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GUIDELINES FOR ANCHOR HANDLING WINCHES

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, at its eighth session, with a view to ensuring a uniform approach towards the application of SOLAS regulation II-1/3-13, adopted by resolution MSC.532(107), approved *Guidelines for anchor handling winches*, 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 them to the attention of ship designers, shipyards, shipowners, equipment manufacturers and other organizations and parties concerned.

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ANNEX

GUIDELINES FOR ANCHOR HANDLING WINCHES

1 Application

These Guidelines support the application of SOLAS regulation II-1/3-13 for anchor handling winches, associated equipment and loose gear used in association with anchor handling winches.

2 Definitions

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

.1 *Brake holding force* is the maximum force for which the winch brake is designed.

.2 *Brake holding capacity* is the maximum line pull that the winch brake can withstand without slipping of the brake.

.3 *Maximum line pull* is the maximum sustained force the winch is capable of pulling.

.4 *Static bollard pull* is the maximum sustained pulling force a vessel is capable of generating at maximum power (i.e. 100% maximum continuous rating (MCR)) and zero forward speed.

.5 A *wire* means a dedicated line (wire rope, synthetic rope or chain cable) used for the handling of anchors by means of an anchor handling winch.
The wire may include connecting loose gear.

.6 *Chain stopper* is a device used for securing and holding a section of wire, thereby relieving the load on the winch drum.

.7 *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.

.8 *Inspection* means an assessment carried out by a responsible person to ascertain if the anchor handling winches or associated loose gear are in good working condition for continued safe use.

.9 *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.

.10 *Thorough examination* means a detailed assessment carried out by a competent person in order to determine whether or not the anchor handling winches or associated loose gear are in compliance with the applicable requirements of the Administration.

.11 *Certified* means that the anchor handling winches or associated loose gear have been verified and documented as compliant to the satisfaction of the Administration or recognized organization acting on its behalf.

.12 *Maintenance* means any activity carried out by a responsible person to keep the anchor handling winches or associated loose gear in good working condition for continued safe use.

.13 *Operational testing* means a test carried out by a responsible person to verify the correct functioning of a component or operation of the anchor handling winches and/or associated loose gear.

.14 *Load test* means a test in excess of the maximum line pull, carried out in the presence of a competent person in order to check the structural integrity of the anchor handling winches and their attachment to and adequacy of their supporting structure.

3 Anchor handling winches

3.1 Design, construction and installation

3.1.1 General

Anchor handling winches and associated equipment 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 SOLAS regulation XI-1/1 or standards acceptable to the Administration which provide an equivalent level of safety. In addition to the above, anchor handling winches that fall under the scope of SOLAS regulation II-1/3-13.2.2 should also comply with the additional guidance specified under paragraphs 3.1.2 to 3.1.8 below.

3.1.2 Speed control and handling

3.1.2.1 The anchor handling winches should be capable of hoisting and lowering in a controlled manner, and should be provided with adjustable speed control between the minimum and maximum speeds.

3.1.2.2 The winch operating controls should be designed to pay out the wire by moving the control lever away from the winch operator and heave in by pulling the control lever towards the operator. All operating controls should be permanently marked with signs indicating their purpose and the operating direction.

3.1.2.3 The winch operating controls should be of the "hold-to run" type, which will cause the hoisting or lowering motion to automatically stop when the control lever is released by the operator.

3.1.3 Tension control

Anchor handling winches should be equipped with tension control to ensure that the system is not overloaded in the event that the anchor being handled gets stuck, entangled or is exposed to similar situations.

3.1.4 Overload alarm and monitoring

3.1.4.1 Winches should be provided with continuous load monitors and an audible and visual overload alarm.

3.1.4.2 The overload alarm should be programmable for lower levels of load.

3.1.5 Control stations

3.1.5.1 The main control station should be placed in a position on the bridge which has a clear view of the deck area. Operators should be able to visually monitor anchor handling winches and associated equipment and, if the view is obstructed, cameras or video monitoring devices may be used for this purpose.

3.1.5.2 The anchor handling winch may be controlled from more than one position provided that an arrangement to prevent more than one position from exercising control at any one time is fitted.

3.1.5.3 Each control station should be provided with:

.1 means for two-way communication with the main control station;

.2 an arrangement to prevent inadvertent actuation;

.3 adequate protection of personnel; and

.4 sufficient illumination.*

3.1.6 Spooling device

Anchor handling winches should be equipped with remotely operated spooling devices.

3.1.7 Emergency release

3.1.7.1 Anchor handling winches should be designed to facilitate emergency release of the load on the wire in a safe and controlled manner, both under normal as well as dead-ship conditions.

3.1.7.2 The controls for actuation of the emergency release should be placed at the main control station. Emergency release function may also be available at the local control station.

3.1.7.3 Emergency release control should be protected against unintentional activation.

3.1.7.4 The design and operation of the emergency release should take into consideration restrictions on the pay-out speed of the wire due to inertia and any restrictions due to onboard arrangements.

3.1.7.5 Instructions for the operation of the emergency release should be clearly displayed at the navigation bridge and locally at the winch.

* The minimum lighting level is at least 320 Lux.

3.1.7.6 After an emergency release, the complete anchor handling winch system should be inspected for signs of damage or deterioration. Any identified damage or deterioration should be rectified before the anchor handling winch is put back into service.

3.1.8 Associated anchor handling equipment

3.1.8.1 Chain stopper

3.1.8.1.1 Anchor handling vessels should be equipped with chain or wire stoppers (hereafter referred to as chain stoppers).

3.1.8.1.2 A chain stopper should be equipped with an audible alarm which is activated when the stopper is either being engaged or disengaged.

3.1.8.1.3 A chain stopper should be equipped with an emergency release that is functional in all conditions, including dead-ship situations.

3.1.8.1.4 Emergency release of chain stopper should include disengaging of pins and other equipment that may prevent releasing the wire or cause the wire to get stuck/entangled during release.

3.1.8.1.5 Emergency release of the chain stopper should be designed for remote operation in order to minimize the risk of injury to personnel.

3.1.8.1.6 The emergency release mechanism of the chain stopper should be protected against unintentional activation.

3.1.8.1.7 Instructions for the operation of the emergency release should be clearly displayed at the navigation bridge and locally at the emergency release control mechanism.

3.1.8.1.8 After an emergency release, the chain stopper system should be inspected for signs of damage or deterioration. Any identified damage or deterioration should be rectified before the chain stopper is put back into service.

3.2 Testing and thorough examination

3.2.1 Commissioning test

3.2.1.1 For anchor handling winches to which SOLAS regulation II-1/3-13.2.2 applies, a commissioning test should be carried out according to the manufacturer's instructions and the requirements of a classification society which is recognized by the Administration in accordance with SOLAS regulation XI-1/1, or with applicable national or international standards acceptable to the Administration and which provide an equivalent level of safety. The commissioning test should include the following:

.1 Function tests at light load to verify the correct working of the winch and its controls over the full operating range.

.2 An overload test to verify the capacity and integrity of the anchor handling winch, the attachment of the winch to ship and the adequacy of the ship's supporting structure.

.3 Test of emergency release and residual holding force in the wire. The test should be performed with the wire attached to an onshore strong point, or an anchor on the seabed or a similar arrangement.

.4 Residual brake holding force after emergency release should be verified by test.

.5 Function test of the whole winch system including static bollard pull test and brake holding capacity test. Where it is not practicable to verify the brake holding capacity by testing, the same may be demonstrated through calculations.

3.2.1.2 After repairs, modifications or alterations of a major character, anchor handling winches are to be tested in accordance with 3.2.1.1.1, 3.2.1.1.2 and 3.2.1.1.5. If the emergency release system is affected by these repairs, modifications or alterations of a major character, the anchor handling winches are to be additionally tested in accordance with 3.2.1.1.3 and 3.2.1.1.4.

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

.1 change the rated wire pull of the anchor handling winch;

.2 affect the strength, stability or service life of the anchor handling winch;

.3 affect the primary load bearing structure of the anchor handling winch; or

.4 modify the functionality of the anchor handling winch or any part thereof which may affect its strength or safety or structural integrity.

3.2.1.4 Anchor handling winches that are not designed for towing do not need to undergo the bollard pull test in 3.2.1.1.5. Functional testing other than the static bollard pull test is still required.

3.2.2 Periodical testing

Anchor handling winches and associated equipment should be operationally tested annually and five-yearly according to the manufacturer's recommendation and the requirements or recommendations of a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1. The annual test should include function tests of all equipment. The Administration or recognized organization should witness the five-yearly test.

3.2.3 Thorough examination

3.2.3.1 Anchor handling winches and associated equipment should be subject to a thorough examination to the satisfaction of the Administration during annual surveys required by SOLAS regulations I/7 for passenger ships and I/10 for cargo ships, before re-entering service after any structural repairs or modifications of major character and after load testing.

3.2.3.2 If on completion of a thorough examination, the competent person considers the anchor handling winch to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that anchor handling winch should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The anchor handling winch should be clearly marked "not to be used" and the status should be recorded as outlined in 3.2.4. While out of service, the relevant actions for inoperative anchor handling winches as outlined under section 5 of these Guidelines should be followed.

3.2.4 Records of testing and thorough examination

Records of thorough examination and testing may be documented in any convenient form, provided each entry includes the necessary information, is clearly legible and is authenticated by the competent person. The relevant classification society or equivalent forms for documenting the thorough examination and testing should be considered for use.

3.3 Demonstration of compliance

3.3.1 Before being put into use for the first time, anchor handling winches installed on or after 1 January 2026 should be certified by the Administration or a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1 as compliant with SOLAS regulations II-1/3-13.2.2 with the recommended scope for demonstration of compliance of anchor handling winches comprising the following:

.1 a plan appraisal of the anchor handling winch 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 Anchor handling winches installed before 1 January 2026 should be certified by the Administration or a classification society which is recognized by the Administration in accordance with the provisions of regulation XI-1/1 as compliant with SOLAS regulation II-1/3-13.2.5 no later than the date of the first renewal survey on or after 1 January 2026.

3.3.3 Existing anchor handling winches with valid certificates 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-1/3-13.2.5.

3.3.4 Demonstration of compliance certified as per paragraphs 3.3.1.and 3.3.2 should be recorded in accordance with paragraph 3.2.4.

3.4 Nameplate

3.4.1 Anchor handling winches should be provided with a permanently affixed name plate which should include at least the following information:

.1 details of the manufacturer (name, address);

.2 model name/number;

.3 serial number;

.4 date of manufacture and date of installation;

.5 details of power supply;

.6 details of wire (e.g. length, diameter);

.7 maximum brake holding capacity, metric tons;

.8 maximum line pull, metric tons;

.9 maximum static bollard pull, metric tons;

.10 placeholder for the classification society's surveyor's stamp;

.11 drum size; and

.12 winch speed.

3.4.2 Detailed specifications of anchor handling winches, such as the following information, can be included in other documentation, e.g. anchor handling winches' operation/maintenance manual on board:

.1 date of manufacture and date of installation;

.2 details of power supply;

.3 details of wire (e.g. length, diameter);

.4 maximum brake holding capacity, metric tons;

.5 maximum line pull, metric tons;

.6 maximum static bollard pull, metric tons;

.7 placeholder for the classification society's surveyor's stamp;

.8 drum size; and

.9 winch speed.

3.4.3 It should be ensured that the documentation on board can be unambiguously related to the actual winch, i.e. by referring to the unique serial number.

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 anchor handling winch.

3.5.1.2 All anchor handling winches and associated equipment 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 anchor handling winches and associated equipment 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, such as winch frames and bedplates, drums, foundations and foundation connections, including welds and bolts;

.2 wear, corrosion and damage of mechanical components including hydraulic/pneumatic cylinders, pins, winch drums, chain wheels, wire-spooling and guide systems, clutches, bearings, rollers, shafts, gears, bearings and brakes;

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

.4 condition and correct functioning of the anchor handling winch as a whole and, in particular, the piping/hoses, hydraulic arrangements, spooling devices, motors, and electrical and control systems;

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

.6 certification and identification of all wires.

3.5.1.5 Damaged, broken, worn or corroded wires, including their terminations connecting loose gear, should be inspected and discarded according to manufacturers' recommendations, relevant industry standards, international standards or requirements of classification societies acceptable to the Administration.

3.5.1.6 If on the completion of an inspection, the responsible person considers the anchor handling winch to be unsafe for operation or not in compliance with the applicable requirements of the Administration, then that anchor handling winch should be taken out of service until any deficiency is rectified to the satisfaction of a competent person. The anchor handling winch should be clearly marked not to be used and the status should be recorded in accordance with 3.2.4. While out of service, the relevant actions for inoperative anchor handling winches as outlined under section 5 of these Guidelines should be followed.

3.5.2 Maintenance manual

3.5.2.1 A maintenance manual for an anchor handling winch should be provided by the manufacturer. Where maintenance manuals for existing anchor handling winches 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 anchor handling winch:

.1 description of the required inspection regime and maintenance schedules specific to the anchor handling winch, 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 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 anchor handling winch is not operated for long periods of time.

3.5.3 Records of maintenance and inspection

3.5.3.1 Records of the routine inspection and maintenance of anchor handling winches 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 anchor handling winches and their associated equipment should be qualified, familiarized with the equipment and be authorized by the master.

3.6.1.2 All personnel involved in an anchor handling winch 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 anchor handling winch operations should be equipped with appropriate personal protective equipment for the task.

3.6.1.4 Anchor handling winch 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 anchor handling winch and should be provided in the operations manual.

3.6.1.6 Due consideration should be given to any limiting operational conditions, such as the ship's motion/inclination, environmental conditions including sea state, maximum wind speeds including wind gusts, ice and snow accretion, as well as limitations of the anchor handling winch, such as maximum line pull, maximum brake holding capacity, etc.

3.6.1.7 Effective communication should be established among ship's personnel as well as other ships/offshore units involved in the anchor handling winch operation.

3.6.1.8 Safe means of access to anchor handling winches and the work area should be established. Safe areas for the personnel involved should be available.

3.6.1.9 When developing plans and procedures for anchor handling winch operations, consideration should be given to prevention of accidents or incidents due to the wires striking any person or other structures in close proximity.

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

3.6.1.11 Personnel operating the anchor handling winch should consult the operations manual for any specific instructions related to the anchor handling operations.

3.6.1.12 Periodic drills for emergency release and emergency brake operation should form part of the planned maintenance schedule.

3.6.2 Operations manual

3.6.2.1 An operations manual for the anchor handling winches should be provided by the manufacturer. Where operations manuals for existing anchor handling winches are not available from the manufacturer, these may be provided by competent third parties.

3.6.2.2 The operations manual should, as a minimum, include the following for each anchor handling winch:

.1 design, operational and environmental limitations;

.2 compatible loose gear, if any;

.3 safety instructions; and

.4 operating procedures, including emergency procedures, if any.

3.6.2.3 For anchor handling winches installed before 1 January 2026, their operations manual 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, the operations manuals should be developed on the current operational procedures and practices.

4 Loose gear

4.1 Design and manufacturing

Loose gear utilized with anchor handling winches to which SOLAS regulations II-1/3-13.2.2 and II-1/3-13.2.5 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 anchor handling winches and associated equipment 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 major character acceptable to the Administration.

4.2.2 Thorough examination

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

.1 after any proof test; and

.2 annually.

4.2.2.2 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 as detailed in sub-section 4.7. 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, the loose gear utilized with anchor handling winches which comply with SOLAS regulations II-1/3-13.2.2 and 3-13.2.5 should be certified to meet the provisions in section 4.

4.3.2 The existing loose gear utilized with anchor handling winches and associated equipment to which SOLAS regulations II-1/3-13.2.2 and II-1/3-13.2.5 apply, with valid certificates 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-1/3-13.5.

4.4 Marking

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

4.4.2 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

The personnel involved in anchor handling winch 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, anchor handling winch 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 Hazards particular to the inspection and maintenance of loose gear should be considered when developing the relevant procedures for undertaking such tasks.

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, identification and marking 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. 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 and kept on board.

4.7.1.2 Records of thorough examination and testing may be documented in any convenient form, provided each entry includes the necessary information, is clearly legible and is authenticated by the competent person. Forms issued by the relevant classification society recognized by the Administration or any equivalent forms for documenting the thorough examination and testing should be considered for use.

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 anchor handling winches, associated equipment 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 anchor handling winches and associated loose gear and wire:

.1 take the inoperative anchor handling winches, associated equipment and wire into account in planning and executing a safe voyage;

.2 prevent the operation of inoperative anchor handling winches and associated loose gear and equipment;

.3 prevent uncontrolled movement of inoperative anchor handling winches or associated loose gear and equipment using appropriate restraining and preventing arrangements, if required;

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

.5 record the particulars of anchor handling winches or loose gear, associated equipment and wire that is inoperative as detailed in paragraph 3.2.4 and/or 4.7.1 until necessary repairs have been completed and it has been tested or proof tested, as necessary, and thoroughly examined.