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INTERNATIONAL REGULATIONS FOR TONNAGE MEASUREMENT OF SHIPS

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INTERNATIONAL REGULATIONS FOR TONNAGE MEASUREMENT

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Draft Regulations for Tonnage Measurement of Ships. (C.176.M.65.1931.VIII.) (Ser. L.o.N. P. 1931.VIII.17.) 2/– $0.50

The draft international regulations for tonnage measurement of ships deal with the measurement and the calculation of the cubic capacity of spaces constituting the various items of gross tonnage (underdeck tonnage, 'tween-decks, superstructures, hatchways), the exempted spaces (closed and open), double-bottom spaces and the various deductions (master's and crew spaces, navigation spaces, pumprooms, boatswain's stores, sailroom, water-ballast spaces, propelling-machinery spaces).

The draft regulations also contain definitions of the identification dimensions.

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Report to the Advisory and Technical Committee for Communications and Transit by the Chairman and the Rapporteur of the Technical Committee for Maritime Tonnage Measurement on the Replies received from the Governments to the Circular Letter forwarding the Results of the Technical Committee's Work. (C.4.M.4. 1936.VIII.) (Ser. L.o.N. P. 1936.VIII.1.) ... 1/6 $0.40

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INTERNATIONAL REGULATIONS

FOR

TONNAGE MEASUREMENT OF SHIPS[1]

PART I

ADMINISTRATIVE PROVISIONS

Application by the Owner.

ARTICLE 1

When a ship requires measurement or re-measurement, the owner shall send an application to this effect to the competent tonnage measurement authority.

Such application shall be accompanied, if possible, by plans.

When exemption from inclusion in gross tonnage is claimed for certain spaces, plans showing details of the conditions upon which such exemption is claimed should be submitted.

Measurement under Rule I or Rule II.

ARTICLE 2

Measurement and re-measurement shall be carried out in accordance with Rule I (Internal Measurement) or Rule II (External Measurement), the details of which are set forth in Parts II to VI of the present Regulations.

The application of Rule II shall be limited to cases where the application of Rule I is impracticable — *e.g.*, on account of the ship being loaded — and shall depend on a decision of the national central tonnage measurement authority concerned. The ship should, however, be re-measured according to Rule I as soon as practicable.

Formulæ of Measurement.

ARTICLE 3

As measuring proceeds, the measurements taken, as well as other records which serve to determine the gross and net tonnage

[1] The figures referred to in this document are to be found in a separate publication (see document C.108(*a*).M.63(*a*).1939.VIII).

defined in Part II, Article 7, and which are indicated in Parts III to VI, shall be entered on the formulæ of measurement used by each national authority. When the measurement has been completed, the formulæ of measurement, duly signed, shall be forwarded to a national central tonnage measurement authority for checking and approval.

This national central authority, in carrying out the checking, shall for this purpose in all cases (except when a ship is measured under Rule II) make use of the control curves in conformity with the provisions of Part III, Article 44, to the extent found necessary. The said authority shall also, if necessary, complete the measurement by means of the control curves.

Tonnage Certificates.

ARTICLE 4

The measurement having been checked and, if necessary, completed, the national central tonnage measurement authority shall arrange for the tonnage certificate to be issued under Rule I or Rule II, as the case may be.

The tonnage certificates shall be of the types reproduced in Appendices 1 and 2, and shall contain the particulars indicated therein.

Marking.

ARTICLE 5

The spaces indicated in Articles 61 to 63 and 66 to 71, if deducted from the gross tonnage referred to in Article 7, must be duly marked, their proper designation being stated in each case.

The net tonnage defined in Article 7 shall be marked in indelible characters on the main beam or on the inside of the coaming of one of the upper hatchways (by preference hatchway No. 2, counted from the bow) or, if necessary, in another suitable place.

PART II

DETERMINATION AND DEFINITION OF TONNAGE

Units of Measurement; Degree of Exactitude; Definition of Length and Breadth.

Article 6

In ascertaining the tonnage of a ship, the cubic capacity of all spaces shall be calculated in English cubic feet, or in cubic metres. If English cubic feet are employed, these shall be converted into register tons, each of 100 cubic feet, corresponding to $\frac{1}{0.353}$ cubic metres. If the English foot is used, it will be divided decimally.

If not otherwise stated in the present Regulations :

I. Measurements shall be taken with the exactitude of the nearest twentieth part of an English foot, or of the nearest centimetre.

II. Calculations shall be carried out with the following degree of accuracy :

(*a*) When determining :

(1) *The common interval between the transverse sections* (see Article 21) ;

(2) *The common interval between the breadths in each transverse section* (see Article 33) ;

(3) *The common interval between the breadths in double-bottom tanks* (see Article 45), *in 'tween-decks* (see Article 48), *and in superstructures* (see Article 53) :

If using feet, with three decimals, without taking account of the fourth ; or,

If using metres, with three decimals, the third being increased by one if the fourth is 5 or more ;

(*b*) When determining :

(1) *One-third of the common interval between the transverse sections* (see Article 41) ;

(2) *One-third of the common interval between the breadths in each transverse section* (see Article 39) ;

(3) *The area of transverse sections* (see Article 39) ;

(4) *One-third of the common interval between breadths in double-bottom tanks* (see Article 45), *in 'tween-decks* (see Article 48) *and in superstructures* (see Article 54) ;

(5) *The mean height of a double-bottom tank* (see Article 45) ;

(6) *The mean height of a 'tween-deck space* (see Article 49) ;

(7) *The mean breadth of the propelling-machinery space ;*

(8) *The mean height of the propelling-machinery space ;*

(9) *One-third of the round of beam :*

If using feet, with two decimals, the second being increased by one if the third is 5 or more ; or,

If using metres, with two decimals, the second being increased by one if the third is 5 or more.

(*c*) When determining :

The under-deck tonnage and the cubic capacity of all other spaces (*e.g.*, double-bottom tanks, 'tween-decks, superstructures, hatchways, exempted or deducted spaces), both in register tons and in cubic metres, with two decimals, the second being increased by one if the third is 5 or more.

Before proceeding with measurement, all instruments used must be carefully checked.

Measurements taken in the longitudinal direction are termed *lengths*, and measurements taken in the transverse direction are termed *breadths*, irrespective of the shape of the measured space.

Gross Tonnage and Net Tonnage.

ARTICLE 7

The tonnage is determined as gross tonnage and as net tonnage.

The gross tonnage consists of the sum of the following items, subject to the exceptions hereinafter mentioned :

1. The cubic capacity of the space below the tonnage deck (under-deck tonnage).

2. The cubic capacity of each space between decks above the tonnage deck and below the upper deck.

3. The cubic capacity of superstructures (whether extending from side to side or not).[1]

4. The " excess of hatchways ".

The net tonnage is obtained by applying to the gross tonnage the deductions provided for in the present Regulations with regard to :

(1) Master's and crew spaces (see Articles 61 to 64) ;

(2) Spaces for navigation and working of the ship (see Articles 65 to 71) ;

and, for ships propelled by machinery :

(3) Propelling-machinery spaces (see Articles 74 to 81).

[1] A side-to-side superstructure is one in which the sides are flush with those of the ship.

PART III

MEASUREMENT AND CALCULATION OF GROSS TONNAGE UNDER RULE I

ARTICLE 8

The cubic capacity of each of the items of the gross tonnage referred to in Article 7 is to be determined by separate measurement and calculation, in accordance with the provisions hereafter.

Tonnage Deck and Upper Deck.

ARTICLE 9

When measuring decked ships, the tonnage deck must first be determined.

The *tonnage deck* is the upper deck in ships with not more than two decks, and the second deck from below in ships with more than two decks.

The *upper deck* is the uppermost complete deck having permanent means of closing all openings in weather portions of the deck, provided there are no openings in the sides of the ship complying with the provisions of Article 58 II(*b*).

Continuous Decks.

ARTICLE 10

When determining the tonnage deck and the upper deck, only permanent and continuous decks, laid on permanent deck beams, are to be considered. Interruptions in way of engine and boiler openings, cofferdams and peak-tanks, are not to be considered as breaking the continuity of a deck.

Hatchways, skylights, companion-ways, trunks, etc., are not considered as interruptions in a deck (see Figures 1, 2, 3 and 4).

A deck below the upper deck shall still be regarded as continuous when for a part of its length it is continued at a somewhat higher or lower plane (see Figure 3).

ARTICLE 11

When measuring the space below the tonnage deck, the cubic capacity sought is to be limited by the under side of the tonnage deck, the top of the floors, or of the double bottom and the inner edge of frames, or the ceiling, as the case may be, irrespective of beams, pillars, stringers, keelsons or other projecting parts.

Ceiling (continuous or sparred).

ARTICLE 12

Unless otherwise stated in the present regulations, the measurements are to be taken to the inner edge of frames and to the top of floors or double bottom, deducting from these measurements the average thickness of continuous ceiling, if any, fitted directly on to the frames, floors or double bottom. If batten or spar ceiling is fitted on the inner edge of the frames, and the ceiling on the floors or double bottom is fitted on grounds and not laid directly on to the top of the floors or of the double bottom, the following provisions will apply.

When the ceiling on the bottom is laid on grounds and not fitted directly on the floors or double bottom, no allowance is to be made for the thickness of the grounds when measuring the depth of transverse sections. If a batten or spar ceiling (wood or steel) is fitted directly on to the inner edge of frames and the spacing between the battens or bars is not more than 1 foot or 0.305 metre, the thickness of the spar ceiling shall be deducted from the breadth measurements limited to a maximum of 0.25 foot or 0.076 metre on each side of the ship. If, however, the spacing exceeds 1 foot or 0.305 metre, the breadths must be taken to the inner edge of frames. In ships with beam brackets of ordinary size, the uppermost spacing counted from the under side of the deck beam may exceed 1 foot or 0.305 metre provided the uppermost batten is fitted close up to the beam bracket. Side stringers are counted as spar ceiling when determining the spacing of the battens or bars.

When the holds are insulated (*e.g.*, for refrigerating purposes) and the casing extends beyond the inner edge of the frames, or above the top of the floors or double bottom, a maximum allowance of 0.25 foot or 0.08 metre may be made when measuring the horizontal breadths and depths of transverse sections, but if the projection is less than 0.25 foot or 0.076 metre, only the actual projection is to be allowed.

ARTICLE 13

As a general rule, the formulæ of measurement or the plans should give information concerning the depths of the frames, the thickness of the side and bottom ceiling, the thickness of the grounds below the latter, if necessary, and particulars whether the measurements are taken to the frames, the top of the double bottom or floors where no ceiling is fitted. Furthermore, the national central tonnage measurement authority should also receive full information with regard to the depth of the floors or the height of the double bottom in the middle plane, at the intersection of the middle transverse section, or, if the space below the tonnage deck is measured in parts, at the middle position in each part.

ARTICLE 14

The cubic capacity of the space below the tonnage deck is ascertained by means of the length of the space — " tonnage length " — in association with the areas of a number of transverse sections at equal intervals in the length and whose number depends on the length in accordance with Article 21.

The area of each section is ascertained by means of its depth and a number of breadths taken at equal intervals in the depth in accordance with Article 32.

Tonnage Length.

ARTICLE 15

The tonnage length is the distance between two points, of which the foremost is the point where the under side of the tonnage deck, at the stem, meets the inner surface of ceiling or frames, and the aftermost is the point where the under side of the tonnage deck meets the inner surface of ceiling or frames in the middle plane, at the stern.[1]

Determination of the Extreme Points of the Tonnage Length.

ARTICLE 16

When determining the extreme points of the tonnage length according to the principles laid down in Article 15, the following procedure should be observed :

1. In the case of ships having a vertical bow (or stem) and a vertical stern both below and above the tonnage deck, measure horizontally the depth of frames and the thickness of the ceiling (if fitted) forward and aft, immediately below the tonnage deck. Set off these measurements on the upper side of the deck from the shell plating in the direction in which the frames have been measured and draw through the points thus obtained lines parallel to the shell. The points of intersection of these lines fore and aft are the extreme points of the tonnage length (see Figures 5 and 6).

2. In the case of ships having no vertical bow (or stem) or no vertical stern at the level of the tonnage deck, the extreme points of the tonnage length are, when practicable, to be determined at the under side of the tonnage deck. The distance from these points to a hatch-coaming, bulkhead, etc., should be measured and transferred to the upper side of the tonnage deck as indicated in Figure 7.

[1] Should the tonnage deck beam at the extreme points of the tonnage length have a round of beam (camber), in case of a ship with a square bow or stern, or rise in a straight line from the sides of the ship towards the middle plane, then the points are situated respectively at one-third of the round of the beam or one-half of the rise below the under side of the tonnage deck in the middle plane.

Should it not be practicable to determine the extreme points of the tonnage length at the under side of the tonnage deck, and should the thickness of this deck be considerable (*e.g.*, a wooden deck) the rake of the bow (or stem) or stern in the thickness of the deck is to be taken into account. This is done after having first proceeded as indicated in paragraph 1 and as is shown in Figures 5 and 6, by measuring the thickness of the tonnage deck and determining by means of a hinged rule the angle of the rake which the bow (or stem) or the stern forms with the tonnage deck. Transfer thereafter this angle on to a plane (*e.g.*, a bulkhead or the top of the deck) by drawing the lines *a*, *b*, *c* (see Figure 8), and proceed as stated in the explanatory note.

It should be borne in mind that the condition for applying the method of setting out the angles on the upper side of the tonnage deck is that the stem and the stern have the same angle of rake above and immediately below the tonnage deck. If, for instance, the angle of rake at or immediately below the tonnage deck is a different one, then this last angle must be used.

3. Should a ship as referred to in paragraph 2 have a square bow or stern, it will be necessary to make a correction for round of beam (camber) where such exists. This should be done by increasing the thickness of the deck in Figure 8 by one-third of the round of beam at the extreme point of the tonnage length.[1]

Round of Beam.

ARTICLE 17

The round of beam is to be ascertained by stretching a line athwartships, from side to side at the desired point in the tonnage length, so that the line is at an equal height above the deck on both sides of the ship. The distance from the line to the deck at the sides minus the distance from the line to the deck at the middle plane is the round of beam desired (see Figure 9).

Interruption in the Tonnage Deck.

ARTICLE 18

If the tonnage deck is interrupted, within the meaning of Article 10, third paragraph, for a portion of its length (see Figure 10), the tonnage length should be measured on an imaginary line in continuation of the original deck.

In the case shown in Figure 10 it may be advisable to transfer the extreme points of the tonnage length to the top of the superstructures and to measure the length over the latter. As the distance from the under side of the deck which covers the superstructure to the line of continuation is equal to the height

[1] See also footnote to Article 15.

of the superstructure, the extreme points of the tonnage length are found by setting down this height. It is necessary, of course, to take into account the frames, the ceiling (if fitted) and the round of beam, where such exists.

Measurement of the Tonnage Length.

ARTICLE 19

If, as is generally the case, it is impossible to measure the total tonnage length direct between its extreme points, having determined these and marked them on the tonnage deck, the foremost and aftermost parts of the length from the extreme points to a bulkhead, hatch-coaming, etc., as found practicable, should be measured.

In ships with a normal sheer, the remainder of the length shall be measured by means of a tape laid on the tonnage deck, or by a line stretched as tightly as possible from forward to aft. This length is to be measured between the bulkheads, hatch-coamings, etc., to which the foremost and aftermost parts of the length are measured. The tape is laid, or the line is stretched, clear of all obstacles, parallel to the middle plane of the ship, on or above the tonnage deck or its continuation line. In case a line is used (which must always be done if the sheer is excessive) it should be stretched from forward to aft. The length of the line is measured by means of measuring rods or tape. The tonnage length is obtained by adding the length of the foremost part, that of the part measured either by the tape or on the line, and that of the aftermost part.

Determination of the Middle Transverse Section.

ARTICLE 20

The tonnage length having been ascertained, the position of the middle transverse section must be determined. This is done by measuring half of the tonnage length forward from the aftermost point, or aft from the foremost point of the length, in the same way as explained in Article 19. The middle point of the length is marked on the line and on the deck, and its distance from a bulkhead, hatch-coaming, etc., is determined. The work is then checked by measuring the second half of the length from the middle point in the same way. If the end of half of the length coincides with the extreme point of the tonnage length, this length has been accurately measured and the position of the middle transverse section correctly marked off. If the two points do not coincide, it is necessary to re-measure the tonnage length.

As an alternative method, the positions of the various transverse sections, as indicated in Article 21, may be determined by setting off upon the deck the common interval

from each extreme point of the tonnage length, the position of the middle transverse section being found where such sections coincide amidships.

Transverse Sections.

ARTICLE 21

The tonnage length is to be divided into a number of equal parts, as given in the following table :

Tonnage length	Number of equal parts
50 feet = 15.24 metres, or less	4
Above 50 feet = 15.24 metres, but not more than 120 feet = 36.58 metres	6
Above 120 feet = 36.58 metres, but not more than 180 feet = 54.86 metres	8
Above 180 feet = 54.86 metres, but not more than 225 feet = 68.58 metres	10
Above 225 feet = 68.58 metres	12

The common interval between the sections is ascertained by dividing the tonnage length by the divisor thus determined.

Vertical sections are taken through the points of division, and through the extreme points of the tonnage length, at right angles to the middle plane of the ship. They are numbered 1, 2, 3, etc., in such a manner that No. 1 is the section at the foremost and the last number is the section at the aftermost point of the tonnage length.

ARTICLE 22

The position of the middle transverse section, as determined on the tonnage deck, is now to be transferred into the hold (machinery spaces, bunkers, etc.) perpendicularly to the keel line of the ship, by using the distance from a bulkhead, hatch-coaming, etc., as measured in accordance with Article 20.

By setting off forward and aft from the position of the middle section, as determined in the hold, the common interval between the various sections, the positions of the other sections are determined and marked off on the bottom ceiling, the tunnel, the keelson or whatever may be found suitable. The common interval is to be set off parallel to the keel line, and in the middle plane of the ship, or parallel to it. The correctness of the positions of the various transverse sections is to be verified by measuring distances to bulkheads, hatch-coaming, etc., and checking such distances on top of the tonnage deck.

When it is not possible to measure a transverse section at its correct position, it should be measured as close thereto as possible.[1] It should be very accurately ascertained how far

[1] It may even be advisable to measure two subsidiary transverse sections situated respectively forward and aft of the correct position (see Article 44).

forward or aft of the correct position the section is being measured, and full particulars as to this should, if necessary, be given in the formulæ of measurement.

In ships propelled by machinery, the distance from the machinery bulkhead to the correct position of the nearest section should be ascertained, both as regards the foremost and aftermost bulkheads, and stated on the formulæ of measurement.

ARTICLE 23

Before commencing the measurement of the transverse sections it is necessary, at the positions where these sections are to be measured, to examine, if the surface to which the tonnage depths are to be taken, whether the top of ordinary floors, longitudinals, double bottom, or the top of bottom ceiling in a wooden ship, is horizontal athwartships or rises or falls from the middle plane to the wings.[1]

ARTICLE 24

For the purpose of determining the tonnage depths, the round of beam should be ascertained for each transverse section in conformity with the provisions of Article 17 and as shown in Figure 9.

Definition of Tonnage Depth.

ARTICLE 25

The tonnage depth of a transverse section is the distance from the under side of the tonnage deck to the top of the main floors or the top of the double bottom, as defined in Article 26, minus the thickness of the bottom ceiling, if fitted, and one-third of the round of beam, this depth being, if necessary, corrected as indicated in Article 28 where the top of the double bottom is not horizontal[2].

If a transverse section is situated at a place where the deck is interrupted the depth is the distance from the line of continuation of the tonnage deck to the top of the floor or the double bottom, with the deductions and correction mentioned above.

Main Floors and Top of Double Bottom.

ARTICLE 26

In determining the main floors of the ship or the top of double bottom, as referred to in Article 25, the indications given below shall be followed :

[1] For this purpose a line is stretched across the bottom at an equal height at each side. The difference between the height of the line above the bottom at the middle plane and its height above the bottom at the sides is the fall or rise of the bottom.

[2] Should the tonnage deck beams rise in a straight line from the sides towards the middle plane, the correction for the rise of beam will be one-half instead of one-third of the rise of the beam. Such rise is determined and applied in the same manner as indicated in Articles 24, 25, 30 and 43 for the round of beam.

(*a*) With regard to the part of the ship situated between the collision bulkhead and the after peak bulkhead :

Single-bottom ships.

(1) The bottom construction with solid transverse floors on every frame is to be considered as a standard construction and, whenever such floors are fitted, they shall be regarded as the main floors (see Figure 11).

(2) If the bottom construction consists of solid floors two or more frame spaces apart and skeleton floors of the same depth on the intermediate frames, such floors constitute the main floors (see Figures 12 and 13).

(3) If the bottom construction consists of solid floors on alternate frames and intermediate lower floors or frames, the tonnage depth should be measured to the higher floors (see Figure 14).

(4) If the bottom construction consists of floors of different depths, it must be determined whether the higher or the lower floors should be considered as the main floors. As a general indication, it should be noted that the lower floors are to be considered as the main floors when the higher floors are more than two frame spaces apart (see Figure 15).

(5) In the case of a bottom construction with longitudinal framing of a uniform depth, the upper edge of the longitudinals should be considered as the top of the main floors (see Figure 16).

(6) Should the longitudinal system consist of elements of different depths, the same provisions as given in paragraphs (3) and (4) will apply (see Figures 17 and 18).

(7) Mixed constructions of transverse and longitudinal framing are to be compared with the various systems referred to in the preceding paragraphs for the purpose of determining the main floors.

Double-bottom ships.

(8) If a double bottom is fitted, whether on the transverse or longitudinal system, and is adapted for the carriage of water ballast only, the tonnage depth should be measured to the top of the double bottom, but if available for the carriage of cargo, stores or fuel, the tonnage depth should be measured to the top of the main floors, determined in accordance with paragraphs (1) to (7), as for single-bottom ships (see Figures 19, 20, 21 and 22).

Where the top of the main floors extends to the tank-top plating, the top of this plating may be regarded as the top of the main floors.

(9) The thickness of a ceiling, referred to in Article 25, is still to be deducted, even if such ceiling is laid on a double bottom or on floors, to which the tonnage depth, according to the above indications, is not to be measured.

(*b*) With regard to the parts of the ship situated forward of the collision bulkhead and aft of the after peak bulkhead :

(1) If the floors are equal in height or lower than the floors or double bottom immediately contiguous to the collision bulkhead or after peak bulkhead, as the case may be, such floors constitute the main floors (see Figure 23).

(2) If the floors are higher than the floors or double bottom immediately contiguous to the collision bulkhead or the after peak bulkhead, as the case may be, the tonnage depth must be measured to an imaginary line drawn parallel to the keel at a level corresponding to the height of such floors or double bottom (see Figures 24[1] and 25).

Measurement of Tonnage Depths.

ARTICLE 27

The tonnage depths are to be measured by means of rods placed at or close to the middle plane in the transverse section at the positions indicated in Article 22. The depths are to be measured to the top of floors or to the top of double-bottom plating, deducting therefrom the thickness of ceiling, if fitted (see Figure 26).

In the case of wooden ships, the depths are to be measured to the top of the ceiling, provided such ceiling is fitted directly on top of floors (see Figures 27 and 28).

The projecting parts of side keelsons or other projecting constructions for strengthening are not to be regarded as ceiling.

Corrections to Measured Depths.

ARTICLE 28

1. In ships with a double bottom where the line of tank-top in way of a transverse section falls from the middle plane to the wings, the depth measured at the middle plane is to be increased

[1] Peak tanks are not to be regarded as double-bottom tanks, even when the floors extend to the tank-top.

by one-half of the fall if the line is straight, and by one-third if it forms a convex curve (see Figure 29).

2. In ships with a double bottom, where the line of tank-top in way of a transverse section rises from the middle plane to the wings, the depth measured at the middle plane is to be decreased by one-half of the rise if the line is straight, and by one-third if it forms a concave curve (see Figure 30).

3. In ships with a single bottom, where the top of floors rises or falls from the middle plane to the wings, the corrections defined in paragraphs 1 and 2 do not apply.

Spaces to be included in or excluded from the Under-deck Tonnage

ARTICLE 29

1. Should there be any recesses or projections in the double bottom or in the ordinary floors not extending from side to side of the ship, the recess or projection is to be measured separately and its cubic capacity respectively included in or excluded from the under-deck tonnage, provided in the latter case that the projection forms an integral part of the bottom construction of the ship. The depth of the transverse section is to be measured from the line of continuation of the tank-top or top of floor (see Figures 31 and 32).

2. Should a bottom ceiling exist under the hatchways only, such ceiling should, however, be measured separately and its cubic capacity excluded from the under-deck tonnage. No deduction for thickness of ceiling is to be made when ascertaining the tonnage depths of the various transverse sections in way of a hatchway (see Figure 33).

3. Should there be any bulges on the ship's sides such as propeller bossings, the breadths which may fall in way of the bulges are to be measured to the normal frame-line. The cubic capacity of the bulges should be ascertained and added to the under-deck tonnage.

4. In cruiser stern ships in which the projection beyond the extreme point of the tonnage length is appreciable, the capacity of this space is to be ascertained and added to the tonnage below the upper deck (see Figure 34).

ARTICLE 30

When a transverse section is situated in way of a deck opening (*e.g.*, hatchway, engine casing, etc.) :

(1) The depth may be taken : at the side coaming, adding thereto the round of the beam due to the breadth of the opening ;

or, alternatively :

(2) The depth at the side of the ship may be determined, adding thereto the total round of beam (see Figure 35). This round of beam is determined as the average of the rounds of beam at the end-coamings of the opening.

After having measured the depth indicated above, the tonnage depth of the transverse section is to be determined by applying the provisions of Article 25.

ARTICLE 31

Should the tonnage deck be interrupted by a break and the deck continued at a higher or lower level, the depths of the transverse sections situated in way of the raised or sunken deck are to be measured to the under side of these decks. The depths thus obtained should then be decreased or increased, as the case may be, by the height of the break (see Figure 36).

If there exists below the tonnage deck a recessed portion entirely open to the sea, and therefore not liable to inclusion in the gross tonnage (*e.g.*, the slipway in a whaling ship), such portion should be calculated separately and its cubic capacity excluded from the under-deck tonnage.

Number of Breadths.

ARTICLE 32

The tonnage depth of every transverse section is to be divided into :

(*a*) Four equal parts, if the tonnage depth at the middle of the tonnage length does not exceed 16 feet or 4.88 metres ;

(*b*) Six equal parts, if the tonnage depth at the middle of tonnage length exceeds 16 feet or 4.88 metres.

ARTICLE 33

When the tonnage depth has been ascertained, the common interval between the breadths is determined by dividing the depth by the divisor indicated in Article 32. The points of division are now set off on one of the measuring rods, starting with the lowest point of division and setting off the common intervals from this point. When marking off the lowest point of division, care must be taken that this point is situated at the correct level above the actual lowest point of the tonnage depth.[1]

Measurements of Breadths.

ARTICLE 34

The breadths of each transverse section are numbered from the top downwards, the upper breadth, at the level of the upper

[1] In the case of a ship with a horizontal tank-top athwartships and a ceiling fitted on grounds, the measuring rod should be placed on top of the ceiling. The lowest point of division is now ascertained by setting off the common interval minus the height of grounds.

extreme point of the tonnage depth, being No. 1, the lowest breadth No. 5 or No. 7, as the case may be.

The breadths are measured perpendicularly to the middle plane through the points of division and the extreme points of the tonnage depth from ceiling to ceiling, if fitted, and, if not, between the inner edge of the frames. The thickness of the ceiling is also ascertained. The projecting parts of stringers, shelves, or other projecting constructions for strengthening are not to be regarded as ceiling (see Figures 37 and 38).

When spar ceiling in steel ships is not fitted directly against the edge of the frames, it is advisable to measure to the frames, and from the breadth thus obtained deduct the thickness of the ceiling measured horizontally.

Should there be no frame at the place where a breadth is to be taken, such breadth shall be measured to the shell, and the horizontal depth of the nearest frame deducted therefrom at each side.

If it is impossible to measure a breadth at its proper level, it should be measured as close thereto as possible. It should be very accurately ascertained how far above or below the proper level the breadth is being measured, and, if necessary, full particulars as to this should be given in the formulæ of measurement.

When measuring the upper and lowest breadths, the provisions of Articles 37 and 38 are to be observed.

Frames of Different Depths.

Article 35

In ships with frames of different depths (see Figures 39 and 40), the breadths are to be taken to the shallower frames when the deeper frames are fitted more than two frame spaces apart. Should there be a ceiling, its thickness is to be deducted from the breadths thus ascertained, or the breadths are to be measured from ceiling to ceiling, as indicated in Article 34.

The above rule does not apply to ships with longitudinal frames of depths decreasing upwards towards the tonnage deck (see Figure 41). In such a case the provisions of the fourth paragraph of Article 34 are to be applied. Should there, however, be a ceiling, its thickness is to be deducted.

Article 36

In the case of ships with corrugated sides, the breadths are to be measured to an assumed line of framing (see Figure 42) with a view to ascertaining the correct area of the transverse sections, including the corrugations. If a ceiling is fitted, its thickness is to be deducted from the breadths thus ascertained.

Upper Breadth.

ARTICLE 37

The upper breadth, situated at the level of the upper extreme point of the tonnage depth, must be measured immediately below the tonnage deck. Should it not be practicable to measure the breadth below the deck, the measurement may also be taken on top of the deck ; but in this case it should be ascertained whether the depth of frames below and above the deck is the same and whether the sides of the ship at the level of the deck are vertical. Should the depth of frames above the deck be different from that below the deck, the measured breadth shall be corrected as indicated in Figure 43. Should there be either tumble-home or flaring sides, the measured breadth shall be corrected as indicated in Figure 44.

Lowest Breadth.

ARTICLE 38

The lowest breadth situated at the level of the lowest extreme point of the tonnage depth must be measured on top of floors, or ceiling if fitted, or on the tank-top, as the case may be, in accordance with the following rules :

1. In ships with a double bottom the top of which is horizontal or falls or rises from the middle plane to the wings, the breadth is to be measured between the knuckle lines of the margin plates (see Figures 45, 46, 47 and 48). If, however, the upper edge of the knees connecting the double bottom with the frames continues in line with the tank-top (see Figure 49), the breadth is to be measured to the inner edge of frames, or of the ceiling thereon if fitted. This last method shall also be used when the tank-top extends to the sides of the ship, and the knees are fitted more than two frame spaces apart (see Figure 50) ; but if the knees are spaced closer, the breadth should be measured to the points of intersection of the knees with the tank-top (see Figure 51).

2. In ships with a single bottom, the lowest breadth shall be taken between the points up to which the top line of floors or ceiling is horizontal (see Figures 52, 53, 54, 55 and 56).

Area of Transverse Sections.

ARTICLE 39

The areas of transverse sections are calculated by applying Simpson's Rule. Therefore the area of a transverse section is ascertained as follows :

(*a*) When five breadths are taken, they are to be multiplied :

Breadths Nos. 1 and 5 by 1 ;
Breadths Nos. 2 and 4 by 4 ;
Breadth No. 3 by 2.

(*b*) When seven breadths are taken, they are to be multiplied :

Breadths Nos. 1 and 7 by 1 ;
Breadths Nos. 2, 4 and 6 by 4 ;
Breadths Nos. 3 and 5 by 2.

The sum of the products thus obtained is multiplied by one-third of the common interval between the breadths, and this last product is the area of the section.

ARTICLE 40

When it is not possible to measure a section at its correct position as indicated in Article 22, the area of the correct section may be determined by using the diagram of control curves indicated in Article 44.

Cubic Capacity of the Space below the Tonnage Deck.

ARTICLE 41

Having determined the area of each transverse section at its correct position, the cubic capacity of the space below the tonnage deck is ascertained as follows :

The areas of the first and last transverse sections are multiplied by 1.

The areas of even-numbered transverse sections are multiplied by 4.

The areas of odd-numbered transverse sections (other than first and last) are multiplied by 2.

The sum of these products is to be multiplied by one-third of the common interval between the transverse sections. This last product gives the cubic capacity of the space below the tonnage deck in cubic feet or in cubic metres. The under-deck tonnage in register tons is obtained by dividing the number of cubic feet by 100. If cubic metres are employed, these shall be converted into register tons by multiplying by 0.353.

After having calculated the cubic capacity of the space below the tonnage deck, the cubic capacity of the spaces referred to in Article 29 or Article 31, paragraph 2, will be added thereto or deducted therefrom, as the case may be, and the remainder will constitute the under-deck tonnage of the ship.

Breaks in the Double Bottom.

ARTICLE 42

Should there be a break or breaks in the double bottom, the space below the tonnage deck is to be measured in parts. Each part is to be measured as if it were a separate ship of a tonnage length equal to the length of the part ; and, therefore, the length of each part should be divided as stated in Article 21, with the exception that, if the length is not more than 30 feet or 9.14 metres, it is only divided into two.

Within the meaning of this article, the word " break " shall apply to cases (*a*) where there is an abrupt change in the depth of the double bottom, (*b*) where the double bottom continues at a lower level, and (*c*) where, at the end of a partial double bottom, the adjoining floors are of a depth different from that of the double bottom. The latter provision shall not apply to floors in peaks if such floors are deeper than the adjoining part of the double bottom (see Figures 57, 58 and 59).

At the ends and at the points of division of each portion, transverse sections are measured, the tonnage depth measured at the middle of the tonnage length of the ship being the factor which determines if the other tonnage depths are to be divided into four or six equal parts, in accordance with Article 32.

The area of each transverse section and the cubic capacity of each part of the space below the tonnage deck are to be calculated in accordance with the rules given in Articles 39, 40 and 41, and the sum of the different parts will constitute the under-deck tonnage of the ship.

Subject to the provisions of (*c*) in the second paragraph, the procedure set forth in the present article shall not apply in the case of a change in the depth of floors in a ship with single bottom or partial double bottom (see Figure 60).

ARTICLE 43

In ships with a deck below the tonnage deck, the transverse sections should be measured partly below and partly above the lower deck. This is to be done in the following way :

The positions of the transverse sections are marked on the lower deck, after which the distance from the top of this deck to the under side of the tonnage deck at the middle plane at each transverse section is measured, and the thickness of the lower deck is ascertained.

The positions of the transverse sections are then determined below the lower deck and the depths from the under side of the lower deck are measured. The sum of the depth taken in the lower hold, the thickness of the lower deck and the depth taken between the tonnage deck and the lower deck, after applying the necessary corrections (see Article 25), constitutes

the total tonnage depth. This depth is divided in the usual way in order to ascertain the points of division at which the breadths are taken.

Control Curves.

ARTICLE 44

The dimensions measured on board shall be checked by means of control curves made, for instance, as indicated below (see Figure 61).

1. The tonnage length shall be set off, drawn to scale, on a horizontal line AB. The points of division of this length numbered from fore to aft shall be marked. At each point of division a line at right angles shall be drawn on which, on a suitable scale, there shall be set off the tonnage depth of the corresponding transverse section. The uppermost points of those depths are then connected by a curved line formed by a batten. The curved line *c* thus obtained is approximately equivalent to the sheer of the deck, if the top of double bottom or top line of ordinary floors is horizontal in the longitudinal direction. Should this curved line be regular and continuous, the various tonnage depths may be regarded as being accurate.

The points of division of each depth shall be set off on each of the lines perpendicular to AB, on which the depths have been marked off. Horizontal lines shall be drawn through the points of division and on these lines half the breadths measured at the corresponding points of division shall be set off on the adopted scale.

If the measurements have been taken accurately, the extreme points of the half-breadths will be connected by a regular curve ; if this is not the case, the irregularities of the curve will show irregularities in the measurements.

2. (*a*) In cases where the lowest points of the tonnage depths of the various transverse sections are situated on a straight line or on a regular continuous curve, longitudinal curves of breadths of the same number will be drawn in the following way : starting from the base *xy*, distances equal to the half-breadths of the transverse sections are set off on vertical lines corresponding to those sections.

If it is possible to connect the points corresponding to the breadths of the same numbers by lines forming regular curves, the accuracy of the measurements will be guaranteed.

(*b*) In cases where the lowest points of the tonnage depths of the various transverse sections are situated on a broken line, longitudinal curves situated in horizontal planes (water-lines) are drawn in the following way: a certain number of horizontal planes at an equal distance from each other (*e.g.*, seven numbered from I to VII) shall be taken parallel to the line AB.

To avoid confusion with the breadths of the transverse sections, these planes are only shown in the example (Figure 61) in the foremost and aftermost portions.

Each horizontal section thus determined meets the transverse sections at points which can easily be found. For half-sections 3 and 7 they intersect respectively at points h, i, j, k, l, m and n, and h′, i′, j′, k′, l′, m′ and n′. The next step is to determine the distance hg, ig, jg . . . ng, h′g′, i′g′, j′g′ . . . n′g′ — *i.e.*, the respective distances between each of the points h, i, j . . . n, and h′, i′, j′ . . . n′ and the middle lines of sections 3 and 7. These distances shall be set off in a horizontal plane starting, from a base *xy* parallel to AB, on lines at right angles to this base, corresponding to the various transverse sections ; h, i, j, k, l, m and n, and h′, i′, j′, k′, l′, m′ and n′, which are the extreme points of the distance set off, are thus obtained.

The same shall be done in the case of the other sections.

By joining the corresponding points h, i, j . . . n and h′, i′, j′ . . . n′, the curves representing the horizontal sections I, II, III . . . VII are obtained. If the measurement is accurate, the curves will be regular.

3. On the vertical lines drawn at the points of division of the length, distances in proportion to the area of the sections should be set off to scale. The fact that the curve formed by the extreme points of these distances is regular will give an indication that the areas have been accurately measured and calculated. Errors will be shown by corresponding irregularities in the line of the curve.

4. The control curves not only provide an indispensable method of checking measurements and calculation ; they also make it possible, if necessary, to reconstitute a transverse section, the measurement of which has been prevented by material obstacles.

In such cases, at the time of measurement, it is advisable to take two subsidiary transverse sections situated respectively forward and aft of the inaccessible section and as near as possible to it (see Article 22). These two subsidiary sections, together with the regular sections which it has been possible to determine, assist in the finding of the curves of the breadths of the same number, or the curves of the horizontal sections, as the case may be.

On the vertical line passing through the point of division of the non-measured transverse section shall be taken the distances between the base *xy* and the intersections of the vertical line with the curves (see lower part of Figure 61).

Such procedure may be followed both in the case mentioned under 2 (*a*) and under 2 (*b*) of this article, and will make it easy to establish the transverse section. If the method of using the

curves of the breadths of the same number has been followed, the distances obtained will correspond to one-half of the real breadths of the section.

Cubic Capacity of Double-bottom Tanks.

ARTICLE 45

The cubic capacity of each double-bottom tank, which must be known when determining the maximum allowance for water-ballast spaces (see Article 71), is to be ascertained either from the capacity plan provided for the ship's use,[1] or as indicated below :

If the length of the tank does not exceed 50 feet or 15.24 metres, three breadths and three heights are taken, but if it exceeds 50 feet or 15.24 metres, the number of breadths and heights to be taken will be five.

The length of each tank is measured between the floors at the ends of the tank. At the points of division of the length and at its ends the heights are then measured at a distance of one-quarter of the tank-top breadth from the middle plane. The breadth is measured at each section where a height has been taken, at the middle of the height. If a tank is of an irregular shape, it should be measured in parts.

All measurements are taken to the shell, the margin plates, and the under side of the tank-top, regardless of stiffeners, or shell and side frames (see Figures 62, 63, 64 and 65).

The cubic capacity of each tank is to be determined in the following way :

The sum of the two end breadths plus four times the middle breadth in the case of three breadths, or the sum of the two end breadths plus four times the even breadths, plus twice the middle breadth in the case of five breadths, is multiplied by one-third of the common interval between the breadths. The area so obtained is multiplied by the mean height (*i.e.*, the arithmetic mean of the various heights measured), and 95 per cent of this last product gives the cubic capacity of the tank in cubic feet or in cubic metres. The capacity in register tons is obtained by dividing the number of cubic feet by 100 or by multiplying the number of cubic metres by 0.353.

The cubic capacity in register tons or in cubic metres of each double-bottom tank or each separate compartment of the double bottom should be noted on the tonnage certificate.

The cubic capacity of any space in a double bottom not available for the carriage of water ballast, stores, fuel oil or cargo should not be included in the cubic capacity of the double-bottom tanks.

[1] Where the figures on the capacity plan are given in weight tons (either English or metric), the proper conversion factor should be used for ascertaining the register tons. When the capacities have been obtained from the capacity plan and any doubt arises as to the accuracy of these capacities, the tanks shall be measured as indicated.

'Tween-deck Spaces.

ARTICLE 46

The spaces situated between the tonnage deck and the upper deck, and which are hereinafter designated as 'tween-deck spaces, shall be measured and included in the gross tonnage. Each 'tween-deck space is to be measured between two successive decks.

ARTICLE 47

The provisions of Articles 11, 12 and 13 shall apply *mutatis mutandis* to the measurement of 'tween-deck spaces.

Methods for the Measurement of 'Tween-deck Spaces.

ARTICLE 48

The measurement of a 'tween-deck space shall be carried out according to one of the methods indicated hereafter.

Method 1. — (*a*) The length of the space is measured in two parts. Length 1 is taken in the middle plane, at the middle of the height fore and aft, from the ceiling or the frames, as the case may be, at the stem, to the foreside of the stern post. Length 2 is taken in the middle plane, at the middle of the height, from the foreside of the stern post to the inner edge of the stern frame, or of the ceiling thereon (see Figure 66).

(*b*) Length 1 shall be divided into a number of equal parts in conformity with the provisions of Article 21, and length 2 shall be divided into four equal parts. At the extreme points of both lengths and at their various points of division the inside breadths are then measured at the middle of the height, and in conformity with the provisions of Articles 34, 35 and 36. In most cases the breadth at the stem and the breadth at the after extreme point of length 2 will be equal to nil.

(*c*) The height shall be measured in the middle plane at each point of division. Should there, however, exist a difference in the round of beam of the two decks between which the space is to be measured, the height shall be measured at one-fourth of the corresponding breadth. The height shall be measured from the upper side of the lower deck (or from the upper side of the permanent deck covering — such as deck-planking, concrete, rubber, etc. — thereon) to the under side of the deck overhead.[1] Should there exist a panelling or similar covering at the under side of this deck, the height shall be taken through such panelling or covering.

Method 2. — (*a*) The whole length[2] of the space in the

[1] If the lower deck ends at the stern post or in the neighbourhood thereof, the height at the stern post shall be taken as representing the height of the after part.

[2] Once the tonnage length has been ascertained, the whole length of the 'tween-deck space will easily be found by adding to or deducting from the tonnage length, as the case may be, the length of the horizontal distance, measured in the middle plane, between the extreme points of the tonnage length and the points at the stem and stern, mentioned above (see Figure 66).

middle plane, at the middle of the height, will be ascertained between the same points at the stem and stern as indicated under Method 1.

(*b*) The whole length shall be divided into a number of equal parts in conformity with the provisions of Article 21, and the last two common intervals shall each be divided into two equal parts. The breadth shall then be measured at the extreme point forward of the whole length, at its points of division, and also at the points of division of the last two common intervals. Each breadth is to be measured at the middle of the height and in conformity with the provisions of Articles 34, 35 and 36.

(*c*) The height shall be measured at each point of division of the whole length. This height shall be ascertained as indicated in Method 1 (*c*).

Method 3 (Special Cases). — (*a*) In square-sterned ships, where the aftermost breadth can be measured at the extreme point aft of the whole length of the 'tween-deck space, and in ships with a 'tween-deck space the after part of which has a shape similar to that of its fore part (see Figure 67), no special measurement of the after part is required. In the latter case the breadth at the extreme point aft of the whole length will be nil or almost nil.

(*b*) Once the whole length has been measured and divided, as indicated in Article 21, the breadths shall be measured at each point of division and also at the extreme points of the whole length. Such breadths shall be measured at the middle of the height and in conformity with the provisions of Articles 34, 35 and 36.

(*c*) The height shall be measured at each point of division of the whole length. This height shall be ascertained as indicated in Method 1 (*c*).

Cubic Capacity of a 'Tween-deck Space.

ARTICLE 49

The cubic capacity of a 'tween-deck space is determined as follows :

1. In case Method 1, mentioned in Article 48, has been used, the breadths of the fore part of the space are numbered, No. 1 being at the stem, and the last number at the foreside of the stern post. The first- and last-numbered breadths are then multiplied by one, the other odd-numbered breadths by two, and the even-numbered breadths by four. The sum of these products shall be multiplied by one-third of the common interval between the breadths, after which the areas thus obtained are multiplied by the mean height (*i.e.*, the arithmetic mean of the heights measured at each point of division of length 1, not taking

into account the heights at the fore and aft extreme points of this length).[1] This last product gives the cubic capacity of the fore part of the space in cubic feet or in cubic metres. The provisions of Article 41 shall apply with regard to the conversion into register tons.

The breadths of the after part of the space are then numbered, No. 1 being the breadth at the foreside of the stern post and No. 5 the breadth at the after extreme point of length 2. The sum of the first and last breadths, plus four times the second and fourth breadths, and plus twice the middle breadth shall be multiplied by one-third of the common interval between the breadths. The area thus obtained shall then be multiplied by the mean height, as defined above, and this last product gives the cubic capacity of the after part of the 'tween-deck space in cubic feet or in cubic metres.

The sum of the cubic capacity of the fore and after part constitutes the cubic capacity of the whole 'tween-deck space.

2. In case Method 2, mentioned in Article 48, has been used, the breadths of the whole space shall be numbered from fore to aft, No. 1 being the breadth at the stem. The cubic capacity of the whole 'tween-deck space is ascertained as indicated in the first explanatory note to Figure 68.

As an alternative method, it is also permissible to calculate the aftermost breadth by determining the area extending aft of the penultimate point of division of the whole length by means of a planimetre as shown in Figure 68. Once the correct aftermost breadth has thus been determined, the cubic capacity of the whole 'tween-deck space is ascertained as indicated in the second explanatory note to Figure 68.

3. In case Method 3, mentioned in Article 48, has been used, the breadths shall be numbered in the usual way from fore to aft. The cubic capacity of the whole space is then ascertained by applying the provisions given in paragraph 1 of the present article for the determination of the cubic capacity of the fore part of a 'tween-deck space.

Superstructures.

ARTICLE 50

The spaces of a permanent character situated on or above the upper deck, and which are hereinafter designated as superstructures, shall be measured and, subject to the conditions laid down in Article 51 and to the exceptions provided for in Articles 57 and 58, shall be included in the gross tonnage.

[1] When the decks have not the same sheer, the mean height shall be obtained as follows : the first- and last-numbered heights (actual or virtual) are multiplied by one, the other odd-numbered by two and the even-numbered by four. The sum of these products divided by the sum of the multipliers will be the mean height required.

ARTICLE 51

Subject to the exceptions provided for in Article 57, any closed superstructure (*e.g.*, forecastle, poop, bridge, deck-houses, etc.) available for cargo or stores or for the berthing or accommodation of passengers or crew shall be included in the gross tonnage.

Spaces which, in accordance with the provisions of Article 58, are deemed to be open spaces, if fitted and used for the berthing or accommodation of passengers or crew, shall be included in the gross tonnage. With regard to the inclusion in the gross tonnage of spaces partially used for crew or passengers, see Figure 69.

If the enclosures (coverings, bulkheads, etc.) of a superstructure are constructed in such a way[1] that doubt may arise whether such superstructure should be considered to be of a permanent character, a sketch of the superstructure, with detailed description of its construction, shall be attached to the formulæ of measurement.

ARTICLE 52

The provisions of Articles 11, 12 and 13 shall apply *mutatis mutandis* to the measurement of superstructures.

Measurement of Superstructures.

ARTICLE 53

The measurement of superstructures shall be carried out tier by tier in the following manner :

1. The inside lengths and breadths shall be taken to the inner edge of the normally spaced stiffeners of the bulkheads, or to the inner edge of frames, or to the linings if fitted, and the heights from the upper side of the lower deck (or from the upper side of the permanent deck covering, such as deck-planking, concrete, rubber, etc., thereon) to the under side of the deck. Should there exist any panelling or similar covering at the under side of this deck, the heights shall be taken through such panelling or covering.

Should there be any doubt as to whether the spacing between the bulkhead stiffeners is to be considered as normal, the depth of such stiffeners and the spacing shall be indicated on the formulæ of measurement, together with a detailed description as to how the measurements have been taken.

If different thicknesses of deck covering exist in parts of a superstructure, the excess in thickness is neglected if the surface of the deck covered by a layer of greater thickness is small in comparison with the whole surface. In other cases, an average thickness of deck covering is taken.

[1] For example, by jamming or wedging.

2. The provisions of Article 48 relating to 'tween-deck spaces shall apply to the measurement of a poop or break extending right aft to the stern, subject to the special conditions mentioned hereafter :

Length 1 in the case of application of Method 1, or the whole length in case of application of Methods 2 or 3, shall be divided into a number of equal parts in conformity with the following table :

Length	Number of parts
50 feet = 15.24 metres, or less	2
Above 50 feet = 15.24 metres, but not more than 225 feet = 68.58 metres	4
Above 225 feet = 68.58 metres	6

If length 1, or the whole length, has been divided into two equal parts only, the heights shall be measured also at the extreme points of these lengths.[1]

3. The length of other superstructures (*e.g.*, forecastle, bridge, etc.) shall also be divided into a number of equal parts in conformity with the above table. The length of a forecastle is to be measured from the same point at the stem as indicated in Article 48, Method 1, for the measurement of 'tween-deck spaces.

The breadths shall be measured at each point of division and at the extreme points of the length in conformity with the relevant provisions of Article 48 and of paragraph 1 of the present article.[2]

If the length has been divided into two equal parts only, the heights shall be measured also at the extreme points of the length, and, for the remainder, the relevant provisions of Article 48 and of paragraph 1 of the present article shall apply.

4. In the case of a superstructure not extending from side to side (*e.g.*, deck-houses, etc.), the bulkheads of which form exactly or approximately a rectangle, it will be sufficient to measure one breadth at the middle of the length.

In such a case the way in which the height shall be measured will depend upon the situation of the superstructure and on the difference in round of beam of the decks overhead and underneath (see Figure 70).

5. If a superstructure is irregular in shape, it shall be measured in parts.

Cubic Capacity of a Superstructure.

ARTICLE 54

The cubic capacity of a superstructure is to be determined as follows :

[1] See footnote to Article 48, Method 1 (*c*).

[2] In the case of a superstructure having the same breadth at all points of its length, it is sufficient to measure only one breadth.

1. The breadths having been numbered from fore to aft, the provisions of Article 49 relating to the determination of the cubic capacity of 'tween-deck spaces shall apply for the purpose of ascertaining the cubic capacity of a superstructure. Should the length, however, have only been divided into two equal parts, the sum of the two end breadths, plus four times the middle breadth, shall be multiplied by one-third of the common interval between the breadths. The area so obtained is multiplied by the mean height and this last product gives the cubic capacity of the superstructure in cubic feet or in cubic metres.

2. In the case of the superstructures referred to in footnote 2 to paragraph 3 of Article 53 and in paragraph 4 of the said Article, the length is multiplied by the breadth, and the area thus obtained is multiplied by the mean height. This last product gives the cubic capacity of the superstructure in cubic feet or in cubic metres.

Hatchways.

ARTICLE 55

The cubic capacity of a hatchway is obtained by multiplying the inside length by the mean inside breadth, and the product by the mean height (*i.e.*, the arithmetic mean of the heights measured from the under side of the deck to the under side of the hatch covers).

If the aggregate tonnage of the hatchways exceeds ½ % of the portion of the gross tonnage consisting of the under-deck tonnage, the 'tween-deck spaces, the non-exempted superstructures and such light and air spaces for the machinery space as may be included, the excess shall be incorporated in the gross tonnage.

ARTICLE 56

The aggregate tonnage of the hatchways shall consist of the sum of the cubic capacity of all hatchways leading to spaces which are included in the gross tonnage. Therefore a hatchway leading to an exempted space, as defined in Articles 57 and 58, shall not be included in this aggregate. The cubic capacity of a hatchway, however, situated within an open space but leading to a space included in the gross tonnage, shall form part of the said aggregate tonnage.

Hatchways leading to spaces which are not included in the gross tonnage shall nevertheless be measured, and their dimensions be stated on the formulæ of measurement.

The portion of a closed-in trunk (*e.g.*, coal-shoot) situated within the boundaries of a superstructure shall be treated as a closed superstructure and therefore included in the gross tonnage (see Figure 71), except where the said trunk leads to an exempted space (see Figure 72).

Closed Spaces not included in Gross Tonnage.

ARTICLE 57

The following spaces situated on or above the upper deck shall not be included in the gross tonnage, provided that they are solely appropriated to, adapted and used entirely for the purposes mentioned :

1. Spaces which may be regarded as forming part of the propelling-machinery space, or as serving for the admission of light and air thereto. The provisions of Article 77 shall apply with regard to the treatment of such spaces.

2. Spaces fitted with any sort of machinery, not forming part of the propelling machinery. Within the meaning of the present Article, the following shall be regarded as machinery : anchor gear, chain locker, capstan, steering gear, pumps, refrigerating apparatus and distilling plant, lifts, laundry machinery, boilers and machinery for the preparation of whale oil, fish oil or guano, dynamos, storage batteries, fire-extinguishing apparatus, etc. The same provision shall apply with regard to donkey-boilers which, in accordance with Articles 78 and 79, are not to be regarded as forming part of the propelling machinery.

3. The space for sheltering the man or men at the wheel (wheel-house). If a space is used partly as a wheel-house and partly as a chart-room, the portion of it that is used as a wheel-house shall be exempted from inclusion in gross tonnage.

4. Spaces serving as galleys or bakeries fitted with ranges or ovens, without regard to the category of persons which these spaces serve.

5. Spaces such as skylights, domes and trunks, affording ventilation or light to spaces thereunder. None of the space below the roof or covering of a superstructure shall, however, be exempted from inclusion in the gross tonnage, except when there is an opening left in the floor of the superstructure under the skylight, dome or trunk to give ventilation or light to spaces below such floor (see Figures 73 and 74).

6. Spaces such as companions and booby-hatches serving as a protection for companion-ways, stairways or ladderways leading to spaces below. Should a companion-way not bulk-headed off be situated within a space used for other purposes, such as a smoking-room, only the portion of the space directly above the companion-way shall be exempted. Companion-ways (stairways or ladderways) directly situated below companions or booby-hatches shall also be exempted from inclusion in gross tonnage (see Figures 75, 76, 77, 78 and 79).

7. Spaces occupied by water-closets, privies and urinals for officers, crew and passengers. No exemption shall, however, be granted for such spaces for the use of which a special charge is levied from passengers, nor shall such spaces be exempted from

inclusion in gross tonnage when they form part of passengers' suites.

In cases where water-closets and urinals are combined with a lavatory in the same place, the space occupied by the lavatory shall not be exempted, unless its size is small as compared with the space occupied by the water-closets and urinals (see Figure 80).

8. Water-ballast spaces complying with the conditions laid down in Article 71.

The exemption of the spaces referred to in items 2 to 6 shall depend on the condition that such spaces are no larger than required for their purpose.

All the spaces enumerated in the present Article shall be measured and entered on the formulæ of measurement under a separate heading. The measurements of the spaces referred to in paragraphs 2 to 8 shall be taken externally, except where such space has part of the shell or of a bulkhead in common with a superstructure of which it forms part, in which event the length and breadth should be measured to the same surface, as in the case of the superstructure (see Figures 81 and 82). For the rest, the relevant provisions of Articles 53 and 54 shall apply as regards the measurements and the calculation of the cubic capacity.

If such spaces are situated within a superstructure, it will in general be more convenient to measure first the whole superstructure and then separately the said spaces which are not to be included in the gross tonnage (see Figure 77). The cubic capacity of the said spaces shall be subtracted from the cubic capacity of the whole superstructure, and the remainder shall be included in the gross tonnage.

In cases in which, in conformity with the provisions of the present Article, it has been found necessary to reduce the space to be exempted, on account of such space being unreasonably large or available for other purposes than those mentioned under 2 to 6, the exemption will be limited to the space strictly necessary for the purpose — for instance, in the case of machinery, it will be limited to the space strictly occupied by such machinery and necessary for its working. As a general rule, however, the full height of the space should be applied. Should the exemption have been limited, the limited measurements, as well as the measurements of the whole space, shall be stated on the formulæ of measurement.

Open Spaces not included in Gross Tonnage.

ARTICLE 58

As an exception to the general rule laid down in Article 50, but subject to the conditions of Article 51, the space situated between the upper deck and the shelter-deck — commonly called

" shelter-deck space " — and other superstructures shall be exempted from inclusion in gross tonnage when they are deemed to be open spaces, in conformity with the following provisions :

I. A space shall be considered to be open for the purpose of tonnage measurement if a bulkhead or covering consists solely of expanded metal or similar grating or of planks with intervals from each other of more than 0.25 foot, or 0.076 metre, in the case of a bulkhead, or more than 0.08 foot, or 0.024 metre, in the case of a covering.[1]

II. (a) *Openings in Decks or Coverings.* — 1. A space shall be considered to be open for the purpose of tonnage measurement when there is an opening in the centre of the deck or covering above such space. The length of this opening shall not be less than 4 feet, or 1.219 metre, and the breadth shall be at least equal to that of the nearest cargo hatch on the same deck or covering.

2. If exemption from inclusion in gross tonnage is claimed for a shelter-deck space or part of it, the distance between the aft side (after coaming) of the deck opening and the aft side of the stern post shall not be less than one-twentieth of the identification length of the ship when the opening is situated aft ; or the distance between the fore side (fore coaming) of the deck opening and the fore side of the stem shall not be less than one-fifth of this length if the opening is situated forward.

3. If coamings are fitted, their mean height above the deck or covering shall not exceed 1 foot, or 0.305 metre. Guard-rails, stanchions or sockets around the opening shall be fitted in such a way as to prevent any battening down of the opening. Only portable wooden covers are allowed, and it is permissible to hold such covers in place by lashings beneath of cordage (not steel wires) of hemp or similar material (see Figure 83).

4. Tonnage openings in the deck shall not be fitted under a deck, permanent platform or any other similar structure (see Figure 84).

(b) *Openings in the Sides of the Ship or in the Side Bulkheads of a Superstructure.* — 1. A space shall be considered to be open for the purpose of tonnage measurement when there are one or more openings on both sides in the shell or in the side bulkheads of a superstructure. When there is only one opening in each side, the length shall not be less than 18 feet, or 5.486 metres, and the height shall not be less than 2.5 feet, or 0.762 metre. When there is more than one opening in each side, the height of such openings shall not be less than 2.5 feet, or 0.762 metre, and their total area on each side not less than

[1] If such a space is used as a storeroom, workshop, etc., it shall be included in the gross tonnage.

60 square feet, or 5.574 square metres. No opening shall have an area of less than 25 square feet, or 2.323 square metres (see Figures 85 and 86).

2. Should there be a well between thwartship bulkheads, the openings in the shell or in the side bulkheads shall have a length of 18 feet, or 5.486 metres, if possible, or not less than three-fourths of the length between the thwartship bulkheads. The height shall not be less than 2.5 feet, or 0.762 metre. The area of the opening on each side should be at least 45 square feet, or 4.181 square metres.

3. All side openings shall be in corresponding positions on both sides of the ship or of the superstructure ; they shall not be fitted with any permanent means of closing. The only means allowed for closing side openings are shifting boards, fitted in channel-bars riveted or welded to the shell or to the side bulkheads. Neither the shell or bulkheads at the openings, nor the channel-bars, nor the frames crossing the openings are to be provided with holes, hinges, eye-bolts, cleats or any other means which may serve in permanently closing or battening down the openings.

4. Side openings shall not be enclosed by bulkheads or otherwise.

(c) *Openings in Thwartship Bulkheads.* — 1. A space shall be considered to be open, for the purpose of tonnage measurement :

(*i*) When there are, in one of the end bulkheads, two tonnage openings, one on each side of the middle plane. If coamings are fitted, their height shall not exceed 2 feet, or 0.610 metre. The height of opening shall in no case be less than 4 feet, or 1.219 metre, and the breadth shall be at least 3 feet, or 0.914 metre ;

(*ii*) When there is, on one of the end bulkheads, one single tonnage opening of at least 5 feet, or 1.524 metre, in height and 4 feet, or 1.219 metre, in breadth, provided that the opening is situated as near as is practicable to the middle plane of the space concerned or of the ship if the space extends from side to side (see Figures 87, 88 and 89). If a coaming is fitted, its height shall not exceed 2 feet, or 0.610 metre.

2. The openings may only be closed either by shifting-boards[1] fitted in channel-bars, the latter being riveted or welded to the bulkheads, or by loose plates[2] held in place by hook bolts not less than 1 foot or 0.305 metre apart centre to centre or by bolts on loose strongbacks, the bolts not passing through the

[1] Instead of shifting-boards, sections of channel-bars or similar appliances may be used.

[2] The plates may be insulated.

bulkhead. The bulkheads or the channel-bars at the openings must not be provided with holes, hinges, eye-bolts, cleats or any other means which may serve in permanently closing or battening down the openings.

3. If the space is subdivided by bulkheads, such bulkheads shall have openings of the same dimensions and means of closing as indicated hereabove.

4. Where exemption of any superstructure depends on the existence of a tonnage opening or openings in the boundary bulkhead, there shall not exist in this bulkhead any other means of access to the exempted space (see Figure 90).

5. Spaces which are entirely open from deck to deck with no means of closing shall be exempted, provided the breadth of such spaces is at least 3 feet, or 0.914 metre (see Figure 91).

(d) *General Provisions.* — 1. All tonnage openings on account of which exemption from inclusion in gross tonnage is claimed shall be so situated as to be open to weather and sea.

2. The dimensions of tonnage openings indicated above serve to determine the clear minimum area of an opening; therefore, the minimum length shall exist over the total minimum breadth (see Figure 92) or the minimum height over the total minimum length (see Figures 85 and 86).

3. In ascertaining the dimensions of tonnage openings, the projection or bars, stanchions, sockets or similar fittings shall be taken into account as reducing the clear area of such openings. In the case of side openings, however, shell flanges of frame angles may encroach on the free surface of the openings (see Figures 85 and 86).

Article 59

Open superstructures and open shelter-deck spaces, as defined in Article 58, shall always be measured and entered on the formulæ of measurement. An exact description indicating the dimensions of the openings shall be provided. The measurement shall be carried out in accordance with the provisions of Article 48[1] or 53, as the case may be.

The calculation will be carried out as indicated in Articles 49 and 54.

Should there be superstructures within an open space (see Figure 83) liable to inclusion in gross tonnage, or hatchways, or spaces as referred to in Article 57, or spaces that may be regarded as forming part of the propelling-machinery space (casings, etc.), all such spaces shall be measured separately and entered on the formulæ of measurement. Each of these spaces shall be treated,

[1] In general, a shelter-deck space will not be open from stem to stern. In most cases, there will be a closed bulkhead forward and a closed bulkhead aft (see Figure 83); therefore, the provisions of Article 48 will only be applicable in very rare cases.

with regard to its inclusion or non-inclusion in gross tonnage, as indicated in the relevant articles.

The dimensions and the cubic capacity of each open space, as defined in Article 58, shall be stated on the tonnage certificate under a special heading. From this cubic capacity shall be subtracted the cubic capacity of such spaces situated within the open space as are indicated in the preceding paragraph, and the difference constitutes the net cubic capacity of the open spaces concerned. In cases where there is an important difference between the internal and external dimensions of a closed space situated within an open space (*e.g.*, an insulated provision room), the external dimensions shall be used in applying the above rule.

The following example, which refers to Figure 93, indicates in what manner the cubic capacity of the open part of a shelter-deck space is to be entered on the tonnage certificate :

Open Part of a Shelter-deck Space.[1]

Total cubic capacity :

H = 8 ft. (2.44 m.) ; L = 360 ft. (109.73m.) ;

B = { 34 ft. (10.36 m.), 48 ft. (14.63 m.), 56 ft. (17.07 m.), 56 ft. (17.07 m.), 56 ft. (17.07 m.), 53 ft. (16.15 m.), 50 ft. (15.24 m.) } = 1,497.60 tons (4,242.49 m³)

Less closed portion (n), hatchways (o) and engine casing	150 tons	(424.93 m³).
Net cubic capacity	1,347.60 tons	(3,817.56 m³).

Open Well.

H = 8 ft. (2.44 m.) ; L = 8 ft. (2.44 m.) ;

B = { 50 ft. (15.24 m.), 49.5 ft. (15.09 m.), 49 ft. (14.93 m.) } = 31.68 tons (89.74 m³).

Sheller for Deck Passengers.

ARTICLE 60

Notwithstanding the provisions of the first paragraph of Article 51, closed superstructures exclusively used for the shelter, without extra charge, of deck passengers in ships employed on short voyages may be exempted from inclusion in the gross tonnage, on decision of the national central tonnage measurement authority concerned.

[1] If desired, this space may be measured in parts between intermediate steel thwartship bulkheads.

The measurement and calculation shall be carried out as indicated in Articles 53 and 54, and the cubic capacity (excluding water-closets, which have already been exempted in accordance with Article 57) shall be stated under a special heading in the tonnage certificate.

PART IV

MEASUREMENT AND CALCULATION OF DEDUCTIONS UNDER RULE I

Master's Spaces.

ARTICLE 61

Any space appropriated to and used exclusively for the accommodation of the master, and certified as such, shall be deducted from the gross tonnage.

The deductible master's spaces may include a sleeping-room, with a day-room adjacent[1] thereto, a bathroom, an office and wardrobes. In case the master's quarters are not adjacent to the wheel-house or chartroom, a master's watchroom, if existing adjacent to the wheelhouse or chartroom, may also be included in the deductible spaces.

Crew Spaces.

ARTICLE 62

Any space occupied by the crew, appropriated exclusively to their use, and certified as such, shall be deducted from the gross tonnage.

The expression " crew " shall include every person (except master and pilots) employed or engaged in any capacity on board the ship during her voyage. In a pilot-ship, only the pilots required for the ordinary navigation of the pilot-ship may be regarded as members of the crew.

The deductible crew spaces may consist of sleeping-rooms, mess-rooms, bathrooms, washing-places, wardrobes, drying-rooms, smoke-rooms, recreation-rooms, libraries, hospitals, etc.

The chief engineer's and chief officer's office and/or day room adjacent[1] to their sleeping-room may be deducted, provided no berth is fitted therein. Offices for other officers, pursers[2] and stewards shall not be deducted, nor the doctor's consulting-room on a passenger-ship.

Passage-ways and Other Spaces used by Master and Crew.

ARTICLE 63

Pantries, galleys, bakeries, spaces occupied by drinking-water filtration or distilling plant, water-closets, privies, urinals, etc., for the exclusive use of the master and crew shall

[1] The expression " adjacent " is meant to apply also to rooms separated by a passage-way.

[2] Or officers acting as such.

be deducted, if such spaces have not been exempted from the gross tonnage, in accordance with the provisions of Article 57. Hospitals, dispensary-rooms and medicine lockers, used exclusively for the master and the crew, may also be deducted.

Passage-ways and stairways exclusively serving as access to master's and crew spaces, whether such spaces are deducted or exempted, shall be deducted.

Such passage-ways and stairways shall also be deducted when they serve at the same time as access to :

(*a*) Other deducted or exempted spaces (including propelling machinery spaces) (see Figure 94) ;

(*b*) Non-deductible spaces where the access to these spaces only consists of ordinary manholes (see Figure 95) ;

(*c*) Non-deductible spaces exclusively appropriated for the use of the master and crew (*e.g.*, linen lockers) ;

(*d*) Non-deductible passage-ways and stairways provided these are separately closed (see Figure 95).

A portion of a passage-way not bulkheaded off shall not be deducted.

Spaces properly constructed, strictly necessary and used for the storage of liquid and solid provisions exclusively for the master and crew, shall also be deducted. The deduction thus allowed shall, however, not exceed 15 per cent of the other deducted master's and crew spaces.

Food-lockers may be deducted without any restriction in ships where the master and crew provide their own food, but no deduction for a provision-room shall be made in such cases.

ARTICLE 64

Spare rooms shall not be deducted. The existence, however, of two spare rooms for the use, *e.g.*, of pilots or supernumerary officers will not be considered as rendering the ship a passenger-ship, on condition that the said spare rooms are fitted with not more than four berths in all, including sofa-berths.

In passenger-ships having no dining-saloon, smoke-room, pantry, galley, bakery, provision-room, drinking-water filtration or distilling plant, bathroom, washing-place, water-closet, privy or urinal intended for the exclusive use of passengers, the deduction for the corresponding master's or crew spaces shall be cancelled. In the case, however, of ships carrying unberthed passengers, such as pilgrims, and not having any accommodation for berthing passengers, this rule shall not apply, except in respect of water-closets, privies or urinals.

Within the meaning of the present article, the expression " passenger-ship " shall include any ship carrying paying passengers, or any ship (even if not carrying passengers) having more than two spare rooms, fitted as described above.

ARTICLE 65

The spaces referred to in Articles 66 to 71 shall, within the meaning of the present Regulations, be deemed " spaces, for navigation and working of the ship ", indicated in Article 7 under No. 2, and shall be deducted from the gross tonnage subject to the conditions laid down in those articles, and provided that they have not been exempted according to the provisions of Article 57.

The spaces for navigation and working of the ship consist of :

(*a*) Navigation spaces (except donkey-boilers and main pumps) (Article 66).

(*b*) Spaces for donkey-boilers and for main pumps (Article 67).

(*c*) Spaces for pumping installations in ships carrying liquid cargo in bulk (Article 68).

(*d*) Spaces for boatswain's stores (Article 69).

(*e*) Sail-room spaces (Article 70).

(*f*) Water-ballast spaces (Article 71).

Spaces for Navigation
(except Donkey-Boilers and Main Pumps).

ARTICLE 66

Spaces used exclusively for the navigation of the ship, which have not been exempted under Article 57, shall be deducted from the gross tonnage to the extent of what is considered reasonable.

The deductible navigation spaces will generally include rooms for keeping and using charts and instruments of navigation, wireless telegraphy and telephony spaces,[1] rooms for keeping navigation lamps, flags, rockets, etc., spaces for submarine signalling and sounding apparatus, rooms for automatic-steering compasses, gyro-stabilisers or similar apparatus and spaces for the helm, steering-gear, capstan and anchor-gear with chain lockers.

In ships where part of the wheel-house is used as a chart-room, such part shall be deducted.

In cases where the helm, steering-gear, capstan, anchor-gear or similar appliances are situated in rooms larger than is necessary for the purpose, the actual space occupied by each of these appliances shall be deducted ; and, in addition, an allowance will be made on every side of the apparatus for the space necessary for its working (in general, not more than 2 feet or 0.610 metre on all sides). The total height to be allowed should, as a rule, not exceed that of an ordinary 'tween-deck space.

[1] But not the waiting-room for passengers.

Donkey-Boilers and Main Pumps.

ARTICLE 67

Subject to the provisions of Article 79 relating to the treatment of donkey-boiler spaces which may be regarded as part of the propelling-machinery space, the space actually occupied by donkey-boilers, if connected with the main pumps of the ship, shall be deducted, even if the donkey-boilers may be used at the same time for working the cargo winches or for similar purposes.

If the donkey-boilers are not connected with the main pumps, but serve exclusively for the working of the capstan, anchor-gear, steering-gear or similar appliances for navigation purposes, the space occupied may be regarded as navigation space, and therefore shall be deducted as such.

Spaces occupied by and necessary for the working of bilge pumps and for exclusive access to same shall be deducted. The same provision shall apply to pumps for water ballast, if available for pumping out the ship.

If a donkey-boiler, a bilge pump or a water-ballast pump, fulfilling the above conditions, is situated within the boundaries of the propelling-machinery space and is not to be regarded as part of the propelling machinery, only the spaces strictly occupied by the said appliances shall be deducted and stated on the formulæ of measurement under Spaces for Navigation and Working of the Ship.

Pumping Installations in Ships carrying Liquid Cargo in Bulk.

ARTICLE 68

In ships carrying liquid cargo in bulk, deduction shall be made for spaces occupied by and strictly necessary for access to and for working pumps serving as cargo pumps, or, subject to the provisions of Article 78 under A (6) (*n*), transfer pumps for liquid fuel situated outside the boundaries of the propelling-machinery space, provided all such pumps are at the same time available for pumping out the ship.

The deductible pump-room space shall be determined as follows :

The space occupied by and necessary for working of a pump shall have a height equal to that of the pump, or of 7 feet, or 2.134 metres, whichever is the larger, and a horizontal area conssiting of the floor space occupied, with sufficient space around for efficient working.

The space necessary for access shall have a height extending from the top of the space hereabove-mentioned to the upper deck and a horizontal area having one dimension equal to the

breadth of the ladder and the other of 3 feet, or 0.914 metre, but not exceeding 6 square feet, or 0.557 square metre.

The total deduction allowed for pump-rooms shall not exceed the figures indicated in the table hereafter :

Gross tonnage	Percentage of gross tonnage	Tons or cubic metres, total
Over 3,000 T. (8,498.58 m³)	0.9	
Over 1,500 T. (4,249.29 m³) up to and including 3,000 T. (8.498.58 m³). .	1.2	27 T. (76.49 m³)
Over 500 T. (1,416.43 m³) up to and including 1,500 T. (4,249.29 m³). .	2	18 T. (50.99 m³)
500 T. (1,416.43 m³) or less.	4	10 T. (28.33 m³)

Boatswain's Stores.

ARTICLE 69

Subject to the restrictions stated below, any space exclusively appropriated to and used for the keeping of boatswain's stores shall be deducted from the gross tonnage.

The expression " boatswain's stores " shall include all stores necessary for working and upkeep of the ship and which are in charge of the boatswain. In general, the boatswain's stores will contain wires, hawsers, cordage, tar, paint, blocks, shackles, awnings, tarpaulins, tackles, brooms, swabs, buckets, etc.

The deduction allowed for boatswain's stores shall be limited according to the following scale :

Gross tonnage	Percentage of gross tonnage	Tons or cubic metres, total
Over 20,000 T. (56,657.22 m³) . .	1/2	125 T. (354.11 m³)
Over 10,000 T. (28,328.61 m³) up to and including 20,000 T. (56,657.22 m³).	3/4	100 T. (283.29 m³)
Over 2,000 T. (5,665.72 m³) up to and including 10,000 T. (28,328.61 m³).	1	75 T. (212.46 m³)
Over 1,000 T. (2,832.86 m³) up to and including 2,000 T. (5,665.72 m³)	1 1/2	20 T. (56.66 m³)
Over 500 T. (1,416.43 m³) up to and including 1,000 T. (2,832.86 m³)	2	15 T. (42.49 m³)
Over 150 T. (424.93 m³) up to and including 500 T. (1,416.43 m³)	2 1/2	10 T. (28.33 m³)
150 T. (424.93 m³) or less. . . .	—	3 T. (8.50 m³)

If in ships having a gross tonnage not exceeding 150 register tons, or 424.93 cubic metres, boatswain's stores are kept in a space not solely appropriated for such purpose, the deduction for boatswain's stores according to the above scale shall still be granted.

In fishing and hunting ships (*e.g.*, whalers and sealers) having a gross tonnage exceeding 150 register tons, or 424.93 cubic metres, where there is no separate boatswain's store-room, a suitable deduction not exceeding 3 tons, or 8.50 cubic metres, shall be made for the boatswain's stores carried in the room for fishing and catching gear.

Sail-rooms.

ARTICLE 70

In ships propelled by sails, the space exclusively appropriated to and used for the storage of sails shall be deducted from the gross tonnage in accordance with the following provisions :

1. In the case of ships wholly propelled by sails, this deduction shall not exceed 4 % of the gross tonnage.

2. If the sail-room and boatswain's store are combined, the sail-room space shall first be deducted up to the limit indicated in the preceding paragraph, and a deduction for boatswain's store shall then be made in respect of the remaining space in accordance with the scale given in Article 69.

Water-ballast Spaces.

ARTICLE 71

Water-ballast spaces include water-ballast tanks in the double bottom and all water-ballast spaces outside the double bottom, below the upper deck (*e.g.*, forward and after peak-tanks, deep-tanks and coffer-dams), when the said spaces comply with the regulations indicated below.

On an application in writing from the owner, and subject to the limitations indicated hereafter, spaces not exempted which are appropriated to and exclusively used for water ballast shall be deducted from the gross tonnage, provided that they fulfil the following conditions :

(*a*) That they are certified as properly constructed and tested ballast tanks ;

(*b*) That they are solely adapted for water ballast ;

(*c*) That their only means of entrance shall be ordinary-size manholes.

Ad (*a*). — The expression " properly constructed and tested ballast tanks " indicates that the tanks are able to stand

pressure under a head of water. The filling of the openings in the tank-top around the frames at the sides with cement is not permissible.

Ad (*b*). — The means for filling and emptying water-ballast tanks (*e.g.*, pumps, pipes, etc.) must be of a permanent and satisfactory character and independent of the installations for water or oil for motor cooling, water for feed or domestic purposes, fuel oil or cargo. Pumping installations must be of a suitable type and dimensions for dealing efficiently with the water ballast. The suction and delivery pipes shall, in general, not be less than 2½ inches, or 64 mm., inside diameter. Hand pumps, portable pumps, or hose connections are not to be regarded as permanent and satisfactory means for filling and emptying. In all ships not exceeding 200 tons, or 566.57 cubic metres gross, and in ships over 200 tons, or 566.57 cubic metres, having sails as principal means of propulsion, hand pumps, constituting the only means for filling or emptying water-ballast spaces, will not be objected to, provided that the installation is of a permanent character.

Ad (*c*). — The manholes shall have an area not exceeding 2.5 square feet, or 0.233 square metre.

Coffer-dams shall be considered as water-ballast spaces, provided that they fulfil the foregoing conditions.

Double bottom tanks connected with the ballast-pumping system, or available for water or oil for motor cooling, water for boiler feeding, or domestic purposes or for carrying fuel oil or cargo, shall be considered as water-ballast spaces when determining the allowance for same.

For the purpose of calculating the cubic capacity of the deductible water-ballast spaces, it should be noted that the total cubic capacity of water-ballast spaces which are exempted or deducted (including whole or partial double bottom, peak-tanks, deep-tanks, coffer-dams and all other types of *bona fide* water-ballast tanks below the upper deck) shall not exceed the percentages of gross tonnage indicated in the table on page 48. In case the cubic capacity of exempted water-ballast spaces in the double bottom equals or exceeds the allowance provided for in the said table, no deduction for water-ballast spaces may be granted. A part of a tank may be allowed as a deduction, provided that the whole tank is fitted, constructed and tested for carrying water ballast.

Article 72

No deduction shall be allowed in respect of any of the spaces dealt with in Articles 61 to 71 which have not first been included in the gross tonnage (see Figures 96 and 97 indicating the method of measurement of the breadth and depth of a fore peak-tank).

Table indicating the Maximum Allowance for Water Ballast as Percentage of Gross Tonnage.[1]

Gross tonnage	Per-centage	Gross tonnage	Per-centage	Gross tonnage	Per-centage	Gross tonnage	Per-centage
1,000[2]	19.00	3,300	15.85	6,200	12.59	10,800	9.03
1,100	18.85	3,400	15.73	6,400	12.39	11,000	8.92
1,200	18.71	3,500	15.60	6,600	12.20	11,200	8.82
1,300	18.56	3,600	15.48	6,800	12.01	11,400	8.71
1,400	18.42	3,700	15.35	7,000	11.83	11,600	8.61
1,500	18.27	3,800	15.23	7,200	11.65	11,800	8.52
1,600	18.12	3,900	15.11	7,400	11.47	12,000	8.43
1,700	17.99	4,000	14.99	7,600	11.30	12,200	8.34
1,800	17.85	4,100	14.87	7,800	11.13	12,400	8.26
1,900	17.71	4,200	14.75	8,000	10.96	12,600	8.18
2,000	17.57	4,300	14.64	8,200	10.80	12,800	8.10
2,100	17.43	4,400	14.52	8,400	10.64	13,000	8.03
2,200	17.29	4,500	14.41	8,600	10.48	13,200	7.96
2,300	17.16	4,600	14.29	8,800	10.33	13,400	7.90
2,400	17.02	4,700	14.18	9,000	10.19	13,600	7.84
2,500	16.89	4,800	14.06	9,200	10.04	13,800	7.78
2,600	16.76	4,900	13.95	9,400	9.91	14,000	7.73
2,700	16.62	5,000	13.84	9,600	9.77	14,200	7.68
2,800	16.49	5,200	13.62	9,800	9.64	14,400	7.64
2,900	16.36	5,400	13.41	10,000	9.51	14,600	7.59
3,000	16.23	5,600	13.20	10,200	9.38	14,800	7.55
3,100	16.11	5,800	12.99	10,400	9.26	15,000[3]	7.50
3,200	15.98	6,000	12.79	10,600	9.14	—	—

Article 73

The measurement and the calculation of the cubic capacity of the spaces dealt with in Articles 61 to 63 and 66 to 70 shall be carried out as indicated in Articles 53 and 54. Consequently, the heights are to be measured to the under side of the deck overhead through panelling, if any. The horizontal measurements of these spaces are to be taken between the partitions and linings, if any, or to the inner edge of frames, or to the inner edge of the normally spaced bulkhead stiffeners to which the measurements have been taken when ascertaining the gross tonnage. Each space is to be measured separately, and the formulæ of measurement should indicate the purpose for which the space is intended. If only parts of a space have been deducted, the dimensions of the whole space, along with those of the space deducted, shall be shown in the formulæ of measurement (see Figure 98).

The measurement of peak-tanks and other water-ballast spaces extending from side to side of the ship, and situated outside the double bottom and below the tonnage deck or its line

[1] For intermediate values of the gross tonnage, the percentages should be obtained by interpolation.

[2] And under.

[3] And over.

of continuation, shall be carried out in conformity with the rules for the measurement of the space below the tonnage deck. The length shall be measured at the top of the tank (see Figures 96 and 97). Transverse sections shall be measured in the usual way at the middle of the length and at its extreme points, but only five breadths are to be taken in each section. If a water-ballast space is situated partly below and partly above the tonnage deck or its line of continuation (*e.g.*, a peak-tank aft extending to the under side of a raised quarter-deck), the part situated below the tonnage deck or its line of continuation shall be measured as indicated above and the remaining part shall be measured as a superstructure.

For all tanks extending from side to side of the ship, the distance from the end bulkhead or bulkheads to the correct position of the nearest transverse section of the space below the tonnage deck is to be ascertained and stated in the formulæ of measurement.

The measurement of water-ballast spaces not extending from side to side of the ship and situated below the tonnage deck and outside the double bottom shall be carried out as follows. First measure the length of the tank ; this length shall be divided as indicated in Article 21, but, in case this length does not exceed 30 feet, or 9.14 metres, it shall only be divided into two equal parts. Transverse sections are then measured at the extreme points of the length and at its points of division. When the spaces referred to in the present paragraph are of relatively small height, they may also be measured as provided in Article 53, if they are bounded by approximately straight planes. If a tank is irregular in shape, it shall be measured in parts.

Water-ballast spaces situated above the tonnage deck or its line of continuation shall be measured as indicated in Article 53.

The cubic capacity of each water-ballast space shall be ascertained by applying the relevant provisions given in the present regulations for the determination of the cubic capacity of the space below the tonnage deck and of superstructures.

Deduction for Propelling-machinery Space.

ARTICLE 74

In the case of any ship propelled by machinery for which space is required, an allowance shall be made for propelling-power in accordance with the provisions of Article 75, and the amount so allowed shall be deducted from the ship's gross tonnage.

The space occupied by and necessary for the proper working of the main propelling-machinery and the auxiliary machinery necessary for the proper working of the main machinery, as specified in Articles 78 and 79, with or without, as the case may

be, light and air spaces referred to in Article 77, shall, within the meaning of the present Regulations, be regarded as propelling-machinery space.

Apart from the differences in method for obtaining the cubic capacity of the space below the tonnage deck and that of the propelling-machinery spaces, as provided for in Articles 41, 80 (1) and 82, no space shall be included in the cubic capacity of the propelling-machinery space when determining the propelling-power allowance, unless it has first been included in the ship's gross tonnage[1].

All propelling-machinery spaces shall be measured and their cubic capacity be ascertained in accordance with the provisions of Articles 80, 81 and 82.

Determination of Propelling-power Allowance.

ARTICLE 75

The allowance for propelling-power shall be determined as follows:

1. *Screw Ships.* — If the cubic capacity of the propelling-machinery space, ascertained in accordance with the provisions of Articles 77 to 82, is above 13 per cent and under 20 per cent of the gross tonnage, the deduction shall be 32 per cent of the gross tonnage.

If the cubic capacity of the propelling-machinery space is 13 per cent or less, or 20 per cent or more of the gross tonnage, the deduction shall be the cubic capacity of the space increased by 75 per cent.

2. *Paddle Ships.* — If the cubic capacity of the propelling-machinery space, ascertained in accordance with the provisions of Articles 77 to 82, is above 20 per cent and under 30 per cent of the gross tonnage, the deduction shall be 37 per cent of the gross tonnage.

If the cubic capacity of the propelling-machinery space is 20 per cent or less, or 30 per cent or more of the gross tonnage, the deduction shall be the cubic capacity of the space increased by 50 per cent.

3. Except for ships exclusively employed as tugs[2] and ships constructed and intended exclusively for icebreaking, the propelling-power allowance shall in no case exceed 55 per cent of that portion of the ship's tonnage which remains after subtracting from the gross tonnage all deductions other than that for propelling-machinery.

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[1] See Figure 99, indicating the method of measurement of the height of a shaft-tunnel when the tonnage depths in way of same are measured to the top of the ceiling supposed to be situated directly on the top of the double bottom.

[2] Salvage tugs and fire-floats shall not be considered as tugs.

Items of Propelling-machinery Space.

ARTICLE 76

The propelling-machinery space includes the following items :

(*a*) Spaces below the top of the main space ;
(*b*) Shaft-tunnels or trunks in screw ships, and escape trunks ;
(*c*) Spaces between the top of the main space and the upper deck ;

and may include :

(*d*) Spaces on or above the upper deck designated as light and air spaces.

Ad (*a*), (*b*) *and* (*c*). — These items include all spaces situated below the upper deck, which may be regarded as propelling-machinery spaces in accordance with the provisions of Articles 78 and 79.

The " main space " is the space containing the principal appliances for propelling the ship other than those indicated under (*b*). Its " top " is the under side of the deck overhead. If, however, the space thus defined extends vertically to the under side of a break or a raised quarter-deck, the portion of the space situated within the superstructure shall be dealt with under item (*d*) (see Figures 100 and 101).

Ad (*d*). — This item includes light and air casings framed in for the admission of light and air to the boiler- and engine-room. It also includes all other spaces framed in for machinery which, in accordance with the provisions of Articles 78 and 79, may be regarded as propelling-machinery.[1]

The inclusion in the propelling-machinery space of spaces under item (*d*) shall be subject to the conditions laid down in Article 77.

Light and Air Spaces.

ARTICLE 77

Spaces or parts of spaces referred to under item (*d*) of Article 76, designated as light and air spaces, shall, on an application by the owner, be added to the ship's gross tonnage and to the propelling-machinery space on which the allowance for propelling-power is to be based, provided that they are :

(*a*) reasonable in extent ;
(*b*) certified as safe and seaworthy ;
(*c*) so constructed, that they cannot be used for any purpose other than the admission of light and air to the machinery space or for such machinery, appliances or apparatus as may be regarded as

[1] For example, a portion of an escape trunk, situated on or above the upper deck, shall be dealt with under this item (see Figure 102).

forming part of the propelling-machinery, in conformity with the provisions of Articles 78 and 79.

The formulæ of measurement should indicate whether the spaces in question fulfil the conditions mentioned above.

Particulars as to the Spaces which may be regarded as Propelling-machinery Spaces.

ARTICLE 78

A. The following spaces shall be regarded as propelling-machinery spaces :

(1) Spaces for the *main boilers* ;

(2) Spaces for the *main machinery* ;

(3) Spaces for *auxiliary machinery* necessary for the working of main boilers or main machinery ;

(4) *Shaft-tunnels* or *trunks* and *escape trunks* ;

(5) *Engineers' store-rooms and workshops* up to a maximum of three-quarters of one % of gross tonnage, if situated within the boundaries of the machinery space below the upper deck ;

(6) Spaces for the following machinery, appliances or apparatus :

(a) *Settling tanks*, reasonable in extent,[1] in oil-burning ships if situated within the boundaries of the machinery space, in the casings above, or directly adjacent to such space or casings ;

(b) *Dynamos*, *switchboards* and *control-panels*, with the exception of those indicated under B (4) (f) of the present article ;

(c) *Silencers* (including silencers in funnels) ;

(d) *Hot-wells*, if situated within the boundaries of the machinery space below the upper deck ;

(e) *Ash-ejectors* ;

(f) *Apparatus for forced-draft to boilers* ;

(g) *Oil-refiners and oil-coolers for fuel oil and lubricating oil* (including rectifying and purifying tanks) ;

(h) *Feed-water heating apparatus* and other similar plant necessary for the working of the main machinery ;

(i) *Evaporators solely for boiler feed-water* ;

(j) *Pumps for lubricating oil* ;

[1] For ships making long voyages, the maximum cubic capacity of the settling tanks must not exceed a capacity corresponding to a two-day supply of fuel oil ; otherwise they will be considered exclusively as fuel spaces.

(k) *Ventilating plant* situated in and necessary for the ventilation of the machinery space ;

(l) *Storage batteries*, used solely in connection with the propelling-machinery ;

(m) *Steam and electric compressors and air-reservoirs* used in connection with the propelling-machinery ;

(n) *Fuel oil pumps*, used solely for fuel oil purposes if situated within the boundaries of the machinery space, in the casings above, or directly adjacent to such space or casings.

B. The following spaces shall not be regarded as propelling-machinery spaces :

(1) *Fuel spaces.*

(2) *Feed-water spaces.*

(3) *Storage tanks for lubricating oil.*

(4) Spaces occupied by the following machinery, appliances or apparatus :

(a) *Auxiliary condenser plant* not used in connection with propelling-machinery ;

(b) *Fire-extinguishing plant* ;

(c) *Refrigerating machinery* ;

(d) *Machinery for ventilation and for heating of crew's and passengers' quarters* ;

(e) *Sanitary and other pumps* not used in connection with the propelling-machinery ;

(f) *Dynamos, switchboards and control-panels*, exclusively used for lighting or navigating purposes, cargo work, etc., quite independent of the ship's propelling-machinery ;

(g) *Donkey-boilers* other than those referred to in Article 79.

Donkey-boiler Space.

ARTICLE 79

Donkey-boilers which, to the satisfaction of the national central tonnage measurement authority concerned, are necessary for and are used in connection with the main propelling-machinery or auxiliary machinery considered as part of same, shall be regarded as forming part of the propelling-machinery.

If situated below the upper deck, within or outside the boundaries of the machinery space, the space occupied by and necessary for the working of such donkey-boilers shall be included in the propelling-machinery space. If situated above

the upper deck the space occupied by and necessary for the working of such donkey-boilers shall be regarded as light and air space referred to in Article 77.

Measurement of Propelling-machinery Spaces.

ARTICLE 80

The measurement of propelling-machinery spaces shall be carried out as follows :

(1) *Spaces below the top of the main space*, referred to in Article 76 under item (*a*), are measured by ascertaining :

(i) the length ;
(ii) three, five or, if necessary, seven depths ;
(iii) three, five or, if necessary, seven breadths ;

The *length* of the space between its end bulkheads is measured ; this length is then divided into two, four or six equal parts, according to whether three, five or seven depths are to be measured.

The *depth* is measured in the middle plane from the top of the main space to the top of the double bottom (or top of the ordinary floors or top of ceiling, as the case may be) at the extreme points of the length and at its points of division. Each depth is to be corrected, if necessary, on account of the rise or fall of double bottom, as indicated in Article 28.

At the middle of each depth, the *breadth* is then measured between the side bulkheads (or between the inner edges of the frames at the ship's sides or the ceiling thereon, as the case may be).

The length of a space and its situation will serve as guidance with regard to the number of depths and breadths to be taken. A large engine-room situated aft and extending from side to side of the ship will require the measurement of five or seven depths and five or seven breadths. If situated amidships, however, three depths and three breadths will, as a rule, be sufficient.

When there exist in the machinery space a break or breaks in the double bottom or, in the case of a ship with single bottom, an abrupt change in the depth of floors, or when the side bulkheads of the machinery space have a curved or broken outline (*e.g.*, side bulkheads of fuel spaces) or in general when the machinery space is irregular in shape, it shall be measured in parts, each part being dealt with as prescribed for the measurement of the whole space. When the space is a rectangular parallelepipedon, the measurement of one depth and one breadth will be sufficient.

All the measured depths and breadths shall be entered on the formulæ of measurement with an indication as to whether they have been taken to top of double bottom or to top of ordinary floors, to inner edge of frames or to ceiling.

When carrying out measurement of spaces below the top of the main space, due regard must be given to existing recesses or projections in double bottom or floors as mentioned in paragraph (1) of Article 29.

Figures 103 to 110 show details of measurement of propelling-machinery spaces.

(2) *Spaces referred in Article 76 under Items (b), (c) and (d)* are measured as regards length, height and breadth as indicated under paragraph (1) of the present article. In most cases, however, the measurement of one height and one breadth will be sufficient unless the space concerned extends from side to side of the ship (*e.g.*, a shaft recess), in which case three or five breadths should be measured.

Spaces situated above the top of the main space shall be measured tier by tier. Each space is measured separately and the measurements are taken between their partitions without regard to stiffeners.

(3) When ascertaining the cubic capacity of the spaces dealt with in the present Article, it should be noted that spaces not to be regarded as propelling-machinery spaces or spaces referred to in Article 78.A.(5), the total or partial incorporation of which cannot take place until the gross tonnage of the ship has been determined, should not be included. With a view to attaining this object it will, in most cases, be found practical to measure separately by their extreme outside dimensions the spaces occupied by such machinery, appliances and apparatus as are not to be regarded as propelling-machinery and then subtract their cubic capacity from the cubic capacity of the whole space (see Figures 103 and 110).

If such machinery, appliances, apparatus, etc., are bulkheaded off, the cubic capacity of the space bulkheaded off is ascertained.

The measurements of spaces occupied by machinery, appliances, apparatus, etc., not to be regarded as propelling-machinery whether bulkheaded off or not, should be entered on the formulæ of measurement.

If it is necessary to apply restrictions to the measurements of the propelling-machinery space, in conformity with the provisions of Article 81, the restricted measurements as well as the full measurements of the space shall be entered on the formulæ of measurement.

Restrictions of Propelling-machinery Spaces.

ARTICLE 81

(a) *Length of the spaces below the top of the main space.* — (1) If, in carrying out the measurement of the propelling-machinery space, it is found that the length of such space exceeds what is necessary for the proper working of the main

propelling-machinery and for the auxiliary machinery necessary for the main machinery, such length shall be restricted, subject to the provisions of paragraph (4).

(2) In the case of steamships, the following procedure shall be observed :

(i) If the fire-grates are in a fore-and-aft direction, the length equal to that of the fire-grates increased by about 1 foot or 0.305 metres shall be allowed in front of the fire-grates for the stoking or working of the fires, but no additional length is required when the boilers are placed with the fire-grates athwartships.[1]

(ii) In the case of ships propelled by reciprocating engines, the point to which the after boundary of the length of the machinery space is to be measured should be no further aft of the after cylinder, its valve-casing or other part of the main propelling-machinery than is necessary for safe working, but in no case without special instructions from the national central tonnage measurement authority should the actual point of measurement be more than 4 feet or 1.219 metres aft of such cylinder, etc., indicated above.

(3) In the case of turbine ships, the restrictions laid down in paragraph (2) of section (*a*) of the present Article shall apply to the measurement of boiler spaces.

(4) The restrictions referred to in paragraphs (1), (2) and (3) of section (*a*) of the present Article shall only apply in cases where the cubic capacity of the propelling-machinery spaces upon which the propelling-power allowance is based is 20 % or more of the gross tonnage in the case of screw ships, or 30 % or more of the gross tonnage in the case of paddle ships, but whatever be the size of the machinery space these restrictions shall in no case be applied to fishing and hunting ships, tugs as defined in Article 75, ships constructed and intended exclusively for icebreaking, or yachts.

(5) If a departure from either of the above provisions as to length appears to be necessary owing to the high power of the engines or any peculiarity in the arrangement of the machinery, the national central tonnage measurement authority concerned, to which all necessary particulars and plans should be forwarded, will have to decide as to the length to be used for the purpose of calculating the cubic capacity.

(b) *Shaft trunks in screw ships, escape trunks.* — (1) Thrust-block space. When the thrust-block is not situated within an ordinary thrust-block recess and when, according to the present Article, a limitation has to be applied to the length

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[1] The same restriction would apply if the main boilers were situated wholly or partly above the upper deck.

of the main machinery space, the thrust-block being situated within the main space outside the restricted part, the height of such thrust-block space to be allowed for shall in no case exceed what is considered necessary for the purpose of overhauling (see Figure 111).

(2) When there is no built tunnel :

(*i*) In the case of single-screw ships, the space allowed as a tunnel shall be of ordinary dimensions suitable for the ship ; if the after machinery bulkhead is recessed, the height of the space allowed for shall not exceed, above the shaft, what is necessary for working and overhauling (see Figures 111 and 112).

(*ii*) In the case of ships with two or more screws, the same provisions shall, in general, apply, but when there exists a large space or recess open from side to side immediately aft of the main space, the space included in the propelling-machinery space shall not be larger than would have been necessary in the case of ordinary-sized shaft tunnels for each shaft line (see Figure 113).

(3) In ships with two or more screws and built shaft-tunnels, the recessed part immediately forward of the stern tubes shall not be larger than is reasonable for the purpose of overhauling of shafting, due account being taken of the general construction of that part of the ship (see Figure 114).

(4) Escape trunks shall be regarded as part of the propelling-machinery space, provided that they are not larger than is necessary for the purpose of access to and escape from the tunnel.

All doubtful cases shall be submitted, together with the necessary particulars, to the national central tonnage measurement authority concerned, for their decision.

(c) *Spaces between the top of the main space and the upper deck.* — In general, the only restrictons to be applied are those indicated under (a).

(d) *Spaces on or above the upper deck.* — For the purpose of determining whether these spaces are " reasonable in extent ", it should be noted that :

(1) In the case of spaces situated outside the boundaries of the propelling-machinery space or the casings above same, and fitted with machinery which in accordance with the provisions of Articles 78 and 79 may be regarded as part of the propelling-machinery, such spaces are not to be larger than is necessary for the proper working of the said machinery.

(2) In the case of spaces serving for the admission of light and air to the propelling-machinery space :

(i) Their total length should not exceed the length of the machinery space underneath (see Figure 115), and if any portion is plated over, the length of the plated part should be deducted from the full length in the tier affected (see Figure 116) ;

(ii) The breadth to be allowed should not exceed half of the extreme tonnage breadth, the restriction as to the breadth shall, however, not apply to the portion of a break or a raised quarter-deck referred to in Article 76 (see Figures 100 and 101).

Calculation of the Cubic Capacity of Propelling-machinery Spaces.

Article 82

When the propelling-machinery spaces have been measured as indicated in Article 80 and the restrictions referred to in Article 81 have, if necessary, been applied, the cubic capacity of the propelling-machinery spaces is ascertained as follows :

The cubic capacity of each space (or each part of a space, as the case may be) is calculated separately by first multiplying its length by its breadth. The area thus obtained is then multiplied by the depth (height) and this last product constitutes the cubic capacity of the space (or of the part of the space, as the case may be) in cubic feet or in cubic metres.

If more than one breadth has been measured, the arithmetic mean of the breadths shall be used in the calculation ; the same provision shall apply with regard to the depths (heights).

Article 83

The following two examples relating to two screw ships contain more detailed indications as to the application of the provisions concerning the deduction for propelling-machinery spaces.

The scheme of calculation (page 61) indicates how to determine the portion of light and air spaces necessary for obtaining a propelling-power allowance of 32 % of the gross tonnage.

Example 1

Cubic capacity of actual machinery space = 160 tons (453.26 m³).
Total cubic capacity of space on or above the upper deck (light and air casings, etc.) = 65 tons (184.14 m³).
Aggregate cubic capacity of hatchways = 25 tons (70.82 m³).

	A. *The owner does not request any space on or above the upper deck to be included in the gross tonnage and added to the actual machinery space.*	B. *The owner requests as much space as possible on or above the upper deck to be added to the actual machinery space and included in the gross tonnage, the latter not exceeding 1,600.00 tons (4,532.58 m³).*	C. *The owner requests the necessary cubic capacity of spaces on or above the upper deck to be included in the gross tonnage and added to the actual machinery space in order to obtain the 32 % deduction.*
	The cubic capacity of the actual machinery space does not exceed 13 % of the gross tonnage. Consequently, the deduction for propelling-machinery space will be 160 × 1.75 = 280 tons (453.26 × 1.75 = 793.21 m³).	32.89 tons (93.17 m³) of the space on or above the upper deck is added to the actual machinery space and included in the gross tonnage 160.00 + 32.89 = 192.89 tons (453.26 + 93.17 = 546.43 m³) does not exceed 13 % of the gross tonnage. Consequently, the deduction for propelling-machinery space will be 192.89 × 1.75 = 337.56 tons (546.43 × 1.75 = 956.25 m³).	50.28 tons (142.44 m³) of the space on or above the upper deck is included in the gross tonnage and added to the actual machinery space 160.00 + 50.28 = 210.28 tons (453.26 + 142.44 = 595.70 m³). 13 % of the gross tonnage = 210.25 tons (595.60 m³). Consequently, the deduction for propelling-machinery space will be 32 % of the gross tonnage.
Under-deck tonnage	1,350.00 tons (3,824.36 m³)	1,350.00 tons (3,824.36 m³)	1,350.00 tons (3,824.36 m³)
Space above the tonnage deck	200.00 tons (566.57 m³)	200.00 tons (566.57 m³)	200.00 tons (566.57 m³)
Space on or above the upper deck (light and air casings, etc.)		32.89 tons (93.17 m³)	50.28 tons (142.44 m³)
Excess of hatchways	17.25 tons (48.87 m³)	17.09 tons (48.41 m³)	17.00 tons (48.16 m³)
Gross tonnage	1,567.25 tons (4,439.80 m³)	1,599.98 tons (4,532.51 m³)	1,617.28 tons (4,581.53 m³)
Deductions other than deduction for propelling-machinery space	120.00 tons (339.94 m³)	120.00 tons (339.94 m³)	120.00 tons (339.94 m³)
Remainder	1,447.25 tons (4,099.86 m³)	1,479.98 tons (4,192.57 m³)	1,497.28 tons (4,241.59 m³)
Deduction for propelling-machinery space	280.00 tons (793.21 m³)	337.56 tons (956.25 m³)	517.53 tons (1,466.09 m³)
Net tonnage	1,167.25 tons (3,306.65 m³)	1,142.42 tons (3,236.32 m³)	979.75 tons (2,775.50 m³)

Example 2

Cubic capacity of actual machinery space = 360 tons (1,019.83 m³).
Total cubic capacity of space on or above the upper deck (light and air casing, etc.) = 105 tons (297.45 m³).
Aggregate cubic capacity of hatchways = 30 tons (84.99 m³).

	A. *The owner does not request any space on or above the upper deck to be included in the gross tonnage and added to the actual machinery space.*	B. *The owner requests as much space as possible on or above the upper deck to be added to the actual machinery space and included in the gross tonnage, the later not exceeding 2,000.00 tons (5,665.72 m³).*	C. *The owner requests the total cubic capacity of space on or above the upper deck to be included in the gross tonnage and added to the actual machinery space.*
	The cubic capacity of the actual machinery space is above 13 % and under 20 % of the gross tonnage. Consequently, the deduction for propelling-machinery space will be 32 % of the gross tonnage.	69.88 tons (197.96 m³) of the space on or above the upper deck is added to the actual machinery space and included in the gross tonnage 360.00 + 69.88 = 429.88 tons (1,019.83 + 197.96 = 1,217.79 m³) is more than 20 % of the gross tonnage. Consequently, the deduction for propelling-machinery space will be 429.88 × 1.75 = 752.29 tons (1,217.79 × 1.75 = 2,131.13 m³).	105 tons (297.45 m³) is included in the gross tonnage and added to the actual machinery space. 360.00 + 105.00 = 465.00 tons (1,019.83 + 297.45 = 1,317.28 m³) is more than 20 % of the gross tonnage. Consequently, the deduction for propelling-machinery space will be 465.00 × 1.75 = 813.75 tons (1,317.28 × 1.75 = 2,305.24 m³).
Under-deck tonnage	1,630.00 tons (4,617.56 m³)	1,630.00 tons (4,617.56 m³)	1,630.00 tons (4,617.56 m³)
Space above the tonnage deck	280.00 tons (793.20 m³)	280.00 tons (793.20 m³)	280.00 tons (793.20 m³)
Space on or above the upper deck (light and air casings, etc.)		69.88 tons (197.96 m³)	105.00 tons (297.45 m³)
Excess of hatchways	20.45 tons (57.93 m³)	20.10 tons (56.94 m³)	19.92 tons (56.43 m³)
Gross tonnage	1,930.45 tons (5,468.69 m³)	1,999.98 tons (5,665.66 m³)	2,034.92 tons (5,764.64 m³)
Deductions other than deduction for propelling-machinery space	190.00 tons (538.24 m³)	190.00 tons (538.24 m³)	190.00 tons (538.24 m³)
Remainder	1,740.45 tons (4,930.45 m³)	1,809.98 tons (5,127.42 m³)	1,844.92 tons (5,226.40 m³)
Deduction for propelling-machinery space	617.74 tons (1,749.98 m³)	752.29 tons (2,131.13 m³)	813.75 tons (2,305.24 m³)
Net tonnage	1,122.71 tons (3,180.47 m³)	1,057.69 tons (2,996.29 m³)	1,031.17 tons (2,921.16 m³)

Scheme of Calculation

Gross tonnage exclusive of light and air space and hatchways		1,550.00
Excess of hatchways (based on the above gross tonnage)		17.25
Gross tonnage, inclusive of excess of hatchways and exclusive of light and air space		1,567.25
13% of 1,567.25 tons	203.74	
Machinery space below upper deck	160.00	
Difference	43.74	
14.95% of difference	6.54	
Difference plus 14.95% of itself	50.28	50.28
Gross tonnage inclusive of light and air space and of temporary excess of hatchways		1,617.53
Additional exemption for hatchways; account of light and air space = ½% of 50.28		0.25
		1,617.28
13% of the gross tonnage 1,617.28 =		210.25
Machinery space below upper deck		160.00
Light and air spaces		50.28
Sum		210.28

PART V

MEASUREMENT AND CALCULATION OF TONNAGE UNDER RULE II

Measurement of the Space below the Uppermost Deck.

ARTICLE 84

When, according to the second paragraph of Article 2, Rule II is to be applied, the measurement of the space below the *uppermost deck*[1] shall be carried out by ascertaining in the following manner the ship's length, the extreme outside breadth and the girth :

(1) The length is measured on the uppermost deck from the aft side of the stem to the aft side of the sternpost. Should no sternpost exist or should the sternpost not extend up to the uppermost deck, the length shall be taken to the fore side of the rudder-stock, the latter being, if necessary, imagined to extend up to the uppermost deck (see Fig. 117).

(2) The extreme outside breadth is determined by measuring the greatest breadth of the uppermost deck to the outside of the ship's sides, where the level of the upper side of the deck is to be marked off. The tumble-home, if any, is then measured by means of a lead or otherwise. The sum of the breadth and the tumble-home at both sides constitutes the extreme outside breadth (see Fig. 118). Rubbing-pieces should not be included in this breadth.

In cases where it is possible to determine the extreme outside breadth by inside measurement (*e.g.*, in the machinery space of a steel ship) the greatest breadth to the inside of the plating is measured and to this breadth is added the thickness of the plating at both sides.

(3) The girth should preferably be measured by means of a curb chain passed round the ship outboard at the place where the extreme breadth has been measured (see Figs. 119 and 120). The chain must be hauled tight perpendicularly to the keel line, and the upper side of the uppermost deck on both sides shall be marked on it. The girth is then found when measuring on the chain the distance between the points marked off on the chain.

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[1] When applying Rule II, to open shelter-deck ships, the shelter-deck shall be regarded as the uppermost deck.

Calculation of the Cubic Capacity of the Space below the Uppermost Deck.

ARTICLE 85

The cubic capacity of the space below the uppermost deck is calculated by adding together half the girth and half the extreme outside breadth. The sum thus obtained is squared, the result being multiplied by the length. This product is then multiplied, when using feet, by the factor 0.0017 in the case of wooden or composite ships and 0.0018 in the case of steel ships, and, when using metres, by the factors 0.17 and 0.18 respectively. This last product shall be deemed to be the cubic capacity of the space below the uppermost deck in register tons or in cubic metres.

ARTICLE 86

When applying Rule II no measurement of double-bottom tanks shall be carried out.

Superstructures, etc.

ARTICLE 87

Subject to the provisions of Article 88, spaces on or above the uppermost deck (forecastles, breaks, deck-houses, hatchways, etc.) shall be dealt with in accordance with the relevant provisions of Part III.

Measurement and Calculation of Cubic Capacity of Superstructures.

ARTICLE 88

The measurement of all superstructures and hatchways on or above the uppermost deck shall be carried out by ascertaining their mean breadth, mean length and mean height, if practicable in accordance with the provisions contained in Part III. In no case, however, shall more than one breadth be used. When it is impracticable to ascertain internal measurements, external measurements shall be taken.

The cubic capacity of such spaces is ascertained by multiplying the length by the breadth, and the product of the area thus obtained, by the height. This last product shall be deemed to be the cubic capacity in cubic feet or in cubic metres.

Measurement and Calculation of the Deductible Spaces.

ARTICLE 89

The deductible spaces referred to in Article 7 shall be measured and their cubic capacity ascertained in accordance with the provisions of Article 88. All deductions shall be subject to the limitations and restrictions imposed by Part IV and when it is impossible to calculate such limitations and restrictions for any space (*e.g.*, in case of water-ballast spaces) no deduction shall be allowed for the space concerned.

PART VI

IDENTIFICATION DIMENSIONS

Identification Dimensions when applying Rule I.

ARTICLE 90

(1) The identification *length*[1] is the length from the fore side of the uppermost end of the stem (see Figure 121) to the aft side of the uppermost end of the sternpost.

Should no sternpost exist, the length is taken to the point of intersection of the fore side of the rudder-stock (or its line of continuation) with the uppermost deck.

(2) The identification *breadth* is the extreme outside breadth which is ascertained in the same manner as indicated under Article 84 for the breadth under Rule II (see Figure 118).

Rubbing-pieces should not be included in this breadth.

(3) The identification *depth* is the vertical distance measured in the middle plane at half the identification length between the under side of the tonnage deck and the upper side of the double-bottom plating or floors. In ships having three decks or more, an additional identification depth shall be measured to the under side of the upper deck (see Figure 122).

When the identification depth falls in way of a recess or a projection in the double bottom, the depth should be measured to the bottom of the recess or to the top of the projection, as the case may be (see Figure 123).

Identification Dimensions when applying Rule II.

ARTICLE 91

The identification dimensions for ships measured under Rule II shall be the length, the breadth and girth determined in accordance with Article 84.

Overall Length.

ARTICLE 92

The overall length should also be ascertained. It is to be measured from the foreside of the foremost permanent structure to the afterside of the aftermost permanent structure of the ship (see Figure 124).

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[1] When the tonnage length has been ascertained, the identification length will easily be found by adding to or deducting from the tonnage length, as the case may be, the length of the horizontal distances measured in the middle plane between the extreme points of the tonnage length and the points mentioned above (see Figure 117).

Tableau I A

INDIQUANT EN PIEDS L'INTERVALLE COMMUN ET LE TIERS DE L'INTERVALLE COMMUN ENTRE LES LARGEURS POUR DIFFÉRENTES HAUTEURS DE TONNAGE.

La hauteur de tonnage au milieu de la longueur de tonnage *n'excède pas* 16 pieds.

Table I A

INDICATING IN FEET COMMON INTERVALS AND ONE-THIRD OF COMMON INTERVALS BETWEEN THE BREADTHS CORRESPONDING TO DIFFERENT TONNAGE DEPTHS.

The tonnage depth at the middle of the tonnage length *does not exceed* 16 feet.

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
2,00	0,500	0,17	**3**,00	0,750	0,25	**4**,00	1,000	0,33	**5**,00	1,250	0,42
,05	0,512	0,17	,05	0,762	0,25	,05	1,012	0,34	,05	1,262	0,42
,10	0,525	0,18	,10	0,775	0,26	,10	1,025	0,34	,10	1,275	0,43
,15	0,537	0,18	,15	0,787	0,26	,15	1,037	0,35	,15	1,287	0,43
,20	0,550	0,18	,20	0,800	0,27	,20	1,050	0,35	,20	1,300	0,43
,25	0,562	0,19	,25	0,812	0,27	,25	1,062	0,35	,25	1,312	0,44
,30	0,575	0,19	,30	0,825	0,28	,30	1,075	0,36	,30	1,325	0,44
,35	0,587	0,20	,35	0,837	0,28	,35	1,087	0,36	,35	1,337	0,45
,40	0,600	0,20	,40	0,850	0,28	,40	1,100	0,37	,40	1,350	0,45
,45	0,612	0,20	,45	0,862	0,29	,45	1,112	0,37	,45	1,362	0,45
,50	0,625	0,21	,50	0,875	0,29	,50	1,125	0,38	,50	1,375	0,46
,55	0,637	0,21	,55	0,887	0,30	,55	1,137	0,38	,55	1,387	0,46
,60	0,650	0,22	,60	0,900	0,30	,60	1,150	0,38	,60	1,400	0,47
,65	0,662	0,22	,65	0,912	0,30	,65	1,162	0,39	,65	1,412	0,47
,70	0,675	0,23	,70	0,925	0,31	,70	1,175	0,39	,70	1,425	0,48
,75	0,687	0,23	,75	0,937	0,31	,75	1,187	0,40	,75	1,437	0,48
,80	0,700	0,23	,80	0,950	0,32	,80	1,200	0,40	,80	1,450	0,48
,85	0,712	0,24	,85	0,962	0,32	,85	1,212	0,40	,85	1,462	0,49
,90	0,725	0,24	,90	0,975	0,33	,90	1,225	0,41	,90	1,475	0,49
,95	0,737	0,25	,95	0,987	0,33	,95	1,237	0,41	,95	1,487	0,50
6,00	1,500	0,50	**7**,00	1,750	0,58	**8**,00	2,000	0,67	**9**,00	2,250	0,75
,05	1,512	0,50	,05	1,762	0,59	,05	2,012	0,67	,05	2,262	0,75
,10	1,525	0,51	,10	1,775	0,59	,10	2,025	0,68	,10	2,275	0,76
,15	1,537	0,51	,15	1,787	0,60	,15	2,037	0,68	,15	2,287	0,76
,20	1,550	0,52	,20	1,800	0,60	,20	2,050	0,68	,20	2,300	0,77
,25	1,562	0,52	,25	1,812	0,60	,25	2,062	0,69	,25	2,312	0,77
,30	1,575	0,53	,30	1,825	0,61	,30	2,075	0,69	,30	2,325	0,78
,35	1,587	0,53	,35	1,837	0,61	,35	2,087	0,70	,35	2,337	0,78
,40	1,600	0,53	,40	1,850	0,62	,40	2,100	0,70	,40	2,350	0,78
,45	1,612	0,54	,45	1,862	0,62	,45	2,112	0,70	,45	2,362	0,79
,50	1,625	0,54	,50	1,875	0,63	,50	2,125	0,71	,50	2,375	0,79
,55	1,637	0,55	,55	1,887	0,63	,55	2,137	0,71	,55	2,387	0,80
,60	1,650	0,55	,60	1,900	0,63	,60	2,150	0,72	,60	2,400	0,80
,65	1,662	0,55	,65	1,912	0,64	,65	2,162	0,72	,65	2,412	0,80
,70	1,675	0,56	,70	1,925	0,64	,70	2,175	0,73	,70	2,425	0,81
,75	1,687	0,56	,75	1,937	0,65	,75	2,187	0,73	,75	2,437	0,81
,80	1,700	0,57	,80	1,950	0,65	,80	2,200	0,73	,80	2,450	0,82
,85	1,712	0,57	,85	1,962	0,65	,85	2,212	0,74	,85	2,462	0,82
,90	1,725	0,58	,90	1,975	0,66	,90	2,225	0,74	,90	2,475	0,83
,95	1,737	0,58	,95	1,987	0,66	,95	2,237	0,75	,95	2,487	0,83

Tableau I A *(suite)* **Table I A** *(continued)*

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
10,00	2,500	0,83	**11**,00	2,750	0,92	**12**,00	3,000	1,00	**13**,00	3,250	1,08
,05	2,512	0,84	,05	2,762	0,92	,05	3,012	1,00	,05	3,262	1,09
,10	2,525	0,84	,10	2,775	0,93	,10	3,025	1,01	,10	3,275	1,09
,15	2,537	0,85	,15	2,787	0,93	,15	3,037	1,01	,15	3,287	1,10
,20	2,550	0,85	,20	2,800	0,93	,20	3,050	1,02	,20	3,300	1,10
,25	2,562	0,85	,25	2,812	0,94	,25	3,062	1,02	,25	3,312	1,10
,30	2,575	0,86	,30	2,825	0,94	,30	3,075	1,03	,30	3,325	1,11
,35	2,587	0,86	,35	2,837	0,95	,35	3,087	1,03	,35	3,337	1,11
,40	2,600	0,87	,40	2,850	0,95	,40	3,100	1,03	,40	3,350	1,12
,45	2,612	0,87	,45	2,862	0,95	,45	3,112	1,04	,45	3,362	1,12
,50	2,625	0,88	,50	2,875	0,96	,50	3,125	1,04	,50	3,375	1,13
,55	2,637	0,88	,55	2,887	0,96	,55	3,137	1,05	,55	3,387	1,13
,60	2,650	0,88	,60	2,900	0,97	,60	3,150	1,05	,60	3,400	1,13
,65	2,662	0,89	,65	2,912	0,97	,65	3,162	1,05	,65	3,412	1,14
,70	2,675	0,89	,70	2,925	0,98	,70	3,175	1,06	,70	3,425	1,14
,75	2,687	0,90	,75	2,937	0,98	,75	3,187	1,06	,75	3,437	1,15
,80	2,700	0,90	,80	2,950	0,98	,80	3,200	1,07	,80	3,450	1,15
,85	2,712	0,90	,85	2,962	0,99	,85	3,212	1,07	,85	3,462	1,15
,90	2,725	0,91	,90	2,975	0,99	,90	3,225	1,08	,90	3,475	1,16
,95	2,737	0,91	,95	2,987	1,00	,95	3,237	1,08	,95	3,487	1,16
14,00	3,500	1,17	**15**,00	3,750	1,25	**16**,00	4,000	1,33	**17**,00	4,250	1,42
,05	3,512	1,17	,05	3,762	1,25	,05	4,012	1,34	,05	4,262	1,42
,10	3,525	1,18	,10	3,775	1,26	,10	4,025	1,34	,10	4,275	1,43
,15	3,537	1,18	,15	3,787	1,26	,15	4,037	1,35	,15	4,287	1,43
,20	3,550	1,18	,20	3,800	1,27	,20	4,050	1,35	,20	4,300	1,43
,25	3,562	1,19	,25	3,812	1,27	,25	4,062	1,35	,25	4,312	1,44
,30	3,575	1,19	,30	3,825	1,28	,30	4,075	1,36	,30	4,325	1,44
,35	3,587	1,20	,35	3,837	1,28	,35	4,087	1,36	,35	4,337	1,45
,40	3,600	1,20	,40	3,850	1,28	,40	4,100	1,37	,40	4,350	1,45
,45	3,612	1,20	,45	3,862	1,29	,45	4,112	1,37	,45	4,362	1,45
,50	3,625	1,21	,50	3,875	1,29	,50	4,125	1,38	,50	4,375	1,46
,55	3,637	1,21	,55	3,887	1,30	,55	4,137	1,38	,55	4,387	1,46
,60	3,650	1,22	,60	3,900	1,30	,60	4,150	1,38	,60	4,400	1,47
,65	3,662	1,22	,65	3,912	1,30	,65	4,162	1,39	,65	4,412	1,47
,70	3,675	1,23	,70	3,925	1,31	,70	4,175	1,39	,70	4,425	1,48
,75	3,687	1,23	,75	3,937	1,31	,75	4,187	1,40	,75	4,437	1,48
,80	3,700	1,23	,80	3,950	1,32	,80	4,200	1,40	,80	4,450	1,48
,85	3,712	1,24	,85	3,962	1,32	,85	4,212	1,40	,85	4,462	1,49
,90	3,725	1,24	,90	3,975	1,33	,90	4,225	1,41	,90	4,475	1,49
,95	3,737	1,25	,95	3,987	1,33	,95	4,237	1,41	,95	4,487	1,50

Tableau I A *(suite)* **Table I A** *(continued)*

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
18,00	4,500	1,50	**19**,00	4,750	1,58	**20**,00	5,000	1,67	**21**,00	5,250	1,75
,05	4,512	1,50	,05	4,762	1,59	,05	5,012	1,67	,05	5,262	1,75
,10	4,525	1,51	,10	4,775	1,59	,10	5,025	1,68	,10	5,275	1,76
,15	4,537	1,51	,15	4,787	1,60	,15	5,037	1,68	,15	5,287	1,76
,20	4,550	1,52	,20	4,800	1,60	,20	5,050	1,68	,20	5,300	1,77
,25	4,562	1,52	,25	4,812	1,60	,25	5,062	1,69	,25	5,312	1,77
,30	4,575	1,53	,30	4,825	1,61	,30	5,075	1,69	,30	5,325	1,78
,35	4,587	1,53	,35	4,837	1,61	,35	5,087	1,70	,35	5,337	1,78
,40	4,600	1,53	,40	4,850	1,62	,40	5,100	1,70	,40	5,350	1,78
,45	4,612	1,54	,45	4,862	1,62	,45	5,112	1,70	,45	5,362	1,79
,50	4,625	1,54	,50	4,875	1,63	,50	5,125	1,71	,50	5,375	1,79
,55	4,637	1,55	,55	4,887	1,63	,55	5,137	1,71	,55	5,387	1,80
,60	4,650	1,55	,60	4,900	1,63	,60	5,150	1,72	,60	5,400	1,80
,65	4,662	1,55	,65	4,912	1,64	,65	5,162	1,72	,65	5,412	1,80
,70	4,675	1,56	,70	4,925	1,64	,70	5,175	1,73	,70	5,425	1,81
,75	4,687	1,56	,75	4,937	1,65	,75	5,187	1,73	,75	5,437	1,81
,80	4,700	1,57	,80	4,950	1,65	,80	5,200	1,73	,80	5,450	1,82
,85	4,712	1,57	,85	4,962	1,65	,85	5,212	1,74	,85	5,462	1,82
,90	4,725	1,58	,90	4,975	1,66	,90	5,225	1,74	,90	5,475	1,83
,95	4,737	1,58	,95	4,987	1,66	,95	5,237	1,75	,95	5,487	1,83
22,00	5,500	1,83	**23**,00	5,750	1,92	**24**,00	6,000	2,00	**25**,00	6,250	2,08
,05	5,512	1,84	,05	5,762	1,92	,05	6,012	2,00	,05	6,262	2,09
,10	5,525	1,84	,10	5,775	1,93	,10	6,025	2,01	,10	6,275	2,09
,15	5,537	1,85	,15	5,787	1,93	,15	6,037	2,01	,15	6,287	2,10
,20	5,550	1,85	,20	5,800	1,93	,20	6,050	2,02	,20	6,300	2,10
,25	5,562	1,85	,25	5,812	1,94	,25	6,062	2,02	,25	6,312	2,10
,30	5,575	1,86	,30	5,825	1,94	,30	6,075	2,03	,30	6,325	2,11
,35	5,587	1,86	,35	5,837	1,95	,35	6,087	2,03	,35	6,337	2,11
,40	5,600	1,87	,40	5,850	1,95	,40	6,100	2,03	,40	6,350	2,12
,45	5,612	1,87	,45	5,862	1,95	,45	6,112	2,04	,45	6,362	2,12
,50	5,625	1,88	,50	5,875	1,96	,50	6,125	2,04	,50	6,375	2,13
,55	5,637	1,88	,55	5,887	1,96	,55	6,137	2,05	,55	6,387	2,13
,60	5,650	1,88	,60	5,900	1,97	,60	6,150	2,05	,60	6,400	2,13
,65	5,662	1,89	,65	5,912	1,97	,65	6,162	2,05	,65	6,412	2,14
,70	5,675	1,89	,70	5,925	1,98	,70	6,175	2,06	,70	6,425	2,14
,75	5,687	1,90	,75	5,937	1,98	,75	6,187	2,06	,75	6,437	2,15
,80	5,700	1,90	,80	5,950	1,98	,80	6,200	2,07	,80	6,450	2,15
,85	5,712	1,90	,85	5,962	1,99	,85	6,212	2,07	,85	6,462	2,15
,90	5,725	1,91	,90	5,975	1,99	,90	6,225	2,08	,90	6,475	2,16
,95	5,737	1,91	,95	5,987	2,00	,95	6,237	2,08	,95	6,487	2,16

Tableau I A *(fin)* **Table I A** *(concluded)*

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
26,00	6,500	2,17	**27**,00	6,750	2,25	**28**,00	7,000	2,33	**29**,00	7,250	2,42
,05	6,512	2,17	,05	6,762	2,25	,05	7,012	2,34	,05	7,262	2,42
,10	6,525	2,18	,10	6,775	2,26	,10	7,025	2,34	,10	7,275	2,43
,15	6,537	2,18	,15	6,787	2,26	,15	7,037	2,35	,15	7,287	2,43
,20	6,550	2,18	,20	6,800	2,27	,20	7,050	2,35	,20	7,300	2,43
,25	6,562	2,19	,25	6,812	2,27	,25	7,062	2,35	,25	7,312	2,44
,30	6,575	2,19	,30	6,825	2,28	,30	7,075	2,36	,30	7,325	2,44
,35	6,587	2,20	,35	6,837	2,28	,35	7,087	2,36	,35	7,337	2,45
,40	6,600	2,20	,40	6,850	2,28	,40	7,100	2,37	,40	7,350	2,45
,45	6,612	2,20	,45	6,862	2,29	,45	7,112	2,37	,45	7,362	2,45
,50	6,625	2,21	,50	6,875	2,29	,50	7,125	2,38	,50	7,375	2,46
,55	6,637	2,21	,55	6,887	2,30	,55	7,137	2,38	,55	7,387	2,46
,60	6,650	2,22	,60	6,900	2,30	,60	7,150	2,38	,60	7,400	2,47
,65	6,662	2,22	,65	6,912	2,30	,65	7,162	2,39	,65	7,412	2,47
,70	6,675	2,23	,70	6,925	2,31	,70	7,175	2,39	,70	7,425	2,48
,75	6,687	2,23	,75	6,937	2,31	,75	7,187	2,40	,75	7,437	2,48
,80	6,700	2,23	,80	6,950	2,32	,80	7,200	2,40	,80	7,450	2,48
,85	6,712	2,24	,85	6,962	2,32	,85	7,212	2,40	,85	7,462	2,49
,90	6,725	2,24	,90	6,975	2,33	,90	7,225	2,41	,90	7,475	2,49
,95	6,737	2,25	,95	6,987	2,33	,95	7,237	2,41	,95	7,487	2,50
30,00	7,500	2,50	**30**,25	7,562	2,52	**30**,50	7,625	2,54	**30**,75	7,687	2,56
,05	7,512	2,50	,30	7,575	2,53	,55	7,637	2,55	,80	7,700	2,57
,10	7,525	2,51	,35	7,587	2,53	,60	7,650	2,55	,85	7,712	2,57
,15	7,537	2,51	,40	7,600	2,53	,65	7,662	2,55	,90	7,725	2,58
,20	7,550	2,52	,45	7,612	2,54	,70	7,675	2,56	,95	7,737	2,58

Tableau I B

INDIQUANT EN PIEDS L'INTERVALLE COMMUN ET LE TIERS DE L'INTERVALLE COMMUN ENTRE LES LARGEURS POUR DIFFÉRENTES HAUTEURS DE TONNAGE.

La hauteur de tonnage au milieu de la longueur de tonnage *excède* 16 pieds.

Table I B

INDICATING IN FEET COMMON INTERVALS AND ONE-THIRD OF COMMON INTERVALS BETWEEN THE BREADTHS CORRESPONDING TO DIFFERENT TONNAGE DEPTHS.

The tonnage depth at the middle of the tonnage length *exceeds* 16 feet.

Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
14,00	2,333	0,78	**15**,00	2,500	0,83	**16**,00	2,666	0,89	**17**,00	2,833	0,94
,05	2,341	0,78	,05	2,508	0,84	,05	2,675	0,89	,05	2,841	0,95
,10	2,350	0,78	,10	2,516	0,84	,10	2,683	0,89	,10	2,850	0,95
,15	2,358	0,79	,15	2,525	0,84	,15	2,691	0,90	,15	2,858	0,95
,20	2,366	0,79	,20	2,533	0,84	,20	2,700	0,90	,20	2,866	0,96
,25	2,375	0,79	,25	2,541	0,85	,25	2,708	0,90	,25	2,875	0,96
,30	2,383	0,79	,30	2,550	0,85	,30	2,716	0,91	,30	2,883	0,96
,35	2,391	0,80	,35	2,558	0,85	,35	2,725	0,91	,35	2,891	0,96
,40	2,400	0,80	,40	2,566	0,86	,40	2,733	0,91	,40	2,900	0,97
,45	2,408	0,80	,45	2,575	0,86	,45	2,741	0,91	,45	2,908	0,97
,50	2,416	0,81	,50	2,583	0,86	,50	2,750	0,92	,50	2,916	0,97
,55	2,425	0,81	,55	2,591	0,86	,55	2,758	0,92	,55	2,925	0,98
,60	2,433	0,81	,60	2,600	0,87	,60	2,766	0,92	,60	2,933	0,98
,65	2,441	0,81	,65	2,608	0,87	,65	2,775	0,93	,65	2,941	0,98
,70	2,450	0,82	,70	2,616	0,87	,70	2,783	0,93	,70	2,950	0,98
,75	2,458	0,82	,75	2,625	0,88	,75	2,791	0,93	,75	2,958	0,99
,80	2,466	0,82	,80	2,633	0,88	,80	2,800	0,93	,80	2,966	0,99
,85	2,475	0,83	,85	2,641	0,88	,85	2,808	0,94	,85	2,975	0,99
,90	2,483	0,83	,90	2,650	0,88	,90	2,816	0,94	,90	2,983	0,99
,95	2,491	0,83	,95	2,658	0,89	,95	2,825	0,94	,95	2,991	1,00
18,00	3,000	1,00	**19**,00	3,166	1,06	**20**,00	3,333	1,11	**21**,00	3,500	1,17
,05	3,008	1,00	,05	3,175	1,06	,05	3,341	1,11	,05	3,508	1,17
,10	3,016	1,01	,10	3,183	1,06	,10	3,350	1,12	,10	3,516	1,17
,15	3,025	1,01	,15	3,191	1,06	,15	3,358	1,12	,15	3,525	1,18
,20	3,033	1,01	,20	3,200	1,07	,20	3,366	1,12	,20	3,533	1,18
,25	3,041	1,01	,25	3,208	1,07	,25	3,375	1,13	,25	3,541	1,18
,30	3,050	1,02	,30	3,216	1,07	,30	3,383	1,13	,30	3,550	1,18
,35	3,058	1,02	,35	3,225	1,08	,35	3,391	1,13	,35	3,558	1,19
,40	3,066	1,02	,40	3,233	1,08	,40	3,400	1,13	,40	3,566	1,19
,45	3,075	1,03	,45	3,241	1,08	,45	3,408	1,14	,45	3,575	1,19
,50	3,083	1,03	,50	3,250	1,08	,50	3,416	1,14	,50	3,583	1,19
,55	3,091	1,03	,55	3,258	1,09	,55	3,425	1,14	,55	3,591	1,20
,60	3,100	1,03	,60	3,266	1,09	,60	3,433	1,14	,60	3,600	1 20
,65	3,108	1,04	,65	3,275	1,09	,65	3,441	1,15	,65	3,608	1,20
,70	3,116	1,04	,70	3,283	1,09	,70	3,450	1,15	,70	3,616	1,21
,75	3,125	1,04	,75	3,291	1,10	,75	3,458	1,15	,75	3,625	1,21
,80	3,133	1,04	,80	3,300	1,10	,80	3,466	1,16	,80	3,633	1,21
,85	3,141	1,05	,85	3,308	1,10	,85	3,475	1,16	,85	3 641	1,21
,90	3,150	1,05	,90	3,316	1,11	,90	3,483	1,16	,90	3,650	1,22
,95	3,158	1,05	,95	3,325	1,11	,95	3,491	1,16	,95	3,658	1,22

Tableau I B *(suite)* **Table I B** *(continued)*

Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths
22,00	3,666	1,22	**23**,00	3,833	1,28	**24**,00	4,000	1,33	**25**,00	4,166	1,39
,05	3,675	1,23	,05	3,841	1,28	,05	4,008	1,34	,05	4,175	1,39
,10	3,683	1,23	,10	3,850	1,28	,10	4,016	1,34	,10	4,183	1,39
,15	3,691	1,23	,15	3,858	1,29	,15	4,025	1,34	,15	4,191	1,40
,20	3,700	1,23	,20	3,866	1,29	,20	4,033	1,34	,20	4,200	1,40
,25	3,708	1,24	,25	3,875	1,29	,25	4,041	1,35	,25	4,208	1,40
,30	3,716	1,24	,30	3,883	1,29	,30	4,050	1,35	,30	4,216	1,41
,35	3,725	1,24	,35	3,891	1,30	,35	4,058	1,35	,35	4,225	1,41
,40	3 733	1,24	,40	3,900	1,30	,40	4,066	1,36	,40	4,233	1,41
,45	3,741	1,25	,45	3,908	1,30	,45	4,075	1,36	,45	4,241	1,41
,50	3,750	1,25	,50	3,916	1,31	,50	4,083	1,36	,50	4,250	1,42
,55	3,758	1,25	,55	3,925	1,31	,55	4,091	1,36	,55	4,258	1,42
,60	3,766	1,26	,60	3,933	1,31	,60	4,100	1,37	,60	4,266	1,42
,65	3,775	1,26	,65	3,941	1,31	,65	4,108	1,37	,65	4,275	1,43
,70	3,783	1,26	,70	3,950	1,32	,70	4,116	1,37	,70	4,283	1,43
,75	3,791	1,26	,75	3,958	1,32	,75	4,125	1,38	,75	4,291	1,43
,80	3,800	1,27	,80	3,966	1,32	,80	4,133	1,38	,80	4,300	1,43
,85	3,808	1,27	,85	3,975	1,33	,85	4,141	1,38	,85	4,308	1,44
,90	3,816	1,27	,90	3,983	1,33	,90	4,150	1,38	,90	4,316	1,44
,95	3,825	1,28	,95	3,991	1,33	,95	4,158	1,39	,95	4,325	1,44
26,00	4,333	1,44	**27**,00	4,500	1,50	**28**,00	4,666	1,56	**29**,00	4,833	1,61
,05	4,341	1,45	,05	4,508	1,50	,05	4,675	1,56	,05	4,841	1,61
,10	4,350	1,45	,10	4,516	1,51	,10	4,683	1,56	,10	4,850	1,62
,15	4,358	1,45	,15	4,525	1,51	,15	4,691	1,56	,15	4,858	1,62
,20	4,366	1,46	,20	4,533	1,51	,20	4,700	1,57	,20	4,866	1,62
,25	4,375	1,46	,25	4,541	1,51	,25	4,708	1,57	,25	4,875	1,63
,30	4,383	1,46	,30	4,550	1,52	,30	4,716	1,57	,30	4,883	1,63
,35	4,391	1,46	,35	4,558	1,52	,35	4,725	1,58	,35	4,891	1,63
,40	4,400	1,47	,40	4,566	1,52	,40	4,733	1,58	,40	4,900	1,63
,45	4,408	1,47	,45	4,575	1,53	,45	4,741	1,58	,45	4,908	1,64
,50	4,416	1,47	,50	4,583	1,53	,50	4,750	1,58	,50	4,916	1,64
,55	4,425	1,48	,55	4,591	1,53	,55	4,758	1,59	,55	4,925	1,64
,60	4,433	1,48	,60	4,600	1,53	,60	4,766	1,59	,60	4,933	1,64
,65	4,441	1,48	,65	4,608	1,54	,65	4,775	1,59	,65	4,941	1,65
,70	4,450	1,48	,70	4,616	1,54	,70	4,783	1,59	,70	4,950	1,65
,75	4,458	1,49	,75	4,625	1,54	,75	4,791	1,60	,75	4,958	1,65
,80	4,466	1,49	,80	4,633	1,54	,80	4,800	1,60	,80	4,966	1,66
,85	4,475	1,49	,85	4,641	1,55	,85	4,808	1,60	,85	4,975	1,66
,90	4,483	1,49	,90	4,650	1,55	,90	4,816	1,61	,90	4,983	1,66
,95	4,491	1,50	,95	4,658	1,55	,95	4,825	1,61	,95	4,991	1,66

Tableau I B *(suite)* — **Table I B** *(continued)*

Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
30,00	5,000	1,67	**31**,00	5,166	1,72	**32**,00	5,333	1,78	**33**,00	5,500	1,83
,05	5,008	1,67	,05	5,175	1,73	,05	5,341	1,78	,05	5,508	1,84
,10	5,016	1,67	,10	5,183	1,73	,10	5,350	1,78	,10	5,516	1,84
,15	5,025	1,68	,15	5,191	1,73	,15	5,358	1,79	,15	5,525	1,84
,20	5,033	1,68	,20	5,200	1,73	,20	5,366	1,79	,20	5,533	1,84
,25	5,041	1,68	,25	5,208	1,74	,25	5,375	1,79	,25	5,541	1,85
,30	5,050	1,68	,30	5,216	1,74	,30	5,383	1,79	,30	5,550	1,85
,35	5,058	1,69	,35	5,225	1,74	,35	5,391	1,80	,35	5,558	1,85
,40	5,066	1,69	,40	5,233	1,74	,40	5,400	1,80	,40	5,566	1,86
,45	5,075	1,69	,45	5,241	1,75	,45	5,408	1,80	,45	5,575	1,86
,50	5,083	1,69	,50	5,250	1,75	,50	5,416	1,81	,50	5,583	1,86
,55	5,091	1,70	,55	5,258	1,75	,55	5,425	1,81	,55	5,591	1,86
,60	5,100	1,70	,60	5,266	1,76	,60	5,433	1,81	,60	5,600	1,87
,65	5,108	1,70	,65	5,275	1,76	,65	5,441	1,81	,65	5,608	1,87
,70	5,116	1,71	,70	5,283	1,76	,70	5,450	1,82	,70	5,616	1,87
,75	5,125	1,71	,75	5,291	1,76	,75	5,458	1,82	,75	5,625	1,88
,80	5,133	1,71	,80	5,300	1,77	,80	5,466	1,82	,80	5,633	1,88
,85	5,141	1,71	,85	5,308	1,77	,85	5,475	1,83	,85	5,641	1,88
,90	5,150	1,72	,90	5,316	1,77	,90	5,483	1,83	,90	5,650	1,88
,95	5,158	1,72	,95	5,325	1,78	,95	5,491	1,83	,95	5,658	1,89
34,00	5,666	1,89	**35**,00	5,833	1,94	**36**,00	6,000	2,00	**37**,00	6,166	2,06
,05	5,675	1,89	,05	5,841	1,95	,05	6,008	2,00	,05	6,175	2,06
,10	5,683	1,89	,10	5,850	1,95	,10	6,016	2,01	,10	6,183	2,06
,15	5,691	1,90	,15	5,858	1,95	,15	6,025	2,01	,15	6,191	2,06
,20	5,700	1,90	,20	5,866	1,96	,20	6,033	2,01	,20	6,200	2,07
,25	5,708	1,90	,25	5,875	1,96	,25	6,041	2,01	,25	6,208	2,07
,30	5,716	1,91	,30	5,883	1,96	,30	6,050	2,02	,30	6,216	2,07
,35	5,725	1,91	,35	5,891	1,96	,35	6,058	2,02	,35	6,225	2,08
,40	5,733	1,91	,40	5,900	1,97	,40	6,066	2,02	,40	6,233	2,08
,45	5,741	1,91	,45	5,908	1,97	,45	6,075	2,03	,45	6,241	2,08
,50	5,750	1,92	,50	5,916	1,97	,50	6,083	2,03	,50	6,250	2,08
,55	5,758	1,92	,55	5,925	1,98	,55	6,091	2,03	,55	6,258	2,09
,60	5,766	1,92	,60	5,933	1,98	,60	6,100	2,03	,60	6,266	2,09
,65	5,775	1,93	,65	5,941	1,98	,65	6,108	2,04	,65	6,275	2,09
,70	5,783	1,93	,70	5,950	1,98	,70	6,116	2,04	,70	6,283	2,09
,75	5,791	1,93	,75	5,958	1,99	,75	6,125	2,04	,75	6,291	2,10
,80	5,800	1,93	,80	5,966	1,99	,80	6,133	2,04	,80	6,300	2,10
,85	5,808	1,94	,85	5,975	1,99	,85	6,141	2,05	,85	6,308	2,10
,90	5,816	1,94	,90	5,983	1,99	,90	6,150	2,05	,90	6,316	2,11
,95	5,825	1,94	,95	5,991	2,00	,95	6,158	2,05	,95	6,325	2,11

Tableau I B *(suite)* **Table I B** *(continued)*

Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths
38,00	6,333	2,11	**39**,00	6,500	2,17	**40**,00	6,666	2,22	**41**,00	6,833	2,28
,05	6,341	2,11	,05	6,508	2,17	,05	6,675	2,23	,05	6,841	2,28
,10	6,350	2,12	,10	6,516	2,17	,10	6,683	2,23	,10	6,850	2,28
,15	6,358	2,12	,15	6,525	2,18	,15	6,691	2,23	,15	6,858	2,29
,20	6,366	2,12	,20	6,533	2,18	,20	6,700	2,23	,20	6,866	2,29
,25	6,375	2,13	25	6,541	2,18	,25	6,708	2,24	,25	6,875	2,29
,30	6,383	2,13	,30	6,550	2,18	,30	6,716	2,24	,30	6,883	2,29
,35	6,391	2,13	,35	6,558	2,19	,35	6,725	2,24	,35	6,891	2,30
,40	6,400	2,13	,40	6,566	2,19	,40	6,733	2,24	,40	6,900	2,30
,45	6,408	2,14	,45	6,575	2,19	,45	6,741	2,25	,45	6,908	2,30
,50	6,416	2,14	,50	6,583	2,19	,50	6,750	2,25	,50	6,916	2,31
,55	6,425	2,14	,55	6,591	2,20	,55	6,758	2,25	,55	6,925	2,31
,60	6,433	2,14	,60	6,600	2,20	,60	6,766	2,26	,60	6,933	2,31
,65	6,441	2,15	,65	6,608	2,20	,65	6,775	2,26	,65	6,941	2,31
,70	6,450	2,15	,70	6,616	2,21	,70	6,783	2,26	,70	6,950	2,32
,75	6,458	2,15	,75	6,625	2,21	,75	6,791	2,26	,75	6,958	2,32
,80	6,466	2,16	,80	6,633	2,21	,80	6,800	2,27	,80	6,966	2,32
,85	6,475	2,16	,85	6,641	2,21	,85	6,808	2,27	,85	6,975	2,33
,90	6,483	2,16	,90	6,650	2,22	,90	6,816	2,27	,90	6,983	2,33
,95	6,491	2,16	,95	6,658	2,22	,95	6,825	2,28	,95	6,991	2,33
42,00	7,000	2,33	**43**,00	7,166	2,39	**44**,00	7,333	2,44	**45**,00	7,500	2,50
,05	7,008	2,34	,05	7,175	2,39	,05	7,341	2,45	,05	7,508	2,50
,10	7,016	2,34	,10	7,183	2,39	,10	7,350	2,45	,10	7,516	2,51
,15	7,025	2,34	,15	7,191	2,40	,15	7,358	2,45	,15	7,525	2,51
,20	7,033	2,34	,20	7,200	2,40	,20	7,366	2,46	,20	7,533	2,51
,25	7,041	2,35	,25	7,208	2,40	,25	7,375	2,46	,25	7,541	2,51
,30	7,050	2,35	,30	7,216	2,41	,30	7,383	2,46	,30	7,550	5,52
,35	7,058	2,35	,35	7,225	2,41	,35	7,391	2,46	,35	7,558	2,52
,40	7,066	2,36	,40	7,233	2,41	,40	7,400	2,47	,40	7,566	2,52
,45	7,075	2,36	,45	7,241	2,41	,45	7,408	2,47	,45	7,575	2,53
,50	7,083	2,36	,50	7,250	2,42	,50	7,416	2,47	,50	7,583	2,53
,55	7,091	2,36	,55	7,258	2,42	,55	7,425	2,48	,55	7,591	2,53
,60	7,100	2,37	,60	7,266	2,42	,60	7,433	2,48	,60	7,600	2,53
,65	7,108	2,37	,65	7,275	2,43	,65	7,441	2,48	,65	7,608	2,54
,70	7,116	2,37	,70	7,283	2,43	,70	7,450	2,48	,70	7,616	2,54
,75	7,125	2,38	,75	7,291	2,43	,75	7,458	2,49	,75	7,625	2,54
,80	7,133	2,38	,80	7,300	2,43	,80	7,466	2,49	,80	7,633	2,54
,85	7,141	2,38	,85	7,308	2,44	,85	7,475	2,49	,85	7,641	2,55
,90	7,150	2,38	,90	7,316	2,44	,90	7,483	2,49	,90	7,650	2,55
,95	7,158	2,39	,95	7,325	2,44	,95	7,491	2,50	,95	7,658	2,55

Tableau I B *(fin)* **Table I B** *(concluded)*

Hauteur de tonnage Tonnage depth	⅛ hauteur de tonnage ⅛ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅛ hauteur de tonnage ⅛ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅛ hauteur de tonnage ⅛ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅛ hauteur de tonnage ⅛ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
46,00	7,666	2,56	**47**,00	7,833	2,61	**48**,00	8,000	2,67	**49**,00	8,166	2,72
,05	7,675	2,56	,05	7,841	2,61	,05	8,008	2,67	,05	8,175	2,73
,10	7,683	2,56	,10	7,850	2,62	,10	8,016	2,67	,10	8,183	2,73
,15	7,691	2,56	,15	7,858	2,62	,15	8,025	2,68	,15	8,191	2,73
,20	7,700	2,57	,20	7,866	2,62	,20	8,033	2,68	,20	8,200	2,73
,25	7,708	2,57	,25	7,875	2,63	,25	8,041	2,68	,25	8,208	2,74
,30	7,716	2,57	,30	7,883	2,63	,30	8,050	2,68	,30	8,216	2,74
,35	7,725	2,58	,35	7,891	2,63	,35	8,058	2,69	,35	8,225	2,74
,40	7,733	2,58	,40	7,900	2,63	,40	8,066	2,69	,40	8,233	2,74
,45	7,741	2,58	,45	7,908	2,64	,45	8,075	2,69	,45	8,241	2,75
,50	7,750	2,58	,50	7,916	2,64	,50	8,083	2,69	,50	8,250	2,75
,55	7,758	2,59	,55	7,925	2,64	,55	8,091	2,70	,55	8,258	2,75
,60	7,766	2,59	,60	7,933	2,64	,60	8,100	2,70	,60	8,266	2,76
,65	7,775	2,59	,65	7,941	2,65	,65	8,108	2,70	,65	8,275	2,76
,70	7,783	2,59	,70	7,950	2,65	,70	8,116	2,71	,70	8,283	2,76
,75	7,791	2,60	,75	7,958	2,65	,75	8,125	2,71	,75	8,291	2,76
,80	7,800	2,60	,80	7,966	2,66	,80	8,133	2,71	,80	8,300	2,77
,85	7,808	2,60	,85	7,975	2,66	,85	8,141	2,71	,85	8,308	2,77
,90	7,816	2,61	,90	7,983	2,66	,90	8,150	2,72	,90	8,316	2,77
,95	7,825	2,61	,95	7,991	2,66	,95	8,158	2,72	,95	8,325	2,78
50,00	8,333	2,78									
,05	8,341	2,78									
,10	8,350	2,78									
,15	8,358	2,79									
,20	8,366	2,79									
,25	8,375	2,79									
,30	8,383	2,79									
,35	8,391	2,80									
,40	8,400	2,80									
,45	8,408	2,80									
,50	8,416	2,81									
,55	8,425	2,81									
,60	8,433	2,81									
,65	8,441	2,81									
,70	8,450	2,82									
,75	8,458	2,82									
,80	8,466	2,82									
,85	8,475	2,83									
,90	8,483	2,83									
,95	8,491	2,83									

Tableau II A

INDIQUANT EN MÈTRES L'INTERVALLE COMMUN ET LE TIERS DE L'INTERVALLE COMMUN ENTRE LES LARGEURS POUR DIFFÉRENTES HAUTEURS DE TONNAGE. La hauteur de tonnage au milieu de la longueur de tonnage *n'excède pas* 4 m. 88.

Table II A

INDICATING IN METRES COMMON INTERVALS AND ONE-THIRD OF COMMON INTERVALS BETWEEN THE BREADTHS CORRESPONDING TO DIFFERENT TONNAGE DEPTHS. The tonnage depth at the middle of the tonnage length *does not exceed* 4.88 metres

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
0.50	0.125	0.04	0.70	0.175	0.06	0.90	0.225	0.08	1.10	0.275	0.09
0.51	0.128	0.04	0.71	0.178	0.06	0.91	0.228	0.08	1.11	0.278	0.09
0.52	0.130	0.04	0.72	0.180	0.06	0.92	0.230	0.08	1.12	0.280	0.09
0.53	0.133	0.04	0.73	0.183	0.06	0.93	0.233	0.08	1.13	0.283	0.09
0.54	0.135	0.05	0.74	0.185	0.06	0.94	0.235	0.08	1.14	0.285	0.10
0.55	0.138	0.05	0.75	0.188	0.06	0.95	0.238	0.08	1.15	0.288	0.10
0.56	0.140	0.05	0.76	0.190	0.06	0.96	0.240	0.08	1.16	0.290	0.10
0.57	0.143	0.05	0.77	0.193	0.06	0.97	0.243	0.08	1.17	0.293	0.10
0.58	0.145	0.05	0.78	0.195	0.07	0.98	0.245	0.08	1.18	0.295	0.10
0.59	0.148	0.05	0.79	0.198	0.07	0.99	0.248	0.08	1.19	0.298	0.10
0.60	0.150	0.05	0.80	0.200	0.07	1.00	0.250	0.08	1.20	0.300	0.10
0.61	0.153	0.05	0.81	0.203	0.07	1.01	0.253	0.08	1.21	0.303	0.10
0.62	0.155	0.05	0.82	0.205	0.07	1.02	0.255	0.09	1.22	0.305	0.10
0.63	0.158	0.05	0.83	0.208	0.07	1.03	0.258	0.09	1.23	0.308	0.10
0.64	0.160	0.05	0.84	0.210	0.07	1.04	0.260	0.09	1.24	0.310	0.10
0.65	0.163	0.05	0.85	0.213	0.07	1.05	0.263	0.09	1.25	0.313	0.10
0.66	0.165	0.06	0.86	0.215	0.07	1.06	0.265	0.09	1.26	0.315	0.11
0.67	0.168	0.06	0.87	0.218	0.07	1.07	0.268	0.09	1.27	0.318	0.11
0.68	0.170	0.06	0.88	0.220	0.07	1.08	0.270	0.09	1.28	0.320	0.11
0.69	0.173	0.06	0.89	0.223	0.07	1.09	0.273	0.09	1.29	0.323	0.11
1.30	0.325	0.11	1.50	0.375	0.13	1.70	0.425	0.14	1.90	0.475	0.16
1.31	0.328	0.11	1.51	0.378	0.13	1.71	0.428	0.14	1.91	0.478	0.16
1.32	0.330	0.11	1.52	0.380	0.13	1.72	0.430	0.14	1.92	0.480	0.16
1.33	0.333	0.11	1.53	0.383	0.13	1.73	0.433	0.14	1.93	0.483	0.16
1.34	0.335	0.11	1.54	0.385	0.13	1.74	0.435	0.15	1.94	0.485	0.16
1.35	0.338	0.11	1.55	0.388	0.13	1.75	0.438	0.15	1.95	0.488	0.16
1.36	0.340	0.11	1.56	0.390	0.13	1.76	0.440	0.15	1.96	0.490	0.16
1.37	0.343	0.11	1.57	0.393	0.13	1.77	0.443	0.15	1.97	0.493	0.16
1.38	0.345	0.12	1.58	0.395	0.13	1.78	0.445	0.15	1.98	0.495	0.17
1.39	0.348	0.12	1.59	0.398	0.13	1.79	0.448	0.15	1.99	0.498	0.17
1.40	0.350	0.12	1.60	0.400	0.13	1.80	0.450	0.15	2.00	0.500	0.17
1.41	0.353	0.12	1.61	0.403	0.13	1.81	0.453	0.15	2.01	0.503	0.17
1.42	0.355	0.12	1.62	0.405	0.14	1.82	0.455	0.15	2.02	0.505	0.17
1.43	0.358	0.12	1.63	0.408	0.14	1.83	0.458	0.15	2.03	0.508	0.17
1.44	0.360	0.12	1.64	0.410	0.14	1.84	0.460	0.15	2.04	0.510	0.17
1.45	0.363	0.12	1.65	0.413	0.14	1.85	0.463	0.15	2.05	0.513	0.17
1.46	0.365	0.12	1.66	0.415	0.14	1.86	0.465	0.16	2.06	0.515	0.17
1.47	0.368	0.12	1.67	0.418	0.14	1.87	0.468	0.16	2.07	0.518	0.17
1.48	0.370	0.12	1.68	0.420	0.14	1.88	0.470	0.16	2.08	0.520	0.17
1.49	0.373	0.12	1.69	0.423	0.14	1.89	0.473	0.16	2.09	0.523	0.17

Tableau II A *(suite)* **Table II A** *(continued)*

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
2.10	0.525	0.18	2.30	0.575	0.19	2.50	0.625	0.21	2.70	0.675	0.23
2.11	0.528	0.18	2.31	0.578	0.19	2.51	0.628	0.21	2.71	0.678	0.23
2.12	0.530	0.18	2.32	0.580	0.19	2.52	0.630	0.21	2.72	0.680	0.23
2.13	0.533	0.18	2.33	0.583	0.19	2.53	0.633	0.21	2.73	0.683	0.23
2.14	0.535	0.18	2.34	0.585	0.20	2.54	0.635	0.21	2.74	0.685	0.23
2.15	0.538	0.18	2.35	0.588	0.20	2.55	0.638	0.21	2.75	0.688	0.23
2.16	0.540	0.18	2.36	0.590	0.20	2.56	0.640	0.21	2.76	0.690	0.23
2.17	0.543	0.18	2.37	0.593	0.20	2.57	0.643	0.21	2.77	0.693	0.23
2.18	0.545	0.18	2.38	0.595	0.20	2.58	0.645	0.22	2.78	0.695	0.23
2.19	0.548	0.18	2.39	0.598	0.20	2.59	0.648	0.22	2.79	0.698	0.23
2.20	0.550	0.18	2.40	0.600	0.20	2.60	0.650	0.22	2.80	0.700	0.23
2.21	0.553	0.18	2.41	0.603	0.20	2.61	0.653	0.22	2.81	0.703	0.23
2.22	0.555	0.19	2.42	0.605	0.20	2.62	0.655	0.22	2.82	0.705	0.24
2.23	0.558	0.19	2.43	0.608	0.20	2.63	0.658	0.22	2.83	0.708	0.24
2.24	0.560	0.19	2.44	0.610	0.20	2.64	0.660	0.22	2.84	0.710	0.24
2.25	0.563	0.19	2.45	0.613	0.20	2.65	0.663	0.22	2.85	0.713	0.24
2.26	0.565	0.19	2.46	0.615	0.21	2.66	0.665	0.22	2.86	0.715	0.24
2.27	0.568	0.19	2.47	0.618	0.21	2.67	0.668	0.22	2.87	0.718	0.24
2.28	0.570	0.19	2.48	0.620	0.21	2.68	0.670	0.22	2.88	0.720	0.24
2.29	0.573	0.19	2.49	0.623	0.21	2.69	0.673	0.22	2.89	0.723	0.24
2.90	0.725	0.24	3.10	0.775	0.26	3.30	0.825	0.28	3.50	0.875	0.29
2.91	0.728	0.24	3.11	0.778	0.26	3.31	0.828	0.28	3.51	0.878	0.29
2.92	0.730	0.24	3.12	0.780	0.26	3.32	0.830	0.28	3.52	0.880	0.29
2.93	0.733	0.24	3.13	0.783	0.26	3.33	0.833	0.28	3.53	0.883	0.29
2.94	0.735	0.25	3.14	0.785	0.26	3.34	0.835	0.28	3.54	0.885	0.30
2.95	0.738	0.25	3.15	0.788	0.26	3.35	0.838	0.28	3.55	0.888	0.30
2.96	0.740	0.25	3.16	0.790	0.26	3.36	0.840	0.28	3.56	0.890	0.30
2.97	0.743	0.25	3.17	0.793	0.26	3.37	0.843	0.28	3.57	0.893	0.30
2.98	0.745	0.25	3.18	0.795	0.27	3.38	0.845	0.28	3.58	0.895	0.30
2.99	0.748	0.25	3.19	0.798	0.27	3.39	0.848	0.28	3.59	0.898	0.30
3.00	0.750	0.25	3.20	0.800	0.27	3.40	0.850	0.28	3.60	0.900	0.30
3.01	0.753	0.25	3.21	0.803	0.27	3.41	0.853	0.28	3.61	0.903	0.30
3.02	0.755	0.25	3.22	0.805	0.27	3.42	0.855	0.29	3.62	0.905	0.30
3.03	0.758	0.25	3.23	0.808	0.27	3.43	0.858	0.29	3.63	0.908	0.30
3.04	0.760	0.25	3.24	0.810	0.27	3.44	0.860	0.29	3.64	0.910	0.30
3.05	0.763	0.25	3.25	0.813	0.27	3.45	0.863	0.29	3.65	0.913	0.30
3.06	0.765	0.26	3.26	0.815	0.27	3.46	0.865	0.29	3.66	0.915	0.31
3.07	0.768	0.26	3.27	0.818	0.27	3.47	0.868	0.29	3.67	0.918	0.31
3.08	0.770	0.26	3.28	0.820	0.27	3.48	0.870	0.29	3.68	0.920	0.31
3.09	0.773	0.26	3.29	0.823	0.27	3.49	0.873	0.29	3.69	0.923	0.31

Tableau II A *(suite)* **Table II A** *(continued)*

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
3.70	0.925	0.31	3.90	0.975	0.33	4.10	1.025	0.34	4.30	1.075	0.36
3.71	0.928	0.31	3.91	0.978	0.33	4.11	1.028	0.34	4.31	1.078	0.36
3.72	0.930	0.31	3.92	0.980	0.33	4.12	1.030	0.34	4.32	1.080	0.36
3.73	0.933	0.31	3.93	0.983	0.33	4.13	1.033	0.34	4.33	1.083	0.36
3.74	0.935	0.31	3.94	0.985	0.33	4.14	1.035	0.35	4.34	1.085	0.36
3.75	0.938	0.31	3.95	0.988	0.33	4.15	1.038	0.35	4.35	1.088	0.36
3.76	0.940	0.31	3.96	0.990	0.33	4.16	1.040	0.35	4.36	1.090	0.36
3.77	0.943	0.31	3.97	0.993	0.33	4.17	1.043	0.35	4.37	1.093	0.36
3.78	0.945	0.32	3.98	0.995	0.33	4.18	1.045	0.35	4.38	1.095	0.37
3.79	0.948	0.32	3.99	0.998	0.33	4.19	1.048	0.35	4.39	1.098	0.37
3.80	0.950	0.32	4.00	1.000	0.33	4.20	1.050	0.35	4.40	1.100	0.37
3.81	0.953	0.32	4.01	1.003	0.33	4.21	1.053	0.35	4.41	1.103	0.37
3.82	0.955	0.32	4.02	1.005	0.34	4.22	1.055	0.35	4.42	1.105	0.37
3.83	0.958	0.32	4.03	1.008	0.34	4.23	1.058	0.35	4.43	1.108	0.37
3.84	0.960	0.32	4.04	1.010	0.34	4.24	1.060	0.35	4.44	1.110	0.37
3.85	0.963	0.32	4.05	1.013	0.34	4.25	1.063	0.35	4.45	1.113	0.37
3.86	0.965	0.32	4.06	1.015	0.34	4.26	1.065	0.36	4.46	1.115	0.37
3.87	0.968	0.32	4.07	1.018	0.34	4.27	1.068	0.36	4.47	1.118	0.37
3.88	0.970	0.32	4.08	1.020	0.34	4.28	1.070	0.36	4.48	1.120	0.37
3.89	0.973	0.32	4.09	1.023	0.34	4.29	1.073	0.36	4.49	1.123	0.37
4.50	1.125	0.38	4.70	1.175	0.39	4.90	1.225	0.41	5.10	1.275	0.43
4.51	1.128	0.38	4.71	1.178	0.39	4.91	1.228	0.41	5.11	1.278	0.43
4.52	1.130	0.38	4.72	1.180	0.39	4.92	1.230	0.41	5.12	1.280	0.43
4.53	1.133	0.38	4.73	1.183	0.39	4.93	1.233	0.41	5.13	1.283	0.43
4.54	1.135	0.38	4.74	1.185	0.40	4.94	1.235	0.41	5.14	1.285	0.43
4.55	1.138	0.38	4.75	1.188	0.40	4.95	1.238	0.41	5.15	1.288	0.43
4.56	1.140	0.38	4.76	1.190	0.40	4.96	1.240	0.41	5.16	1.290	0.43
4.57	1.143	0.38	4.77	1.193	0.40	4.97	1.243	0.41	5.17	1.293	0.43
4.58	1.145	0.38	4.78	1.195	0.40	4.98	1.245	0.42	5.18	1.295	0.43
4.59	1.148	0.38	4.79	1.198	0.40	4.99	1.248	0.42	5.19	1.298	0.43
4.60	1.150	0.38	4.80	1.200	0.40	5.00	1.250	0.42	5.20	1.300	0.43
4.61	1.153	0.38	4.81	1.203	0.40	5.01	1.253	0.42	5.21	1.303	0.43
4.62	1.155	0.39	4.82	1.205	0.40	5.02	1.255	0.42	5.22	1.305	0.44
4.63	1.158	0.39	4.83	1.208	0.40	5.03	1.258	0.42	5.23	1.308	0.44
4.64	1.160	0.39	4.84	1.210	0.40	5.04	1.260	0.42	5.24	1.310	0.44
4.65	1.163	0.39	4.85	1.213	0.40	5.05	1.263	0.42	5.25	1.313	0.44
4.66	1.165	0.39	4.86	1.215	0.41	5.06	1.265	0.42	5.26	1.315	0.44
4.67	1.168	0.39	4.87	1.218	0.41	5.07	1.268	0.42	5.27	1.318	0.44
4.68	1.170	0.39	4.88	1.220	0.41	5.08	1.270	0.42	5.28	1.320	0.44
4.69	1.173	0.39	4.89	1.223	0.41	5.09	1.273	0.42	5.29	1.323	0.44

Tableau II A *(suite)* **Table II A** *(continued)*

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
5.30	1.325	0.44	5.50	1.375	0.46	5.70	1.425	0.48	5.90	1.475	0.49
5.31	1.328	0.44	5.51	1.378	0.46	5.71	1.428	0.48	5.91	1.478	0.49
5.32	1.330	0.44	5.52	1.380	0.46	5.72	1.430	0.48	5.92	1.480	0.49
5.33	1.333	0.44	5.53	1.383	0.46	5.73	1.433	0.48	5.93	1.483	0.49
5.34	1.335	0.45	5.54	1.385	0.46	5.74	1.435	0.48	5.94	1.485	0.50
5.35	1.338	0.45	5.55	1.388	0.46	5.75	1.438	0.48	5.95	1.488	0.50
5.36	1.340	0.45	5.56	1.390	0.46	5.76	1.440	0.48	5.96	1.490	0.50
5.37	1.343	0.45	5.57	1.393	0.46	5.77	1.443	0.48	5.97	1.493	0.50
5.38	1.345	0.45	5.58	1.395	0.47	5.78	1.445	0.48	5.98	1.495	0.50
5.39	1.348	0.45	5.59	1.398	0.47	5.79	1.448	0.48	5.99	1.498	0.50
5.40	1.350	0.45	5.60	1.400	0.47	5.80	1.450	0.48	6.00	1.500	0.50
5.41	1.353	0.45	5.61	1.403	0.47	5.81	1.453	0.48	6.01	1.503	0.50
5.42	1.355	0.45	5.62	1.405	0.47	5.82	1.455	0.49	6.02	1.505	0.50
5.43	1.358	0.45	5.63	1.408	0.47	5.83	1.458	0.49	6.03	1.508	0.50
5.44	1.360	0.45	5.64	1.410	0.47	5.84	1.460	0.49	6.04	1.510	0.50
5.45	1.363	0.45	5.65	1.413	0.47	5.85	1.463	0.49	6.05	1.513	0.50
5.46	1.365	0.46	5.66	1.415	0.47	5.86	1.465	0.49	6.06	1.515	0.51
5.47	1.368	0.46	5.67	1.418	0.47	5.87	1.468	0.49	6.07	1.518	0.51
5.48	1.370	0.46	5.68	1.420	0.47	5.88	1.470	0.49	6.08	1.520	0.51
5.49	1.373	0.46	5.69	1.423	0.47	5.89	1.473	0.49	6.09	1.523	0.51
6.10	1.525	0.51	6.30	1.575	0.53	6.50	1.625	0.54	6.70	1.675	0.56
6.11	1.528	0.51	6.31	1.578	0.53	6.51	1.628	0.54	6.71	1.678	0.56
6.12	1.530	0.51	6.32	1.580	0.53	6.52	1.630	0.54	6.72	1.680	0.56
6.13	1.533	0.51	6.33	1.583	0.53	6.53	1.633	0.54	6.73	1.683	0.56
6.14	1.535	0.51	6.34	1.585	0.53	6.54	1.635	0.55	6.74	1.685	0.56
6.15	1.538	0.51	6.35	1.588	0.53	6.55	1.638	0.55	6.75	1.688	0.56
6.16	1.540	0.51	6.36	1.590	0.53	6.56	1.640	0.55	6.76	1.690	0.56
6.17	1.543	0.51	6.37	1.593	0.53	6.57	1.643	0.55	6.77	1.693	0.56
6.18	1.545	0.52	6.38	1.595	0.53	6.58	1.645	0.55	6.78	1.695	0.57
6.19	1.548	0.52	6.39	1.598	0.53	6.59	1.648	0.55	6.79	1.698	0.57
6.20	1.550	0.52	6.40	1.600	0.53	6.60	1.650	0.55	6.80	1.700	0.57
6.21	1.553	0.52	6.41	1.603	0.53	6.61	1.653	0.55	6.81	1.703	0.57
6.22	1.555	0.52	6.42	1.605	0.54	6.62	1.655	0.55	6.82	1.705	0.57
6.23	1.558	0.52	6.43	1.608	0.54	6.63	1.658	0.55	6.83	1.708	0.57
6.24	1.560	0.52	6.44	1.610	0.54	6.64	1.660	0.55	6.84	1.7 0	0.57
6.25	1.563	0.52	6.45	1.613	0.54	6.65	1.663	0.55	6.85	1.713	0.57
6.26	1.565	0.52	6.46	1.615	0.54	6.66	1.665	0.56	6.86	1.715	0.57
6.27	1.568	0.52	6.47	1.618	0.54	6.67	1.668	0.56	6.87	1.718	0.57
6.28	1.570	0.52	6.48	1.620	0.54	6.68	1.670	0.56	6.88	1.720	0.57
6.29	1.573	0.52	6.49	1.623	0.54	6.69	1.673	0.56	6.89	1.723	0.57

Tableau II A *(suite)* **Table II A** *(continued)*

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
6.90	1.725	0.58	7.10	1.775	0.59	7.30	1.825	0.61	7.50	1.875	0.63
6.91	1.728	0.58	7.11	1.778	0.59	7.31	1.828	0.61	7.51	1.878	0.63
6.92	1.730	0.58	7.12	1.780	0.59	7.32	1.830	0.61	7.52	1.880	0.63
6.93	1.733	0.58	7.13	1.783	0.59	7.33	1.833	0.61	7.53	1.883	0.63
6.94	1.735	0.58	7.14	1.785	0.60	7.34	1.835	0.61	7.54	1.885	0.63
6.95	1.738	0.58	7.15	1.788	0.60	7.35	1.838	0.61	7.55	1.888	0.63
6.96	1.740	0.58	7.16	1.790	0.60	7.36	1.840	0.61	7.56	1.890	0.63
6.97	1.743	0.58	7.17	1.793	0.60	7.37	1.843	0.61	7.57	1.893	0.63
6.98	1.745	0.58	7.18	1.795	0.60	7.38	1.845	0.62	7.58	1.895	0.63
6.99	1.748	0.58	7.19	1.798	0.60	7.39	1.848	0.62	7.59	1.898	0.63
7.00	1.750	0.58	7.20	1.800	0.60	7.40	1.850	0.62	7.60	1.900	0.63
7.01	1.753	0.58	7.21	1.803	0.60	7.41	1.853	0.62	7.61	1.903	0.63
7.02	1.755	0.59	7.22	1.805	0.60	7.42	1.855	0.62	7.62	1.905	0.64
7.03	1.758	0.59	7.23	1.808	0.60	7.43	1.858	0.62	7.63	1.908	0.64
7.04	1.760	0.59	7.24	1.810	0.60	7.44	1.860	0.62	7.64	1.910	0.64
7.05	1.763	0.59	7.25	1.813	0.60	7.45	1.863	0.62	7.65	1.913	0.64
7.06	1.765	0.59	7.26	1.815	0.61	7.46	1.865	0.62	7.66	1.915	0.64
7.07	1.768	0.59	7.27	1.818	0.61	7.47	1.868	0.62	7.67	1.918	0.64
7.08	1.770	0.59	7.28	1.820	0.61	7.48	1.870	0.62	7.68	1.920	0.64
7.09	1.773	0.59	7.29	1.823	0.61	7.49	1.873	0.62	7.69	1.923	0.64
7.70	1.925	0.64	7.90	1.975	0.66	8.10	2.025	0.68	8.30	2.075	0.69
7.71	1.928	0.64	7.91	1.978	0.66	8.11	2.028	0.68	8.31	2.078	0.69
7.72	1.930	0.64	7.92	1.980	0.66	8.12	2.030	0.68	8.32	2.080	0.69
7.73	1.933	0.64	7.93	1.983	0.66	8.13	2.033	0.68	8.33	2.083	0.69
7.74	1.935	0.65	7.94	1.985	0.66	8.14	2.035	0.68	8.34	2.085	0.70
7.75	1.938	0.65	7.95	1.988	0.66	8.15	2.038	0.68	8.35	2.088	0.70
7.76	1.940	0.65	7.96	1.990	0.66	8.16	2.040	0.68	8.36	2.090	0.70
7.77	1.943	0.65	7.97	1.993	0.66	8.17	2.043	0.68	8.37	2.093	0.70
7.78	1.945	0.65	7.98	1.995	0.67	8.18	2.045	0.68	8.38	2.095	0.70
7.79	1.948	0.65	7.99	1.998	0.67	8.19	2.048	0.68	8.39	2.098	0.70
7.80	1.950	0.65	8.00	2.000	0.67	8.20	2.050	0.68	8.40	2.100	0.70
7.81	1.953	0.65	8.01	2.003	0.67	8.21	2.053	0.68	8.41	2.103	0.70
7.82	1.955	0.65	8.02	2.005	0.67	8.22	2.055	0.69	8.42	2.105	0.70
7.83	1.958	0.65	8.03	2.008	0.67	8.23	2.058	0.69	8.43	2.108	0.70
7.84	1.960	0.65	8.04	2.010	0.67	8.24	2.060	0.69	8.44	2.110	0.70
7.85	1.963	0.65	8.05	2.013	0.67	8.25	2.063	0.69	8.45	2.113	0.70
7.86	1.965	0.66	8.06	2.015	0.67	8.26	2.065	0.69	8.46	2.115	0.71
7.87	1.968	0.66	8.07	2.018	0.67	8.27	2.068	0.69	8.47	2.118	0.71
7.88	1.970	0.66	8.08	2.020	0.67	8.28	2.070	0.69	8.48	2.120	0.71
7.89	1.973	0.66	8.09	2.023	0.67	8.29	2.073	0.69	8.49	2.123	0.71

Tableau II A *(fin)* **Table II A** *(concluded)*

Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	¼ hauteur de tonnage ¼ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
8.50	2.125	0.71	8.63	2.158	0.72	8.76	2.190	0.73	8.89	2.223	0.74
8.51	2.128	0.71	8.64	2.160	0.72	8.77	2.193	0.73	8.90	2.225	0.74
8.52	2.130	0.71	8.65	2.163	0.72	8.78	2.195	0.73	8.91	2.228	0.74
8.53	2.133	0.71	8.66	2.165	0.72	8.79	2.198	0.73	8.92	2.230	0.74
8.54	2.135	0.71	8.67	2.168	0.72	8.80	2.200	0.73	8.93	2.233	0.74
8.55	2.138	0.71	8.68	2.170	0.72	8.81	2.203	0.73	8.94	2.235	0.75
8.56	2.140	0.71	8.69	2.173	0.72	8.82	2.205	0.74	8.95	2.238	0.75
8.57	2.143	0.71	8.70	2.175	0.73	8.83	2.208	0.74	8.96	2.240	0.75
8.58	2.145	0.72	8.71	2.178	0.73	8.84	2.210	0.74	8.97	2.243	0.75
8.59	2.148	0.72	8.72	2.180	0.73	8.85	2.213	0.74	8.98	2.245	0.75
8.60	2.150	0.72	8.73	2.183	0.73	8.86	2.215	0.74	8.99	2.248	0.75
8.61	2.153	0.72	8.74	2.185	0.73	8.87	2.218	0.74	9.00	2.250	0.75
8.62	2.255	0.72	8.75	2.188	0.73	8.88	2.220	0.74			

Tableau II B

INDIQUANT EN MÈTRES L'INTERVALLE COMMUN ET LE TIERS DE L'INTERVALLE COMMUN ENTRE LES LARGEURS POUR DIFFÉRENTES HAUTEURS DE TONNAGE.
La hauteur de tonnage au milieu de la longueur de tonnage *excède* 4 m. 88.

Table II B

INDICATING IN METRES COMMON INTERVALS AND ONE-THIRD OF COMMON INTERVALS BETWEEN THE BREADTHS CORRESPONDING TO DIFFERENT TONNAGE DEPTHS.
The tonnage depth at the middle of the tonnage length *exceeds* 4.88 metres.

Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
4.00	0.667	0.22	4.20	0.700	0.23	4.40	0.733	0.24	4.60	0.767	0.26
4.01	0.668	0.22	4.21	0.702	0.23	4.41	0.735	0.25	4.61	0.768	0.26
4.02	0.670	0.22	4.22	0.703	0.23	4.42	0.737	0.25	4.62	0.770	0.26
4.03	0.672	0.22	4.23	0.705	0.24	4.43	0.738	0.25	4.63	0.772	0.26
4.04	0.673	0.22	4.24	0.707	0.24	4.44	0.740	0.25	4.64	0.773	0.26
4.05	0.675	0.23	4.25	0.708	0.24	4.45	0.742	0.25	4.65	0.775	0.26
4.06	0.677	0.23	4.26	0.710	0.24	4.46	0.743	0.25	4.66	0.777	0.26
4.07	0.678	0.23	4.27	0.712	0.24	4.47	0.745	0.25	4.67	0.778	0.26
4.08	0.680	0.23	4.28	0.713	0.24	4.48	0.447	0.25	4.68	0.780	0.26
4.09	0.682	0.23	4.29	0.715	0.24	4.49	0.748	0.25	4.69	0.782	0.26
4.10	0.683	0.23	4.30	0.717	0.24	4.50	0.750	0.25	4.70	0.783	0.26
4.11	0.685	0.23	4.31	0.718	0.24	4.51	0.752	0.25	4.71	0.785	0.26
4.12	0.687	0.23	4.32	0.720	0.24	4.52	0.753	0.25	4.72	0.787	0.26
4.13	0.688	0.23	4.33	0.722	0.24	4.53	0.755	0.25	4.73	0.788	0.26
4.14	0.690	0.23	4.34	0.723	0.24	4.54	0.757	0.25	4.74	0.790	0.26
4.15	0.692	0.23	4.35	0.725	0.24	4.55	0.758	0.25	4.75	0.792	0.26
4.16	0.693	0.23	4.36	0.727	0.24	4.56	0.760	0.25	4.76	0.793	0.26
4.17	0.695	0.23	4.37	0.728	0.24	4.57	0.762	0.25	4.77	0.795	0.27
4.18	0.697	0.23	4.38	0.730	0.24	4.58	0.763	0.25	4.78	0.797	0.27
4.19	0.698	0.23	4.39	0.732	0.24	4.59	0.765	0.26	4.79	0.798	0.27
4.80	0.800	0.27	5.00	0.833	0.28	5.20	0.867	0.29	5.40	0.900	0.30
4.81	0.802	0.27	5.01	0.835	0.28	5.21	0.868	0.29	5.41	0.902	0.30
4.82	0.803	0.27	5.02	0.837	0.28	5.22	0.870	0.29	5.42	0.903	0.30
4.83	0.805	0.27	5.03	0.838	0 28	5.23	0.872	0.29	5.43	0.905	0.30
4.84	0.807	0.27	5.04	0.840	0.28	5.24	0.873	0.29	5.44	0.907	0.30
4.85	0.808	0.27	5.05	0.842	0.28	5.25	0.875	0.29	5.45	0.908	0.30
4.86	0.810	0.27	5.06	0.843	0.28	5.26	0.877	0.29	5.46	0.910	0.30
4.87	0.812	0.27	5.07	0.845	0.28	5.27	0.878	0.29	5.47	0.912	0.30
4.88	0.813	0.27	5.08	0.847	0.28	5.28	0.880	0.29	5.48	0.913	0.30
4.89	0.815	0.27	5.09	0.848	0.28	5.29	0.882	0.29	5.49	0.915	0.31
4.90	0.817	0.27	5.10	0.850	0.28	5.30	0.883	0.29	5.50	0.917	0.31
4.91	0.818	0.27	5.11	0.852	0.28	5.31	0.885	0.30	5.51	0.918	0.31
4.92	0.820	0.27	5.12	0.853	0.28	5.32	0.887	0.30	5.52	0.920	0.31
4.93	0.822	0.27	5.13	0.855	0.29	5.33	0.888	0.30	5.53	0.922	0.31
4.94	0.823	0.27	5.14	0.857	0.29	5.34	0.890	0.30	5.54	0.923	0.31
4.95	0.825	0.28	5.15	0.858	0.29	5.35	0.892	0.30	5.55	0.925	0.31
4.96	0.827	0.28	5.16	0.860	0.29	5.36	0.893	0.30	5.56	0.927	0.31
4.97	0.828	0.28	5.17	0.862	0.29	5.37	0.895	0.30	5.57	0.928	0.31
4.98	0.830	0.28	5.18	0.863	0.29	5.38	0.897	0.30	5.58	0.930	0.31
4.99	0.832	0.28	5.19	0.865	0.29	5.39	0.898	0.30	5.59	0.932	0.31

Tableau II B *(suite)* **Table II B** *(continued)*

Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths
5.60	0.933	0.31	5.80	0.967	0.32	6.00	1.000	0.33	6.20	1.033	0.34
5.61	0.935	0.31	5.81	0.968	0.32	6.01	1.002	0.33	6.21	1.035	0.35
5.62	0.937	0.31	5.82	0.970	0.32	6.02	1.003	0.33	6.22	1.037	0.35
5.63	0.938	0.31	5.83	0.972	0.32	6.03	1.005	0.34	6.23	1.038	0.35
5.64	0.940	0.31	5.84	0.973	0.32	6.04	1.007	0.34	6.24	1.040	0.35
5.65	0.942	0.31	5.85	0.975	0.33	6.05	1.008	0.34	6.25	1.042	0.35
5.66	0.943	0.31	5.86	0.977	0.33	6.06	1.010	0.34	6.26	1.043	0.35
5.67	0.945	0.32	5.87	0.978	0.33	6.07	1.012	0.34	6.27	1.045	0.35
5.68	0.947	0.32	5.88	0.980	0.33	6.08	1.013	0.34	6.28	1.047	0.35
5.69	0.948	0.32	5.89	0.982	0.33	6.09	1.015	0.34	6.29	1.048	0.35
5.70	0.950	0.32	5.90	0.983	0.33	6.10	1.017	0.34	6.30	1.050	0.35
5.71	0.952	0.32	5.91	0.985	0.33	6.11	1.018	0.34	6.31	1.052	0.35
5.72	0.953	0.32	5.92	0.987	0.33	6.12	1.020	0.34	6.32	1.053	0.35
5.73	0.955	0.32	5.93	0.988	0.33	6.13	1.022	0.34	6.33	1.055	0.35
5.74	0.957	0.32	5.94	0.990	0.33	6.14	1.023	0.34	6.34	1.057	0.35
5.75	0.958	0.32	5.95	0.992	0.33	6.15	1.025	0.34	6.35	1.058	0.35
5.76	0.960	0.32	5.96	0.993	0.33	6.16	1.027	0.34	6.36	1.060	0.35
5.77	0.962	0.32	5.97	0.995	0.33	6.17	1.028	0.34	6.37	1.062	0.35
5.78	0.963	0.32	5.98	0.997	0.33	6.18	1.030	0.34	6.38	1.063	0.35
5.79	0.965	0.32	5.99	0.998	0.33	6.19	1.032	0.34	6.39	1.065	0.36
6.40	1.067	0.36	6.60	1.100	0.37	6.80	1.133	0.38	7.00	1.167	0.39
6.41	1.068	0.36	6.61	1.102	0.37	6.81	1.135	0.38	7.01	1.168	0.39
6.42	1.070	0.36	6.62	1.103	0.37	6.82	1.137	0.38	7.02	1.170	0.39
6.43	1.072	0.36	6.63	1.105	0.37	6.83	1.138	0.38	7.03	1.172	0.39
6.44	1.073	0.36	6.64	1.107	0.37	6.84	1.140	0.38	7.04	1.173	0.39
6.45	1.075	0.36	6.65	1.108	0.37	6.85	1.142	0.38	7.05	1.175	0.39
6.46	1.077	0.36	6.66	1.110	0.37	6.86	1.143	0.38	7.06	1.177	0.39
6.47	1.078	0.36	6.67	1.112	0.37	6.87	1.145	0.38	7.07	1.178	0.39
6.48	1.080	0.36	6.68	1.113	0.37	6.88	1.147	0.38	7.08	1.180	0.39
6.49	1.082	0.36	6.69	1.115	0.37	6.89	1.148	0.38	7.09	1.182	0.39
6.50	1.083	0.36	6.70	1.117	0.37	6.90	1.150	0.38	7.10	1.183	0.39
6.51	1.085	0.36	6.71	1.118	0.37	6.91	1.152	0.38	7.11	1.185	0.40
6.52	1.087	0.36	6.72	1.120	0.37	6.92	1.153	0.38	7.12	1.187	0.40
6.53	1.088	0.36	6.73	1.122	0.37	6.93	1.155	0.39	7.13	1.188	0.40
6.54	1.090	0.36	6.74	1.123	0.37	6.94	1.157	0.39	7.14	1.190	0.40
6.55	1.092	0.36	6.75	1.125	0.38	6.95	1.158	0.39	7.15	1.192	0.40
6.56	1.093	0.36	6.76	1.127	0.38	6.96	1.160	0.39	7.16	1.193	0.40
6.57	1.095	0.37	6.77	1.128	0.38	6.97	1.162	0.39	7.17	1.195	0.40
6.58	1.097	0.37	6.78	1.130	0.38	6.98	1.163	0.39	7.18	1.197	0.40
6.59	1.098	0.37	6.79	1.132	0.38	6.99	1.165	0.39	7.19	1.198	0.40

Tableau II B *(suite)* **Table II B** *(continued)*

Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths	Hauteur de tonnage Tonnage depth	⅙ hauteur de tonnage ⅙ tonnage depth	⅓ intervalle commun entre largeurs — ⅓ common interval between breadths
7.20	1.200	0.40	7.40	1.233	0.41	7.60	1.267	0.42	7.80	1.300	0.43
7.21	1.202	0.40	7.41	1.235	0.41	7.61	1.268	0.42	7.81	1.302	0.43
7.22	1.203	0.40	7.42	1.237	0.41	7.62	1.270	0.42	7.82	1.303	0.43
7.23	1.205	0.40	7.43	1.238	0.41	7.63	1.272	0,42	7.83	1.305	0.44
7.24	1.207	0.40	7.44	1.240	0.41	7.64	1.273	0.42	7.84	1.307	0.44
7.25	1.208	0.40	7.45	1.242	0.41	7.65	1.275	0.43	7.85	1.308	0.44
7.26	1.210	0.40	7.46	1.243	0.41	7.66	1.277	0.43	7.86	1.310	0.44
7.27	1.212	0.40	7.47	1.245	0.42	7.67	1.278	0.43	7.87	1.312	0.44
7.28	1.213	0.40	7.48	1.247	0.42	7.68	1.280	0.43	7.88	1.313	0.44
7.29	1.215	0.41	7.49	1.248	0.42	7.69	1.282	0.43	7.89	1.315	0.44
7.30	1.217	0.41	7.50	1.250	0.42	7.70	1.283	0.43	7.90	1.317	0.44
7.31	1.218	0.41	7.51	1.252	0.42	7.71	1.285	0.43	7.91	1.318	0.44
7.32	1.220	0.41	7.52	1.253	0.42	7.72	1.287	0.43	7.92	1.320	0.44
7.33	1.222	0.41	7.53	1.255	0.42	7.73	1.288	0.43	7.93	1.322	0.44
7.34	1.223	0.41	7.54	1.257	0.42	7.74	1.290	0.43	7.94	1.323	0.44
7.35	1.225	0.41	7.55	1.258	0.42	7.75	1.292	0.43	7.95	1.325	0.44
7.36	1.227	0.41	7.56	1.260	0.42	7.76	1.293	0.43	7.96	1.327	0.44
7.37	1.228	0.41	7.57	1.262	0.42	7.77	1.295	0.43	7.97	1.328	0.44
7.38	1.230	0.41	7.58	1.263	0.42	7.78	1.297	0.43	7.98	1.330	0.44
7.39	1.232	0.41	7.59	1.265	0.42	7.79	1.298	0.43	7.99	1.332	0.44
8.00	1.333	0.44	8.20	1.367	0.46	8.40	1.400	0.47	8.60	1.433	0.48
8.01	1.335	0.45	8.21	1.368	0.46	8.41	1.402	0.47	8.61	1.435	0.48
8.02	1.337	0.45	8.22	1.370	0.46	8.42	1.403	0.47	8.62	1.437	0.48
8.03	1.338	0.45	8.23	1.372	0.46	8.43	1.405	0.47	8.63	1.438	0.48
8.04	1.340	0.45	8.24	1.373	0.46	8.44	1.407	0.47	8.64	1.440	0.48
8.05	1.342	0.45	8.25	1.375	0.46	8.45	1.408	0.47	8.65	1.442	0.48
8.06	1.343	0.45	8.26	1.377	0.46	8.46	1.410	0.47	8.66	1.443	0.48
8.07	1.345	0.45	8.27	1.378	0.46	8.47	1.412	0.47	8.67	1.445	0.48
8.08	1.347	0.45	8.28	1.380	0.46	8.48	1.413	0.47	8.68	1.447	0.48
8.09	1.348	0.45	8.29	1.382	0.46	8.49	1.415	0.47	8.69	1.448	0.48
8.10	1.350	0.45	8.30	1.383	0.46	8.50	1.417	0.47	8.70	1.450	0.48
8.11	1.352	0.45	8.31	1.385	0.46	8.51	1.418	0.47	8.71	1.452	0.48
8.12	1.353	0.45	8.32	1.387	0.46	8.52	1.420	0.47	8.72	1.453	0.48
8.13	1.355	0.45	8.33	1.388	0.46	8.53	1.422	0.47	8.73	1.455	0.49
8.14	1.357	0.45	8.34	1.390	0.46	8.54	1.423	0.47	8.74	1.457	0.49
8.15	1.358	0.45	8.35	1.392	0.46	8.55	1.425	0.48	8.75	1.458	0.49
8.16	1.360	0.45	8.36	1.393	0.46	8.56	1.427	0.48	8.76	1.460	0.49
8.17	1.362	0.45	8.37	1.395	0.47	8.57	1.428	0.48	8.77	1.462	0.49
8.18	1.363	0.45	8.38	1.397	0.47	8.58	1.430	0.48	8.78	1.463	0.49
8.19	1.365	0.46	8.39	1.398	0.47	8.59	1.432	0.48	8.79	1.465	0.49

Tableau II B *(suite)* **Table II B** *(continued)*

Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths
8.80	1.467	0.49	9.00	1.500	0.50	9.20	1.533	0.51	9.40	1.567	0.52
8.81	1.468	0.49	9.01	1.502	0.50	9.21	1.535	0.51	9.41	1.568	0.52
8.82	1.470	0.49	9.02	1.503	0.50	9.22	1.537	0.51	9.42	1.570	0.52
8.83	1.472	0.49	9.03	1.505	0.50	9.23	1.538	0.51	9.43	1.572	0.52
8.84	1.473	0.49	9.04	1.507	0.50	9.24	1.540	0.51	9.44	1.573	0.52
8.85	1.475	0.49	9.05	1.508	0.50	9.25	1.542	0.51	9.45	1.575	0.53
8.86	1.477	0.49	9.06	1.510	0.50	9.26	1.543	0.51	9.46	1.577	0.53
8.87	1.478	0.49	9.07	1.512	0.50	9.27	1.545	0.52	9.47	1.578	0.53
8.88	1.480	0.49	9.08	1.513	0.50	9.28	1.547	0.52	9.48	1.580	0.53
8.89	1.482	0.49	9.09	1.515	0.51	9.29	1.548	0.52	9.49	1.582	0.53
8.90	1.483	0.49	9.10	1.517	0.51	9.30	1.550	0.52	9.50	1.583	0.53
8.91	1.485	0.50	9.11	1.518	0.51	9.31	1.552	0.52	9.51	1.585	0.53
8.92	1.487	0.50	9.12	1.520	0.51	9.32	1.553	0.52	9.52	1.587	0.53
8.93	1.488	0.50	9.13	1.522	0.51	9.33	1.555	0.52	9.53	1.588	0.53
8.94	1.490	0.50	9.14	1.523	0.51	9.34	1.557	0.52	9.54	1.590	0.53
8.95	1.492	0.50	9.15	1.525	0.51	9.35	1.558	0.52	9.55	1.592	0.53
8.96	1.493	0.50	9.16	1.527	0.51	9.36	1.560	0.52	9.56	1.593	0.53
8.97	1.495	0.50	9.17	1.528	0.51	9.37	1.562	0.52	9.57	1.595	0.53
8.98	1.497	0.50	9.18	1.530	0.51	9.38	1.563	0.52	9.58	1.597	0.53
8.99	1.498	0.50	9.19	1.532	0.51	9.39	1.565	0.52	9.59	1.598	0.53
9.60	1.600	0.53	9.80	1.633	0.54	10.00	1.667	0.56	10.20	1.700	0.57
9.61	1.602	0.53	9.81	1.635	0.55	10.01	1.668	0.56	10.21	1.702	0.57
9.62	1.603	0.53	9.82	1.637	0.55	10.02	1.670	0.56	10.22	1.703	0.57
9.63	1.605	0.54	9.83	1.638	0.55	10.03	1.672	0.56	10.23	1.705	0.57
9.64	1.607	0.54	9.84	1.640	0.55	10.04	1.673	0.56	10.24	1.707	0.57
9.65	1.608	0.54	9.85	1.642	0.55	10.05	1.675	0.56	10.25	1.708	0.57
9.66	1.610	0.54	9.86	1.643	0.55	10.06	1.677	0.56	10.26	1.710	0.57
9.67	1.612	0.54	9.87	1.645	0.55	10.07	1.678	0.56	10.27	1.712	0.57
9.68	1.613	0.54	9.88	1.647	0.55	10.08	1.680	0.56	10.28	1.713	0.57
9.69	1.615	0.54	9.89	1.648	0.55	10.09	1.682	0.56	10.29	1.715	0.57
9.70	1.617	0.54	9.90	1.650	0.55	10.10	1.683	0.56	10.30	1.717	0.57
9.71	1.618	0.54	9.91	1.652	0.55	10.11	1.685	0.56	10.31	1.718	0.57
9.72	1.620	0.54	9.92	1.653	0.55	10.12	1.687	0.56	10.32	1.720	0.57
9.73	1.622	0.54	9.93	1.655	0.55	10.13	1.688	0.56	10.33	1.722	0.57
9.74	1.623	0.54	9.94	1.657	0.55	10.14	1.690	0.56	10.34	1.723	0.57
9.75	1.625	0.54	9.95	1.658	0.55	10.15	1.692	0.56	10.35	1.725	0.58
9.76	1.627	0.54	9.96	1.660	0.55	10.16	1.693	0.56	10.36	1.727	0.58
9.77	1.628	0.54	9.97	1.662	0.55	10.17	1.695	0.57	10.37	1.728	0.58
9.78	1.630	0.54	9.98	1.663	0.55	10.18	1.697	0.57	10.38	1.730	0.58
9.79	1.632	0.54	9.99	1.665	0.56	10.19	1.698	0.57	10.39	1.732	0.58

Tableau II B *(suite)* **Table II B** *(continued)*

Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths
10.40	1.733	0.58	10.60	1.767	0.59	10.80	1.800	0.60	11.00	1.833	0.61
10.41	1.735	0.58	10.61	1.768	0.59	10.81	1.802	0.60	11.01	1.835	0.61
10.42	1.737	0.58	10.62	1.770	0.59	10.82	1.803	0.60	11.02	1.837	0.61
10.43	1.738	0.58	10.63	1.772	0.59	10.83	1.805	0.60	11.03	1.838	0.61
10.44	1.740	0.58	10.64	1.773	0.59	10.84	1.807	0.60	11.04	1.840	0.61
10.45	1.742	0.58	10.65	1.775	0.59	10.85	1.808	0.60	11.05	1.842	0.61
10.46	1.743	0.58	10.66	1.777	0.59	10.86	1.810	0.60	11.06	1.843	0.61
10.47	1.745	0.58	10.67	1.778	0.59	10.87	1.812	0.60	11.07	1.845	0.62
10.48	1.747	0.58	10.68	1.780	0.59	10.88	1.813	0.60	11.08	1.847	0.62
10.49	1.748	0.58	10.69	1.782	0.59	10.89	1.815	0.61	11.09	1.848	0.62
10.50	1.750	0.58	10.70	1.783	0.59	10.90	1.817	0.61	11.10	1.850	0.62
10.51	1.752	0.58	10.71	1.785	0.60	10.91	1.818	0.61	11.11	1.852	0.62
10.52	1.753	0.58	10.72	1.787	0.60	10.92	1.820	0.61	11.12	1.853	0.62
10.53	1.755	0.59	10.73	1.788	0.60	10.93	1.822	0.61	11.13	1.855	0.62
10.54	1.757	0.59	10.74	1.790	0.60	10.94	1.823	0.61	11.14	1.857	0.62
10.55	1.758	0.59	10.75	1.792	0.60	10.95	1.825	0.61	11.15	1.858	0.62
10.56	1.760	0.59	10.76	1.793	0.60	10.96	1.827	0.61	11.16	1.860	0.62
10.57	1.762	0.59	10.77	1.795	0.60	10.97	1.828	0.61	11.17	1.862	0.62
10.58	1.763	0.59	10.78	1.797	0.60	10.98	1.830	0.61	11.18	1.863	0.62
10.59	1.765	0.59	10.79	1.798	0.60	10.99	1.832	0.61	11.19	1.865	0.62
11.20	1.867	0.62	11.40	1.900	0.63	11.60	1.933	0.64	11.80	1.967	0.66
11.21	1.868	0.62	11.41	1.902	0.63	11.61	1.935	0.65	11.81	1.968	0.66
11.22	1.870	0.62	11.42	1.903	0.63	11.62	1.937	0.65	11.82	1.970	0.66
11.23	1.872	0.62	11.43	1.905	0.64	11.63	1.938	0.65	11.83	1.972	0.66
11.24	1.873	0.62	11.44	1.907	0.64	11.64	1.940	0.65	11.84	1.973	0.66
11.25	1.875	0.63	11.45	1.908	0.64	11.65	1.942	0.65	11.85	1.975	0.66
11.26	1.877	0.63	11.46	1.910	0.64	11.66	1.943	0.65	11.86	1.977	0.66
11.27	1.878	0.63	11.47	1.912	0.64	11.67	1.945	0.65	11.87	1.978	0.66
11.28	1.880	0.63	11.48	1.913	0.64	11.68	1.947	0.65	11.88	1.980	0.66
11.29	1.882	0.63	11.49	1.915	0.64	11.69	1.948	0.65	11.89	1.982	0.66
11.30	1.883	0.63	11.50	1.917	0.64	11.70	1.950	0.65	11.90	1.983	0.66
11.31	1.885	0.63	11.51	1.918	0.64	11.71	1.952	0.65	11.91	1.985	0.66
11.32	1.887	0.63	11.52	1.920	0.64	11.72	1.953	0.65	11.92	1.987	0.66
11.33	1.888	0.63	11.53	1.922	0.64	11.73	1.955	0.65	11.93	1.988	0.66
11.34	1.890	0.63	11.54	1.923	0.64	11.74	1.957	0.65	11.94	1.990	0.66
11.35	1.892	0.63	11.55	1.925	0.64	11.75	1.958	0.65	11.95	1.992	0.66
11.36	1.893	0.63	11.56	1.927	0.64	11.76	1.960	0.65	11.96	1.993	0.66
11.37	1.895	0.63	11.57	1.928	0.64	11.77	1.962	0.65	11.97	1.995	0.67
11.38	1.897	0.63	11.58	1.930	0.64	11.78	1.963	0.65	11.98	1.997	0.67
11.39	1.898	0.63	11.59	1.932	0.64	11.79	1.965	0.66	11.99	1.998	0.67

Tableau II B *(suite)* **Table II B** *(continued)*

Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths
12.00	2.000	0.67	12.20	2.033	0.68	12.40	2.067	0.69	12.60	2.100	0.70
12.01	2.002	0.67	12.21	2.035	0.68	12.41	2.068	0.69	12.61	2.102	0.70
12.02	2.003	0.67	12.22	2.037	0.68	12.42	2.070	0.69	12.62	2.103	0.70
12.03	2.005	0.67	12.23	2.038	0.68	12.43	2.072	0.69	12.63	2.105	0.70
12.04	2.007	0.67	12.24	2.040	0.68	12.44	2.073	0.69	12.64	2.107	0.70
12.05	2.008	0.67	12.25	2.042	0.68	12.45	2.075	0.69	12.65	2.108	0.70
12.06	2.010	0.67	12.26	2.043	0.68	12.46	2.077	0.69	12.66	2.110	0.70
12.07	2.012	0.67	12.27	2.045	0.68	12.47	2.078	0.69	12.67	2.112	0.70
12.08	2.013	0.67	12.28	2.047	0.68	12.48	2.080	0.69	12.68	2.113	0.70
12.09	2.015	0.67	12.29	2.048	0.68	12.49	2.082	0.69	12.69	2.115	0.71
12.10	2.017	0.67	12.30	2.050	0.68	12.50	2.083	0.69	12.70	2.117	0.71
12.11	2.018	0.67	12.31	2.052	0.68	12.51	2.085	0.70	12.71	2.118	0.71
12.12	2.020	0.67	12.32	2.053	0.68	12.52	2.087	0.70	12.72	2.120	0.71
12.13	2.022	0.67	12.33	2.055	0.69	12.53	2.088	0.70	12.73	2.122	0.71
12.14	2.023	0.67	12.34	2.057	0.69	12.54	2.090	0.70	12.74	2.123	0.71
12.15	2.025	0.68	12.35	2.058	0.69	12.55	2.092	0.70	12.75	2.125	0.71
12.16	2.027	0.68	12.36	2.060	0.69	12.56	2.093	0.70	12.76	2.127	0.71
12.17	2.028	0.68	12.37	2.062	0.69	12.57	2.095	0.70	12.77	2.128	0.71
12.18	2.030	0.68	12.38	2.063	0.69	12.58	2.097	0.70	12.78	2.130	0.71
12.19	2.032	0.68	12.39	2.065	0.69	12.59	2.098	0.70	12.79	2.132	0.71
12.80	2.133	0.71	13.00	2.167	0.72	13.20	2.200	0.73	13.40	2.233	0.74
12.81	2.135	0.71	13.01	2.168	0.72	13.21	2.202	0.73	13.41	2.235	0.75
12.82	2.137	0.71	13.02	2.170	0.72	13.22	2.203	0.73	13.42	2.237	0.75
12.83	2.138	0.71	13.03	2.172	0.72	13.23	2.205	0.74	13.43	2.238	0.75
12.84	2.140	0.71	13.04	2.173	0.72	13.24	2.207	0.74	13.44	2.240	0.75
12.85	2.142	0.71	13.05	2.175	0.73	12.25	2.208	0.74	13.45	2.242	0.75
12.86	2.143	0.71	13.06	2.177	0.73	13.26	2.210	0.74	13.46	2.243	0.75
12.87	2.145	0.72	13.07	2.178	0.73	13.27	2.212	0.74	13.47	2.245	0.75
12.88	2.147	0.72	13.08	2.180	0.73	13.28	2.213	0.74	13.48	2.247	0.75
12.89	2.148	0.72	13.09	2.182	0.73	13.29	2.215	0.74	13.49	2.248	0.75
12.90	2.150	0.72	13.10	2.183	0.73	13.30	2.217	0.74	13.50	2.250	0.75
12.91	2.152	0.72	13.11	2.185	0.73	13.31	2.218	0.74	13.51	2.252	0.75
12.92	2.153	0.72	13.12	2.187	0.73	13.32	2.220	0.74	13.52	2.253	0.75
12.93	2.155	0.72	13.13	2.188	0.73	13.33	2.222	0.74	13.53	2.255	0.75
12.94	2.157	0.72	13.14	2.190	0.73	13.34	2.223	0.74	13.54	2.257	0.75
12.95	2.158	0.72	13.15	2.192	0.73	13.35	2.225	0.74	13.55	2.258	0.75
12.96	2.160	0.72	13.16	2.193	0.73	13.36	2.227	0.74	13.56	2.260	0.75
12.97	2.162	0.72	13.17	2.195	0.73	13.37	2.228	0.74	13.57	2.262	0.75
12.98	2.163	0.72	13.18	2.197	0.73	13.38	2.230	0.74	13.58	2.263	0.75
12.99	2.165	0.72	13.19	2.198	0.73	13.39	2.232	0.74	13.59	2.265	0.76

Tableau II B *(suite)* **Table II B** *(continued)*

Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths
13.60	2.267	0.76	13.80	2.300	0.77	14.00	2.333	0.78	14.20	2.367	0.79
13.61	2.268	0.76	13.81	2.302	0.77	14.01	2.335	0.78	14.21	2.368	0.79
13.62	2.270	0.76	13.82	2.303	0.77	14.02	2.337	0.78	14.22	2.370	0.79
13.63	2.272	0.76	13.83	2.305	0.77	14.03	2.338	0.78	14.23	2.372	0.79
13.64	2.273	0.76	13.84	2.307	0.77	14.04	2.340	0.78	14.24	2.373	0.79
13.65	2.275	0.76	13.85	2.308	0.77	14.05	2.342	0.78	14.25	2.375	0.79
13.66	2.277	0.76	13.86	2.310	0.77	14.06	2.343	0.78	14.26	2.377	0.79
13.67	2.278	0.76	13.87	2.312	0.77	14.07	2.345	0.78	14.27	2.378	0.79
13.68	2.280	0.76	13.88	2.313	0.77	14.08	2.347	0.78	14.28	2.380	0.79
13.69	2.282	0.76	13.89	2.315	0.77	14.09	2.348	0.78	14.29	2.382	0.79
13.70	2.283	0.76	13.90	2.317	0.77	14.10	2.350	0.78	14.30	2.383	0.79
13.71	2.285	0.76	13.91	2.318	0.77	14.11	2.352	0.78	14.31	2.385	0.80
13.72	2.287	0.76	13.92	2.320	0.77	14.12	2.353	0.78	14.32	2.387	0.80
13.73	2.288	0.76	13.93	2.322	0.77	14.13	2.355	0.79	14.33	2.388	0.80
13.74	2.290	0.76	13.94	2.323	0.77	14.14	2.357	0.79	14.34	2.390	0.80
13.75	2.292	0.76	13.95	2.325	0.78	14.15	2.358	0.79	14.35	2.392	0.80
13.76	2.293	0.76	13.96	2.327	0.78	14.16	2.360	0.79	14.36	2.393	0.80
13.77	2.295	0.77	13.97	2.328	0.78	14.17	2.362	0.79	14.37	2.395	0.80
13.78	2.297	0.77	13.98	2.330	0.78	14.18	2.363	0.79	14.38	2.397	0.80
13.79	2.298	0.77	13.99	2.332	0.78	14.19	2.365	0.79	14.39	2.398	0.80
14.40	2.400	0.80	14.60	2.433	0.81	14.80	2.467	0.82	15.00	2.500	0.83
14.41	2.402	0.80	14.61	2.435	0.81	14.81	2.468	0.82	15.01	2.502	0.83
14.42	2.403	0.80	14.62	2.437	0.81	14.82	2.470	0.82	15.02	2.503	0.83
14.43	2.405	0.80	14.63	2.438	0.81	14.83	2.472	0.82	15.03	2.505	0.84
14.44	2.407	0.80	14.64	2.440	0.81	14.84	2.473	0.82	15.04	2.507	0.84
14.45	2.408	0.80	14.65	2.442	0.81	14.85	2.475	0.83	15.05	2.508	0.84
14.46	2.410	0.80	14.66	2.443	0.81	14.86	2.477	0.83	15.06	2.510	0.84
14.47	2.412	0.80	14.67	2.445	0.82	14.87	2.478	0.83	15.07	2.512	0.84
14.48	2.413	0.80	14.68	2.447	0.82	14.88	2.480	0.83	15.08	2.513	0.84
14.49	2.415	0.81	14.69	2.448	0.82	14.89	2.482	0.83	15.09	2.515	0.84
14.50	2.417	0.81	14.70	2.450	0.82	14.90	2.483	0.83	15.10	2.517	0.84
14.51	2.418	0.81	14.71	2.452	0.82	14.91	2.485	0.83	15.11	2.518	0.84
14.52	2.420	0.81	14.72	2.453	0.82	14.92	2.487	0.83	15.12	2.520	0.84
14.53	2.422	0.81	14.73	2.455	0.82	14.93	2.488	0.83	15.13	2.522	0.84
14.54	2.423	0.81	14.74	2.457	0.82	14.94	2.490	0.83	15.14	2.523	0.84
14.55	2.425	0.81	14.75	2.458	0.82	14.95	2.492	0.83	15.15	2.525	0.84
14.56	2.427	0.81	14.76	2.460	0.82	14.96	2.493	0.83	15.16	2.527	0.84
14.57	2.428	0.81	14.77	2.462	0.82	14.97	2.495	0.83	15.17	2.528	0.84
14.58	2.430	0.81	14.78	2.463	0.82	14.98	2.497	0.83	15.18	2.530	0.84
14.59	2.432	0.81	14.79	2.465	0.82	14.99	2.498	0.83	15.19	2.532	0.84

Tableau II B *(suite)* **Table II B** *(continued)*

Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths
15.20	2.533	0.84	15.40	2.567	0.86	15.60	2.600	0.87	15.80	2.633	0.88
15.21	2.535	0.85	15.41	2.568	0.86	15.61	2.602	0.87	15.81	2.635	0.88
15.22	2.537	0.85	15.42	2.570	0.86	15.62	2.603	0.87	15.82	2.637	0.88
15.23	2.538	0.85	15.43	2.572	0.86	15.63	2.605	0.87	15.83	2.638	0.88
15.24	2.540	0.85	15.44	2.573	0.86	15.64	2.607	0.87	15.84	2.640	0.88
15.25	2.542	0.85	15.45	2.575	0.86	15.65	2.608	0.87	15.85	2.642	0.88
15.26	2.543	0.85	15.46	2.577	0.86	15.66	2.610	0.87	15.86	2.643	0.88
15.27	2.545	0.85	15.47	2.578	0.86	15.67	2.612	0.87	15.87	2.645	0.88
15.28	2.547	0.85	15.48	2.580	0.86	15.68	2.613	0.87	15.88	2.647	0.88
15.29	2.548	0.85	15.49	2.582	0.86	15.69	2.615	0.87	15.89	2.648	0.88
15.30	2.550	0.85	15.50	2.583	0.86	15.70	2.617	0.87	15.90	2.650	0.88
15.31	2.552	0.85	15.51	2.585	0.86	15.71	2.618	0.87	15.91	2.652	0.88
15.32	2.553	0.85	15.52	2.587	0.86	15.72	2.620	0.87	15.92	2.653	0.88
15.33	2.555	0.85	15.53	2.588	0.86	15.73	2.622	0.87	15.93	2.655	0.89
15.34	2.557	0.85	15.54	2.590	0.86	15.74	2.623	0.87	15.94	2.657	0.89
15.35	2.558	0.85	15.55	2.592	0.86	15.75	2.625	0.88	15.95	2.658	0.89
15.36	2.560	0.85	15.56	2.593	0.86	15.76	2.627	0.88	15.96	2.660	0.89
15.37	2.562	0.85	15.57	2.595	0.87	15.77	2.628	0.88	15.97	2.662	0.89
15.38	2.563	0.85	15.58	2.597	0.87	15.78	2.630	0.88	15.98	2.663	0.89
15.39	2.565	0.86	15.59	2.598	0.87	15.79	2.632	0.88	15.99	2.665	0.89
16.00	2.667	0.89	16.20	2.700	0.90	16.40	2.733	0.91	16.60	2.767	0.92
16.01	2.668	0.89	16.21	2.702	0.90	16.41	2.735	0.91	16.61	2.768	0.92
16.02	2.670	0.89	16.22	2.703	0.90	16.42	2.737	0.91	16.62	2.770	0.92
16.03	2.672	0.89	16.23	2.705	0.90	16.43	2.738	0.91	16.63	2.772	0.92
16.04	2.673	0.89	16.24	2.707	0.90	16.44	2.740	0.91	16.64	2.773	0.92
16.05	2.675	0.89	16.25	2.708	0.90	16.45	2.742	0.91	16.65	2.775	0.93
16.06	2.677	0.89	16.26	2.710	0.90	16.46	2.743	0.91	16.66	2.777	0.93
16.07	2.678	0.89	16.27	2.712	0.90	16.47	2.745	0.92	16.67	2.778	0.93
16.08	2.680	0.89	16.28	2.713	0.90	16.48	2.747	0.92	16.68	2.780	0.93
16.09	2.682	0.89	16.29	2.715	0.91	16.49	2.748	0.92	16.69	2.782	0.93
16.10	2.683	0.89	16.30	2.717	0.91	16.50	2.750	0.92	16.70	2.783	0.93
16.11	2.685	0.90	16.31	2.718	0.91	16.51	2.752	0.92	16.71	2.785	0.93
16.12	2.687	0.90	16.32	2.720	0.91	16.52	2.753	0.92	16.72	2.787	0.93
16.13	2.688	0.90	16.33	2.722	0.91	16.53	2.755	0.92	16.73	2.788	0.93
16.14	2.690	0.90	16.34	2.723	0.91	16.54	2.757	0.92	16.74	2.790	0.93
16.15	2.692	0.90	16.35	2.725	0.91	16.55	2.758	0.92	16.75	2.792	0.93
16.16	2.693	0.90	16.36	2.727	0.91	16.56	2.760	0.92	16.76	2.793	0.93
16.17	2.695	0.90	16.37	2.728	0.91	16.57	2.762	0.92	16.77	2.795	0.93
16.18	2.697	0.90	16.38	2.730	0.91	16.58	2.763	0.92	16.78	2.797	0.93
16.19	2.698	0.90	16.39	2.732	0.91	16.59	2.765	0.92	16.79	2.798	0.93

Tableau II B *(fin)* **Table II B** *(concluded)*

Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths	Hauteur de tonnage Tonnage depth	1/6 hauteur de tonnage 1/6 tonnage depth	1/3 intervalle commun entre largeurs — 1/3 common interval between breadths
16.80	2.800	0.93	17.00	2.833	0.94	17.20	2.867	0.96	17.40	2.900	0.97
16.81	2.802	0.93	17.01	2.835	0.95	17.21	2.868	0.96	17.41	2.902	0.97
16.82	2.803	0.93	17.02	2.837	0.95	17.22	2.870	0.96	17.42	2.903	0.97
16.83	2.805	0.94	17.03	2.838	0.95	17.23	2.872	0.96	17.43	2.905	0.97
16.84	2.807	0.94	17.04	2.840	0.95	17.24	2.873	0.96	17.44	2.907	0.97
16.85	2.808	0.94	17.05	2.842	0.95	17.25	2.875	0.96	17.45	2.908	0.97
16.86	2.810	0.94	17.06	2.843	0.95	17.26	2.877	0.96	17.46	2.910	0.97
16.87	2.812	0.94	17.07	2.845	0.95	17.27	2.878	0.96	17.47	2.912	0.97
16.88	2.813	0.94	17.08	2.847	0.95	17.28	2.880	0.96	17.48	2.913	0.97
16.89	2.815	0.94	17.09	2.848	0.95	17.29	2.882	0.96	17.49	2.915	0.97
16.90	2.817	0.94	17.10	2.850	0.95	17.30	2.883	0.96	17.50	2.917	0.97
16.91	2.818	0.94	17.11	2.852	0.95	17.31	2.885	0.96	17.51	2.918	0.97
16.92	2.820	0.94	17.12	2.853	0.95	17.32	2.887	0.96	17.52	2.920	0.97
16.93	2.822	0.94	17.13	2.855	0.95	17.33	2.888	0.96	17.53	2.922	0.97
16.94	2.823	0.94	17.14	2.857	0.95	17.34	2.890	0.96	17.54	2.923	0.97
16.95	2.825	0.94	17.15	2.858	0.95	17.35	2.892	0.96	17.55	2.925	0.98
16.96	2.827	0.94	17.16	2.860	0.95	17.36	2.893	0.96	17.56	2.927	0.98
16.97	2.828	0.94	17.17	2.862	0.95	17.37	2.895	0.97	17.57	2.928	0.98
16.98	2.830	0.94	17.18	2.863	0.95	17.38	2.897	0.97	17.58	2.930	0.98
16.99	2.832	0.94	17.19	2.865	0.96	17.39	2.898	0.97	17.59	2.932	0.98
17.60	2.933	0.98	17.70	2.950	0.98	17.80	2.967	0.99	17.90	2.983	0.99
17.61	2.935	0.98	17.71	2.952	0.98	17.81	2.968	0.99	17.91	2.985	1.00
17.62	2.937	0.98	17.72	2.953	0.98	17.82	2.970	0.99	17.92	2.987	1.00
17.63	2.938	0.98	17.73	2.955	0.99	17.83	2.972	0.99	17.93	2.988	1.00
17.64	2.940	0.98	17.74	2.957	0.99	17.84	2.973	0.99	17.94	2.990	1.00
17.65	2.942	0.98	17.75	2.958	0.99	17.85	2.975	0.99	17.95	2.992	1.00
17.66	2.943	0.98	17.76	2.960	0.99	17.86	2.977	0.99	17.96	2.993	1.00
17.67	2.945	0.98	17.77	2.962	0.99	17.87	2.978	0.99	17.97	2.995	1.00
17.68	2.947	0.98	17.78	2.963	0.99	17.88	2.980	0.99	17.98	2.997	1.00
17.69	2.948	0.98	17.79	2.965	0.99	17.89	2.982	0.99	17.99	2.998	1.00

Tableau III A

DE CONVERSION DE TONNEAUX DE JAUGE EN MÈTRES CUBES

Table III A

FOR CONVERTING REGISTER TONS INTO CUBIC METRES

Tonneaux Tons	Mètres cubes Cubic metres							Tonneaux Tons	Mètres cubes Cubic metres						
	1 fois once	10 fois 10 times	100 fois 100 times	1,000 fois 1,000 times	10,000 fois 10,000 times	100,000 fois 100,000 times			1 fois once	10 fois 10 times	100 fois 100 times	1,000 fois 1,000 times	10,000 fois 10,000 times	100,000 fois 100,000 times	
1	2	8	3	2	8	6	119	51	144	4	7	5	9	2	068
2	5	6	6	5	7	2	238	52	147	3	0	8	7	8	187
3	8	4	9	8	5	8	357	53	150	1	4	1	6	4	306
4	11	3	3	1	4	4	476	54	152	9	7	4	5	0	425
5	14	1	6	4	3	0	595	55	155	8	0	7	3	6	544
6	16	9	9	7	1	6	714	56	158	6	4	0	2	2	663
7	19	8	3	0	0	2	833	57	161	4	7	3	0	8	782
8	22	6	6	2	8	8	952	58	164	3	0	5	9	4	901
9	25	4	9	5	7	5	071	59	167	1	3	8	8	1	020
10	28	3	2	8	6	1	190	60	169	9	7	1	6	7	139
11	31	1	6	1	4	7	309	61	172	8	0	4	5	3	258
12	33	9	9	4	3	3	428	62	175	6	3	7	3	9	377
13	36	8	2	7	1	9	547	63	178	4	7	0	2	5	496
14	39	6	6	0	0	5	666	64	181	3	0	3	1	1	615
15	42	4	9	2	9	1	785	65	184	1	3	5	9	7	734
16	45	3	2	5	7	7	904	66	186	9	6	8	8	3	853
17	48	1	5	8	6	4	023	67	189	8	0	1	6	9	972
18	50	9	9	1	5	0	142	68	192	6	3	4	5	6	091
19	53	8	2	4	3	6	261	69	195	4	6	7	4	2	210
20	56	6	5	7	2	2	380	70	198	3	0	0	2	8	329
21	59	4	9	0	0	8	499	71	201	1	3	3	1	4	448
22	62	3	2	2	9	4	618	72	203	9	6	6	0	0	567
23	65	1	5	5	8	0	737	73	206	7	9	8	8	6	686
24	67	9	8	8	6	6	856	74	209	6	3	1	7	2	805
25	70	8	2	1	5	2	975	75	212	4	6	4	5	8	924
26	73	6	5	4	3	9	093	76	215	2	9	7	4	5	042
27	76	4	8	7	2	5	212	77	218	1	3	0	3	1	161
28	79	3	2	0	1	1	331	78	220	9	6	3	1	7	280
29	82	1	5	2	9	7	450	79	223	7	9	6	0	3	399
30	84	9	8	5	8	3	569	80	226	6	2	8	8	9	518
31	87	8	1	8	6	9	688	81	229	4	6	1	7	5	637
32	90	6	5	1	5	5	807	82	232	2	9	4	6	1	756
33	93	4	8	4	4	1	926	83	235	1	2	7	4	7	875
34	96	3	1	7	2	8	045	84	237	9	6	0	3	3	994
35	99	1	5	0	1	4	164	85	240	7	9	3	2	0	113
36	101	9	8	3	0	0	283	86	243	6	2	6	0	6	232
37	104	8	1	5	8	6	402	87	246	4	5	8	9	2	351
38	107	6	4	8	7	2	521	88	249	2	9	1	7	8	470
39	110	4	8	1	5	8	640	89	252	1	2	4	6	4	589
40	113	3	1	4	4	4	759	90	254	9	5	7	5	0	708
41	116	1	4	7	3	0	878	91	257	7	9	0	3	6	827
42	118	9	8	0	1	6	997	92	260	6	2	3	2	2	946
43	121	8	1	3	0	3	116	93	263	4	5	6	0	9	065
44	124	6	4	5	8	9	235	94	266	2	8	8	9	5	184
45	127	4	7	8	7	5	354	95	269	1	2	1	8	1	303
46	130	3	1	1	6	1	473	96	271	9	5	4	6	7	422
47	133	1	4	4	4	7	592	97	274	7	8	7	5	3	541
48	135	9	7	7	3	3	711	98	277	6	2	0	3	9	660
49	138	8	1	0	1	9	830	99	280	4	5	3	2	5	779
50	141	6	4	3	0	5	949	100	283	2	8	6	1	1	898

Tableau III B

DE CONVERSION DE TONNEAUX DE JAUGE EN MÈTRES CUBES

Table III B

FOR CONVERTING REGISTER TONS INTO CUBIC METRES

Tonneaux Tons	Mètres cubes Cubic metres	Tonneaux Tons	Mètres cubes Cubic metres
0.01	0.028	0.51	1.445
0.02	0.057	0.52	1.473
0.03	0.085	0.53	1.501
0.04	0.113	0.54	1.530
0.05	0.142	0.55	1.558
0.06	0.170	0.56	1.586
0.07	0.198	0.57	1.615
0.08	0.227	0.58	1.643
0.09	0.255	0.59	1.671
0.10	0.283	0.60	1.700
0.11	0.312	0.61	1.728
0.12	0.340	0.62	1.756
0.13	0.368	0.63	1.785
0.14	0.397	0.64	1.813
0.15	0.425	0.65	1.841
0.16	0.453	0.66	1.870
0.17	0.482	0.67	1.898
0.18	0.510	0.68	1.926
0.19	0.538	0.69	1.955
0.20	0.567	0.70	1.983
0.21	0.595	0.71	2.011
0.22	0.623	0.72	2.040
0.23	0.652	0.73	2.068
0.24	0.680	0.74	2.096
0.25	0.708	0.75	2.125
0.26	0.737	0.76	2.153
0.27	0.765	0.77	2.181
0.28	0.793	0.78	2.210
0.29	0.822	0.79	2.238
0.30	0.850	0.80	2.266
0.31	0.878	0.81	2.295
0.32	0.907	0.82	2.323
0.33	0.935	0.83	2.351
0.34	0.963	0.84	2.380
0.35	0.992	0.85	2.408
0.36	1.020	0.86	2.436
0.37	1.048	0.87	2.465
0.38	1.076	0.88	2.493
0.39	1.105	0.89	2.521
0.40	1.133	0.90	2.550
0.41	1.161	0.91	2.578
0.42	1.190	0.92	2.606
0.43	1.218	0.93	2.635
0.44	1.246	0.94	2.663
0.45	1.275	0.95	2.691
0.46	1.303	0.96	2.720
0.47	1.331	0.97	2.748
0.48	1.360	0.98	2.776
0.49	1.388	0.99	2.805
0.50	1.416	1.00	2.833

Tableau IV A

DE CONVERSION DE MÈTRES CUBES EN TONNEAUX DE JAUGE

Table IV A

FOR CONVERTING CUBIC METRES INTO REGISTER TONS

Mètres cubes Cubic metres	Tonneaux Tons				Mètres cubes Cubic metres	Tonneaux Tons			
	1 fois once	10 fois 10 times	100 fois 100 times	1,000 fois 1,000 times		1 fois once	10 fois 10 times	100 fois 100 times	1,000 fois 1,000 times
1	0	3	5	3	51	18	0	0	3
2	0	7	0	6	52	18	3	5	6
3	1	0	5	9	53	18	7	0	9
4	1	4	1	2	54	19	0	6	2
5	1	7	6	5	55	19	4	1	5
6	2	1	1	8	56	19	7	6	8
7	2	4	7	1	57	20	1	2	1
8	2	8	2	4	58	20	4	7	4
9	3	1	7	7	59	20	8	2	7
10	3	5	3	0	60	21	1	8	0
11	3	8	8	3	61	21	5	3	3
12	4	2	3	6	62	21	8	8	6
13	4	5	8	9	63	22	2	3	9
14	4	9	4	2	64	22	5	9	2
15	5	2	9	5	65	22	9	4	5
16	5	6	4	8	66	23	2	9	8
17	6	0	0	1	67	23	6	5	1
18	6	3	5	4	68	24	0	0	4
19	6	7	0	7	69	24	3	5	7
20	7	0	6	0	70	24	7	1	0
21	7	4	1	3	71	25	0	6	3
22	7	7	6	6	72	25	4	1	6
23	8	1	1	9	73	25	7	6	9
24	8	4	7	2	74	26	1	2	2
25	8	8	2	5	75	26	4	7	5
26	9	1	7	8	76	26	8	2	8
27	9	5	3	1	77	27	1	8	1
28	9	8	8	4	78	27	5	3	4
29	10	2	3	7	79	27	8	8	7
30	10	5	9	0	80	28	2	4	0
31	10	9	4	3	81	28	5	9	3
32	11	2	9	6	82	28	9	4	6
33	11	6	4	9	83	29	2	9	9
34	12	0	0	2	84	29	6	5	2
35	12	3	5	5	85	30	0	0	5
36	12	7	0	8	86	30	3	5	8
37	13	0	6	1	87	30	7	1	1
38	13	4	1	4	88	31	0	6	4
39	13	7	6	7	89	31	4	1	7
40	14	1	2	0	90	31	7	7	0
41	14	4	7	3	91	32	1	2	3
42	14	8	2	6	92	32	4	7	6
43	15	1	7	9	93	32	8	2	9
44	15	5	3	2	94	33	1	8	2
45	15	8	8	5	95	33	5	3	5
46	16	2	3	8	96	33	8	8	8
47	16	5	9	1	97	34	2	4	1
48	16	9	4	4	98	34	5	9	4
49	17	2	9	7	99	34	9	4	7
50	17	6	5	0	100	35	3	0	0

Tableau IV B

DE CONVERSION DE MÈTRES CUBES EN TONNEAUX DE JAUGE

Table IV B

FOR CONVERTING CUBIC METRES INTO REGISTER TONS

Mètres cubes Cubic metres	Tonneaux Tons	Mètres cubes Cubic metres	Tonneaux Tons
0.01	0.004	0.51	0.180
0.02	0.007	0.52	0.184
0.03	0.011	0.53	0.187
0.04	0.014	0.54	0.191
0.05	0.018	0.55	0.194
0.06	0.021	0.56	0.198
0.07	0.025	0.57	0.201
0.08	0.028	0.58	0.205
0.09	0.032	0.59	0.208
0.10	0.035	0.60	0.212
0.11	0.039	0.61	0.215
0.12	0.042	0.62	0.219
0.13	0.046	0.63	0.222
0.14	0.049	0.64	0.226
0.15	0.053	0.65	0.229
0.16	0.056	0.66	0.233
0.17	0.060	0.67	0.237
0.18	0.064	0.68	0.240
0.19	0.067	0.69	0.244
0.20	0.071	0.70	0.247
0.21	0.074	0.71	0.251
0.22	0.078	0.72	0.254
0.23	0.081	0.73	0.258
0.24	0.085	0.74	0.261
0.25	0.088	0.75	0.265
0.26	0.092	0.76	0.268
0.27	0.095	0.77	0.272
0.28	0.099	0.78	0.275
0.29	0.102	0.79	0.279
0.30	0.106	0.80	0.282
0.31	0.109	0.81	0.286
0.32	0.113	0.82	0.289
0.33	0.116	0.83	0.293
0.34	0.120	0.84	0.297
0.35	0.124	0.85	0.300
0.36	0.127	0.86	0.304
0.37	0.131	0.87	0.307
0.38	0.134	0.88	0.311
0.39	0.138	0.89	0.314
0.40	0.141	0.90	0.318
0.41	0.145	0.91	0.321
0.42	0.148	0.92	0.325
0.43	0.152	0.93	0.328
0.44	0.155	0.94	0.332
0.45	0.159	0.95	0.335
0.46	0.162	0.96	0.339
0.47	0.166	0.97	0.342
0.48	0.169	0.98	0.346
0.49	0.173	0.99	0.349
0.50	0.177	1.00	0.353

Tableau V A

DE CONVERSION DE PIEDS EN MÈTRES

Table V A

FOR CONVERTING FEET INTO METRES

Pieds / Feet	Mètres / Metres			Pieds / Feet	Mètres / Metres		
	1 fois / once	10 fois / 10 times			1 fois / once	10 fois / 10 times	
1	0	3	0479	51	15	5	4452
2	0	6	0959	52	15	8	4931
3	0	9	1438	53	16	1	5411
4	1	2	1918	54	16	4	5890
5	1	5	2397	55	16	7	6370
6	1	8	2877	56	17	0	6849
7	2	1	3356	57	17	3	7329
8	2	4	3836	58	17	6	7808
9	2	7	4315	59	17	9	8287
10	3	0	4794	60	18	2	8767
11	3	3	5274	61	18	5	9246
12	3	6	5753	62	18	8	9726
13	3	9	6233	63	19	2	0205
14	4	2	6712	64	19	5	0685
15	4	5	7192	65	19	8	1164
16	4	8	7671	66	20	1	1644
17	5	1	8151	67	20	4	2123
18	5	4	8630	68	20	7	2603
19	5	7	9110	69	21	0	3082
20	6	0	9589	70	21	3	3561
21	6	4	0068	71	21	6	4041
22	6	7	0548	72	21	9	4520
23	7	0	1027	73	22	2	5000
24	7	3	1507	74	22	5	5479
25	7	6	1986	75	22	8	5959
26	7	9	2466	76	23	1	6438
27	8	2	2945	77	23	4	6918
28	8	5	3425	78	23	7	7397
29	8	8	3904	79	24	0	7876
30	9	1	4383	80	24	3	8356
31	9	4	4863	81	24	6	8835
32	9	7	5342	82	24	9	9315
33	10	0	5822	83	25	2	9794
34	10	3	6301	84	25	6	0274
35	10	6	6781	85	25	9	0753
36	10	9	7260	86	26	2	1233
37	11	2	7740	87	26	5	1712
38	11	5	8219	88	26	8	2192
39	11	8	8699	89	27	1	2671
40	12	1	9178	90	27	4	3150
41	12	4	9657	91	27	7	3630
42	12	8	0137	92	28	0	4109
43	13	1	0616	93	28	3	4589
44	13	4	1096	94	28	6	5068
45	13	7	1575	95	28	9	5548
46	14	0	2055	96	29	2	6027
47	14	3	2534	97	29	5	6507
48	14	6	3014	98	29	8	6986
49	14	9	3493	99	30	1	7465
50	15	2	3972	100	30	4	7945

Tableau V B

DE CONVERSION DE VINGTIÈMES DE PIED EN MÈTRES

Table V B

FOR CONVERTING TWENTIETHS OF FEET INTO METRES

Pied Foot	Mètres Metres
0.05	0.0152
0.10	0.0305
0.15	0.0457
0.20	0.0610
0.25	0.0762
0.30	0.0914
0.35	0.1067
0.40	0.1219
0.45	0.1372
0.50	0.1524
0.55	0.1676
0.60	0.1829
0.65	0.1981
0.70	0.2134
0.75	0.2286
0.80	0.2438
0.85	0.2591
0.90	0.2743
0.95	0.2896
1.00	0.3048

Tableau VI A

DE CONVERSION DE MÈTRES EN PIEDS

Table VI A

FOR CONVERTING METRES INTO FEET

Mètres Metres	Pieds Feet			Mètres Metres	Pieds Feet		
	1 fois once	10 fois 10 times			1 fois once	10 fois 10 times	
1	3	2	8090	51	167	3	2586
2	6	5	6180	52	170	6	0676
3	9	8	4270	53	173	8	8766
4	13	1	2360	54	177	1	6856
5	16	4	0450	55	180	4	4946
6	19	6	8540	56	183	7	3036
7	22	9	6629	57	187	0	1125
8	26	2	4719	58	190	2	9215
9	29	5	2809	59	193	5	7305
10	32	8	0899	60	196	8	5395
11	36	0	8989	61	200	1	3485
12	39	3	7079	62	203	4	1575
13	42	6	5169	63	206	6	9665
14	45	9	3259	64	209	9	7755
15	49	2	1349	65	213	2	5845
16	52	4	9439	66	216	5	3935
17	55	7	7529	67	219	8	2025
18	59	0	5619	68	223	1	0115
19	62	3	3708	69	226	3	8205
20	65	6	1798	70	229	6	6294
21	68	8	9888	71	232	9	4384
22	72	1	7978	72	236	2	2474
23	75	4	6068	73	239	5	0564
24	78	7	4158	74	242	7	8654
25	82	0	2248	75	246	0	6744
26	85	3	0338	76	249	3	4834
27	88	5	8428	77	252	6	2924
28	91	8	6518	78	255	9	1014
29	95	1	4608	79	259	1	9104
30	98	4	2698	80	262	4	7194
31	101	7	0788	81	265	7	5284
32	104	9	8877	82	269	0	3373
33	108	2	6967	83	272	3	1463
34	111	5	5057	84	275	5	9553
35	114	8	3147	85	278	8	7643
36	118	1	1237	86	282	1	5733
37	121	3	9327	87	285	4	3823
38	124	6	7417	88	288	7	1913
39	127	9	5507	89	292	0	0003
40	131	2	3597	90	295	2	8093
41	134	5	1687	91	298	5	6183
42	137	7	9777	92	301	8	4273
43	141	0	7867	93	305	1	2363
44	144	3	5957	94	308	4	0453
45	147	6	4046	95	311	6	8542
46	150	9	2136	96	314	9	6632
47	154	2	0226	97	318	2	4722
48	157	4	8316	98	321	5	2812
49	160	7	6406	99	324	8	0902
50	164	0	4496	100	328	0	8992

Tableau VI B

DE CONVERSION DE CENTIÈMES DE MÈTRES EN PIEDS

Table VI B

FOR CONVERTING HUNDREDTHS OF METRES INTO FEET

Mètres Metres	Pieds Feet	Mètres Metres	Pieds Feet
0.01	0.0328	0.51	1.6733
0.02	0.0656	0.52	1.7061
0.03	0.0984	0.53	1.7389
0.04	0.1312	0.54	1.7717
0.05	0.1640	0.55	1.8045
0.06	0.1969	0.56	1.8373
0.07	0.2297	0.57	1.8701
0.08	0.2625	0.58	1.9029
0.09	0.2953	0.59	1.9357
0.10	0.3281	0.60	1.9685
0.11	0.3609	0.61	2.0013
0.12	0.3937	0.62	2.0342
0.13	0.4265	0.63	2.0670
0.14	0.4593	0.64	2.0998
0.15	0.4921	0.65	2.1326
0.16	0.5249	0.66	2.1654
0.17	0.5578	0.67	2.1982
0.18	0.5906	0.68	2.2310
0.19	0.6234	0.69	2.2638
0.20	0.6562	0.70	2.2966
0.21	0.6890	0.71	2.3294
0.22	0.7218	0.72	2.3622
0.23	0.7546	0.73	2.3951
0.24	0.7874	0.74	2.4279
0.25	0.8202	0.75	2.4607
0.26	0.8530	0.76	2.4935
0.27	0.8858	0.77	2.5263
0.28	0.9187	0.78	2.5591
0.29	0.9515	0.79	2.5919
0.30	0.9843	0.80	2.6247
0.31	1.0171	0.81	2.6575
0.32	1.0499	0.82	2.6903
0.33	1.0827	0.83	2.7231
0.34	1.1155	0.84	2.7560
0.35	1.1483	0.85	2.7888
0.36	1.1811	0.86	2.8216
0.37	1.2139	0.87	2.8544
0.38	1.2467	0.88	2.8872
0.39	1.2796	0.89	2.9200
0.40	1.3124	0.90	2.9528
0.41	1.3452	0.91	2.9856
0.42	1.3780	0.92	3.0184
0.43	1.4108	0.93	3.0512
0.44	1.4436	0.94	3.0840
0.45	1.4764	0.95	3.1169
0.46	1.5092	0.96	3.1497
0.47	1.5420	0.97	3.1825
0.48	1.5748	0.98	3.2153
0.49	1.6076	0.99	3.2481
0.50	1.6404	1.00	3.2800

EXEMPLES

Exemple de l'application du Tableau III de conversion de tonneaux de jauge en mètres cubes

On doit convertir 36.503,85 tonneaux de jauge en mètres cubes :

		T.J.—R.T.		M^3
Du Tableau / From Table	III A . .	36,000	=	101,983.003
» »	III A . .	500	=	1,416.431
» »	III A . .	3	=	8.499
» »	III B . .	0.85	=	2.408
		36,503.85	=	103,410.341
			s	103,410.34

Exemple de l'application du Tableau IV de conversion de mètres cubes en tonneaux de jauge

On doit convertir 89.738,92 mètres cubes en tonneaux de jauge :

		M^3		T.J.—R.T.
Du Tableau / From Table	IV A . .	89,000	=	31,417.000
» »	IV A . .	730	=	257.690
» »	IV A . .	8	=	2.824
» »	IV B . .	0.92	=	0.325
		89,738.92	=	31,677.839
			s	31,677.84

Exemple de l'application du Tableau V de conversion de pieds en mètres

On doit convertir 428,15 pieds en mètres :

		Pieds—Feet		Mètres
Du Tableau / From Table	V A . .	420	=	128.014
» »	V A . .	8	=	2.438
» »	V B . .	0.15	=	0.046
		428.15	=	130.498
			s	130.50

EXAMPLES

Example for Application of Table III for converting Register Tons into Cubic Metres

One has to convert 36,503.85 register tons into cubic metres :

T.J.—R.T.		M^3
36,000	=	101,983.003
500	=	1,416.431
3	=	8.499
0.85	=	2.408
36,503.85	=	103,410.341
	s	103,410.34

Example for Application of Table IV for converting Cubic Metres into Register Tons

One has to convert 89,738.92 cubic metres into register tons :

M^3		T.J.—R.T.
89,000	=	31,417.000
730	=	257.690
8	=	2.824
0.92	=	0.325
89,738.92	=	31,677.839
	s	31,677.84

Example for Application of Table V for converting Feet into Metres

One has to convert 428.15 feet into metres :

Pieds—Feet		Mètres
420	=	128.014
8	=	2.438
0.15	=	0.046
428.15	=	130.498
	s	130.50

EXEMPLE DE L'APPLICATION DU TABLEAU VI DE CONVERSION DE MÈTRES EN PIEDS

On doit convertir 145,67 mètres en pieds :

		Mètres		Pieds—Feet
Du Tableau / From Table	VI A . .	140	=	459.326
» »	VI A . .	5	=	16.405
» »	VI B . .	0.67	=	2.198
		145.67	=	477.929
				S 477.93

EXAMPLE FOR APPLICATION OF TABLE VI FOR CONVERTING METRES INTO FEET

One has to convert 145.67 metres into feet :

		Mètres		Pieds—Feet
From Table	VI A . .	140	=	459.326
» »	VI A . .	5	=	16.405
» »	VI B . .	0.67	=	2.198
		145.67	=	477.929
				S 477.93

GE CERTIFICATE
G TO RULE I

)AT
)F
RMS

NAME OF

PORT OF REGISTRY	OFFICIAL NUMBER AND/OR SIGNAL LETTERS

ADDRESS OF BUILDERS	NAME AND ADDR

RN

NUMBER OF SCREWS / PADDLES

DESCRIPTION OF PROPELL

NUMBER OF FUNNELS

	FEET
AFT SIDE OF THE UPPERMOST END OF THE	
HE TONNAGE DECK TO THE UPPER SIDE OF	
THE UPPER DECK TO THE UPPER SIDE OF	

DEDUCTIONS

	REGISTE
GROSS TONNAGE	

BRIDGE SPACE

APPENDIX I

MODEL TONNAGE CERTIFICATE

ACCORDING TO RULE I

COAT OF ARMS

NAME OF STATE : _____

NAME OF SHIP : _____

DESCRIPTION OF SHIP	NATIONALITY	PORT OF REGISTRY	OFFICIAL NUMBER AND/OR SIGNAL LETTERS	PROPELLED BY MACHINERY OR BY SAILS

DATE OF LAUNCHING	WHERE AND WHEN BUILT	NAME AND ADDRESS OF BUILDERS	NAME AND ADDRESS OF OWNERS

NUMBER OF DECKS [1] _____ DESCRIPTION OF BOW _____ NUMBER OF SCREWS / PADDLES _____

NUMBER OF MASTS _____ DESCRIPTION OF STERN _____ DESCRIPTION OF PROPELLING MACHINERY _____

RIGGED _____ MATERIAL _____ NUMBER OF FUNNELS _____

IDENTIFICATION DIMENSIONS	FEET	METRES
LENGTH, FROM THE FORE SIDE OF THE UPPERMOST END OF THE STEM TO THE AFT SIDE OF THE UPPERMOST END OF THE STERN POST	,	,
BREADTH, EXTREME OUTSIDE	,	,
DEPTH IN THE MIDDLE PLANE AT HALF LENGTH, FROM THE UNDER SIDE OF THE TONNAGE DECK TO THE UPPER SIDE OF THE DOUBLE-BOTTOM PLATING OR FLOORS	,	,
DEPTH IN THE MIDDLE PLANE AT HALF LENGTH, FROM THE UNDER SIDE OF THE UPPER DECK TO THE UPPER SIDE OF THE DOUBLE-BOTTOM PLATING OR FLOORS	,	,
OVERALL LENGTH	,	,

GROSS TONNAGE

	REGISTER TONS	CUBIC METRES
SPACE BELOW TONNAGE DECK	,	,
SPACES ABOVE THE TONNAGE DECK: 'TWEEN-DECK SPACE	,	,
» » »	,	,
» » »	,	,
» « »	,	,
OPEN SHELTER-DECK SPACES. HOUSES IN	,	,
FORECASTLE	,	,
»	,	,
»	,	,
HOUSES IN	,	,
BRIDGE SPACE	,	,
HOUSES IN	,	,
BREAK OR RAISED DECK	,	,
» » » »	,	,
POOP	,	,
»	,	,
HOUSES IN	,	,
TRUNK SPACE	,	,
DECKHOUSES	,	,
»	,	,
	,	,
	,	,
	,	,
	,	,
	,	,
SPACES ABOVE THE UPPER DECK INCLUDED AS PART OF THE PROPELLING-MACHINERY SPACE	,	,
EXCESS OF HATCHWAYS	,	,
GROSS TONNAGE	,	,

DEDUCTIONS

GROSS TONNAGE	REGISTER TONS	CUBIC METRES
	,	,

		REGISTER TONS	CUBIC METRES
MASTER'S AND CREW SPACES	MASTER'S SPACES	,	,
	CREW SPACES	,	,
	PROVISION ROOMS	,	,
SPACES FOR NAVIG. AND FOR WORKING OF THE SHIP	NAVIGATION SPACES	,	,
	PUMPROOMS	,	,
	BOATSWAIN'S STORES	,	,
	SAILROOMS	,	,
	WATER BALLAST SPACES	,	,

	,	,
REMAINDER = NET TONNAGE IF SHIP SOLELY PROPELLED BY SAILS	,	,
DEDUCTION FOR PROPELLING-MACHINERY SPACES (IF NECESSARY LIMITED TO 55% OF THE REMAINDER)	,	,
NET TONNAGE, IF SHIP PROPELLED BY MACHINERY	,	,

THIS IS TO CERTIFY THAT THE ABOVE-NAMED SHIP HAS BEEN MEASURED IN ACCORDANCE WITH THE INTERNATIONAL REGULATIONS FOR TONNAGE MEASUREMENT OF SHIPS AND THAT HER TONNAGE UNDER RULE I OF THE SAID REGULATIONS IS AS STATED IN THIS TONNAGE CERTIFICATE, THE GROSS TONNAGE BEING ..... REGISTER TONS OR ..... CUBIC METRES, AND THE NET TONNAGE, ... REGISTER TONS OR ..... CUBIC METRES.[2]

(PLACE), ON THE _____ DAY OF _____, 19____

(SIGNATURE)

(OFFICIAL POSITION) _____

SEAL

[1] In open shelter-deck ships, the number of decks should be designated as follows : ..... decks and a shelter-deck.
[2] The tonnage to be stated both in letters *and* in figures.

SEE OVERLEAF

DIMENSIONS AND NET CUBIC CAPACITY OF OPEN SPACES NOT INCLUDED IN THE GROSS TONNAGE

	REGISTER TONS	CUBIC METRES
SHELTER-DECK SPACES:		
NET		
FORECASTLE:		
NET		
FORECASTLE:		
NET		
BRIDGE SPACE:		
NET		
BRIDGE SPACE:		
NET		
POOP:		
NET		
POOP:		
NET		
DECKHOUSE:		
NET		
DECKHOUSE:		
NET		

The cubic capacity of propelling-machinery spaces upon which the propelling-power allowance is based and which has therefore been included in the gross tonnage :

	Register tons	*Cubic metres*
Below the upper deck . .		
Above the upper deck . .		
Total		

The cubic capacity of spaces on or above the upper deck eligible for inclusion in the propelling-machinery space but not actually included in the gross tonnage :

Register tons *Cubic metres*

Cubic capacity of double-bottom spaces not included in the gross tonnage and available for carrying water ballast, stores (*e.g.*, feed water or drinking-water), fuel oil or cargo, numbered from forward to aft.[1]

	REGISTER TONS	CUBIC METRES
TOTAL		

[1] If the double-bottom spaces are subdivided, the cubic capacity of each separate space is to be indicated.

[Space which might be utilised for text in the national language of the State issuing the certificate.]

APPENDIX 2

MODEL TONNAGE CERTIFICATE

ACCORDING TO RULE II

COAT OF ARMS

NAME OF STATE : _____

NAME OF SHIP : _____

DESCRIPTION OF SHIP	NATIONALITY	PORT OF REGISTRY	OFFICIAL NUMBER AND/OR SIGNAL LETTERS	PROPELLED BY MACHINERY OR BY SAILS

DATE OF LAUNCHING	WHERE AND WHEN BUILT	NAME AND ADDRESS OF BUILDERS	NAME AND ADDRESS OF OWNERS

NUMBER OF DECKS[1] _____
NUMBER OF MASTS _____
RIGGED _____

DESCRIPTION OF BOW _____
DESCRIPTION OF STERN _____
MATERIAL _____

NUMBER OF SCREWS / PADDLES _____
DESCRIPTION OF PROPELLING MACHINERY _____
NUMBER OF FUNNELS _____

IDENTIFICATION DIMENSIONS	FEET	METRES
LENGTH, ON THE UPPERMOST DECK FROM THE AFT SIDE OF THE STEM TO THE AFT SIDE OF THE STERN POST	,	,
BREADTH, EXTREME OUTSIDE	,	,
GIRTH	,	,
OVERALL LENGTH	,	,

GROSS TONNAGE

SPACES ABOVE UPPERMOST DECK

	REGISTER TONS	CUBIC METRES
SPACE BELOW UPPERMOST DECK	,	,
FORECASTLE	,	,
"	,	,
HOUSES IN	,	,
BRIDGE SPACE	,	,
HOUSES IN	,	,
BREAK OR RAISED DECK	,	,
" " " "	,	,
POOP	,	,
"	,	,
HOUSES IN	,	,
TRUNK SPACE	,	,
DECKHOUSES	,	,
"	,	,
	,	,
	,	,
	,	,
	,	,
SPACES ABOVE THE UPPERMOST DECK INCLUDED AS PART OF THE PROPELLING-MACHINERY SPACE	,	,
	,	,
	,	,
	,	,
	,	,
	,	,
	,	,
	,	,
	,	,
EXCESS OF HATCHWAYS	,	,
GROSS TONNAGE	,	,

DEDUCTIONS

GROSS TONNAGE	REGISTER TONS	CUBIC METRES
	,	,

		REGISTER TONS	CUBIC METRES
MASTER'S AND CREW SPACES	MASTER'S SPACES	,	,
	CREW SPACES	,	,
	PROVISION ROOMS	,	,
SPACES FOR NAVIG. AND FOR WORKING OF THE SHIP	NAVIGATION SPACES	,	,
	PUMPROOMS	,	,
	BOATSWAIN'S STORES	,	,
	SAILROOMS	,	,
	WATERBALLAST SPACES	,	,
		,	,

REMAINDER = NET TONNAGE IF SHIP SOLELY PROPELLED BY SAILS.	,	,
DEDUCTION FOR PROPELLING-MACHINERY SPACES (IF NECESSARY LIMITED TO 55% OF THE REMAINDER).	,	,
NET TONNAGE IF SHIP PROPELLED BY MACHINERY	,	,

THIS IS TO CERTIFY THAT THE ABOVE-NAMED SHIP HAS BEEN MEASURED IN ACCORDANCE WITH THE INTERNATIONAL REGULATIONS FOR TONNAGE MEASUREMENT OF SHIPS AND THAT HER TONNAGE UNDER RULE II OF THE SAID REGULATIONS IS AS STATED IN THIS TONNAGE CERTIFICATE THE GROSS TONNAGE BEING . . . . . REGISTER TONS OR . . . . . CUBIC METRES, AND THE NET TONNAGE . . . . . REGISTER TONS OR . . . . . CUBIC METRES.[2]

(PLACE), ON THE _____ DAY OF _____, 19____

(SIGNATURE)

(OFFICIAL POSITION) _____

SEAL

[1] In open shelter-deck ships, the number of decks should be designated as follows : . . . . . decks and a shelter-deck.

[2] The tonnage to be stated both in letters *and* in figures.

SEE OVERLEAF

DIMENSIONS AND NET CUBIC CAPACITY OF OPEN SPACES NOT INCLUDED IN THE GROSS TONNAGE

	REGISTER TONS	CUBIC METRES
FORECASTLE:		
NET		
FORECASTLE:		
NET		
BRIDGE SPACE:		
NET		
BRIDGE SPACE:		
NET		
POOP:		
NET		
POOP:		
NET		
DECKHOUSE ON:		
NET		
DECKHOUSE ON:		
NET		

THE CUBIC CAPACITY OF PROPELLING-MACHINERY SPACES UPON WHICH THE PROPELLING-POWER ALLOWANCE IS BASED AND WHICH HAS THEREFORE BEEN INCLUDED IN THE GROSS TONNAGE:

	REGISTER TONS	BUBIC METRES
BELOW THE UPPERMOST DECK		
ABOVE THE UPPERMOST DECK		
TOTAL		

THE CUBIC CAPACITY OF SPACES ON OR ABOVE THE UPPERMOST DECK ELIGIBLE FOR INCLUSION IN THE PROPELLING-MACHINERY SPACE BUT NOT ACTUALLY INCLUDED IN THE GROSS TONNAGE =_____ REGISTER TONS, CORRESPONDING TO_____ CUBIC METRES

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