RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER **No. 313-69-1337c** dated 21.02.2020

Re:

amendments to the Rules for the Classification and Construction of Sea-Going Ships, 2020, ND No. 2-020101-124-E

Item(s) of supervision:

internal combustion engines, crankshafts of internal combustion engines, anchor machinery

Entry-into-force date: ~~Valid till:~~ ~~Validity period extended till:~~
refer to Appendix 1

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

Number of pages: 1+3

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 the Rules for the Classification and Construction of Sea-Going Ships shall be amended as specified in 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 amendments introduced by the Circular Letter during review and approval of the technical documentation on internal combustion engines and anchor machinery designed for application on ships contracted for construction or conversion on or after dates indicated in Appendix 1, in the absence of a contract, the keels of which are laid or which are at a similar stage of construction on or after dates indicated in Appendix 1, as well as when performing technical supervision during manufacture of machinery installations requested on or after dates indicated in Appendix 1.

List of the amended and/or introduced paras/chapters/sections:

Part IX: paras 2.1.1 and 2.2.1, para 4.3 of Appendix IV to Section 2 and para 6.3.2.2

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Appendix 1 to Circular Letter
No. 313-69-1337c dated 21.02.2020

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 2.1.1	Application of Section requirements has been specified	313-69-1337c of 21.02.2020	01.05.2020
2	Para 2.2.1	Reference to additional requirements for design of gas engines has been introduced	313-69-1337c of 21.02.2020	01.05.2020
3	Appendix IV to Section 2, para 4.3	Requirements for evaluation of crankshaft fatigue strength test results have been specified considering IACS UR M53 (Rev.4, Aug 2019)	313-69-1337c of 21.02.2020	01.01.2021
4	Para 6.3.2.2	Requirements for welds of anchor machinery elements have been specified considering IACS UR A3 (Rev.1, Jun 2019)	313-69-1337c of 21.02.2020	01.07.2020

RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SEA-GOING SHIPS, 2020

ND No. 2-020101-124-E

PART IX. MACHINERY

2 INTERNAL COMBUSTION ENGINES

1 **Para 2.1.1** is replaced by the following text:

"**2.1.1** The requirements of the present Section are applicable to all internal combustion engines of power output 55 kW and above.

The scope of requirements to the engines of power output less than 55 kW may be reduced regarding to their structural features and purpose.

The Register may impose additional requirements upon the design, scope of surveys and tests of internal combustion engines with electronic control systems, based on the regulating documents developed by the Register.".

2 **Para 2.2.1** is replaced by the following text:

"**2.2.1** Additional requirements for gas internal combustion engines are given in Section 9.".

APPENDIX IV

GUIDANCE FOR EVALUATION OF FATIGUE TESTS (REFER TO IACS UR M53)

3 **Para 4.3** is replaced by the following text:

"**4.3 Use of results and crankshaft acceptability**

In order to combine the bending and torsion fatigue strength test results in calculation of crankshaft acceptability (refer to 2.4.11 of this Part), the Gough-Pollard approach and the maximum principal equivalent stress formulation can be applied for the following cases:

As for the crankpin diameter:

$$Q = (\sqrt{(\sigma_{BH}/\sigma_{DWCT})^2 + (\tau_{BH}/\tau_{DWCT})^2})^{-1}$$

where

σ_{DWCT} is bending test fatigue strength;

τ_{DWCT} is torsion test fatigue strength.

As for the crankpin oil bore:

$$Q = \frac{\sigma_{DWOT}}{\sigma_v};$$

$$\sigma_v = \frac{1}{3}\,\sigma_{BO}\left[1 + 2\sqrt{1 + \frac{9}{4}\left(\frac{\sigma_{TO}}{\sigma_{BO}}\right)^2}\right]$$

where
σ_{DWOT} is fatigue strength by means of largest principal stress from torsion testing.

As for the journal diameter:

$$Q = (\sqrt{(\sigma_{BG}/\sigma_{DWJT})^2 + (\tau_G/\tau_{DWJT})^2})^{-1}$$

where
σ_{DWJT} is bending test fatigue strength;
τ_{DWJT} is torsion test fatigue strength.

If increase in fatigue strength due to surface treatment is considered to be similar between the above cases, it is sufficient to test only the most critical locations according to the calculation where surface treatment has not been taken into account.".

6 DECK MACHINERY

4 **Para 6.3.2.2** is replaced by the following text:

"**6.3.2.2** Weld joint designs shall be shown in the construction plans and shall be approved in association with the approval of the windlass design. Welding procedures and welders shall be qualified in accordance with the requirements of Sections 2, 5 and 6 of Part XIV "Welding". Welding consumables shall be approved by the Register in accordance with Section 4, Part XIV "Welding". The degree of non-destructive examination of welds and post-weld heat treatment, if any, shall be specified and submitted for consideration.".