GEAR

(Official seal) Certificate No. _____

Name of Ship:

IMO Number:

Call Sign:

Port of Registry:

Name of Owner:

This is to certify that the loose gear listed below have been tested and thoroughly examined as required by SOLAS regulation II-1/3-13.

Distinguishing number or mark	Description of loose gear	Number tested	Date of test	Test load applied (tonnes)	Safe working load (tonnes)

Name and address of makers or suppliers: ....

Name and address of the company of
competent person who witnessed
testing and carried out thorough examination: .....

Name of the competent person and
position in public service, association, company: .....

Completion date of the testing and thorough examination on which this certificate is based:

Issued at ……. *(place of issue of the certificate)*

Date of issue …… *(dd/mm/yyyy)*

Signature of competent person issuing the certificate …….

(Seal or stamp of the issuing authority)

APPENDIX 3

SAMPLE FORM
OF REGISTER OF LIFTING APPLIANCES AND CARGO HANDLING GEAR

Name of Ship

Official Number

Call Sign

Port of Registry

Name of Owner

Thorough examination of lifting appliances and loose gear

(1) Situation and description of lifting appliances and loose gear (with distinguishing numbers or marks, if any) which have been thoroughly examined (see note 1).	(2) Certificate nos.	(3) I certify that on the date to which I have appended by signature, the gear shown in column (1) was thoroughly examined and no defects affecting its safe working condition were found other than those shown in column (4) date and signature (see note 2).	(4) Remarks

Note 1:
If all the lifting appliances are thoroughly examined on the same date it will be sufficient to enter in column (1) 'All lifting appliances and loose gear'. If not, the parts which have been thoroughly examined on the dates stated must be clearly indicated.

Note 2:
The thorough examinations to be indicated in column (3) include:
(a) Initial
(b) 12-monthly
(c) Five-yearly
(d) Repair/damage
(e) Other thorough examinations including those associated with heat treatment