INFORMATIVE PUBLICATION 40/I

SAFETY OF LIFTING APPLIANCES AND ASSOCIATED LOOSE GEAR

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GDAŃSK

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PRS/RP, 05/2026

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INTRODUCTION

This informative *Publication* includes IACS Recommendations Nos. 191 and 192 and presents the IACS position, proceedings and understanding with regard to ensuring the safety of lifting appliances and their associated loose gear covered by SOLAS Regulation II-1/3-13 and MSC.1/Circ.1663. As an IACS member, PRS follows these recommendations.

PRS' requirements for lifting appliances are contained in the *Rules for Statutory Survey of Sea-going Ships, Part VI – Lifting appliances.*

Guidelines for wire ropes examination and testing are contained in the informative *Publication 10/I – Wire ropes for lifting appliances. Guidelines for condition assessment*.

CHAPTER 1
IACS REC. 198 (April 2026)

1 ONBOARD LIFTING APPLIANCES

1.1 Introduction

1.1.1 It is important to highlight that lifting appliances (LA) are inherently hazardous machines, mainly due to their lack of structural redundancy in many components, such as steel wire rope reeving systems. IACS strongly supports the inclusion of lifting appliances in the SOLAS Convention, as this enhances the safety of lifting appliances across the maritime industry by significantly broadening regulatory coverage.

1.1.2 The Maritime Safety Committee at its 107th session adopted (MSC 107/20, paragraph 3.71) amendments to SOLAS Chapter II-1 providing new requirements for onboard lifting appliances and anchor handling winches (SOLAS Regulation II-1/3-13) and approved (MSC 107/20, paragraph 3.86.2) related guidelines set out in MSC.1/Circ.1663.

1.1.3 Anchor handling winches are not addressed in this recommendation.

1.2 Application

1.2.1 The recommendations as specified in this document, are meant to support the implementation of SOLAS Regulation II-1/3-13 for *Lifting appliances and anchor handling winches* (Resolution MSC.532(107)) coming into force on 1 January 2026 taking the *Guidelines for Lifting Appliances* (MSC.1/Circ.1663) into consideration.

1.2.2 The recommendations are further meant to be applicable to lifting appliances (LA) and associated loose gear (LG).

1.3 Definitions

.1 ***Installed*** means that lifting appliances are permanently connected (form-closed/bolted, bonded/welded) to the ship.

Notes:

1 *Permanently connected* includes the following types of connection:

a) Form-fit, form-locked or form-closed connections, such as bolted connections; and
b) bonded connections, such as welded connections.

2 *Form-fit, form-locked or form-closed connections* mean a type of connection in which forces and/or moments are transmitted through the geometric shape of the mating parts.

1.4 General

1.4.1 SOLAS Regulation II-1/3-13 distinguishes the following categories of lifting appliances (LA):

a) **New LA**:

.1 any installation date of LA onboard ships for which the keel is laid or which are at a similar stage of construction on or after 1 January 2026 (see SOLAS Regulation II-1/2.33.1); or

.2 for ships other than those specified in .1 the contractual delivery date for LA, or in the absence of a contractual delivery date, the actual delivery date of the LA to the ship on or after 1 January 2026 (see SOLAS Regulation II-1/2.33.2);

b) **Existing LA**:

LA installed onboard all ships before 1 January 2026.

1.4.2 To support the evaluation whether a lifting appliance may be categorised as new or existing, a flowchart is provided in Figure 1.

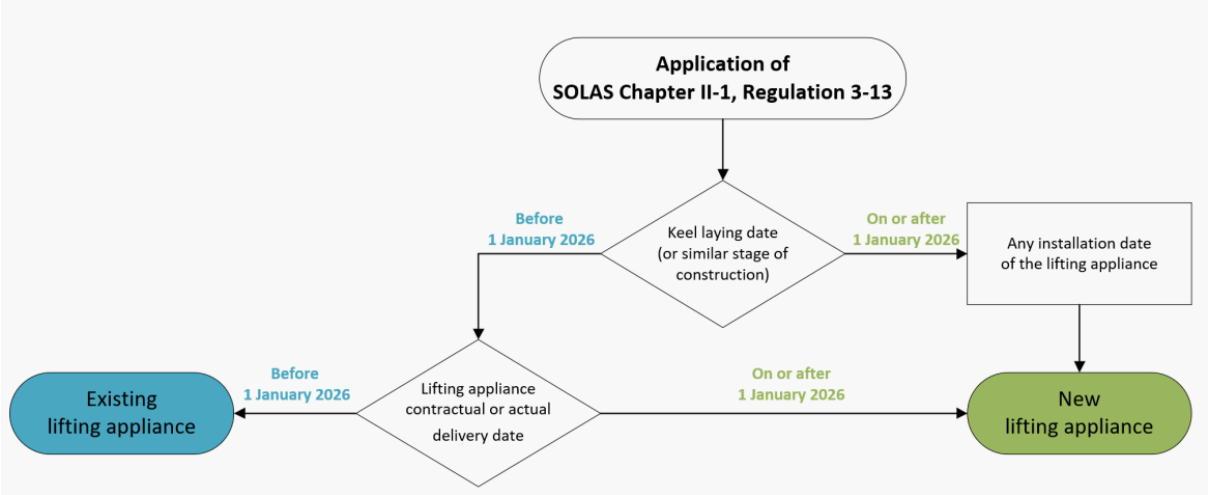

Figure 1 Flowchart – New and existing lifting appliances

1.4.3 SOLAS Regulation II-1/3-13.1.3 requires that the Administration shall determine to what extent the provisions of SOLAS Regulations II-1/3-13.2.1 and II-1/3-13.2.4 do not apply to lifting appliances which have a safe working load below 1,000 kg. In the absence of such specification, it is IACS understanding that SOLAS Regulations II-1/3-13.2.1 and II-1/3-13.2.4 fully apply to all lifting appliances (to which SOLAS Regulation II-1/3-13 applies), irrespective of their safe working load.

Note:

If the flag of the vessel changes, the new Administration may have differing requirements concerning the application of SOLAS Regulations II-1/3-13.2.1 and II-1/3-13.2.4 for lifting appliances with a SWL below 1,000 kg. Therefore, IACS encourages the companies (see SOLAS Regulation IX/1) to consider applying the provisions of SOLAS Regulations II-1/3-13.2.1 and II-1/3-13.2.4 for lifting appliances below a safe working load of 1,000 kg voluntarily.

1.5 Examples of lifting appliances to which SOLAS Regulation II-1/3-13 may or may not apply

1.5.1 The definition of lifting appliances is provided in SOLAS Regulation II-1/2.30. However, in practice, due to the large variety of equipment, it is often difficult to decide whether the new regulation is applicable to the equipment in question. To provide some guidance regarding the application of SOLAS Regulation II-1/3-13, the following offers typical examples for LA within, or equipment outside, the scope of the new regulation. In case of doubt, it is recommended to seek clarification and contact the Administration (or RO) for confirmation.

1.5.2 Below is a non-exhaustive list of examples of lifting appliances for which the application of SOLAS Regulation II-1/3-13 should apply:

- All lifting appliances listed in SOLAS Regulation II-1/2.30;
- Cargo handling cranes;
- Derrick systems;
- Hatch cover gantry cranes (i.e. running on rails on deck);
- Lifting appliances installed in spaces categorized as engine rooms (see paragraph 1.5.5);
- Service cranes (e.g. bunker davits, bosun store davits);
- Car ramps and slope ways operating/moving with (pay) load on it;
- Movable decks operating/moving with (pay) load or cargo on it;
- Lifting platforms for cargo and/or personnel;
- Lifting appliance operating in open sea conditions;
- Monorail trolleys with hoist (permanently installed, i.e. hoist and trolley are unremovable);
- Personnel handling cranes (reference is made to paragraph 1.10 of this recommendation);
- Boom/arm of self-unloading equipment (excluding the conveyor system).

1.5.3 Below is a non-exhaustive list of examples of equipment for which the application of SOLAS Regulation II-1/3-13 should not apply:

- All equipment listed in SOLAS Regulation II-1/3-13.1.2;
- Any removable[1] [2] or portable[2] crane; or any removable[1] [2] chain and rope hoist trolleys temporarily mounted on runway beams, i.e. arrangements that after their use are readily removable and are not intended to remain permanently in place;

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1 Removable means not "permanently connected" (see definition of the term "installed" in 1.3.1).

2 It is recommended that, when onboard lifting arrangements are not clearly identifiable as removable/portable, a list of removable/portable lifting arrangements is prepared onboard jointly by the attending surveyor and the Company to ensure consistent and unambiguous application of SOLAS requirements. This list should be maintained by the Company and made available to surveyors carrying out subsequent surveys for their review and verification during surveys.

- Lifting eyes (e.g. used in the engine room);
- Car ramps and slope always operating/moving without (pay) load on it;
- Movable decks always operating/moving without (pay) load or cargo on it;
- Launch and recovery appliances for survival craft and rescue boats (under SOLAS Chapter III and *LSA Code*) unless dual use as per section 1.8 is applicable;
- Offshore cranes used on fixed offshore installations;
- Pipe laying or cable laying systems;
- Lifts/elevators and escalators;
- Shiplift and transfer systems;
- Personnel transfer systems (i.e. required to comply with the *International Code of Safety for Ships Carrying Industrial Personnel* (*IP Code*));
- Conveyor systems.

1.5.4 For offshore construction ships, IACS recommends exempting only onboard lifting appliances which comply with standards acceptable to the Administration (SOLAS) and is essential for the purpose or operational function of the vessel. SOLAS Regulation II-1/3-13 should apply to all other lifting appliances on these vessels, e.g. engine room cranes, provision cranes etc.

1.5.5 Concerning engine-room cranes (which are defined as lifting appliances in SOLAS Regulation II-1/2.30.3), it is considered helpful to recall the definition of the term "engine room" as provided in IMO MSC/Circ.834, paragraph 5.2:

"5.2 ***Engine room*** – for the purposes of these guidelines, the engine-room is considered to be a space or spaces containing propelling machinery, boilers, oil fuel units, generators, and major electrical machinery, and includes auxiliary machinery spaces, storerooms, workshops, machine shops, the shaft alley, and the steering gear room."

It is recommended to consider this definition for the term "engine room" when determining whether a lifting appliance falls under the term "engine-room crane" in SOLAS Regulation II-1/2.30.3.

1.6 Existing lifting appliances

1.6.1 Lifting appliances installed before 1 January 2026 should fulfil the following requirements no later than the date of the first renewal survey on or after 1 January 2026 to comply with SOLAS Regulation II-1/3-13.2.4:

a) be tested and thoroughly examined in accordance with MSC.1/Circ.1663;
b) be permanently and clearly marked with the Safe Working Load (SWL) in accordance with MSC.1/Circ.1663; and
c) be provided with documentary (as per paragraph 1.6.3) evidence of the SWL in accordance with SOLAS Regulation II-1/3-13.2.3.

1.6.2 Existing lifting appliances should be regarded as compliant with SOLAS Regulation II-1/3-13.2.4 when valid certificates of test and thorough examination have been issued prior to 1 January 2026 under another international instrument acceptable to the Administration.

International instruments acceptable to the Administration are understood to include conventions of international level, such as the International Labour Organization (ILO) *Convention No. 152*. Certificates should be considered acceptable if it can be proven that they were issued by:

a) the Administration; or
b) a competent person acceptable to the Administration, including a Recognized Organization (RO).

Note:

It is recommended that the certificates issued by the Administration or competent person acceptable to the Administration contain all the information as required by:

1. MSC.1/Circ.1663, Appendix 1 and 3; and/or
2. ILO Model Form and Certificates as required by Article 25(2) of the ILO Convention concerning Occupational Safety and Health in Dock Work (No. 152), 1979.

1.6.3 For existing lifting appliances without valid certificates of test and thorough examination under another international instrument (see MSC.1/Circ.1663, paragraph 3.3.3) the company (see SOLAS Regulation IX/1.2) should nominate the SWL (to the satisfaction of the Administration):

a) based on documentary evidence (e.g. operation manual, drawing of lifting appliances or any document provided by manufacturers); or
b) in the absence of the above by means of a declaration document issued by the company (see SOLAS Regulation IX/1.2).

The reliable nomination of the SWL is crucial for the calculation of the minimum test load (according to MSC.1/Circ.1663, paragraph 3.2.1.5, Table 1) which forms the basis of a load test to be carried out in a safe manner.

In order to document compliance with SOLAS Regulation II-1/3-13.2.4 for such lifting appliances after load test and thorough examination, it is recommended to use the factual statement in accordance with the UI SC310 (MSC.1/Circ.1696).

1.7 Loose gear

1.7.1 According to MSC.1/Circ.1663 paragraph 4.2.1, all loose gear in use with lifting appliances (to which SOLAS Regulation II-1/3-13 applies) should be proof tested (with documentary evidence) and be retested after repairs, modifications or alterations of a major character to the satisfaction of the Administration. Minimum test loads should be to the satisfaction of the Administration, based on MSC.1/Circ.1663, paragraph 4.2.1, Table 2.

1.7.2 It is important to note that the SWL is a safety critical information - not only for the operation of loose gear, but also for determining the correct test load that the item of loose gear has been designed to withstand.

1.7.3 Below is a non-exhaustive list of loose gear items that are directly associated with the individual lifting appliance (as applicable) and therefore fall under SOLAS Regulation II-1/3-13:

– fixed load lifting attachments:

- hooks and swivelled hooks;
- hooks and hook blocks; and
- shackles, chains, rings, swivels, rigging screws (all as part of the fixed load lifting attachments of the associated lifting appliance).

Notes:

1 Shackles, chains, rings, swivels, rigging screws and similar items are not normally required to be certified (i.e. subject to a full demonstration of compliance procedure) by the RO and manufacturer's certificates may be accepted provided that the items have the required Safe Working Load (SWL) and are made of acceptable material.

2 It is recommended that hooks, swivelled hooks, hook blocks are subjected to the demonstration of compliance procedures of the RO and that manufacturer's certificates may not be sufficient.

– non-fixed load lifting attachments (load handling devices):

- grabs;
- frames, spreaders; and
- lifting beams.

Note:

It is recommended that grabs, frames, spreaders and lifting beams are subjected to the demonstration of compliance procedures of the RO and that manufacturer's certificates may not be sufficient.

1.7.4 The following loose gear is considered not directly associated with the individual lifting appliance and therefore does not fall under SOLAS Regulation II-1/3-13:

– sling gear (all loose gear between the hook and the non-fixed load lifting attachments and/or the lifted load), e.g.

- grommets;
- shackles;
- rings;
- wire rope/chain slings;
- lifting belts; and
- similar items.

Note:

Such items of loose gear are recommended to be accepted based on the certificates provided by the manufacturer, as long as they are properly marked and can be traced to such certificates.

1.7.5 For existing loose gear IACS has identified five scenarios concerning documentary evidence (ref. MSC.1/Circ.1663, paragraph 4.2.1) of a proof test (and initial thorough examination). In Table 1 these scenarios and recommendations for handling existing loose gear are summarised.

Table 1 Scenarios of documentary evidence for existing loose gear

No.	Scenario description	Scenario handling
1	No documentary evidence or certificate of proof load test and thorough examination is available.	Where no evidence exists whether the loose gear has been proof load tested, compliance with SOLAS Regulation II-1/3-13.2.4 cannot be confirmed. It is recommended to replace the existing non-certified loose gear with SOLAS compliant loose gear, see MSC.1/Circ.1663, paragraph 4.1.
2	Manufacturer's certificate of (proof load) test and initial thorough examination is available (with evidence or no evidence of periodical thorough examination, test loads comply with MSC.1/Circ.1663, Table 2).	Where a manufacturer's certificate of (proof load) test and initial thorough examination is available including evidence that the test loads comply with MSC.1/Circ.1663, Table 2, RO (and/or Competent Person) are recommended to accept those, and the manufacturer's certificate may be attached to the Register.
3	ILO Convention No. 152 (model) form 3 issued by a competent person acceptable to the Administration (with evidence or no evidence of periodical thorough examination).	ILO Convention No. 152 (model) form 3 is issued by a competent person are recommended to be accepted by the RO (and/or Competent Person) and the certificate may be attached to the Register.
4	Certificate issued by an IACS member based on ILO Convention No. 152 (model) form 3 (with evidence or no evidence of periodical thorough examination).	Forms issued by an IACS member are recommended to be accepted by the RO (and/or Competent Person) and the certificate may be attached to the Register.
5	Certificate issued by the Administration including the test loads in compliance with MSC.1/Circ.1663, Table 2 (with evidence or no evidence of periodical thorough examination).	Forms issued by an Administration (with evidence that the test loads comply with MSC.1/Circ.1663, Table 2) are recommended to be accepted by the RO (and/ or Competent Person) and the certificate may be attached to the Register.

1.8 Dual use of lifting appliances

1.8.1 An appliance which is intended to serve as a launching appliance for survival craft or rescue boats (falling under SOLAS Chapter III and the *LSA Code*) and as a lifting appliance (falling under SOLAS Regulation II-1/3-13) may be used for these dual purposes, provided the appliance complies with all requirements in full:

a) SOLAS Chapter III and *LSA Code*;
b) SOLAS Regulation II-1/3-13 (and MSC.1/Circ.1663);

and is certified for dual use.

1.8.2 IACS recommends that both functions (i.e. as described in paragraph 1.8.1) of the dual use appliance are not used simultaneously.

1.8.3 The function of a launching appliance for survival craft or rescue boats needs to be readily available at all times as per the requirements of SOLAS Chapter III and the *LSA Code*.

1.9 Load testing of boom/arm of self-unloading equipment

1.9.1 For the load testing of self-unloading boom/arm the following steps are recommended:

Step 1 The Safe Working Load (SWL) is determined based on the maximum certified uniform load distributed over the full length of the conveyor belt supported by the self-unloading arm.

Step 2 The minimum test load is determined in accordance with MSC.1/Circ.1663, Table 1 and the SWL established in Step 1.

Step 3 Test load (≥ minimum test load) is uniformly distributed over the full length of the conveyor belt supported by the self-unloading arm.

1.10 Personnel handling cranes

1.10.1 The definition of lifting appliances includes "personnel handling cranes" (see SOLAS Regulation II-1/2.30.7).

1.10.2 In this context, reference is made to Chapter 2 of this *Publication* (IACS Recommendation No. 191 *Lifting Appliances engaged in Personnel Handling Operations*).

1.11 Equipment with repairs, modification or alteration of a major character

1.11.1 This paragraph addresses lifting appliances and associated loose gear subject to modification or alteration of a major character.

IACS strongly recommends contacting the classification society in early project stages to clarify the availability of the necessary documentation, i.e. to perform an initial identification of aspects which may be a showstopper for the modification or alteration project.

Comprehensive documentation is a crucial prerequisite for certification after any repair, modification or alteration of a major character. Based on IACS' experience, it is likely that for existing lifting appliances, i.e. lifting appliance installed on board ships before 1 January 2026, such essential approved documentation for verifying the aspects listed in 11.4 may not be readily available.

1.11.2 IACS understands that:

a) repairs of a major character beyond those to restore the original state of the lifting appliance or loose gear, are also be regarded as modification or alteration of a major character and would be subject to this recommendation; and
b) load testing and thorough examination after repairs, modifications or alterations of a major character of lifting appliances and loose gear are well defined in:
    1. for lifting appliances in SOLAS Regulation II-1/3-13.2.1.2 and SOLAS Regulation II-1/3-13.2.4, MSC.1/Circ.1663, paragraphs 3.2.1.1, 3.2.1.2 and 3.2.2.1.1; and
    2. for loose gear in MSC.1/Circ.1663, paragraph 4.2; and
c) the current text of the SOLAS Regulation II-1/3-13 and MSC.1/Circ.1663 does not appear to cover requirements concerning the demonstration of compliance with regard to the design of lifting appliances and/or loose gear which have undergone modifications or alterations of a major character.

1.11.3 SOLAS Regulation II-1/3-13.2.1.1 requires that lifting appliances (installed on or after 1 January 2026) shall be designed, constructed and installed in accordance with the requirements

of a classification society which is recognized by the Administration (… or standards acceptable to the Administration which provide an equivalent level of safety).

MSC.1/Circ.1663, paragraph 4.1 outlines that loose gear should (effectively regardless of installation date) be designed (and manufactured) in accordance with the requirements of a classification society (or requirements acceptable to the Administration).

A modification or alteration of a major character is a fundamental change of the lifting appliances whereby all approved documentation (i.e. drawings) and certificates lose their validity. Consequently, certification/re-certification needs to be carried out in accordance with the requirements of a classification society (or compliance with requirements acceptable to the Administration.

IACS therefore recommends that any lifting appliance and/or item of loose gear undergoing modifications or alterations of a major character should follow the demonstration of compliance procedure as provided in MSC.1/Circ.1663, paragraph 3.3.1 and/or 4.3.1 respectively.

1.11.4 According to IACS's understanding, the documentation and information required for the recommended certification/re-certification of lifting appliance and/or item of loose gear undergoing modifications or alterations of a major character, includes aspects as provided in the non-exhaustive list in Table 2.

Table 2 Necessary documentation enabling modifications or alterations of a major character

Necessary documentation	Original	Modification/alteration
Component certificates including associated loose gear	X	X
Approval documentation of the lifting appliance and foundation connections	X	X
Materials specifications and/or certificates	X	X
Fabrication documentation (e.g. survey, testing, welding procedure specification, examination during fabrication)	X	X
Testing and thorough examination when installed onboard (MSC.1/Circ.1663)	—	X
Load cycle numbers for lifting appliances and/or associated loose gear	X	X

Notes:

1. "X" = to be provided, "—" = not applicable.
2. In the case approval documents for the original certification are unavailable or incomplete, the new certification of lifting appliances and/or loose gear following a modification or alteration is to include retroactive certification of the existing (non-modified or altered) parts.

1.11.5 IACS recommends the following procedure, as applicable, for the certification/re-certification after modifications or alterations of a major character:

a) plan appraisal of the lifting appliance and foundation connections;
b) verification of materials specifications and/or certificates;
c) survey, testing and examination during fabrication and verification of the associated documentation;
d) verification of component certificates including associated loose gear;

e) assessment of fatigue life for lifting appliances and/or associated loose gear; and
f) testing and thorough examination when installed onboard in accordance with MSC.1/Circ.1663.

Note:

Depending on the nature of the major modification the scope of the plan appraisal may significantly vary.

1.12 Survey windows

1.12.1 MSC.1/Circ.1663 states that:

a) thorough examinations should be conducted annually for lifting appliances (paragraph 3.2.2.1) and loose gear (paragraph 4.2.2.1).
b) thorough examination of lifting appliances and loose gear does not have to be part of the renewal survey or annual survey under SOLAS Cargo Ship Safety Construction/Passenger Ship Safety Certificate (paragraph 3.2.2.2 and paragraph 4.2.2.2).
c) for lifting appliances, the load test and thorough examination must be conducted at least once in every five years (paragraph 3.2.1.4).

1.12.2 IACS notes that annual and renewal surveys in accordance with the harmonized system of survey and certification are independent of the dates for the annual thorough examination (both lifting appliances and loose gear) and the load test for the lifting appliance, as long as the certificates for annual thorough examination and the load test of the LA are valid at the date of the harmonized annual and renewal surveys.

1.12.3 For LA subject to SOLAS Regulation II-1/3-13 and to enhance flexibility in conducting thorough examinations of lifting appliances and associated loose gear (to which SOLAS Regulation II-1/3-13 applies) and potentially facilitate harmonization with other ship surveys, IACS recommends that, unless otherwise stated by the ship's Administration:

a) For cargo ships, as defined in SOLAS Regulation I/2(g), the annual thorough examinations may be held within three months before and after each anniversary date of the lifting appliance*.
b) For passenger ships, as defined in SOLAS Regulation I/2(f), the annual thorough examinations may be held within three months before the anniversary date of the lifting appliance*.
c) For all ships (cargo and passenger), the periodical load tests and thorough examinations may be held within three months before the anniversary date of the lifting appliance*, without affecting the subsequent anniversary date of the lifting appliance.

* *Anniversary date of the lifting appliance* should be assumed as the date of the last conducted load test and thorough examination to demonstrate compliance to SOLAS Regulations II-1/3-13.2.1 and II-1/3-13.2.4, as applicable.

1.12.4 For LA subject to SOLAS Regulation II-1/3-13, the load test is to be carried out at least once every five years, i.e. generally no flexibility with respect to prolongation beyond the anniversary date is permitted, unless duly authorised by the Administration in certain cases (e.g. where the ship certificates were extended for a period no longer than three months in accordance with SOLAS Regulation I/14(e), and to allow the ship to arrive to the survey port).

1.12.5 For lifting appliances subject to ILO Convention No. 152 (i.e. lifting appliances used for cargo operations) no survey windows are foreseen by the convention.

1.12.6 In this context IACS recommends seeking clarification from the ship's Administration for aligning ILO surveys with the IMO requirements. Nevertheless, it should be noted that ILO Convention No. 152 governs dock work and may be enforced by the local port authorities, regardless of the interpretation of the ship's Administration. Therefore, it is strongly recommended that Ship Masters consult their local agents early regarding applicable port authority regulations and, if necessary, arrange for lifting appliance examinations in advance to ensure compliance with ILO requirements.

1.12.7 Notwithstanding 1.12.2, IACS recommends that thorough examinations and load tests be carried out harmonized with the HSSC survey guidelines (IMO Resolution A.1207(34) or latest revision).

1.13 Date of the initial verification of compliance

1.13.1 IACS recommends that the following paragraphs are considered in conjunction with section 1.12 when determining the date from which existing equipment (lifting appliances and loose gear) will be governed by the SOLAS Convention.

1.13.2 SOLAS Regulation II-1/3-13.2.4 requires existing (i.e. installed before 1 January 2026) lifting appliances and associated loose gear falls under the SOLAS requirements no later than the date of the first renewal survey on or after 1 January 2026.

Note:

In this context, the term "renewal survey" means a survey that leads to the issue of a new certificate (see IMO Resolution A.1186(33) or latest revision), unless otherwise instructed by the Administration:

- for cargo ships: Safety Construction Renewal Survey (every five years);
- for passenger ships: Passenger Ship Safety Survey (yearly).

1.13.3 During the initial verification of compliance survey (i.e., the first Renewal Survey as noted above), lifting appliances and associated loose gear are required to undergo the following, in addition to the requirements outlined in Sections 1.6 and 1.7,

a) either a thorough examination will be conducted, unless it can be confirmed that a thorough examination was carried out within the last twelve months, and that the inspection confirmed that the equipment (lifting appliance and associated loose gear) is in good working condition for continued safe use; and
b) either a load test will be conducted, unless it can be confirmed that a load test in accordance with MSC.1/Circ.1663 in less than five years from the date of first verification has been carried out.

1.13.4 Notwithstanding 1.13.3, IACS recommends that existing lifting appliances covered by SOLAS undergo a load test and thorough examination, and that associated loose gear undergo a thorough examination upon entry into the SOLAS regime in order to bring the requirements for lifting appliances and associated loose gear into line with the ship surveys.

CHAPTER 2
IACS REC. 191 (July 2025)

2 LIFTING APPLIANCES ENGAGED IN PERSONNEL HANDLING OPERATIONS

2.1 Scope

2.1.1 The following guidelines apply to lifting appliances intended to be used as personnel handling cranes and to lifting appliances intended to be used for cargo/load handling operations which may also be used for personnel handling operations during ship-to-ship transfer operations. These guidelines do not apply to the following appliances:

a) life-saving appliances within the scope of application of the IMO *LSA Code*;
b) lifts;
c) escalators;
d) conveyors;
e) stand-alone man-riding winches (not being part of or installed in the lifting appliances covered by this Recommendation).

2.1.2 Existing lifting appliances, which have never been certified or even designed for personnel handling, should not be used for that purpose. If such existing lifting appliances are intended to change their operational scope to include personnel handling, then those lifting appliances should be re-assessed and potentially upgraded and re-certified.

2.2 Safe working load

2.2.1 For lifting appliances used for both cargo/load handling and personnel handling, the personnel handling Safe Working Load (SWL) should not exceed fifty percent (50%) of the corresponding cargo/load handling SWL.

2.2.2 For lifting appliances solely dedicated to handling of personnel, the static load to be considered in the design and analysis of the lifting appliance should be twice the personnel handling SWL.

2.2.3 Loose gear items of the personnel hoist system should be designed for a load at least twice the personnel handling SWL.

Note:

As an alternative to 2.2.1, 2.2.2 and 2.2.3 methods indicated by recognized national/international standards may be used, with the agreement of the Class Society.

2.2.4 When the personnel handling containment is not an integral part of the lifting appliance, then its weight should be considered under the personnel handling SWL of the lifting appliance.

2.3 General guidelines

2.3.1 Proper instructions for use should be in place for personnel handling operations (incl. all conditions, precautions, limitations and emergency procedures).

2.3.2 The guidelines in this Recommendation consider wind speeds of not exceeding 10 m/s, significant wave height of not more than 2 m and visibility conditions equivalent to daylight. For handling of personnel in open sea conditions, the lifting appliance should be specifically designed for such conditions and a risk assessment should be carried out in order to demonstrate that the lifting appliance system can be safely operated in such conditions. The environmental limitations

of the rules or standards applicable for the certification or classification should also be met. The operational limitations of the design as defined by the manufacturer should also be considered.

2.4 Structure and systems

2.4.1 The following are to comply with the applicable requirements of an appropriate standard for lifting appliances recognized by the society or rules or standards applicable for the certification or classification:

.1 Structural members
.2 Hoisting, luffing, telescoping, folding and slewing systems and associate components such as electrical and control systems, hydraulic or pneumatic systems, hoisting/luffing winches, slewing gears, hydraulic cylinders, hook blocks, items of loose gear, sheaves, pressure vessels, flexible hoses, cables, wire ropes.
.3 The suitability of materials for the intended service conditions

2.4.2 Where fitted, computer-based control systems of cranes intended for personnel lifting should comply with the requirements of UR E22, as applicable, for Category II systems.

2.5 Brakes

2.5.1 Definitions:

.1 ***Dynamic brakes*** are those capable of retarding, stopping any movement and holding at standstill the lifting appliance and personnel handling SWL, without overheating or damage.
.2 ***Static (parking) brakes*** are those capable of holding the lifting appliance and SWL at standstill and should have an emergency dynamic braking capability.

2.5.2 Hoisting and (where fitted) luffing, folding or telescoping winches should be equipped with at least two mechanically and operationally independent brakes, with separate control circuits. At least one of the brakes should be of the dynamic type, and should operate, preferably, directly on the winch drum but a fully independent load path should be considered acceptable.

2.5.3 All hoisting, luffing, folding or telescoping systems using systems other than winches or hydraulic cylinders should be equipped with a dynamic and an operationally independent static brake with separate control circuits, mechanically operable under all operational load conditions.

2.5.4 All brakes should engage automatically in case the control lever is in its neutral position or in case of an emergency stop being initiated or in case of a failure in the control or power system.

2.5.5 Where necessary, brakes should be provided with means of adjustment to compensate for wear and to maintain the spring force on spring-loaded brakes.

2.5.6 Mechanisms such as ratchets and pawls should not be used as dynamic or static brakes.

2.5.7 Swing (slewing) mechanisms should be provided with at least a static brake.

2.6 Hydraulic cylinders

2.6.1 Where hydraulic cylinders are used for hoisting, luffing, folding or telescoping, two independent cylinders should be fitted for each required motion and each cylinder should be independently capable of holding the personnel handling SWL.

Alternatively, a single hydraulic cylinder may be used, provided that no single point hydraulic failure is likely to lead to uncontrolled motion of the lifting appliance under the personnel handling SWL.

2.6.2 Appropriate means, such as pilot-operated non-return valves, should be fitted to ensure that the cylinders remain in position in the event of a hydraulic failure.

2.6.3 The means defined in 2.6.2 to ensure the hydraulic cylinder remains in position should comply with the following:

a) The means should retard, stop and hold the hydraulic cylinder in position in all circumstances.
b) The means should be fail safe.
c) The means should apply without undue delay in case the control lever is in its neutral position or in case of an emergency stop being initiated or in case of a failure in the power or control system.
d) The means should be attached directly on the hydraulic cylinder ports with no hose or pipe in between.
e) The means should close as a result of a loss of pressure at the low-pressure connection. (inlet connection). The pilot line to accomplish this should be as short as possible.

2.6.4 Sufficient hydraulic working fluid supply should be ensured.

2.7 Safety devices and safety features

2.7.1 Lifting appliances should be fitted with safety devices and features in compliance with the applicable requirements of an appropriate standard for lifting appliances recognized by the society or rules or standards applicable for the certification or classification.

2.7.2 Lifting appliances solely dedicated to handling of personnel should not be fitted with systems which according to paragraph 2.10.2 may need to be deactivated.

2.8 Ropes and hooks

2.8.1 The following items should comply with the applicable requirements of an appropriate standard for lifting appliances recognized by the society or rules or standards applicable for the certification or classification:

.1 The required minimum wire rope safety factor in connection with the personnel handling SWL.
.2 The minimum number of wraps of steel wire rope to remain on the winch drums at all times.
.3 Ropes of material other than steel (satisfactory review of rope properties and reports of satisfactory service experience for the intended service can be considered).
.4 Rope terminations (including the winch drum).

2.8.2 Hooks used for personnel handling operations should be fitted with a latch or other securing devices, and with positively locking means to prevent inadvertent or accidental opening of the latch, or other accidental loss of the load.

2.9 Emergency recovery system

2.9.1 An independent emergency recovery system (ERS) should be arranged for controlled recovery operations of the personnel load in the event of a (single point) failure or interruption of the power system or (single point) failure of the control system. The ERS should ensure that the lifting appliance is capable of moving the personnel being handled from any position to a predetermined safe recovery position. Recovery of the personnel being handled by the lifting appliance may require one or more lifting appliance motions such as lowering, hoisting, luffing, slewing, telescoping and folding to be possible, depending on the actual situation on-board and the design of the lifting appliance.

2.9.2 The ERS should be in compliance with the rules or standards applicable for the certification or classification.

2.9.3 When the lifting appliance ERS is fitted with a secondary power and/or independent control system, its activation should be enabled by "hold-to-run" type controls (switches or handles), clearly and permanently marked for their purpose and protected from inadvertent operation.

2.9.4 Instructions for the ERS should be distinctly posted at the operator's station and should be included in the instructions for use.

2.10 Mode selection

2.10.1 Lifting appliances intended to be used for cargo/load handling operations which may also be used for personnel handling operations should be fitted with a manual switch for the selection between the personnel handling mode and cargo/load handling mode. Means should be provided to prevent inadvertent change between modes.

2.10.2 When the personnel handling mode is selected, a continuous visual indication should be activated, the maximum value of the load limiting system should be adjusted to the maximum personnel handling SWL and the following systems (if fitted) should be automatically overridden and deactivated:

a) automatic or manual overload protection systems and emergency load release systems which may lead to lowering of the personnel being handled;
b) all types of motion compensation systems; and
c) all types of rope tensioning systems.

2.11 Marking

2.11.1 Marking of the lifting appliance should be in compliance with the applicable requirements of an appropriate standard for lifting appliances recognized by the society or rules or standards applicable for the certification or classification (refer also to 3.4 of the Annex to MSC.1/Circ.1663).

2.11.2 The Safe Working Load (SWL), radii / boom angles and limiting environmental conditions for personnel handling should be indicated on load chart(s)/table(s) to be securely fixed to the lifting appliance in a location easily visible to the operator.

2.11.3 Appropriate clearly visible labels should be applied at the manual switch to allow switching between "cargo handling" and "personnel handling", indicating the actual mode of operation.

2.11.4 Loose gear items used for both cargo/load handling and personnel handling should be permanently marked with both the maximum cargo/load handling SWL and personnel handling SWL (refer also to 4.4.1 of the Annex to MSC.1/Circ.1663).

2.12 Testing and survey

2.12.1 Testing and survey of the lifting appliance and relevant components should be in compliance with the applicable requirements of an appropriate standard for lifting appliances recognized by the society's rules or standards applicable for the certification or classification (refer also to 3.2 of the Annex to MSC.1/Circ.1663).

2.12.2 All brakes should be tested statically (i.e. at standstill) with a load of at least 1,5 times the personnel handling SWL and dynamic brakes should be also tested dynamically (i.e. with system at nominal speed) with a load of at least 1.1 times the personnel handling SWL. Separate testing of each of the two brakes should be conducted on every hoisting, luffing, folding or telescoping winch engaged in the handling of personnel operation.

2.12.3 The emergency recovery system should be functionally tested with a test load corresponding to 100% of the personnel handling SWL.

2.13 Records

2.13.1 Records of the lifting appliance and relevant components should be in compliance with the applicable requirements of an appropriate standard for lifting appliances recognized by the society's rules or standards applicable for the certification or classification (refer also to 3.2.3.2, 3.3.4 and 4.7.1.2 of the Annex to MSC.1/Circ.1663).