



RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER

No. 313-69-1297c

dated 21.11.2019

Re:

amendments introduced to the Rules for the Classification and Construction of Sea-Going Ships in connection with coming in force of IACS Unified Requirements M3 (Rev. 6 Nov 2018) and M79 (Oct 2018)

Item(s) of supervision:

internal combustion engines and towing winch emergency release systems

Entry-into-force date:

01.01.2020

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~~Cancels / amends / adds Circular Letter No.~~

~~dated~~

Number of pages:

1+6

Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part IX "Machinery"

Director General

Konstantin G. Palnikov

Text of CL:

We hereby inform that upon the re-publication of the Rules for the Classification and Construction of Sea-Going Ships in 2020, the Rules shall be amended as specified in the Appendices to the Circular Letter.

It is necessary to do the following:

1. Bring the content of the Circular Letter to the notice of the RS surveyors, interested organizations and persons in the area of the RS Branch Offices' activity.
 2. Apply the provisions of the Circular Letter during review and approval of the technical documentation on internal combustion engines and towing winch emergency release systems installed on board the ships contracted for construction or conversion on or after 01.01.2020, in the absence of a contract – on ships, the keels of which are laid, or which are at a similar stage of construction on or after 01.01.2020, as well as when performing technical supervision during manufacture of internal combustion engines with an application for certification dated on or after 01.01.2020.
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List of the amended and/or introduced paras/chapters/sections:

para 2.11.3.2, Figure 2.11.3.2, paras 2.11.3.8 and 2.11.8 and Chapter 6.6

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**Information on amendments introduced by the Circular Letter
(for inclusion in the Revision History to the RS Publication)**

Nos.	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
1	Para 2.11.3.2	The requirements for application of electrical load on maximum possible sudden power increase of four-stroke diesel engines considering IACS M3 (Rev. 6 Nov 2018) have been specified	313-69-1297c of 21.11.2019	01.01.2020
2	Figure 2.11.3.2	The values for application of electrical load on maximum possible sudden power increase considering IACS M3 (Rev. 6 Nov 2018) have been specified	313-69-1297c of 21.11.2019	01.01.2020
3	Para 2.11.3.8	The reference has been specified considering IACS M3 (Rev. 6 Nov 2018)	313-69-1297c of 21.11.2019	01.01.2020
4	Para 2.11.8	The requirements for local control position considering IACS M3 (Rev. 6 Nov 2018) have been specified	313-69-1297c of 21.11.2019	01.01.2020
5	Chapter 6.6	A new Chapter has been introduced considering IACS M79 (Oct 2018)	313-69-1297c of 21.11.2019	01.01.2020

RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SEA-GOING SHIPS, 2019,

ND No. 2-020101-114

PART IX. MACHINERY

2 INTERNAL COMBUSTION ENGINES

1 **Para 2.11.3.2** is replaced by the following text:

"**2** when a prime mover running at no-load is suddenly loaded to 50 % of the rated power of the generator followed by the remaining 50 % after the interval sufficient to restore the speed to steady state, the transient speed variations shall not exceed 10 % of the rated speed. Application of electrical load in more than two load steps can only be permitted, if the conditions within the ship's mains permit the use of such prime movers, which can only be loaded in more than two load steps (refer to Fig. 2.11.3.2 for maximum possible sudden power increase of four-stroke diesel engines) and provided that this is already allowed for in the designing stage. This shall be verified in the form of system specifications to be approved and to be demonstrated at ship's trials. In this case the power required for the electrical equipment to be automatically switched on after blackout as well as the sequence in which it is connected shall fit the load steps. This applies analogously also to generators to be operated in parallel and where the power has to be transferred from one generator to another in the event of any one generator has to be switched off;"

2 **Figure 2.11.3.2 and the Legend** under the Figure are replaced by the following:

"

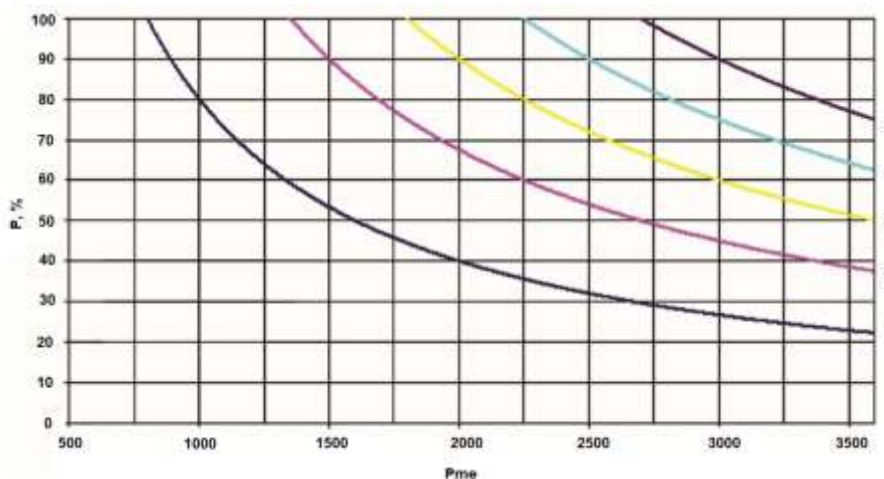


Fig. 2.11.3.2

Maximum possible sudden power increases as a function of brake mean effective pressure, P_{me} , at declared power (four-stroke diesel engines:

- P_{me} – declared power mean effective pressure (in kPa);
 P – power increase referred to declared power at site conditions;
1 – first power stage;
2 – second power stage;
3 – third power stage;
4 – fourth power stage;
5 – fifth power stage."

3 **Para 2.11.3.8** is replaced by the following text:

.8 when 100 % of the generator rated power is thrown off, a transient speed variation in excess of 10 % of the rated speed may be acceptable, provided this does not cause the intervention of the overspeed device as required by 2.11.6."

4 **Para 2.11.8** is replaced by the following text:

"2.11.8 In addition to the requirements of the Chapter, electric (electronic) speed governors shall also comply with 2.1, Part XV "Automation". If the electric (electronic) speed governors comprise a part of the remote automatic control system they shall meet the requirements of 3.1.8 and 3.1.10, Part VII "Machinery Installations" and also of 2.3, Part XV "Automation", in order to carry out this requirement, a separate speed governor shall be additionally provided for the local control station.

The electric (electronic) speed governors shall be of an approved type and tested in accordance with 12.3.1, Part IV "Technical Supervision During Manufacture of Products" of Rules for Technical Supervision During Construction of Ships and Manufacture of Materials and Products for Ships."

DECK MACHINERY

5 **New Chapter 6.6** is introduced reading as follows:

"6.6 TOWING WINCH EMERGENCY RELEASE SYSTEMS

6.6.1 Scope of application.

6.6.1.1 The Chapter defines minimum safety standards for winch emergency release systems provided on towing winches that are used on towing ships within close quarters, ports or terminals.

6.6.1.2 The Chapter requirements are not intended to cover towing winches on board ships used solely for long distance ocean towage, anchor handling or similar offshore activities.

6.6.1.3 Definitions:

Emergency release system refers to the mechanism and associated control arrangements that are used to release the load on the towline in a controlled manner under both normal and dead-ship conditions.

Maximum design load is the maximum load that can be held by the winch as defined by the manufacturer (the manufacturer's rating).

Girthing means the capsize of a tug when in the act of towage as a result of the towline force acting transversely to the tug (in beam direction) as a consequence of an unexpected event (could be loss of propulsion/steering or otherwise), whereby the resulting couple generated by offset and opposing transverse forces (towline force is opposed by thrust or hull resistance force) causes the tug to heel and, ultimately, to capsize. This may also be referred to as "girthing", "girding" or "tripping".

Refer to Fig. 6.6.1-1 which shows the forces acting during towage operations.

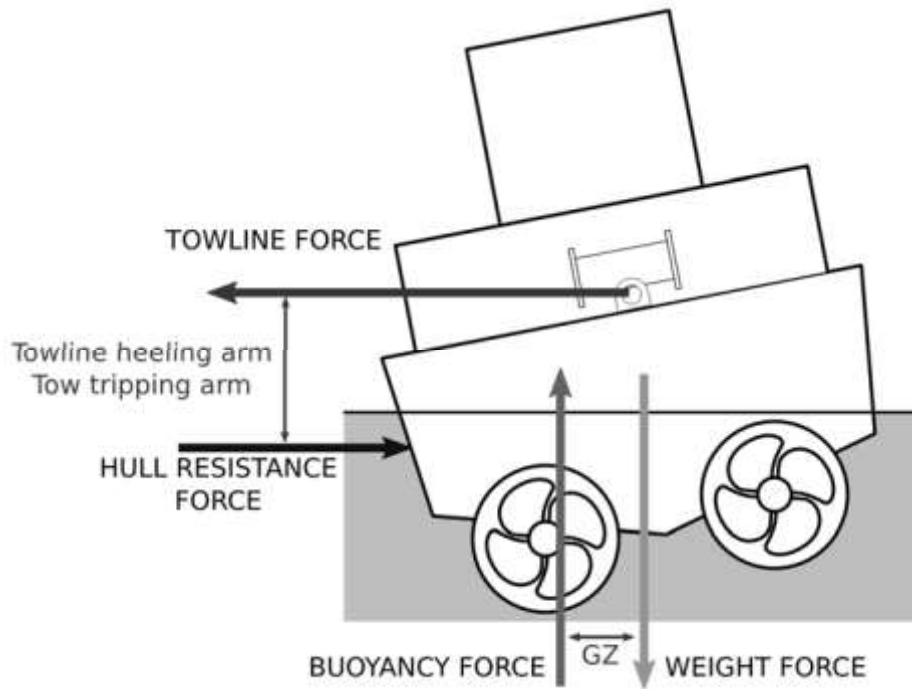


Fig. 6.6.1-1 Forces during towing

Fleet angle is the angle between the applied load (towline force) and the towline as it is wound onto the winch drum (refer to Fig. 2.6.6.1-2).

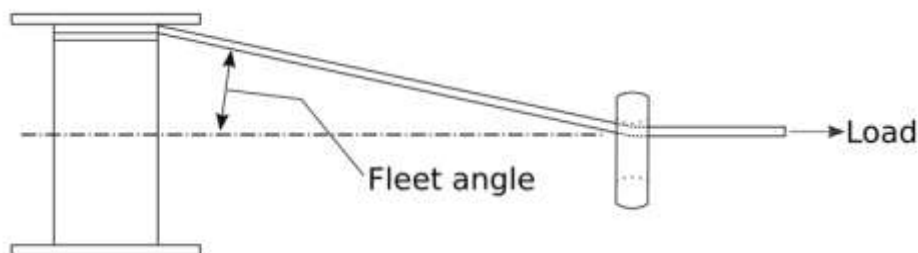


Fig 6.6.1-2 Towline "fleet angle"

6.6.2 General.

6.6.2.1 The in-board end of the towline shall be attached to the winch drum with a weak link or similar arrangement that is designed to release the towline at low load.

6.6.2.2 All towing winches shall be fitted with an emergency release system.

6.6.3 Emergency release system requirements.

6.6.3.1 Performance requirements.

6.6.3.1.1 The emergency release system shall operate across the full range of towline load, fleet angle and ship heel angle under all normal and reasonably foreseeable abnormal conditions (these may include, but are not limited to, the following: ship electrical failure, variable towline load (for example due to heavy weather), etc.).

6.6.3.1.2 The emergency release system shall be capable of operating with towline loads up to at least 100 % of the maximum design load.

6.6.3.1.3 The emergency release system is to function as quickly as is reasonably practicable and within a maximum of three seconds after activation.

6.6.3.1.4 The emergency release system shall allow the winch drum to rotate and the towline to pay out in a controlled manner such that, when the emergency release system is activated, there is sufficient resistance to rotation to avoid uncontrolled unwinding of the towline from

the drum. Spinning (free, uncontrolled rotation) of the winch drum shall be avoided, as this could cause the towline to get stuck and disable the release function of the winch.

6.6.3.1.5 Once the emergency release is activated, the towline load required to rotate the winch drum is to be no greater than:

the lesser of five tonnes or 5 % of the maximum design load when two layers of towline are on the drum, or

15 % of the maximum design load where it is demonstrated that this resistance to rotation does not exceed 25 % of the force that will result in listing sufficient for the immersion of the lowest unprotected opening.

6.6.3.1.6 An alternative source of energy shall be provided such that normal operation of the emergency release system can be sustained under dead-ship conditions.

6.6.3.1.7 The alternative source of energy required by 6.6.3.1.6 shall be sufficient to achieve the most onerous of the following conditions (as applicable):

sufficient for at least three attempts to release the towline (i.e. three activations of the emergency release system). Where the system provides energy for more than one winch it shall be sufficient for three activations of the most demanding winch connected to it;

where the winch design is such that the drum release mechanism requires continuous application of power (e.g. where the brake is applied by spring tension and released using hydraulic or pneumatic power) sufficient power is to be provided to operate the emergency release system (e.g. hold the brake open and allow release of the towline) in a dead-ship situation for a minimum of five minutes. This may be reduced to the time required for the full length of the towline to feed off the winch drum at the load specified in 6.6.3.1.5 if this is less than five minutes.

6.6.3.2 Operational requirements.

6.6.3.2.1 Emergency release operation shall be possible from the bridge and from the winch control station on deck. The winch control station on deck shall be in a safe location.

6.6.3.2.2 The emergency release control shall be located in close proximity to the emergency stop button for winch operation and both shall be clearly identifiable, clearly visible, easily accessible and positioned to allow safe operability.

6.6.3.2.3 The emergency release function is to take priority over any emergency stop function. Activation of the winch emergency stop from any location is not to inhibit operation of the emergency release system from any location.

6.6.3.2.4 Emergency release system control buttons are to require positive action to cancel, the positive action may be made at a different control position from the one where the emergency release was activated. It shall always be possible to cancel the emergency release from the bridge regardless of the activation location and without manual intervention on the working deck.

6.6.3.2.5 Controls for emergency use shall be protected against accidental use.

6.6.3.2.6 Indications shall be provided on the bridge for all power supply and/or pressure levels related to the normal operation of the emergency release system. Alarms shall activate automatically if any level falls outside of the limits within which the emergency release system is fully operational.

6.6.3.2.7 Wherever practicable, control of the emergency release system is to be provided by a hard-wired system, fully independent of programmable electronic systems.

6.6.3.2.8 Computer based systems that operate or may affect the control of emergency release systems shall meet the requirements for Category III programmable electronic systems of Section 7, Part XV "Automation".

6.6.3.2.9 Components critical for the safe operation of the emergency release system shall be identified by the manufacturer.

6.6.3.2.10 The method for annual survey of the winch shall be documented.

6.6.3.2.11 Where necessary for conducting the annual survey of the winch, adequately sized strong points shall be provided on deck.

6.6.4 Test requirements. General.

6.6.4.1 For each emergency release system or type thereof, the performance requirements of 6.6.3.1 shall be verified either at the manufacturer's works or as part of the commissioning of the towing winch when it is installed on board. Where verification solely through testing is impracticable (e.g. due to health and safety), testing may be combined within section, analysis or demonstration in agreement with the Register.

6.6.4.2 The performance capabilities and operating instructions of the emergency release system shall be documented and made available on board the ship on which the winch has been installed.

6.6.4.3 Considering 6.6.4.1 emergency release system shall be surveyed at the Manufacturer's for compliance of the approved documentation during shipboard commissioning trials to the satisfaction of the surveyor with 5.10.5 of Part IV "Technical supervision during manufacture of products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials. Mooring trials shall be conducted in compliance with 3.3.4.3.7 of the Guidelines on Technical Supervision of Ships Under Construction."