

International Yacht Racing Union
Second International Rule of Measurement

From "The Complete Yachtsman" 5th Edition 1928

by

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50.—Penalties for Gross Breach of Rules.

Should a gross breach or infringement of any of these Rules be proved against the owner of a Yacht, or against the owner's representative, or amateur helmsman, such owner, his representative, or amateur helmsman, may be disqualified by the National Authority, for any time the National Authority may think fit, from steering or sailing in charge of a Yacht in any Race held under the Rules of the National Authority.

Should a gross breach of these Rules be proved against any Sailing Master, he may be disqualified by the National Authority, for such time as the National Authority may think fit, from Sailing in a Yacht in any Race held under such Rules.

Notice of any penalty adjudged under this rule shall be communicated to each National Authority.

PART IV.—MEASUREMENT RULES

51.—Fees for Measurement.

The owner of a Yacht shall pay all fees and expenses for measuring such Yacht, previous to the Yacht being measured. A Yacht shall not be measured until all arrears of subscription and fees, due from the owner to the National Authority, have been paid.

52.—Re-measurement by Order of National Authority.

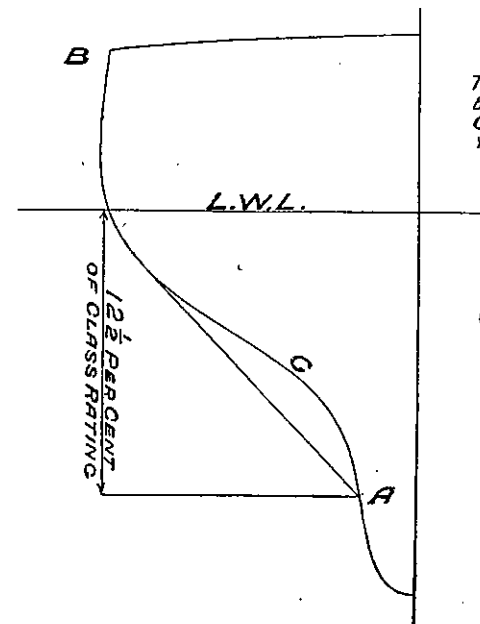
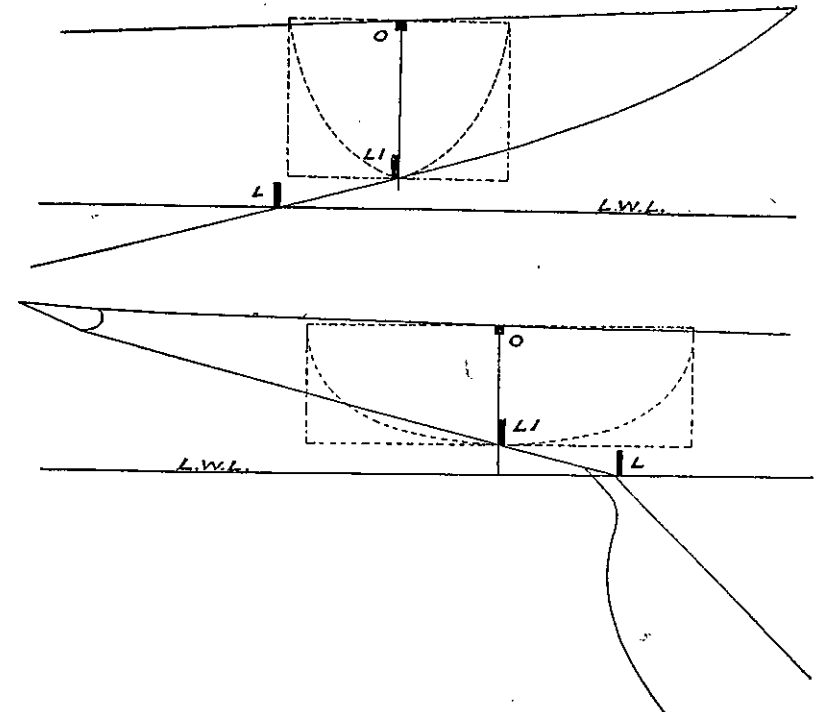
Where a re-measurement is made at the instance of the National Authority, the expenses and fees of such re-measurement shall be paid by the National Authority if the certificate is upheld.

53.—Publication of Certificates.

The figures for the Formula, the rating, and rig, with the dates of the certificates, shall be published as provided by the National Authority.

INTERNATIONAL RULE OF MEASUREMENT

This Rule now extends to every Yachting Nation in the World. It was first adopted in Europe on January 1st, 1920. It was revised in 1924. In the year 1926 the International Rule of Measurement was divided into two parts. Part I, "Yachts of 12 Metres and under," and Part II for "Yachts above 12 Metres." The two parts of the Rule differ slightly. The Formula for the smaller yachts including the factors *G* and *d*, which are omitted from the Rule for larger yachts. There are also slight differences in the co-efficients on the bow girth in the Length Clauses and the Height of Sail Plan allowed to be carried.



GIRTH DIFFERENCE
 The mark *G* is placed on the covering board at the point *B* and the mark *G*₁ at the point *A* on the side of the Yacht

$$(ACB-AB) \times 2 = d$$

SECTION I. PART I. 12 METRES AND UNDER

(i) Rule and Duration.

The duration of the Rule runs for periods of three years but three years' notice must be given of any alteration to it. In the case of some freak yacht being built the co-efficients may be reviewed or varied every two years.

Part I of the Rule 12 Metres and under was accepted by the North American Yacht Racing Union in 1927, which body has adopted it for the continent of North America.

(ii) International Formula.

Rating in linear units, either feet or metres.

$$\frac{L + \frac{1}{4}G + 2d + \sqrt{S - F}}{2.5}$$

Where L=Length in linear units.

„ G=Girth in linear units.

„ d=Girth difference in linear units.

„ S=Sail area in square units.

„ F=Freeboard in linear units.

(iii) Length. (See Figs. 1 and 2.)

The length, L for the formula, is to be the length measured at a height 1.5 per cent of the Class Rating above the L.W.L., plus one and a half times the difference between the girth, covering board to covering board, at the bow ending of this length, and twice the vertical height of the side of the yacht at this station; plus one-third of the difference between the girth, covering board to covering board, at the stern ending of this length, and twice the vertical height of the side of the yacht at this station. The minimum difference between the girth, covering board to covering board, at the bow ending of the length, L—which, multiplied by 1.5, is to be added to L when calculating the Rating—shall be 15 per cent of twice the vertical height at that station.

(iv) Girth.

The girth, G, is to be the chain girth measured from the upper side of the covering board round the keel to the upper side of the covering board again at 0.55 L.W.L. from the fore end, less twice the free-board at the same station. This station is to be indicated on the covering board by an official mark [G]. Should there be any hollow in underside of keel the girth measurement shall be taken under an imaginary keel line excluding such hollow.

(v) Girth Difference

The girth difference, d, in the formula shall be measured in the same transverse plane as the girth, G, and shall be the sum of the

differences between the skin girth and chain girth, measured on the two sides of the yacht, from the mark on the covering board for the chain girth, G, to corresponding points in the hull surface at a level 12.5 per cent of the Class Rating below the waterline. In the case of yachts of over 20 metres the level used will be 12.5 per cent of the declared rating, which must not be exceeded.

(vi) Hollows in the Surface of the Hull.

No hollow shall be allowed in the surface of the hull between the L.W.L. and the sheer line, excepting in the profile of the stern forward of the point of measurement of L.

(vii) Draught

The maximum draught allowed shall be 16 per cent of the L.W.L. plus 0.5 metres (1.64 feet).

(viii) Freeboard.

The freeboard, F, in the formula is to be the freeboard at girth station plus the freeboard at bow L ending plus the freeboard at stern L ending, the sum to be divided by three. The maximum freeboard used as a minus quantity in the formula when calculating the Rating shall be 0.08 multiplied by the Rating plus 0.25 metre.

(ix) Sheer.

The sheer of the yacht to be a fair continuous concave curve.

(x) Tumble Home.

The tumble home on each side not to exceed 2 per cent of the extreme beam.

(xi) Displacement.

Displacement shall not be less than :

Displacement in cubic metres = $(0.2 \text{ L.W.L. [in metres]} + 0.15)^3$

Displacement in cubic feet = $(0.2 \text{ L.W.L. [in feet]} + 0.5)^3$

If a yacht is less than the displacement required by the Rule for her length on L.W.L., then the difference between the length on L.W.L. to which her actual displacement corresponds by the Rule, and the actual length on L.W.L. will be doubled and added to the length measurement.

(xii) Sail Area.

The sail area, S, in the formula shall be measured as in the late International Rule except that the foretriangle shall be taken at 85 per cent of its total measured value.

(xiii) Maximum Height of Sail Plan.

The maximum height allowed, measured from the deck along the mast, shall be :

Class Rating multiplied by 2 plus 1 metre.

TABLE OF

Rules for cabin dimensions, specifications and the fittings of Yachts in the Inter-deck with ordinary fittings of a yacht, efficiently constructed; which in number

Class.		6 m.	8 m.	10 m.
Structural Arrangements.	Least height of cabin .. .. .	..	1.10 m. (3.61 ft.)	1.50 m. (4.94 ft.)
	Least breadth of floor at the broadest part.	..	0.50 m. (1.64 ft.)	0.70 m. (2.30 ft.)
	Bulkheads .. .. .	..	2||	2||
	Least thickness for wooden bulkheads	..	15 mm. (.59 in.)	15 mm. (.59 in.)
	Maximum area of deck openings ..	2½ sq. m. (24.2 sq. ft.)	3.5 sq. m. (37.67 sq. ft.)	..
Fixed Skylights and hatch for the forecabin must be supplied to all yachts except in the 6-metre class	..	..	1.0 sq. m. (10.76 sq. ft.)	
Furniture.	Berths .. .. .	..	2 sleeping berths in the cabin and 1 sleeping place for the crew.	and 2 sleeping places for the crew.
	Tables .. .. .	..	..	1*
	Cupboards and their total capacity	..	0.15 cbm. 5.3 cub. ft.	2, one of which for 0.15 cbm. (5.3 cub. ft.)
	Total capacity of the cupboards, shelves, and compartments in the sideboard	..	0.30 cbm.	0.30 cbm.
Other Fittings.	Washhand-stands .. .. .	..	1	1
	W.C. .. .. .	..	1 Fixed	1 fixed pan closet pump
	Cooking apparatus .. .. .	..	..	Spirit or petro-apparatus for 4
	Water vessels .. .. .	..	..	1, 2 or 3. Total capacity, 50 litres. (11 gallons.)

The "height of cabin" is measured from the floor line for the purposes of measurement† to the under of at least one-fifth the length of the yacht on the line of flotation. The increased heights under the cabin." The round-up of the deck must not exceed one-twentieth of the greatest beam of the yacht.

The following shall apply to all yachts above 8 metres:—

Frames and glazed skylights with sashes to open, to be fitted to every cabin which extends across the companion, with sliding cover or other means of closing it, to be fitted, and a ladder or stairway, which over a cabin, it shall be regarded as equivalent to a skylight. In all cabins the sides of the vessels above Textile fabrics may be used for lining if fitted in wood frames. The following shall apply to yachts of ways in place, and all the other fittings specified in the table of cabin fittings retained on board except and the anchors and chains specified in the "Rules for the Building and Classification of Yachts" must be dead weights may be used as shifting ballast, or for altering the trim of a yacht. No ballast shall be

† An extra number of berths in the cabin will replace the number of sleeping places for the crew.

‡ The actual floor may be at a different level.

|| Any opening between the cockpit and the interior of the yacht must be efficiently closed by an these must be at the fore end of the cockpit, the other near the mast.

CABIN FITTINGS

national Classes. All the Yachts exceeding 8 metres rating must be fitted below and size shall not be less than specified in the following table and description

12 m.	14 m.	17 m. and above.	
1.70 m. (5.58 ft.)	1.90 m. (6.23 ft.)	2.00 m. (6.56 ft.)	The height of cabin is to be measured to the underside of the deck.
1.0 m. (3.28 ft.)	1.40 m. (4.60 ft.)	1.65 m. (5.41 ft.)	The breadth of the floor is to be measured to the inside of the vessel's skin, at the level of the floor line for the purposes of measurement.†
3	3	4	The various cabins are to be separated from each other and from the fore part of the vessel by wooden (or steel) bulkheads. Openings in the bulkheads must be fitted with doors.
15 mm. (.59 in.)	15 mm. (.59 in.)	15 mm. (.59 in.)	All boats must be decked, but in Class 6 need not be fitted with cabins. All openings in the deck except cockpits must be covered with hatches, covers, or skylights. An 8-metre yacht fitted with a cabin top conforming to the Rule need not have a skylight but must have a forecabin hatch.
..	
3 sleeping berths in the cabins and 3 sleeping places for the crew.	4 sleeping berths in the cabins and 5 sleeping places for the crew.	5 sleeping berths in the cabins and 7 sleeping places for the crew. For 20 m. and above 6 and 8 respectively.	As sleeping berths are to be understood, securely fitted bedsteads, slips, bed-berths, or sleeping sofas, the dimensions of which are at least 180 x 45 cm. (5.9 ft. x 1.48 ft.). As sleeping places, frames made of tubing covered with sail cloth hammocks and other similar appliances may be adopted.†
1* 0.45 sq. m. (4.84 sq. ft.)	1* swinging table 0.65 sq. m. (7 sq. ft.)	1 swinging table. 0.85 sq. m. (9.15 sq. ft.)	The table marked with an asterisk may be of the folding description. A centre-board yacht need not carry a swing table.
clothes and linen. 0.20 cbm. (7.06 cub. ft.)	3, one of which for clothes and linen. 0.25 (8.83 cub. ft.)	4, two of which for clothes and linen. 0.35 (12.36 cub. ft.)	
0.50 cbm. (17.66 cub. ft.)	0.65 cbm. (22.96 cub. ft.)	0.90 cbm. (31.78 cub. ft.)	
1	1	2	
or underwater closet.	Underwater pump closets. 1	2	
leum cooking. number of persons 6	1 cooking range sufficient for the crew.		
115 litres. (25.3 gallons.)	1 or more. Total capacity, 160 litres. (35.2 gallons.)	340 litres. (74.8 gallons.)	When the yacht is submitted to measurement, these water vessels must be filled to their prescribed capacity in each case.

side of the deck, regardless of the deck-beams. This "height of cabin" must be maintained over a distance companions, or other deck erections, are not taken into account in the measuring of the "height of

yacht, having a clear deck opening of not less than 4 per cent of the deck area of such cabin. A fixed may be hinged or pivoted, but must not be totally displaced when racing. Should a companion be fitted the fittings to be lined, either close, or if with battens, the space not to exceed 25 per cent of the whole. all classes:—During a race the platforms shall be kept down, bulkheads standing, and ladders and stair-cots, skylights, and unfixed cooking apparatus; no water may be started from or taken into the tanks, on board, all ballast must be properly stowed under the platforms or in lockers, and no ballast or other shipped, unshipped, or shifted after 9 p.m. of the day previous to that on which the race is sailed.

additional bulkhead or bulkheads. In cases where a yacht is required to have two bulkheads one of

(xiiia) Battens.

The length of the battens in all mainsails of yachts shall not exceed the following :—

Intermediate battens, 10 per cent of the Rating + 0.6 metres.

Upper and lower battens, one-fourth shorter. The battens in a sail shall divide the after leach into approximately equal parts.

Maximum number of battens in sail :—

Yachts of 12 metres and under : 4 battens.

(xiiib) Headsticks.

Headsticks to triangular mainsails shall not exceed $2\frac{1}{2}$ per cent of rating.

(xiiic) Sails Unfairly Sheeted or Set.

No contrivance such as an outrigger shall be used on any head sheet or upon the sheet of the spinnaker, and the spinnaker boom shall not be used as a bowsprit by being tacked or fixed down at the outer end when the spinnaker boom is right forward.

(xiv) Crew

All measurements to be taken without crew on board.

(xv) Marks.

Visible marks on the hull must be in accordance with the "Instructions to Measurers."

(xvi) Immersion.

That the certified rating be for the immersion of the yacht in water of the specific gravity of open sea water. Allowance is to be made in the case of vessels measured in fresh water, as prescribed in the "Instructions to Measurers."

(xvia) Cabin Dimensions and Fittings.

The restrictions as to the cabin fittings to be in accordance with the Table annexed.

(xvib) Cabin Tops in 8 Metres.

An 8-metre yacht must be fitted with a cabin top. The minimum cabin top to be 2.5 square metres unobstructed area, or 25 square feet. Height to be an average height of 15 cm. 6 inches. Thickness of roof, 15 mm. ; sides, 25 mm. The mast must not go through the cabin top. The carlings or beams must not go across the space. This is not to apply to any 8-metre yacht ordered before February, 1927. An 8-metre yacht with a cabin top need not be fitted with a skylight, but must have a fore-castle hatch.

(xvii) Masts.

Hollow masts will be allowed. The wall thickness of hollow masts must be of uniform thickness from 0.3 metre (one foot) above the deck

to the top. The mast must be solid from the step to 0.3 metre (one foot) above the deck. The minimum wall thickness to be :—

Class Metres.							Thickness.	
							mm.	in.
6	...	...	...	...	...	...	20	= $\frac{3}{4}$
8	...	...	...	...	...	...	25	= 1
10	...	...	...	...	...	...	30	= $1\frac{1}{4}$
12	...	...	...	...	...	...	45	= $1\frac{3}{4}$
15	...	...	...	...	...	...	62	= $2\frac{3}{4}$

This came into force on the 1st May, 1927.

Permanently bent masts, rotating masts, double-luffed sails and similar contrivances are prohibited under the International Rule.

(xviii) Classification.

The International classes will be as follows :—

Class Metres.	Corresponding Class in Feet.	Limit to number of Paid hands allowed on board during a Race.	Limit to number of <i>Per- sons</i> allowed on board during a Race.
12	39.37	4	No limit
10	32.80	3	8
8	26.24	3	6
6	19.68	2	5

There is no limit to the number of persons allowed on board during a race, but the number of paid hands is limited as in the above table.

(xix) Scantlings.

All yachts will have to be classed with one of the three classification societies, viz., Lloyd's Register of Shipping, Bureau Veritas or Norsk Veritas ; and yachts of the International classes so built will be classed R, denoting that their scantlings are as required for their respective rating classes. The tables of scantlings may be obtained on application from the Secretary of Lloyd's Register of Shipping, 71, Fenchurch Street, E.C. ; the Administration of the Bureau Veritas, 8, Place de la Bourse, Paris, or of the Norsk Veritas, Kongengate 2, Christiania.

(xx) Old Yachts conforming to New Classes. (xxi) Old Yachts not conforming to New Classes.

These two clauses ceased to operate on December 31st, 1925.

(xxii) Certificate of Rating.

As soon as a Yacht has been measured, the measurer shall forward the measurements (with "Designer's Declaration," see para. 4, Instructions to measurers, etc., the sailmaker's diagram, if necessary) to the Secretary of the National Authority, who shall in due course, and after receipt of the Classification Society's certificate, issue a certificate of rating, which shall be in force from the date of the completion of the measurement. If from any peculiarity in the build of the Yacht, or other cause, the measurer shall be of opinion that the rule will not rate the Yacht fairly, or that in any respect she does not comply with the requirements of these rules, he shall report the

circumstances to the National Authority, who, after due inquiry, shall award such certificate of rating as they may consider equitable, and the measurement shall be deemed incomplete until this has been done.

(xxiii) **Errors in Certificates.**

Should the certificate under which a Yacht has sailed in any race or races be proved to have been incorrect for any reason, the National Authority may, after inquiry, correct such certificate as they may deem proper, and may revise the claim of the Yacht to the prizes which she may have been awarded in such race or races.

(xxiv) **Obligations of Owner respecting Certificate.**

The certificate of rating shall cease to be valid under any of the following contingencies :

- (a) If the displacement is *reduced* or the draught is *increased* or any dimension altered so as to invalidate the "Designer's Declaration" (see para. 4, "Instructions to Measurers").
- (b) If any dimension measured for rating, except freeboard, is found to exceed the measurement stated on the certificate.
- (c) If one or both of the length marks fall within the length immersed when the yacht is lying in smooth water in measurement trim.
- (d) If any alteration is made so as to increase the beam or girth or girth difference, or the length of any spar or spars, or the sail area, as respectively measured for rating.
- (e) If any length or girth or immersion mark is moved from its position.
- (f) If the fittings do not comply with the tables.
- (g) At the expiration of two years from the date of the certificate.

In such case the owner or his representative shall forthwith notify in writing the invalidity of the certificate to the Secretary of the National Authority. A fresh or re-dated certificate will afterwards be issued, to be in force from the completion of re-measurement, or from the date the certificate expire under Clause (g).

It is especially incumbent on the owner, or his representative, to ascertain from time to time by inspection of the marks, whether the immersion of the yacht has from any cause whatever become such as to render the certificate invalid.

He should also especially note that he is responsible that Clause (a) "Designer's Declaration," is not infringed, as the designer is in no way responsible for the correctness of his declaration after the date thereof.

(xxv) **Penalty for Infringement of Provisions relating to Certificate.**

If an infringement of any of the foregoing provisions in respect of the validity of the certificate of a Yacht should, in the opinion of the National Authority, be proved against any Yacht, such Yacht shall be liable to be disqualified by the National Authority from

starting in any race sailed under these Rules for the remainder of the current year, or such period as the National Authority may direct, reckoning from the date at which her certificate is proved to have become invalid.

(xxvi) **Inspection to be permitted by Owner.**

Every owner sailing under these Rules shall permit all reasonable inspection by or on behalf of the National Authority, and shall afford all reasonable facility to carry out such inspection in regard to measurements, marks, fittings, and such other matters as fall within the scope of a measurer's duty.

(xxvii) **Centreboards.**

The Rules for Centreboards were still in abeyance in 1928.

SECTION I. PART II.—THE INTERNATIONAL RULE FOR YACHTS ABOVE 12 METRES

(Passed by the I.Y.R.U., November, 1926.)

In all details not mentioned in the following clauses, including the Measurement of Sail Area, limitations upon Displacement and Draught, etc., the Rule of Measurement for Yachts above 12 metres is the same as in the International Rule for Yachts of 12 metres and under.

(i) **The International Formula for Yachts above 12 metres :**

$$\frac{L + \sqrt{S} - F}{2.3} = \text{Rating.}$$

(ii) **Length.**

The length, L, for the formula is to be measured at a height 1.5 per cent of the L.W.L. length above the water-line. In taking the length the girth difference at the bow shall have a co-efficient of $1\frac{1}{2}$ and that at the stern $\frac{1}{2}$.

(iii) **Keels.**

The keel shall be straight from the after end to a point vertically below the centre of the water-line length. A reasonable round up at the after end shall not be considered a deviation from the straight line for the purposes of this clause.

(iv) **Height Limits for Masts.**

Measured from the L.W.L. to the highest sheave on the mast or topmast.

(a) **Yachts of Single-masted rig and Yawls :—**

$$\text{L.W.L.} \times 1.4 + 6 \text{ metres.}$$

(b) **Yachts of Schooner or Ketch Rig :—**

$$\text{L.W.L.} \times 1.4 + 4 \text{ metres.}$$