



WHEN TRUST MATTERS

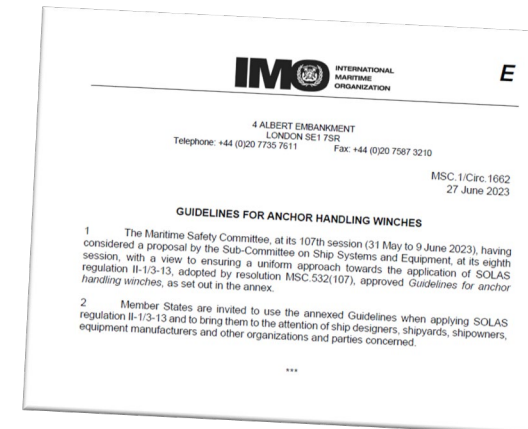
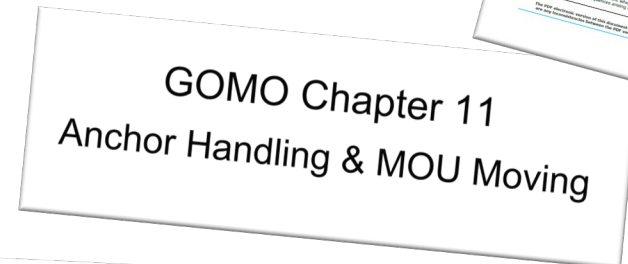
# Anchor handling

Status on AH initiatives and new SOLAS Regulations

Dag-Børre Lillestøl, Senior Principal Surveyor, DNV  
UK Maritime Safety Forum, 2026.05.28

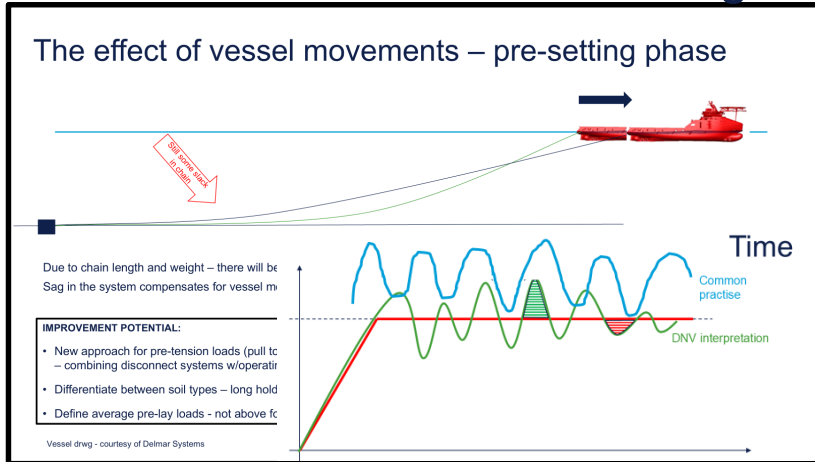
# Anchor handling – ...progress across the industry..

- Industry cooperation across disciplines – despite roles, interests and competition...
- **Increased industry focus on line-dynamics, load reduction & load logging**
  - -> natural part of operation planning & inspection basis (good progress – but much more to gain)
- **Revised inspection schemes**
  - Usage based inspection
- **Chain handling requirements**
  - to be adapted by IACS (increased material strength comes with a cost – requires different handling)
- **Improved anchor recovery procedures**
  - new “good industry practice” (ref. GOMO 2024 May Edition)
- **New IMO Guidelines – SOLAS II-1/3-13 MSC.1 1662**
  - Anchor handling winch package and loose gear now covered under SOLAS
  - Increased focus on maintenance, operational winch capabilities and safety functions
- **Continued focus on lowering of installation loads**
  - slow progress...

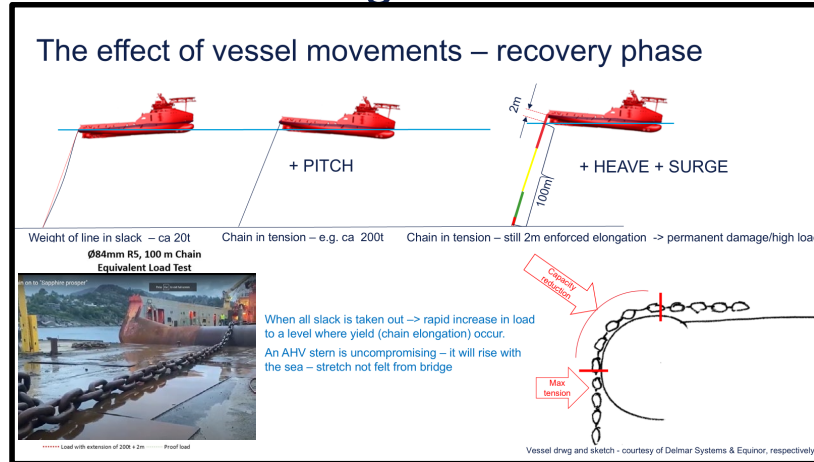


# Focus areas and initiatives – where are we... is it paying off?

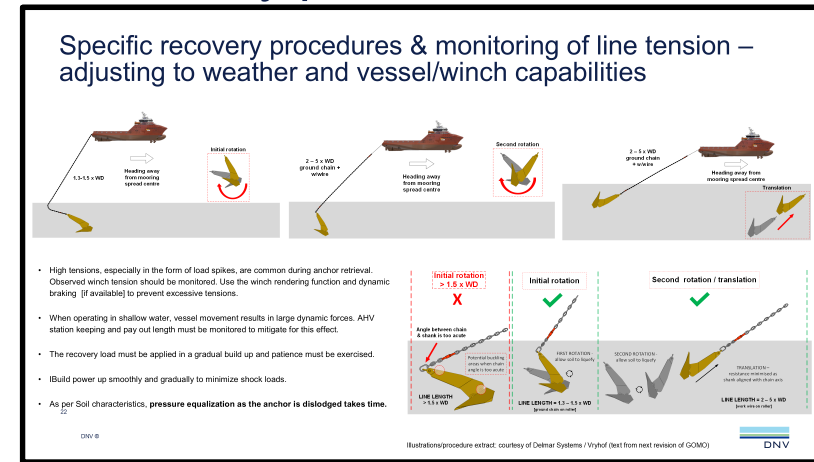
## Installation / Anchor Tensioning



## Chain handling onshore/offshore



## Recovery procedures



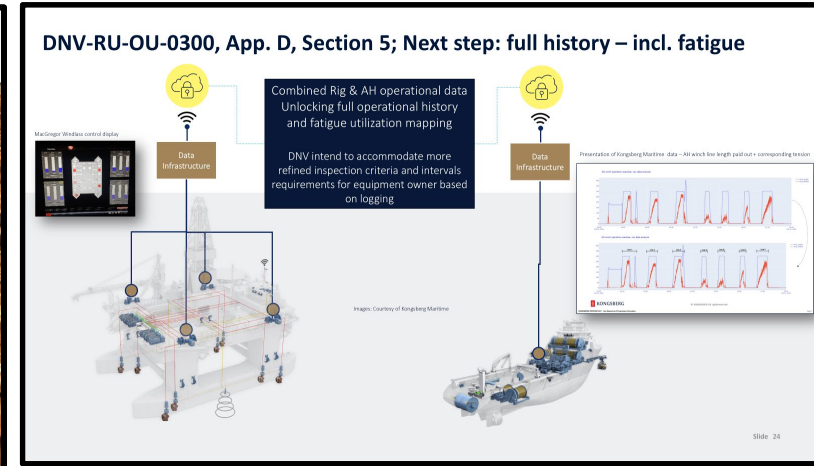
## Load monitoring -> inspection



## Inspection



## Operation -> fatigue - all phases



# New DNV Class Notation: “T-LOG” – (load registration

## Design Requirements:

### 5 Extended tension monitoring

#### 5.1 General

**5.1.1** The class notation **Offshore service vessel (Anchor handling and mooring)** shall include the following design and recording requirements for anchor handling operations and usage-based inspection programmes for mooring equipment.

**5.1.2** The anchor handling winch shall be provided with line tension monitoring. The system shall comply with the requirements of 5.1.3.

**5.1.3** The system shall be able to monitor loads:

- Tension measurement in winch load cell(s) shall be of dynamic mode, and with brake(s) engaged.
- Load measurement shall be taken in drum shaft(s), or in the winch load cell(s).
- The winch tension measurement accuracy in the various operational modes shall be stated in the winch operation manual or datasheet, and be easily accessible to the operator.
- The displayed and recorded line load shall be compensated for the weight of the line.
- Load sampling frequency shall at least be 5 Hz.
- Tension data shall be displayed for all operational phases of anchor handling operations.
- Tension shall be displayed graphically to the operator during all anchor handling operations. The winch wire length paid out/in shall be displayed.

**5.1.4** The system shall be able to log loads:

- All phases of the operation shall be possible to log, including anchor handling operations.
- Tension logs stored shall not have lower resolution than the load history presentation with respect to peak loads and load cycles.
- Data for location, time stamp, line no., and length of line paid out shall be recorded.

**5.1.5** The system shall be able to report loads:

- It shall be possible to create and store the log file with, as a minimum, data for location, time stamp, line no., and length of line paid out.
- It shall be possible to extract the log file by the vessel crew or stored in a database with secure access for transfer to e.g. the equipment owners or other third-parties.

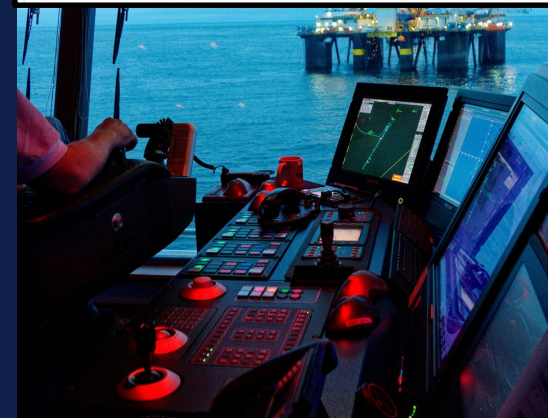


## Annual/Complete Requirements:

### 6.3.3 Additional testing for vessels with qualifier T-LOG

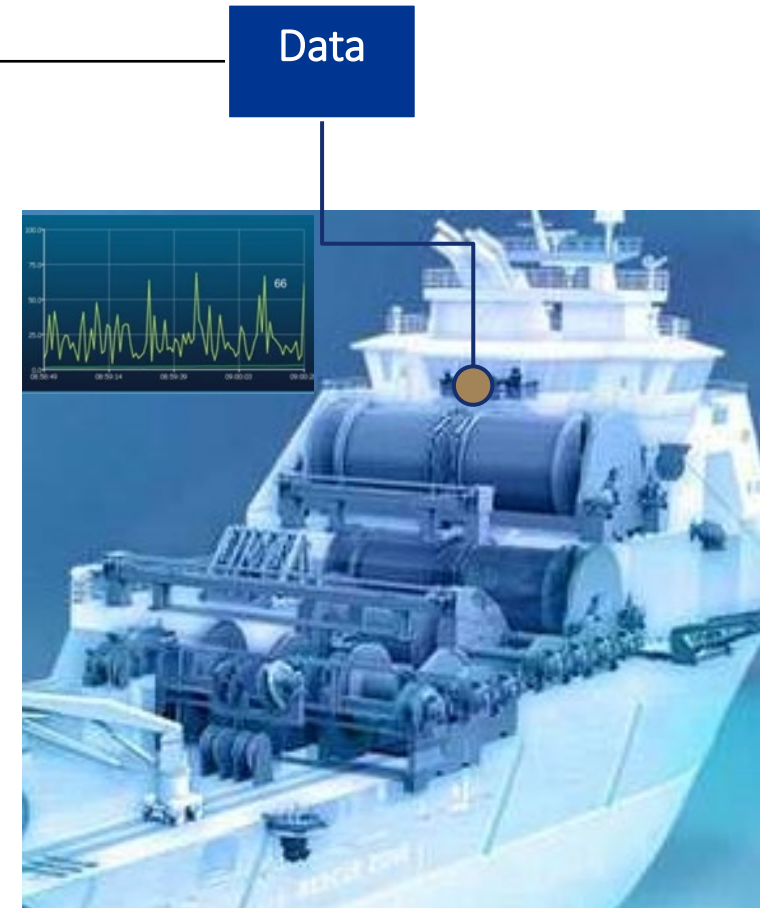
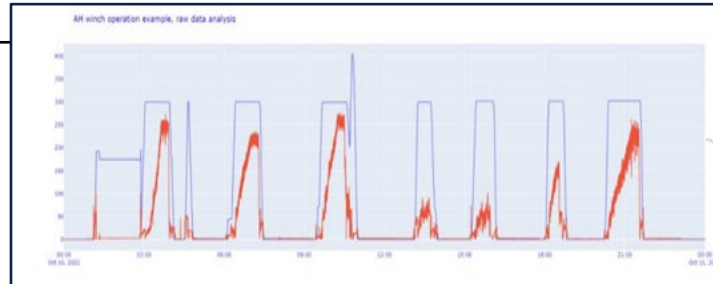
The system for tension monitoring, logging and reporting system for line load shall be prepared for testing including:

- 1) function test of tension monitoring and logging system in all operational winch configuration modes
- 2) verification of correct online display of load and load history at operator station(s)
- 3) verification of functionality to ensure line load log files can be created
- 4) demonstration of logging operations and ability to create tension logs for third party.



# T-LOG – Class Notation

- Intended to give the equipment owners the required accurate data to ensure correct inspection and follow-regimes.
- Vessels with this Notation demonstrate that the logging and data storage complies with latest industry expectations.
- Upgrade of existing fleet / AHV winch packages possible

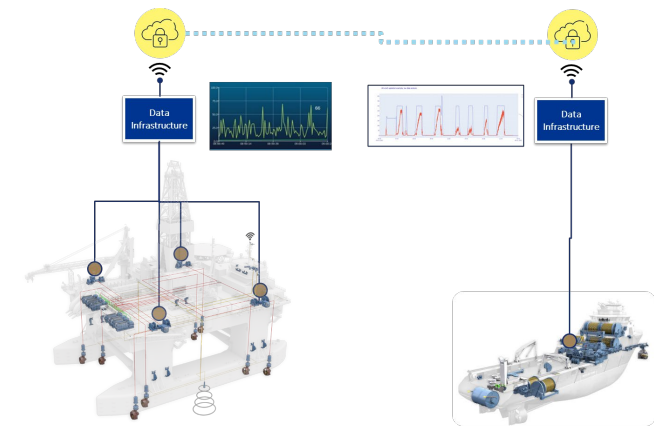
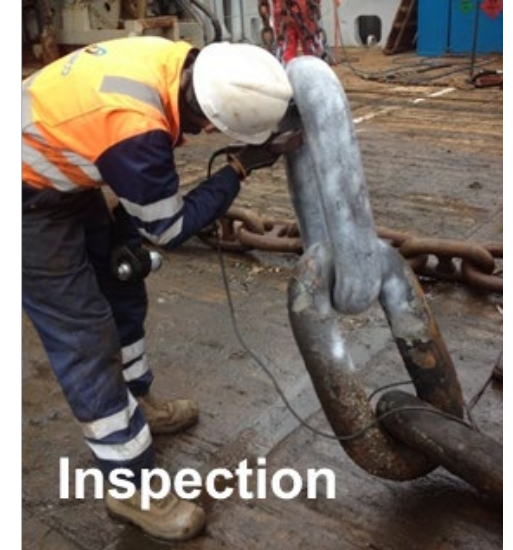


Images: Courtesy of Rolls Royce Marine /Kongsberg Maritime

Upgrades of existing fleet possible

# Summing up – why the focus on line tension logging

- Need to know the real line tension in recovery and shallow water operations
- Pre-tensioning and particularly recovery are the critical phases –
  - Logging at pre-setting – we do not want to set the anchors too hard...
  - Logging at recovery – highest loads/peak loads occur in this phase
    - Need tension data to identify and inspect the high-risk items
    - PoD at inspection increases if one can target the most loaded components
- With today's high utilization – fatigue is becoming an issue also for mobile mooring chain
  - Installation and recovery load history can be combined with rig data/tension (already logged by the rig winches)
  - This will be required - going forward



# Updates on DNV AOSS schemes



CLASS PROGRAMME

Approval of service suppliers

DNV-CP-0632

Edition June 2022

## Examination of mobile and long term mooring systems

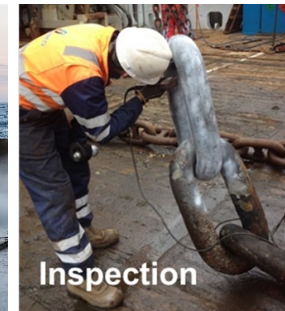
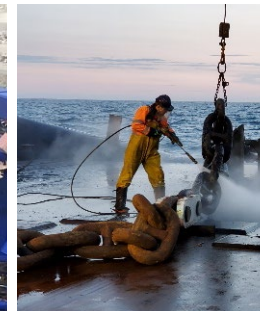
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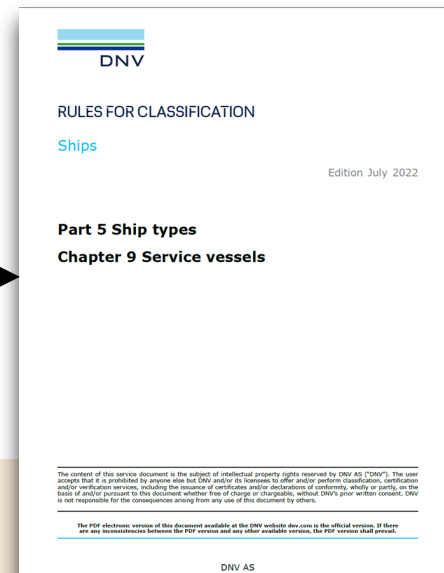
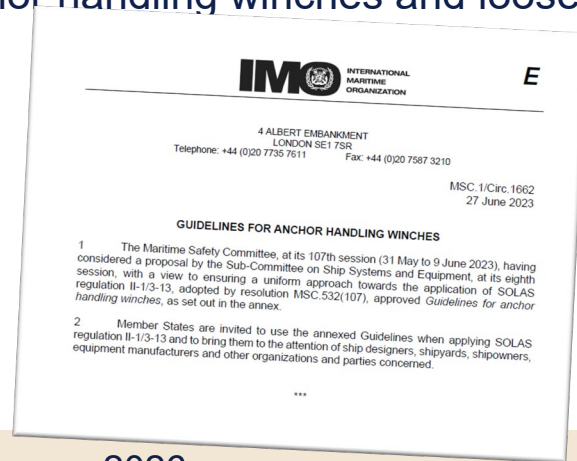
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- Procedural requirements based on:
  - Type of operation
  - Logging of loads/utilization & accuracy
- Class approves process put in place by equipment owner based on the criteria in DNV-RU-OU-0300, App. D, Sec. 5. moved to DNV-CP-0632 (July 2025 Edition)
- Less direct DNV involvement
- Audit regime rather than survey regime
- Suitable for rental companies and asset owners with much equipment and who possesses the knowledge, organization and processes to handle the logistics required
- Scheme shall facilitate correct PoD level and optimize inspections to reduce risk of failures and ensure safer operations
- Require tension monitoring from operations - accuracy requirements to be introduced



# Anchor handling winches & loose gear

- New SOLAS regulation II-1/3-13:
  - Anchor handling winches to be designed, constructed, installed and tested based on IMO Guidelines.
  - Retroactive requirements to testing, thorough examination, operation, inspection and maintenance for all appliances (AH winch, shark jaws, etc) and loose gear.
- Guidelines for anchor handling winches and loose gear



## Impact:

Entry into force on 1 January 2026.

The requirements will be applicable to new and existing ships.

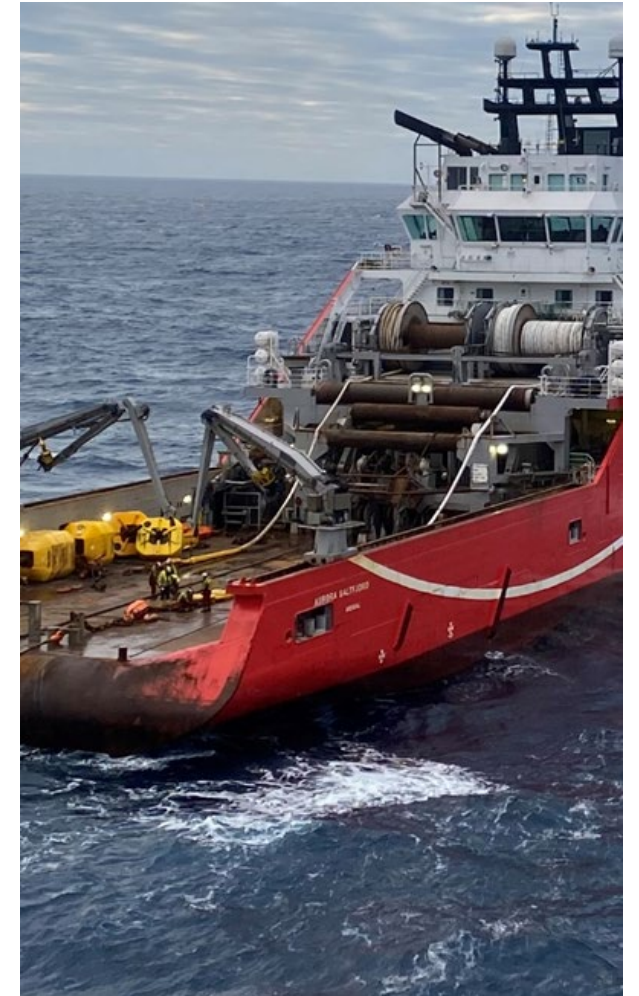
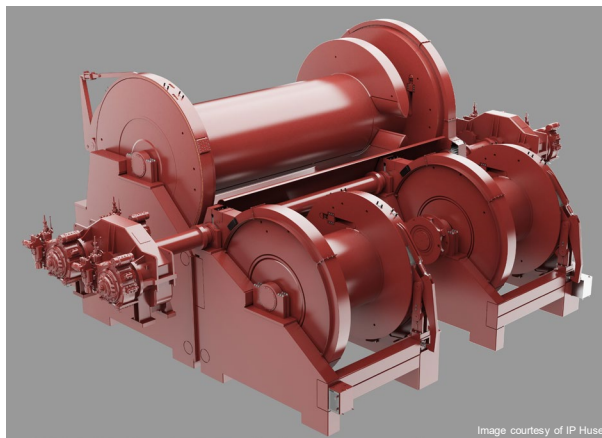
The requirements to anchor handling winches will be applicable to vessels used for anchor handling operations.

## References:

- Resolution MSC.530(107)
- MSC.1/Circ.1662 (anchor handling)

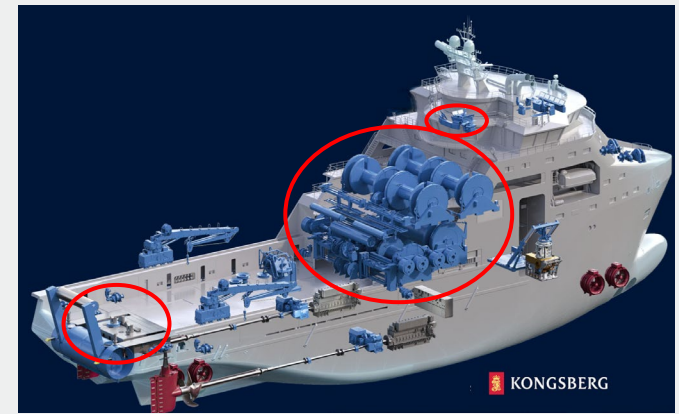
# SOLAS regulation II-1/3-13 / MSC.1/Circ. 1662

*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 (IMO)."*

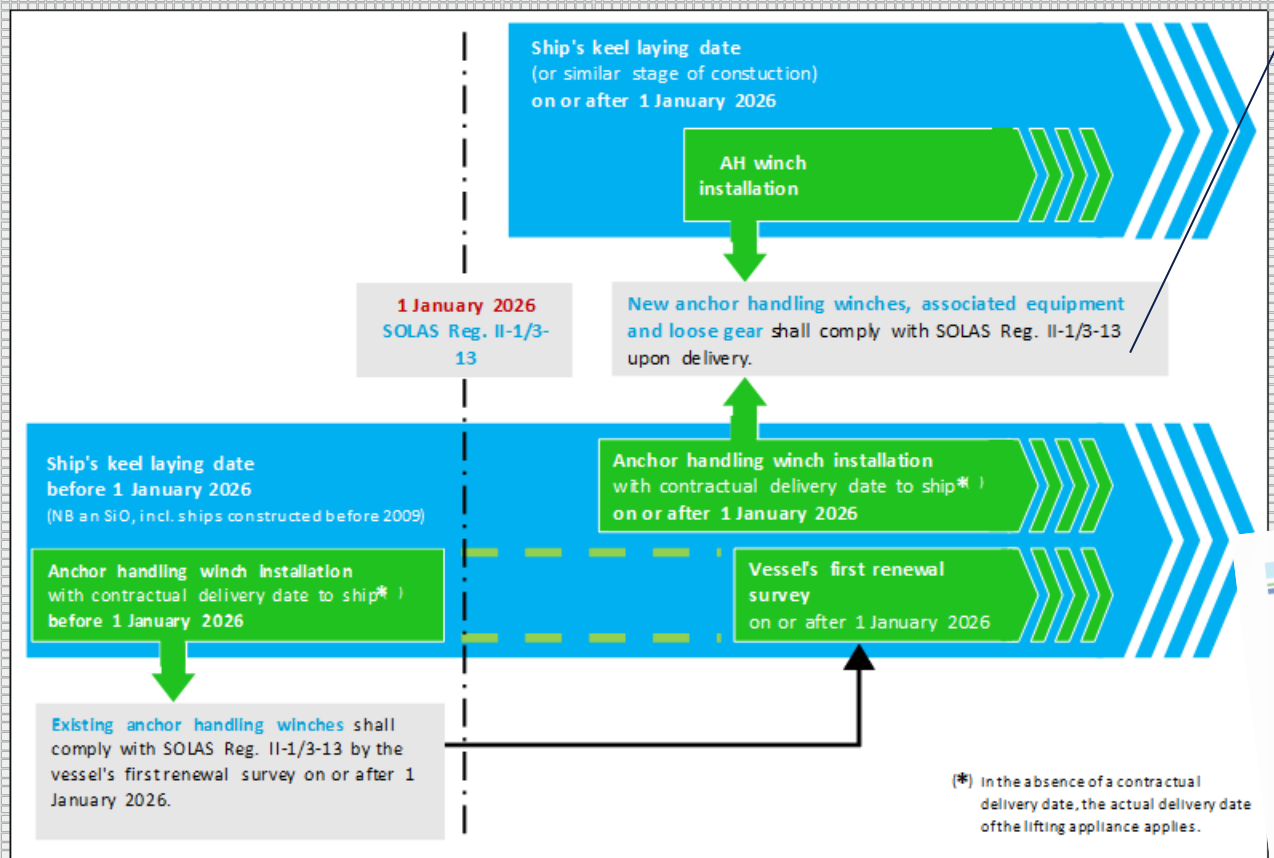


# Implementation

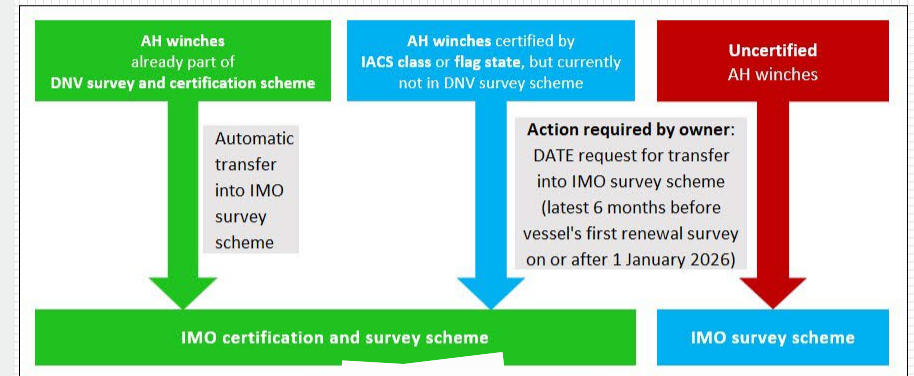
DNV Rules for SHIPS Part 5 Ch.9 Sec.3



## Implementation schedule for new IMO requirements:



## Action plan for existing lifting appliances:



DNV  
**FACTUAL STATEMENT OF TEST AND THOROUGH EXAMINATION OF NON-CERTIFIED ANCHOR HANDLING EQUIPMENT INSTALLED BEFORE 01.01.2026 (AHFS)**

DNV  
**CERTIFICATE OF TEST AND THOROUGH EXAMINATION OF ANCHOR HANDLING EQUIPMENT (AH2)**

Location

Name of vessel: \_\_\_\_\_

DNV ID no. \_\_\_\_\_

Call sign: \_\_\_\_\_

Owners: \_\_\_\_\_

Port of registry: \_\_\_\_\_

Location

Name of vessel: \_\_\_\_\_

DNV ID no. \_\_\_\_\_

Call sign: \_\_\_\_\_

Owners: \_\_\_\_\_

Port of registry: \_\_\_\_\_

(1) Description of anchor handling equipment which have been tested and thoroughly examined	(2) Maker	(3) Type	(4) Rated capacity	(5) Rated brake capacity
Anchor handling winch				
Chain stopper			(@1" layer)	

(6) Register of anchor handling loose gear

(7) Issuer

(8) Register identification no.

(9) Implemented by

# MSC.1/Circ. 1662

## 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.

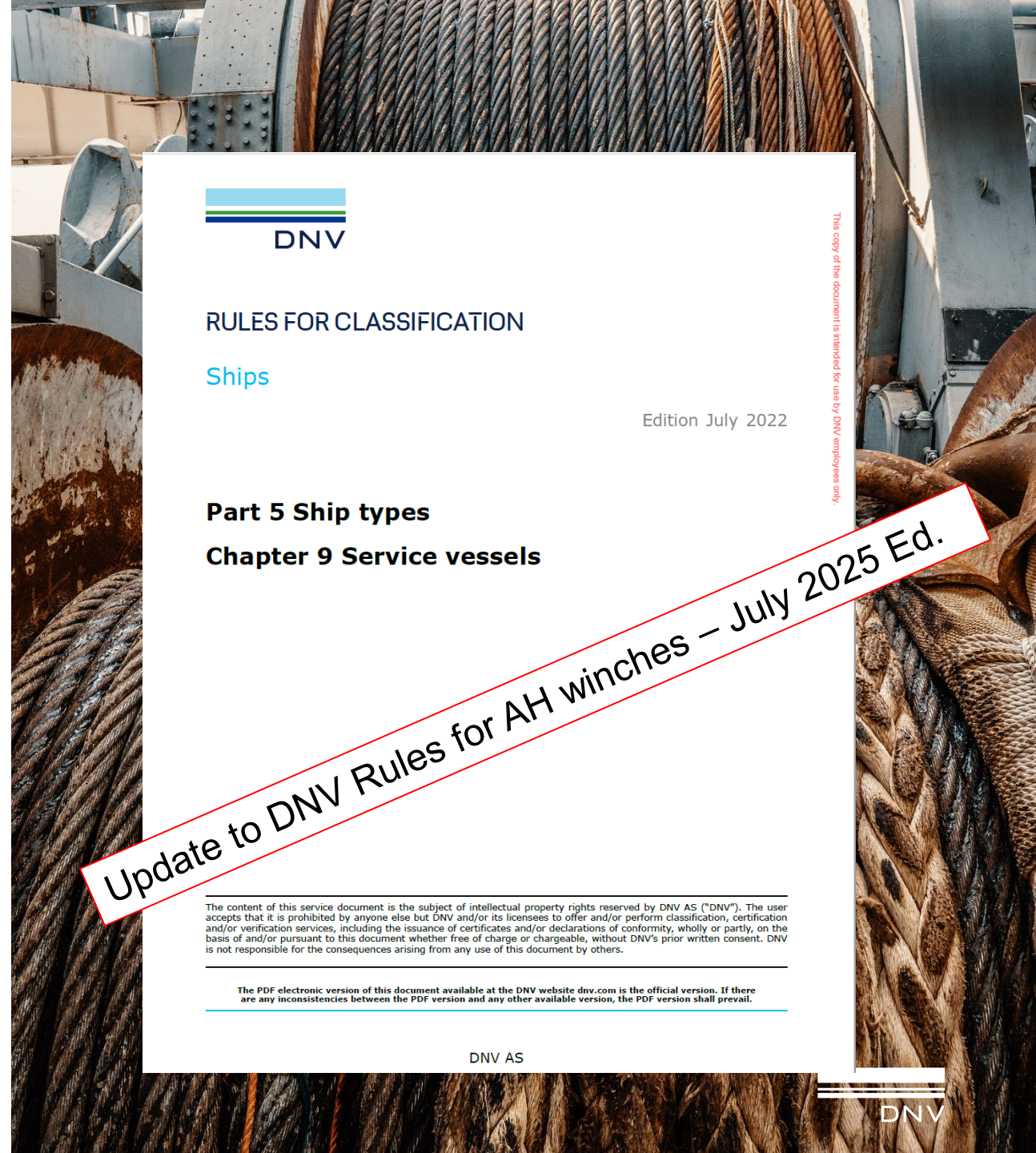
3.6.2.2 The operations manual should, as a minimum, include the following for each anchor handling winch:

- .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.

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.



## RULES FOR CLASSIFICATION

### Ships

Edition July 2022

### Part 5 Ship types

### Chapter 9 Service vessels

**Update to DNV Rules for AH winches – July 2025 Ed.**

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DNV AS

# MSC.1/Circ. 1662

## 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.



# Increased focus on Maintenance + testing of Safety Functions

## Increased vendor engagement

### Information to Anchor Handling Customers

From Kongsberg Maritime – Handling Systems – Global Customer Support

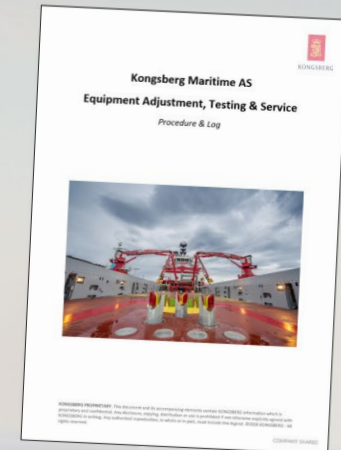
1. Information Letter
  - General information and KM recommendations
2. Fact Sheet
  - Answers to clarifications & questions asked
3. Annual Safety Function Procedure
  - Step by step procedure of recommended function testing of winch system
4. Routine Maintenance Schedule
  - Updated maintenance plan with instructions



### Equipment Assessment, Testing & Service

By Kongsberg Maritime every 5 years in combination with renewal of class approval

- Standard Service Layout
- Conducted by KM personnel onboard
- To be signed by Class, KM & Shipowner
- Consists of three main parts:
  1. Winch system inspection
  2. Safety function testing
  3. Calibration





WHEN TRUST MATTERS

# Thank you

- Questions appreciated – now or later...

[dag.lillestol@dnv.com](mailto:dag.lillestol@dnv.com)

Aberdeen 2026.05.28