

RULES

FOR THE TONNAGE MEASUREMENT OF SEA-GOING SHIPS

ND No. 2-020501-001-E



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RULES FOR THE TONNAGE MEASUREMENT OF SEA-GOING SHIPS

Rules for the Tonnage Measurement of Sea-Going Ships of Russian Maritime Register of Shipping have been approved in accordance with the established approval procedure and come into force on 1 January 2022.

The present edition of the Rules is based on the 2016 edition taking into account the amendments and additions developed immediately before publication.

The Rules are published in electronic format in Russian and English.

With coming into force of this edition of the Rules, the Rules for the Tonnage Measurement of Sea-Going Ships, 2016, cease to be effective.

REVISION HISTORY

(Purely editorial amendments are not included in the Revision History)

For this version, there are no amendments to be included in the Revision History.

1 GENERAL

1.1 SCOPE OF APPLICATION

1.1.1 Rules for the Tonnage Measurement of Sea-Going Ships¹ apply to the following self-propelled and non-self-propelled ships of:

- .1** 24 m and above in length;
- .2** less than 24 m in length, except for ships intended for sports.

1.1.2 The Rules do not apply to ships of war.

1.1.3 Tonnage measurement of the ship means determination of tonnage thereof consisting gross and net tonnages. Tonnage values determined in compliance with these Rules shall be considered as basic parameters in the context they are mentioned in: conventions, laws and regulations, as well as for statistical data and charging the fees.

1.1.4 In applying the Rules of the Russian Maritime Register of Shipping² to a ship of a novel type, the resulting gross and net tonnages shall be reflective of the ship's overall size and useful capacity, respectively. A ship of a novel type shall be understood as one which is novel in its design and shall not include existing traditional types of ships of usual shape or those types already covered by the Rules.

¹ Hereinafter, the Rules.

² Hereinafter, the Register, RS

1.2 DEFINITIONS AND EXPLANATIONS

1.2.1 Gross tonnage.

Gross tonnage means the measure of the overall size of a ship determined in accordance with the provisions of the Rules.

1.2.2 Net tonnage.

Net tonnage means the measure of the useful capacity of a ship determined in accordance with the provisions of the Rules.

1.2.3 Length.

Length means 96 % of the total length on a waterline at 85 % of the least moulded depth measured from the top of the keel, or the length from the fore side of the stem to the axis of the rudder stock on that waterline, if that be greater. In ships designed with a rake of keel the waterline on which this length is measured shall be parallel to the designed waterline. Where more than one rudder is fitted, the aftermost rudder stock is the rudder stock to be considered when determining the length.

When a ship does not have a rudder stock, the length shall be taken as 96 % of the total length on a waterline at 85 % of the least moulded depth measured as defined in [1.2.5](#).

The 96 % overall length shall be used for ships that do not have a clearly defined stem or stern, such as column-stabilized units, submersibles, floating docks, and similar ships (refer to [Fig. 1.2.3](#)).

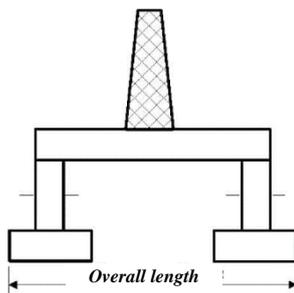


Fig. 1.2.3
Column-stabilized units

1.2.4 Upper deck.

1.2.4.1 The upper deck means the uppermost complete deck exposed to weather and sea, which has permanent means of weathertight closing of all openings in the weather part thereof, and below which all openings in the sides of the ship are fitted with permanent means of watertight closing. In a ship having a stepped upper deck, the lowest line of the exposed deck and the continuation of that line parallel to the upper part of the deck is taken as the upper deck.

A discontinuity in the upper deck which extends over the full breadth of the ship and is in excess of 1 m in length shall be treated as a step (refer to [Fig. 1.2.4.1-1](#)).

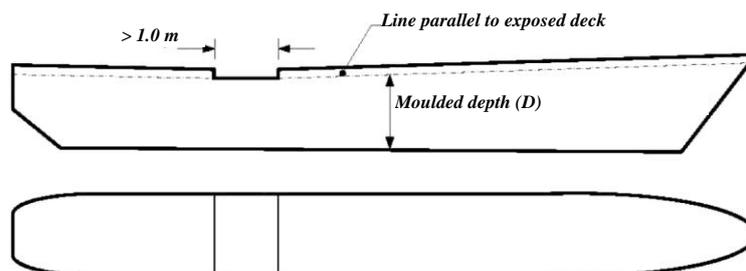


Fig. 1.2.4.1-1

Steps situated outside the "length" specified in [1.2.3](#), shall not be considered. A discontinuity in the upper deck which does not extend to the side of the ship shall be treated as a recess under the upper deck level (refer to [Fig. 1.2.4.1-2](#), where l , b , d_1 – length, width, depth of recess, accordingly).

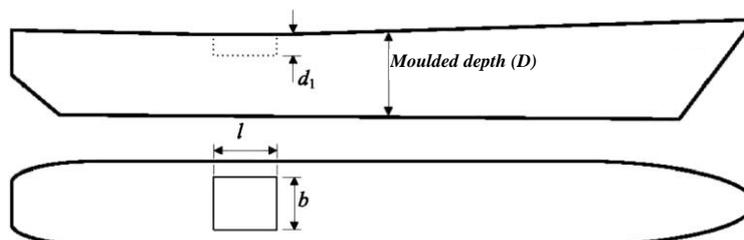


Fig. 1.2.4.1-2

1.2.4.2 In a ship having openings in the side of the ship below the uppermost deck, which are not closed but limited inboard by weathertight bulkheads and decks, the deck below such openings shall be considered the upper deck (refer to [Fig. 1.2.4.2](#)).

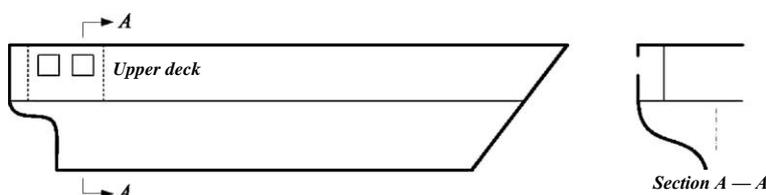


Fig. 1.2.4.2

1.2.5 Moulded depth.

1.2.5.1 The moulded depth means the vertical distance measured from the top of the keel to the underside of the upper deck at side. In wood and composite ships this distance is measured from the lower edge of the keel rabbet. Where the form at the lower part of the midship section is of a hollow character, or where thick garboards are fitted, the distance is measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel.

1.2.5.2 In ships having rounded gunwales, the moulded depth shall be measured to the point of intersection of the moulded lines of the deck and side shell plating, the lines extending as though the gunwales were of angular design.

1.2.5.3 Where the upper deck is stepped and the raised part of the deck extends over the point at which the moulded depth shall be determined, the moulded depth shall be measured to a line of reference extending from the lower part of the deck along a line parallel with the raised part (refer to [Fig. 1.2.4.1-1](#)).

1.2.5.4 In the definition of length in [1.2.3](#), the term "least moulded depth" means the vertical distance measured from the top of the flat plate keel (or equivalent lower terminus as described in [1.2.5.1](#)) at the lowest point along the keel's length to the horizontal line that is tangent to the underside of the upper deck at the ship's side (or equivalent upper terminus as described in [1.2.5.2](#)) at the lowest point along the upper deck's length. For the purpose of this definition, the ship is considered to be trimmed on a waterline parallel to the design waterline (refer to [Fig. 1.2.5.4](#)).

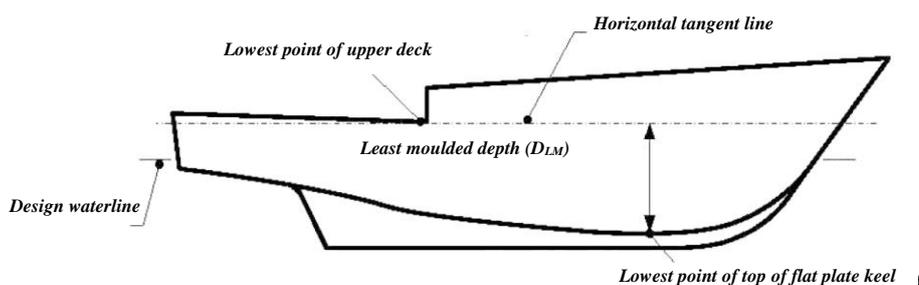


Fig. 1.2.5.4

1.2.6 Breadth.

The breadth means the maximum breadth of the ship, measured amidships to the moulded line of the frame in a ship with a metal shell and to the outer surface of the hull in a ship with a shell of any other material.

1.2.7 Enclosed Spaces.

Enclosed spaces mean all those spaces which are bounded by the ship's hull, by fixed or portable partitions or bulkheads, by decks or coverings other than permanent or movable awnings. No break in a deck, nor any opening in the ship's hull, in a deck or in a covering of a space, or in the partitions or bulkheads of a space, nor the absence of a partition or bulkhead, shall preclude a space from being included in the enclosed space. Open gratings that are part of the ship's hull, or of any deck, covering, partition or bulkhead, are not considered to bound enclosed space, and are ignored (refer to [Fig. 1.2.7](#)).

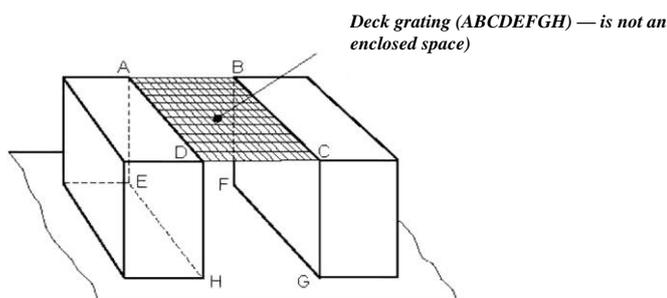


Fig. 1.2.7

1.2.8 Excluded spaces.

Excluded spaces mean the spaces referred to in [1.2.8.1 – 1.2.8.6](#), which shall not be included in the volume of enclosed spaces.

1.2.8.1 Spaces determined by the breadth of the deck in way of the opening.

The term "breadth of the deck" means the width of the deck erection along the opening irrespective of whether the erection is extended from side to side.

In ships with rounded gunwales the breadth is measured as indicated in [Fig. 1.2.8.1](#).

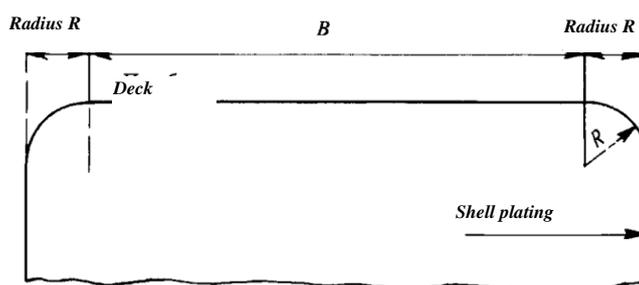


Fig. 1.2.8.1
Ships with rounded gunwales (ships with rounded sheerstrake)

1.2.8.1.1 A space within an erection opposite an end opening extending from deck to deck (except for a curtain plate of a depth not exceeding by more than 25 mm the depth of the adjoining deck beams), such opening having a breadth equal to or greater than 90 per cent of the breadth of the deck at the line of the opening of the space.

This provision shall be applied so as to exclude from the enclosed spaces only the space between the actual end opening and a line drawn parallel to the line or face of the opening at a distance from the opening equal to one half of the width of the deck at the line of the opening (refer to [Fig. 1.2.8.1.1](#)).

In the following Figures:

O – excluded space;

C – enclosed space;

I – space to be considered as an enclosed space (the shaded areas shall be also considered as enclosed spaces);

B – breadth of the deck in way of the opening.

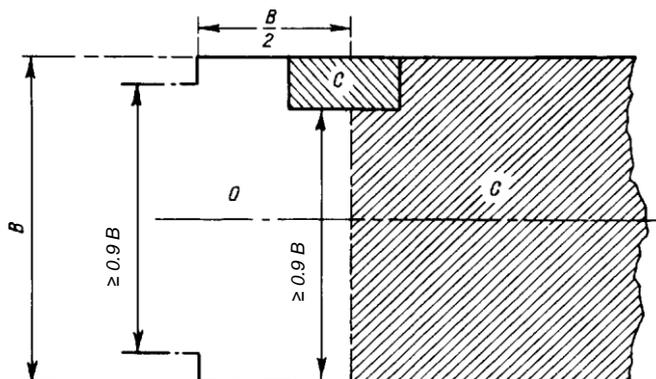


Fig. 1.2.8.1.1

1.2.8.1.2 Should the width of the space because of any arrangement except by convergence of the outside plating, become less than 90 % of the breadth of the deck, only the space between the line of the opening and a parallel line drawn through the point where the athwartships width of the space becomes equal to, or less than, 90 % of the breadth of the deck shall be excluded from the volume of enclosed spaces (refer to [Fig. 1.2.8.1.2-1 – 1.2.8.1.2-3](#)).

1.2.8.1.3 Where an interval which is completely open except for bulwarks or open rails separates any two spaces, the exclusion of one or both of which is permitted under [1.2.8.1.1](#) and/or [1.2.8.1.2](#), such exclusion shall not apply if the separation between the two spaces is less than the least half breadth of the deck in way of the separation (refer to [Fig. 1.2.8.1.3-1](#) and [1.2.8.1.3-2](#)).

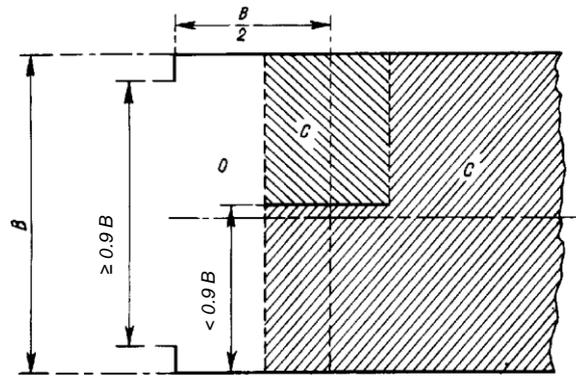


Fig. 1.2.8.1.2-1

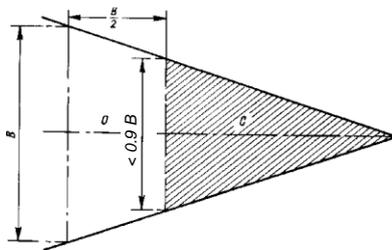


Fig. 1.2.8.1.2-2

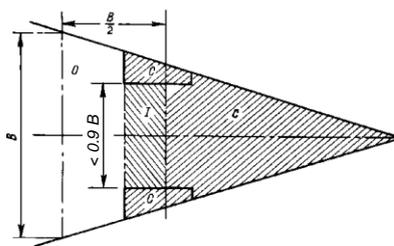


Fig. 1.2.8.1.2-3

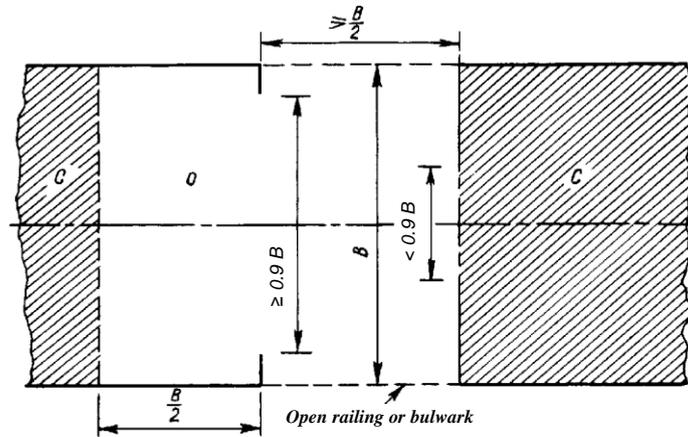


Fig. 1.2.8.1.3-1

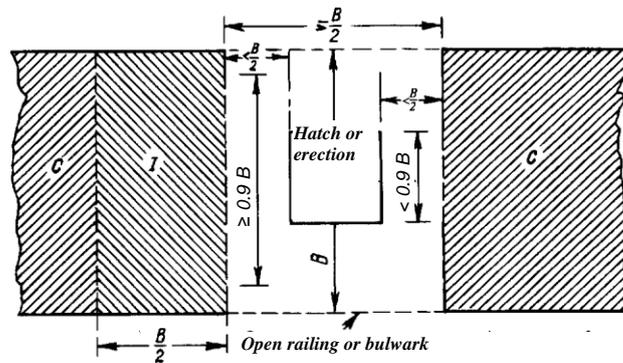
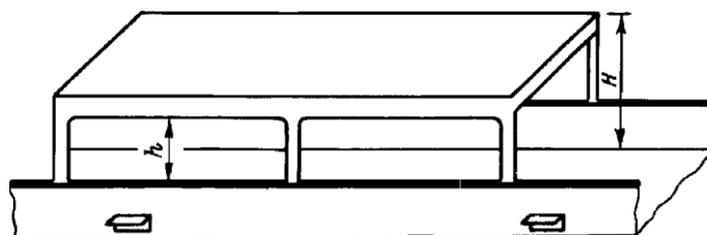


Fig. 1.2.8.1.3-2

1.2.8.2 A space under an overhead deck covering open to the sea and weather, having no other connection on the exposed sides with the body of the ship than the stanchions necessary for its support.

In such a space, open rails or a bulwark and curtain plate may be fitted or stanchions fitted at the ship's side, provided that the distance between the top of the rails or the bulwark and the curtain plate is not less than 0.75 m or 1/3 of the height of the space, whichever is greater (refer to [Fig. 1.2.8.2-1](#)).



$h = \text{at least } H/3 \text{ or } 0.75 \text{ m (2,5 feet), whichever is greater}$

Fig. 1.2.8.2-1

Stanchions necessary to support an overhead deck and vertical railings are not considered to close or reduce the size of a side opening. Horizontal bars connecting vertical railings shall not be treated as rails (refer to [Fig. 1.2.8.2-2](#)).

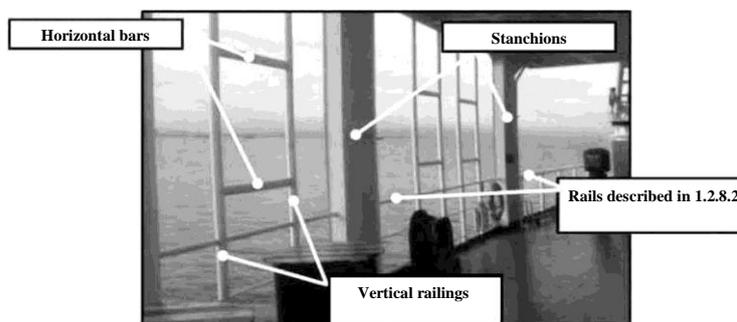
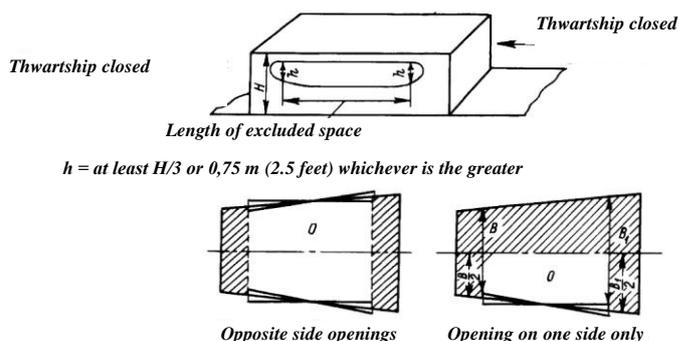


Fig. 1.2.8.2-2

1.2.8.3 A space in a side-to-side erection directly in way of opposite side openings not less in height than 0,75 m or 1/3 of the height of the erection, whichever is the greater.

If the opening in such an erection is provided on one side only, the space to be excluded from the volume of enclosed spaces shall be limited inboard from the opening to a maximum of one-half of the breadth of the deck in way of the opening (refer to [Fig. 1.2.8.3](#)).



$h = \text{at least } H/3 \text{ or } 0,75 \text{ m (2.5 feet) whichever is the greater}$

Fig. 1.2.8.3

1.2.8.4 A space in an erection immediately below an uncovered opening in the deck overhead, provided that such an opening is exposed to the weather and the space excluded from enclosed spaces is limited to the area of the opening (refer to [Fig. 1.2.8.4-1](#)).

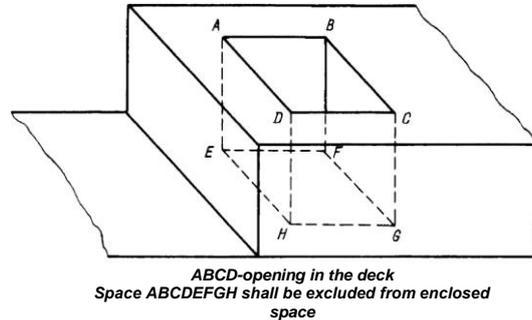


Fig. 1.2.8.4-1

The term "immediately below" means extending from the deck in which the opening occurs to the lower boundary of the opening being considered. Openings which penetrate the upper deck as defined in [1.2.4](#), are only excluded to the line of the upper deck (refer to [Fig. 1.2.8.4-2](#)).

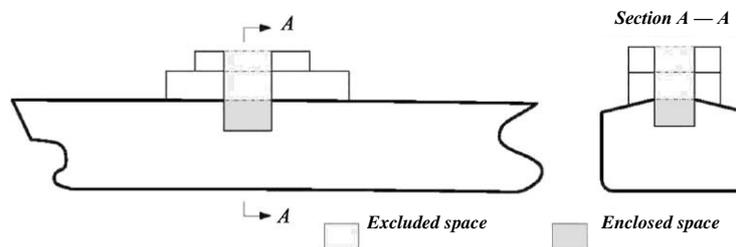


Fig. 1.2.8.4-2

1.2.8.5 A recess in the boundary bulkhead of an erection which is exposed to the weather and the opening of which extends from deck to deck without means of closing, provided that the interior width is not greater than the width at the entrance and its extension into the erection is not greater than twice the width of its entrance (refer to [Fig. 1.2.8.5](#)).

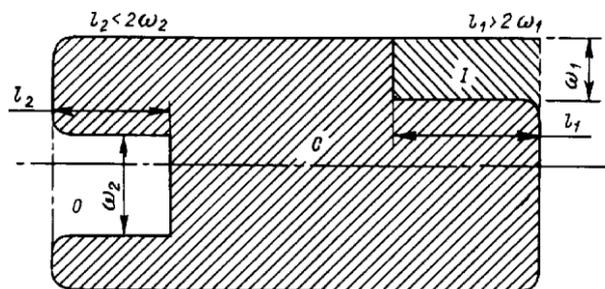


Fig. 1.2.8.5

1.2.8.6 The space between the side longitudinal bulkhead of a deckhouse and the bulwark below a deck extending from side to side supported by stanchions or vertical plates connected to the bulwarks (refer to [Fig. 1.2.8.6](#)).

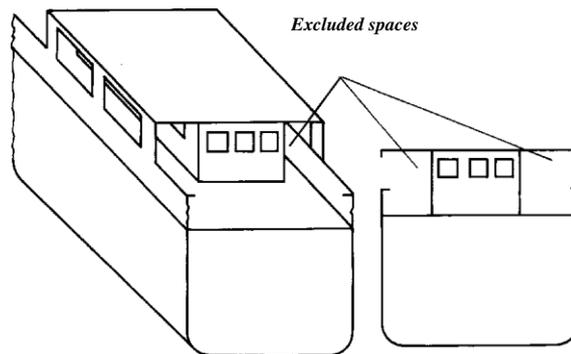


Fig. 1.2.8.6

1.2.8.7 Spaces defined in [1.2.8.1 – 1.2.8.6](#), shall be treated as the enclosed spaces where such space fulfils at least one of the following three conditions:

- .1 the space is fitted with shelves or other means for securing cargo or stores;
 - .2 the openings are fitted with any means of closure;
 - .3 the construction provides any possibility of such openings being closed.
- Gratings at side and end openings shall not be considered as the means of closure.

1.2.9 Passenger.

A passenger means every person other than the master and the members of the crew or other persons employed or engaged in any capacity on board a ship on the business of that ship or a child under one year of age.

Special personnel means persons not being the crew members, constantly available on board due to the ship's purpose (e.g. the persons engaged in harvesting and processing of living marine resources, researchers, laboratory personnel, workers, engineers and technicians, office and management personnel of floating workshops, probationers and instructors on training ships, etc.). Probationers and instructors on all ships except for training ones are considered as passengers.

1.2.10 Cargo spaces.

Cargo spaces, to be included in the computation of net tonnage are enclosed spaces appropriated for the transport of cargo which is to be discharged from the ship, provided that such spaces have been included in the computation of gross tonnage.

1.2.11 Weathertight.

Weathertight means that in any sea conditions water will not penetrate into the ship.

1.2.12 Amidships.

The term "amidships" – shall be considered as the midpoint of the length as defined in [1.2.3](#) where the forward terminal of that length coincides with the fore side of the stem.

1.2.13 Segregated ballast tanks.

Segregated ballast tanks – tanks exclusively used for the carriage of segregated ballast. The segregated ballast tanks shall have a separate ballast pumping and piping system arranged for the intake and discharge of ballast water from and to the sea only; there shall be no piping connections from segregated ballast tanks to the fresh water system. No segregated ballast tank shall be used for the carriage of any cargo or for storage of ship's stores or material.

1.2.14 International voyage.

International voyage – a sea voyage from a country to which the International Convention on Tonnage Measurement of Ships, 1969 applies to a port outside such country, or conversely.

1.2.15 Administration.

Administration — means the Government of the State whose flag the ship is entitled to fly.

1.2.16 An open-top container ship.

An open-top containership — a ship which is designed for the carriage of containers and which is constructed like an open "U", with not less than 66,7 % of the total cargo hatchway clear opening area in an "open-top" configuration, with a double bottom and above this, high-sided erections without hatch covers on the upper deck and without a complete deck above the moulded draught. In a ship which is exempted by the Administration from the requirements to fit weathertight hatch covers on the uppermost deck exposed to weather and sea, as in an open-top containership, the upper deck shall be taken as that deck which would have been determined by [1.2.4](#), as if such hatch covers had been fitted (refer to [Fig. 1.2.16](#)).

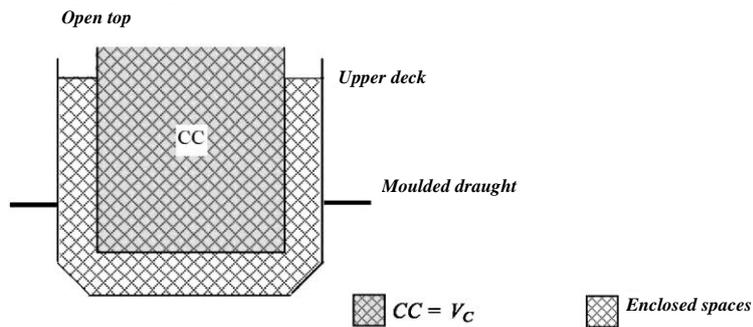


Fig. 1.2.16

2 TONNAGE MEASUREMENT OF SHIPS OF 24 M AND ABOVE IN LENGTH

2.1 GROSS TONNAGE

2.1.1 The gross tonnage GT of a ship shall be determined by the following formula

$$GT = K_1 V, \quad (2.1.1)$$

where V – total volume of all enclosed spaces of the ship, m³;
 $K_1 = 0,2 + 0,02 \log_{10} V$ (or as tabulated in the Annex).

2.2 NET TONNAGE

2.2.1 The net tonnage NT of a ship shall be determined by the following formula

$$NT = K_2 V_c (4d/3D)^2 + K_3 (N_1 + N_2/10), \quad (2.2.1)$$

in which formula $(4d/3D)^2$ shall not be taken as greater than unity;
 $K_2 V_c (4d/3D)^2$ shall not be taken as less than 0.25GT;
 NT : shall not be taken as less than 0.30GT;
 V_c – total volume of cargo spaces, m³;
 $K_2 = 0,2 + 0,02 \log_{10} V_c$ (or as tabulated in the Annex);
 $K_3 = 1,25(GT + 10000)/10000$;
 D – moulded depth amidships, m, as defined in [1.2.5](#);
 d – moulded draught amidships, m, as defined in [2.2.2](#);
 N_1 – number of passengers in cabins with not more than eight berths;
 N_2 – number of other passengers;
 $N_1 + N_2$ – total number of passengers the ship is permitted to carry as indicated in the ship's passenger certificate; when $N_1 + N_2$ is less than 13, N_1 and N_2 shall be taken as zero;
 GT – gross tonnage of the ship as determined in accordance with [2.1.1](#).

2.2.2 The moulded draught d , referred to in [2.2.1](#), shall be one of the following draughts:

- .1** for ships to which the International Convention on Load Lines in force applies, the draught corresponding to the Summer Load Line (other than timber load lines) is assigned;
- .2** for passenger ships - the draught corresponding to the deepest subdivision load line or summer load line, whichever is less;
- .3** for ships to which no load line has been assigned but the draught of which is restricted in compliance with national requirements, the maximum permitted draught;
- .4** for other ships, 75 % of the moulded depth amidships as defined in [1.2.5](#).

2.3 SEGREGATED BALLAST TANK CAPACITY ON OIL TANKERS AND SHIPS CARRYING LIQUEFIED PETROLEUM GAS IN BULK

2.3.1 Capacity of segregated ballast tanks T_b , shall be calculated as per the formula

$$T_b = K_1 V_b, \quad (2.3.1)$$

where $K_1 = 0,2 + 0,02 \log_{10} V$ (or as tabulated in the annex);
 V – total volume of all enclosed spaces of the ship, m³;
 V_b – the total volume of segregated ballast tanks, m³ (segregated ballast tanks shall comply with the requirements of Regulation 18 Annex I to the International Convention for the Prevention of Pollution from Ships, 1973 with the Protocol, 1978 thereto).

An entry on segregated ballast tanks may be introduced by the Register into the column "Notes" of the International Tonnage Certificate of a ship carrying liquefied petroleum gas in bulk only upon a prior consent of the Administration.

2.3.2 The reduced gross tonnage GT_R , which shall be used for the calculation of tonnage based fees for an oil tanker with segregated ballast tanks shall be calculated as per the formula

$$GT_R = GT - T_b, \quad (2.3.2)$$

where GT – gross tonnage of the ship as determined in accordance with [2.1.1](#);
 T_b – the volume of segregated ballast tanks specified in compliance with [2.3.1](#).

2.4 THE REDUCED GROSS TONNAGE OF OPEN-TOP CONTAINERSHIPS

2.4.1 The reduced gross tonnage GT_R , which shall be used for the calculation of tonnage, based fees for open-top container ships shall be calculated as per the formula

$$GT_R = 0,9GT, \quad (2.4.1)$$

where GT – gross tonnage of the ship as determined in accordance with [2.1.1](#).

3 CALCULATION OF VOLUMES

3.1 All volumes included in the calculation of gross and net tonnages shall be measured, irrespective of the fitting of insulation or the like, to the inner side of the shell or structural boundary plating in ships constructed of metal, and to the outer surface of the shell or to the inner side of structural boundary surfaces in ships constructed of any other material. The values of capacity shall be given in round figures (the values obtained after decimal place shall be rounded down) without units of measurement.

3.2 All measurement used in the calculation of volumes shall be taken to the nearest centimetre.

3.3 The volumes shall be calculated by generally accepted methods for the space concerned and with an accuracy of two decimal places.

3.4 Volumes of appendages shall be included in the total volume. Bulbs, fairwaters, propeller shaft bossings or other structures shall be treated as appendages.

3.5 Spaces open to the sea shall not be excluded from the total volume of all enclosed spaces if they are used for cargo and/or buoyancy purposes (refer to [Fig. 3.5](#)).

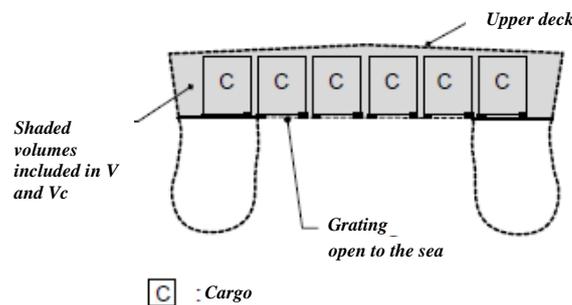


Fig. 3.5

Hawse pipes, sea-valve recesses, thruster tunnels, stern chutes in fishing vessels, dredging wells in dredgers and other similar spaces fitted in the ship's hull shall be dealt with as spaces open to the sea.

3.6 Enclosed spaces above the upper deck, appendages and spaces open to the sea not exceeding 1 m³, shall not be measured.

3.7 The following shall not be included in the total volume of all enclosed spaces:

.1 masts, kingposts, cranes, crane and container support structures, which are completely inaccessible and above the upper deck, separated on all their sides from other enclosed spaces shall not be included in the total volume of all enclosed spaces. Air trunks having a cross-sectional area not exceeding 1 m², may also be excluded under the before-mentioned conditions;

.2 mooring and towing equipment, winches, revolving cranes, cranes with truss structures, and other similar items;

.3 heat exchangers (coolers), arranged in recesses or outside the hull;

.4 mobile cranes, the main structure of which moves either longitudinally or transversely relative to the ship.

3.8 Volumes within the hulls of ships, such as split-hull barges and dredgers, shall be retained in V и V_c notwithstanding that the space within the hull is temporarily opened to the sea when discharging cargo (refer to [Fig. 3.8](#)).

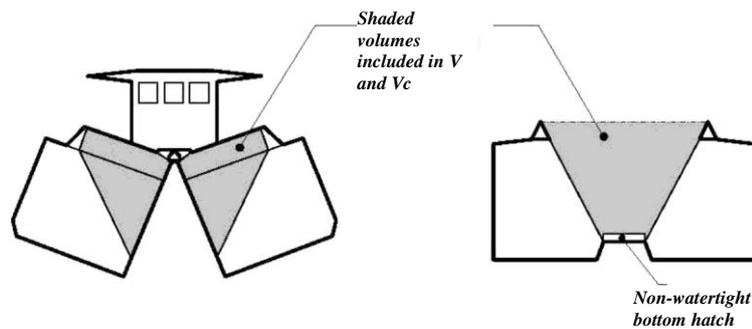


Fig. 3.8

3.9 The volume of weathertight steel pontoon covers on hatchway coamings shall be included in the calculations of the total volume V . If such covers are open on the underside, their volume shall also be included in V_c .

3.10 Tanks, permanently located on the upper deck, provided with removable pipe connections to the cargo system or the vent (de-airing) lines of the ship, shall be included in V_c .

3.11 The volumes of clean ballast tanks in oil tankers shall be included in V_c , when the ship is fitted with a crude oil washing system which would permit dual purpose cargo/clean ballast tank use of these tanks.

The volumes of dedicated clean ballast tanks shall not be included in V_c , provided that:
the tanks are not used for cargo;

the ship carries a single IOPP Certificate which indicates it is operating with dedicated clean ballast tanks.

3.12 The volumes of slop tanks for cargo residues shall be included in V_c .

3.13 In fishing vessels, the volumes of fish processing spaces for fishmeal, liver oil and canning, tanks for re-cooling fish, wet fish bunkers, stores for salt, spices, oil and tare shall be included in V_c . Fishing gear stores shall not be included in V_c .

3.14 The volume of refrigerating machinery used for refrigerating cargoes and situated within the boundaries of the cargo spaces shall be included in V_c .

3.15 The volumes of mail rooms, baggage compartments separate from passenger accommodation, and bonded stores for passengers shall be included in V_c . The volume of provision rooms for crew or passengers and bonded stores for crew shall not be included in V_c .

3.16 When determining the volumes of cargo spaces, no account shall be taken of insulation, sparring or ceiling which is fitted within the boundaries of the space concerned. For ships which have permanent independent cargo tanks constructed within the ship, e.g. gas tankers, the volume to be included in V_c , shall be calculated to the structural boundary of such tanks, irrespective of insulation, which may be fitted on the inside or outside of the tank boundary.

3.17 Spaces allocated to passenger automobiles shall be included in V_c .

3.18 Dockships with a dock deck above the moulded draught, open-ended at the stern or equipped with stern flap, shall be measured taking into consideration that the space above the dock deck, bounded on at least three sides by erections and intended for the carriage of cargo shall be considered as an enclosed space (refer to [Fig. 3.18-1 – 3.18-3](#)).



Fig. 3.18-1



Fig. 3.18-2

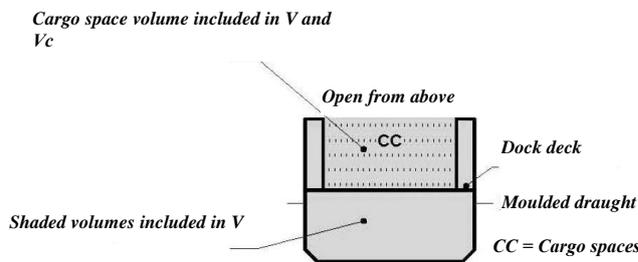


Fig. 3.18-3

3.19 In open-top containerships, an opening in a deck such as the absence of hatch covers shall not preclude a space from being included in the enclosed space. In the case of open-top containerships having movable non-load-bearing covers (shelter) of light construction resting on the container-guides, the space above the hatch coamings up to the covers can be excluded provided that this type of ship meets the requirements of an open-top containership without such covers.

3.20 Multipurpose ships which have the facility to trade with cargo hatches open or closed shall always be measured with the hatch covers considered to be closed.

3.21 In the case of a ro-ro ship, for example, where the space at the end of an erection is fitted with means for securing cargo, the space shall be included in the gross tonnage in accordance with [1.2.8.7](#).

3.22 On livestock carrier livestock structures shall be included in V and V_c .

4 TONNAGE MEASUREMENT OF SHIPS LESS THAN 24 M IN LENGTH

4.1 Ships less than 24 m in length subject to RS technical supervision, whether engaged or not in the international voyages, shall be measured.

4.2 Gross tonnage *GT* of such ships, except for those flying the flag of Belize, Malta or Cyprus, shall be calculated as per the formula

$$GT = (V_1 + V_2)K_1, \quad (4.2)$$

where $V_1 = LBDC$,

V_1 – hull volume to the upper deck, m³;

L – length, m;

B – breadth, m;

D – moulded depth (shall be specified in compliance with [1.2.5](#) amidships), m;

C – constant coefficient equal to 0.68 (except for ships with pontoon hull and multi-hull craft, as well as hydrofoil craft or air cushion vessels, for which the hull volume to the upper deck shall be determined according to hydrostatic curves);

V_2 – the total volume of all enclosed spaces above the upper deck (except the volumes of spaces specified in [1.2.8](#), where available), m³;

K_1 – constant coefficient equal to 0.25.

Net tonnage *NT* of these ships is 30 per cent of gross tonnage.

4.3 Tonnage determination of ships less than 24 m in length flying the flags of Belize, Malta or Cyprus shall be performed by the Register in compliance with the regulations of ship tonnage measurement the specified Administrations.

5 DOCUMENTS

5.1 GENERAL INSTRUCTIONS

5.1.1 Work on ship tonnage measurement including calculations, surveys of ships and issuing documents shall be performed by the Register against requests/agreements. Requests for the initial measurement in compliance with the Rules shall be sent to the RS Head Office.

Upon the authorization of the RS Head Office, the tonnage calculations may be made/reviewed by the RS Branch Offices.

5.1.2 Tonnage certificate for the ship is issued by the Register upon the shipowner or ship operator requests, provided the availability of the authorization of the Administration. The request for issuing the Tonnage certificate upon Malta authorization shall be submitted to the RS Head Office.

5.1.3 Requests for renewal of Tonnage certificate in case of changing flag, port of registry, name, call sign of a ship in service (except of the ship flying the flag of Malta) and absence of changes affecting the ship's tonnage shall be submitted to the RS Branch Office able to carry out prompt survey of the ship prior to issuing the Tonnage certificate.

5.2 TECHNICAL DOCUMENTATION

5.2.1 To determine the ship's tonnage in compliance with the Rules, a designer or a shipowner/ship operator shall submit to the Register the following information in the electronic form:

- .1** lines drawing, coordinate tables of the lines drawing;
- .2** general arrangement drawings, layouts of compartments and tanks;
- .3** other documentation containing data required for calculation of space volumes and determination of the ship's tonnage (hydrostatic curves, midship section, constructional profile, drawing of superstructures and deck-houses, as well as preliminary tonnage calculation of the ship).

5.2.2 As a rule, tonnage calculations for the prototype ships under construction being under the RS technical supervision are made/reviewed by the RS Head Office.

Tonnage of a series ship having no significant differences with the prototype ship, may be assumed based on the tonnage calculation of the prototype ship. In case of changes affecting the tonnage of the series ship under construction, the tonnage calculation shall be made in the RS Head Office based on the information of the RS Branch Office in charge of technical supervision of construction of the ship in question.

5.2.3 Tonnage calculations of ships in service (in case of refitting, draught changing, etc.) may be performed by the RS Branch Offices or design organizations subject to agreement with the RS Head Office. Prior to issuing the appropriate Tonnage certificates, the said calculations shall be checked by the RS Head Office.

5.2.4 The tonnage calculation in compliance with the Rules shall contain:

- .1** a cover page indicating the developer, name and calculation number, name and/or number of the ship's project, place and year of the calculation;
- .2** main dimensions of the ship and tonnage tables (mandatory calculation sheets), necessary for filling in the Tonnage certificate;
- .3** detailed information on ship's space volumes determination;
- .4** references to technical documentation used.

5.3 SURVEY

5.3.1 Survey of the ship for determination of its tonnage according to the Rules is carried out by the Register and consists of checking of the following:

.1 verification of the main parameters of the ship used in calculation of its tonnage and required for issuing the Tonnage certificate;

.2 availability and correctness of marking cargo spaces where available (for ships of 24 m and above in length).

5.3.2 Cargo spaces shall be certified by permanent marking with the letters *CC* (*cargo compartment*), to be so positioned that they are readily visible and not to be less than 100 mm in height. The letters *CC* shall be marked from the outside of side coamings of cargo hatches, on cargo tank headers, at the entrance of cargo spaces and other prominent positions. The letters *CC* shall be marked by white or yellow paint against a dark background or by black paint against light background. When applying on metal the letters shall be prick-punched and when applying on wood - shall be cut to a depth of at least 3 mm.

5.4 TONNAGE CERTIFICATES

5.4.1 For ships the tonnage of which is determined according to the Rules, the following documents may be issued by the Register:

.1 An International Tonnage Certificate 1969 (form 1.2.10) is issued in compliance with the provisions of the International Convention on Tonnage Measurement of Ships, 1969 for ships of 24 m and above in length, engaged in the international voyages, except for the ships flying the flags of Greece, Georgia, Malta or Cyprus;

.2 Tonnage Certificate (form 1.2.12) is issued in compliance with the Rules for the ships not covered by the provisions of the International Convention on Tonnage Measurement of Ships, 1969, except for the ships flying the flags of Belize, Cyprus, Malta.

5.4.2 Tonnage certificates issued upon the authorization of Administrations shall be issued based on their requirements.

5.4.3 Only one Tonnage certificate shall be available on ship. Where the valid Tonnage certificate is available on board, the availability of the tonnage calculation is not mandatory.

5.4.4 Tonnage certificates are issued by the Register based on the Procedure of application the forms of documents to be issued during technical supervision.

5.4.5 As a rule, the Tonnage certificates have constant validity period, except of situations specified in [5.6](#). Tonnage certificates shall be reissued in case of changing the data specified in them.

5.5 TONNAGE CHANGING

5.5.1 The Register shall be notified of any changes on a ship which may result in tonnage changing, where such changes occurred upon issuing a Tonnage certificate for a ship. Requests for re-measurement of the ship shall be promptly submitted to the Register.

5.5.2 Changing of the tonnage addressed in this chapter means changing the ship's tonnage due to its modification or modernization for more than 1 per cent of the tonnage assigned for the ship prior to its modification or modernization.

5.5.3 When the characteristics of a ship, such as V , V_c , d , N_1 or N_2 , are altered and where such an alteration results in an increase in its net tonnage, the net tonnage of the ship corresponding to the new characteristics shall be determined and shall be applied without delay.

5.5.4 When the characteristics of a ship such as V , V_c , d , N_1 or N_2 , are altered or when the appropriate assigned load line is altered due to the change of the trade in which the ship is engaged, and where such an alteration results in a decrease in its net tonnage as determined in accordance with [2.2](#), a new International Tonnage Certificate incorporating the net tonnage so determined shall not be issued until 12 months have elapsed from the date on which the current Certificate was issued.

However, this requirement shall not apply:

if the ship undergoes alterations or modifications (such as the removal of a superstructure) which requires an alteration of the assigned load line;

to passenger ships which are employed in the carriage of large numbers of unberthed passengers;

if the ship is transferred to the flag of another State.

5.6 CANCELLATION OF CERTIFICATE

5.6.1 An International Tonnage Certificate shall cease to be valid and shall be cancelled by the Administration if alterations have taken place, such as would necessitate an increase in gross tonnage or net tonnage.

5.6.2 A certificate issued to a ship by an Administration shall cease to be valid upon transfer of such a ship to the flag of another State, except as provided in [5.6.3](#).

5.6.3 Upon transfer of a ship to the flag of another State, the International Tonnage Certificate shall remain in force for a period not exceeding 3 months, or until the Administration issues another International Tonnage Certificate to replace it, whichever is the earlier.

COEFFICIENTS K_1 AND K_2

V or V_c – volume, m^3

V or V_c	K_1 or K_2						
10	0.2200	450,00	0.2931	330,000	0.3104	670,000	0.3165
20	0.2260	500,00	0.2940	340,000	0.3106	680,000	0.3166
30	0.2295	550,00	0.2948	350,000	0.3109	690,000	0.3168
40	0.2320	600,00	0.2956	360,000	0.3111	700,000	0.3169
50	0.2340	650,00	0.2963	370,000	0.3114	710,000	0.3170
60	0.2356	700,00	0.2969	380,000	0.3116	720,000	0.3171
70	0.2369	750,00	0.2975	390,000	0.3118	730,000	0.3173
80	0.2381	800,00	0.2981	400,000	0.3120	740,000	0.3174
90	0.2391	850,00	0.2986	410,000	0.3123	750,000	0.3175
100	0.2400	900,00	0.2991	420,000	0.3125	760,000	0.3176
200	0.2460	950,00	0.2996	430,000	0.3127	770,000	0.3177
300	0.2495	100,000	0.3000	440,000	0.3129	780,000	0.3178
400	0.2520	110,000	0.3008	450,000	0.3131	790,000	0.3180
500	0.2540	120,000	0.3016	460,000	0.3133	800,000	0.3181
600	0.2556	130,000	0.3023	470,000	0.3134	810,000	0.3182
700	0.2569	140,000	0.3029	480,000	0.3136	820,000	0.3183
800	0.2581	150,000	0.3035	490,000	0.3138	830,000	0.3184
900	0.2591	160,000	0.3041	500,000	0.3140	840,000	0.3185
100,0	0.2600	170,000	0.3046	510,000	0.3142	850,000	0.3186
200,0	0.2660	180,000	0.3051	520,000	0.3143	860,000	0.3187
300,0	0.2695	190,000	0.3056	530,000	0.3145	870,000	0.3188
400,0	0.2720	200,000	0.3060	540,000	0.3146	880,000	0.3189
500,0	0.2740	210,000	0.3064	550,000	0.3148	890,000	0.3190
600,0	0.2756	220,000	0.3068	560,000	0.3150	900,000	0.3191
700,0	0.2769	230,000	0.3072	570,000	0.3151	910,000	0.3192
800,0	0.2781	240,000	0.3076	580,000	0.3153	920,000	0.3193
900,0	0.2791	250,000	0.3080	590,000	0.3154	930,000	0.3194
100,00	0.2800	260,000	0.3083	600,000	0.3156	940,000	0.3195
150,00	0.2835	270,000	0.3086	610,000	0.3157	950,000	0.3196
200,00	0.2860	280,000	0.3089	620,000	0.3158	960,000	0.3196
250,00	0.2880	290,000	0.3092	630,000	0.3160	970,000	0.3197
300,00	0.2895	300,000	0.3095	640,000	0.3161	980,000	0.3198
350,00	0.2909	310,000	0.3098	650,000	0.3163	990,000	0.3199
400,00	0.2920	320,000	0.3101	660,000	0.3164	100,000,0	0.3200

Note. Coefficients K_1 or K_2 for intermediate values V or V_c may be obtained by linear interpolation.

Russian Maritime Register of Shipping

Rules for the Tonnage Measurement of Sea-Going Ships

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