



# RUSSIAN MARITIME REGISTER OF SHIPPING

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**CIRCULAR LETTER**

**No. 314-26-1872c**

dated 01.12.2022

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Re:

amendments to the Rules for the Classification and Construction of Sea-Going Ships, 2022, ND No. 2-020101-152-E

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Item(s) of supervision:

ships under construction and in operation

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Entry-into-force date:

**01.01.2023**

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Cancels / amends / adds Circular Letter No. \_\_\_\_\_

dated \_\_\_\_\_

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Number of pages:            1 + 5

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Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part IV "Stability"

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Director General

Konstantin G. Palnikov

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Text of CL:

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

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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 ships contracted for construction, repair, modernization or conversion on or after 01.01.2023, in the absence of a contract – during review of the technical documentation on ships requested for review on or after 01.01.2023.
  3. Apply the provisions of the Circular Letter during carrying out of an inclining test on or after 01.01.2023.
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List of the amended and/or introduced paras/chapters/sections:

part IV: 1.4.5.3, 1.4.11.2, 1.5.1, 1.5.3, 1.5.9 and 1.5.10

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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 1.4.5.3	Requirement regarding taking into account the openings which assumed as unprotected has been specified considering IACS UI SC280 (Rev.1 June 2022)	314-26-1872c of 01.12.2022	01.01.2023
2	Para 1.4.11.2	Requirement has been specified considering the amendment to 1.5.3	314-26-1872c of 01.12.2022	01.01.2023
3	Para 1.5.1	Requirement has been specified considering the amendment to 1.5.3	314-26-1872c of 01.12.2022	01.01.2023
4	Para 1.5.3	Requirement regarding assessment of necessity of inclining test and light weight check has been specified considering the IACS UI SC297 (New Aug 2022) and IMO circular MSC.1/Circ.1362/Rev.1	314-26-1872c of 01.12.2022	01.01.2023
5	Para 1.5.9	Requirement regarding an inclining test quality assessment has been specified considering the experience of technical supervision	314-26-1872c of 01.12.2022	01.01.2023
6	Para 1.5.10	References to the applicable requirements have been specified	314-26-1872c of 01.12.2022	01.01.2023

**RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SEA-GOING SHIPS, 2022,**  
**ND No. 2-020101-152-E**

**PART IV. STABILITY**

**1 GENERAL**

1 **Para 1.4.5.3** is replaced by the following text:

"**1.4.5.3** Openings for ventilation which shall be open to allow air inside the ship for the effective operation: openings for ventilation of machinery spaces, passenger spaces, emergency generator room, closed ro-ro spaces and other openings, shall be assumed open even if fitted with weathertight covers.

A curve of angles of down flooding through the lowest opening in the ship's side, deck or superstructure, assumed to be open, shall be appended to the calculations of cross curves of stability for each ship."

2 **Para 1.4.11.2** is replaced by the following text:

"**1.4.11.2** The Stability Booklet shall be compiled with regard to the ship's inclining test data.

For ships where the inclining test may be substituted by the light weight check in accordance with 1.5.2, in the Booklet shall be used the light ship displacement and longitudinal centre of gravity derived from the light weight check and the light ship vertical centre of gravity taken from the inclining test of the first ship of a series.

For ships for which a light weight check may be carried out in accordance with Table 1.5.3, in the Booklet shall be used the light ship displacement and longitudinal centre of gravity derived from the light weight check and the light ship vertical centre of gravity taken as the highest used prior to conversion and the design vertical centre of gravity after conversion.

For ships for which neither inclining test nor light weight check is required in accordance with Table 1.5.3, the light ship properties change calculation shall be attached to the Booklet. At the same time, it shall be stated in the Booklet that for the stability calculations, that the data on the light ship displacement and light ship longitudinal centre of gravity derived from the light ship properties change calculation shall be used, and the light ship vertical centre of gravity shall be taken as the highest used prior to conversion and the design vertical centre of gravity after conversion.

For ships where inclining test may be omitted in accordance with 1.5.7, the light ship displacement and longitudinal centre of gravity derived from the light weight check, and the light ship vertical centre of gravity determined according to 1.5.7 shall be used in the Booklet. At the same time, it shall be stated in the Booklet that the ship has been subjected to light

weight check instead of inclining test, and the light ship vertical centre of gravity has been calculated in accordance with 1.5.7."

3 **Para 1.5.1** is replaced by the following text:

- "1.5.1** To be inclined are:
- .1** every ship before completion of ship's construction, except for the cases specified in 1.5.2;
  - .2** ships after repair, conversion, alteration, modification or modernization which affects the light ship displacement and position of the centre of gravity as per 1.5.3;
  - .3** ships after installation of permanent solid ballast as per 1.5.4;
  - .4** ships whose stability is unknown or gives rise to doubts;
  - .5** passenger ships being in service — at intervals not exceeding five years if stipulated by 1.5.5;
  - .6** fishing vessels over 30 m in length being in service — after 10 years from the date of build or last inclining test if stipulated by 1.5.5;
  - .7** fishing vessels of 30 m in length and less being in service — at intervals not exceeding fifteen years.

In the event that, pursuant to the Dual Classification Agreement, statutory supervision of inclining test/light weight check is performed by another classification society (ACS) — IACS member, the data on displacement, longitudinal centre of gravity and vertical centre of gravity derived from the inclining test endorsed by ACS — IACS member, may be recognized by the Register."

4 **Para 1.5.3** is replaced by the following text:

**"1.5.3** If repair, conversion, alteration, modification or modernization of a ship affects the light ship displacement and position of the centre of gravity, the light ship properties change calculation shall be carried out.

Necessity of inclining test, light weight check and enclosure of information on changes to the operational booklets is determined depending on the value of such changes according to Table 1.5.3.

Table 1.5.3

Deviation	Inclining test is required	Light weight check is required	Operational booklets amendment is required
$\Delta D > 2\%$ or 2 t whichever is greater	Yes	No	Yes
$\Delta x_g > 1,0\% L$	Yes	No	Yes
$\Delta z_g > 1,0\%$	Yes	No	Yes
$1\%$ or 1 t whichever is greater $< \Delta D \leq 2\%$ or 2 t whichever is greater	No	Yes	Yes
$0,5\% L < \Delta x_g \leq 1,0\% L$	No	Yes	Yes
$0,5\% < \Delta z_g \leq 1,0\%$	No	Yes	Yes
$\Delta D \leq 1\%$ or 1 t whichever is greater	No	No	The light ship properties change calculation shall be attached to the operational booklets
$\Delta x_g \leq 0,5\% L$	No	No	The light ship properties change calculation shall be attached to the operational booklets
$\Delta z_g \leq 0,5\%$	No	No	The light ship properties change calculation shall be attached to the operational booklets

Notes: 1. The change of the light ship displacement  $\Delta D$ , the change of the longitudinal centre of gravity  $\Delta x_g$  and the change of the vertical centre of gravity  $\Delta z_g$  shall be determined by comparing the values obtained from the light ship properties change calculation with the data of the last inclining test or, if

during construction the inclining test was replaced by the light weight check, with of the data on such light weight check supplemented by the vertical centre of gravity of the first ship of a series.  
 2. For the purpose of this table definition «operational booklets» includes any stability and loading operational documentation, onboard software for stability and strength calculation, and the ship computer model used in shore-based emergency response service.

Irrespective of the calculations submitted, the Register may require the inclining test of the ship to be performed, proceeding from the technical condition of the ship, according to 1.5.1.4."

5 **Para 1.5.9** is replaced by the following text:

**"1.5.9** If during the test, the plot to monitor measurements was not kept, the inclining test performance assessment shall be carried out.

The inclining test shall be considered satisfactory performed, provided:

.1 for each measurement the following condition is fulfilled:

$$|h_i - h_{inc}| \leq 2 \sqrt{\frac{\sum(h_i - h_{inc})^2}{n-1}}, \quad (1.5.9.1)$$

where  $h_i$  = metacentric height obtained by individual measurement;  
 $h_{inc} = \sum h_i / n$  is a metacentric height obtained in inclining the ship;  
 $n$  = number of measurements.

Measurements not meeting the above condition are excluded when treating the results with appropriate change of the total number  $n$  and repeated calculation of the metacentric height  $h_{inc}$ .

No more than one measurement is excluded from the calculation;

.2 probable error of the test

$$t_{\alpha n} \sqrt{\frac{\sum(h_i - h_{inc})^2}{n(n-1)}}$$

fulfils the condition

$$t_{\alpha n} \sqrt{\frac{\sum(h_i - h_{inc})^2}{n(n-1)}} \leq 0,02(1 + h_{inc}) \text{ if } h_{inc} \leq 2 \text{ m}; \quad (1.5.9.2-1)$$

and

$$t_{\alpha n} \sqrt{\frac{\sum(h_i - h_{inc})^2}{n(n-1)}} \leq 0,01(4 + h_{inc}) \text{ if } h_{inc} > 2 \text{ m} \quad (1.5.9.2-2)$$

where factor  $t_{\alpha n}$  is taken from Table 1.5.9.2;

Table 1.5.9.2

Factor $t_{\alpha n}$			
$n$	$t_{\alpha n}$	$n$	$t_{\alpha n}$
8	5,4	13	4,3
9	5,0	14	4,2
10	4,8	15	4,1
11	4,6	16	4,0
12	4,5		

.3 the following condition is fulfilled considering  $h$  and  $l_{\max}$  under the most unfavourable design loading conditions:

$$t_{\alpha n} \sqrt{\frac{\sum (h_i - h_{inc})^2}{n(n-1)} \frac{\Delta_0}{\Delta_1}} \leq \varepsilon, \text{ where } \varepsilon = 0,05h \text{ or } 0,10l_{\max}, \quad (1.5.9.3)$$

whichever is less, but not less than 4 cm;

.4 total number of satisfactory measurements is not less than 8.

6 **Para 1.5.10** is replaced by the following text:

**"1.5.10** If the requirements of 1.5.9.1 — 1.5.9.4 are not met, the metacentric height value obtained during the inclining test shall be taken into account minus the probable test error calculated according to 1.5.9.2."