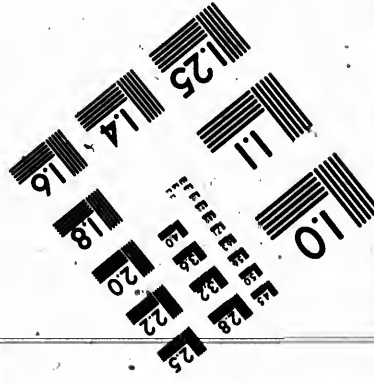
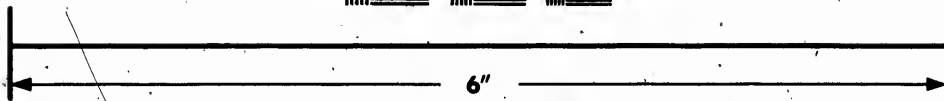
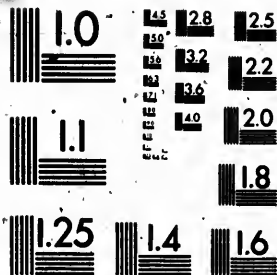


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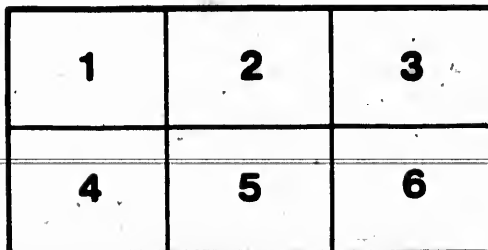
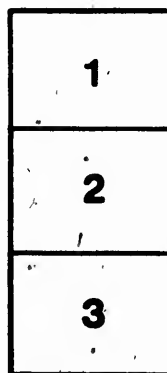
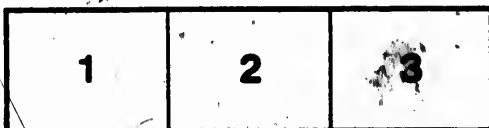
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Lake

Facing

tion.

RULES
OF THE
LAKE YACHT RACING
ASSOCIATION

As amended to 5th November, 1898.

ORGANIZED MARCH 29th, 1884.

TORONTO:
MURRAY PRINTING COMPANY.

1899.

LIST OF YACHT CLUBS

BELONGING TO THE

Lake Yacht Racing Association



| | | | |
|----------------|-------------|-----|------------|
| BUFFALO | YACHT CLUB, | - - | Buffalo. |
| KINGSTON | " " | - - | Kingston. |
| OSWEGO | " " | - - | Oswego. |
| QUEEN CITY | " " | - - | Toronto. |
| ROCHESTER | " " | - - | Charlotte. |
| ROYAL CANADIAN | " " | - - | Toronto. |
| ROYAL HAMILTON | " " | - - | Hamilton. |
| VICTORIA | " " | - - | Hamilton. |

OFFICERS—1900

President,

W. S. THOMPSON,

Club

Secretary,

Club

tion

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3.

4.



Book issued 1899

1899

Section 1, 1st line
water 1899

1899



OFFICERS—1899



PRESIDENT:

A. G. WRIGHT,
Of the Rochester Yacht Club.

VICE-PRESIDENT:

F. B. HOWER,
Of the Buffalo Yacht Club.

SECRETARY:

FRANK M. GRAY,
Of the Royal Canadian Yacht Club.

COUNCIL:

THE OFFICERS AND

E. H. AMBROSE, Royal Hamilton Yacht Club.

FRANK STRANGE, Kingston Yacht Club.

JOHN T. MOTT, Oswego Yacht Club.

OWAIN MARTIN, Queen City Yacht Club.

T. L. STEPHENS, Victoria Yacht Club.

SECRETARY'S ADDRESS:

FREEHOLD LOAN BUILDING, TORONTO, ONT.

OFFICERS SINCE ORGANIZATION:

PRESIDENTS:

| | |
|------------------------------|--------|
| John Leys, R. C. Y. C., | 1884 |
| John T. Mott, O. Y. C., | 1885 |
| W. H. Biggar, B. O. Y. C., | 1886 |
| J. B. Carruthers, K. Y. C., | 1887 |
| Geo. H. Newell, R. Y. C., | 1888 |
| J. F. Monck, H. Y. C., | 1889 |
| A. R. Boswell, R. C. Y. C., | 1890 |
| John T. Mott, O. Y. C., | 1891 |
| Mat. Cartwright, R. Y. C., | 1892 |
| F. S. Malloch, R. H. Y. C., | 1893 |
| A. R. Boswell, R. C. Y. C., | 1894 |
| Æmilius Jarvis, R. C. Y. C., | 1895-6 |
| E. H. Ambrose, R. H. Y. C., | 1897 |
| Frank Strange, K. Y. C., | 1898 |
| A. G. Wright, R. Y. C., | 1899 |

VICE-PRESIDENTS:

| | |
|-----------------------------|------|
| John T. Mott, O. Y. C., | 1884 |
| W. H. Biggar, B. O. Y. C., | 1885 |
| Col. Campbell, K. Y. C., | 1886 |
| Geo. H. Newell, R. Y. C., | 1887 |
| Thos. McGaw, T. Y. C., | 1888 |
| John T. Mott, O. Y. C., | 1889 |
| J. B. Carruthers, K. Y. C., | 1890 |
| Mat. Cartwright, R. Y. C., | 1891 |
| W. H. Biggar, B. O. Y. C., | 1892 |
| A. R. Boswell, R. C. Y. C., | 1893 |
| W. H. Biggar, B. O. Y. C., | 1894 |
| Allen Ames, O. Y. C., | 1895 |
| J. E. Burroughs, R. Y. C., | 1896 |
| T. B. Pritchard, R. Y. C., | 1897 |
| R. A. Downey, O. Y. C., | 1898 |
| F. B. Hower, B. Y. C., | 1899 |

2nd VICE-PRESIDENTS:

| | |
|---------------------------|--------|
| Hugh C. Dennis, T. Y. C., | 1884 |
| Thos. McGaw, T. Y. C., | 1885-6 |
| John Leys, R. C. Y. C., | 1887 |
| F. E. Kilvert, H. Y. C., | 1888 |

The office was abolished in 1889.

SECRETARIES:

| | |
|-----------------------------|---------|
| Geo. E. Evans, R. C. Y. C., | 1884-93 |
| E. H. Ambrose, R. H. Y. C., | 1894-95 |
| Frank M. Gray, R. C. Y. C., | 1897-99 |

ION:

GENERAL RULES.

I.—NAME.

The Association shall be known as the
"Lake Yacht Racing Association."

II.—OBJECTS.

The objects of the Association shall be to encourage yacht building and yacht racing, and to establish and enforce uniform rules for the government of all races in which the yachts of two or more clubs compete.

III.—MEMBERSHIP.

Any Yacht Club on the lakes, in good standing, having 50 members and 5 yachts of 16 feet load water line and upwards, shall be eligible for membership.

IV.—REPRESENTATION.

Each Club shall annually appoint from its members three representatives to the Association. These shall be appointed before the Annual General Meeting and shall hold office for one year or until their successors are appointed.

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1888

1884-93

1894-96

1897-99

V.—MANAGEMENT.

The officers of the Association shall be a President, Vice-President and Secretary. The affairs of the Association shall be managed by a Council consisting of the officers and one representative from each Club, except those from which the officers have been chosen. The Council shall be elected by the Association at its Annual General Meeting by ballot. Vacancies occurring between the Annual General Meetings shall be filled by the Council.

VI.—DUTIES OF THE COUNCIL.

It shall be the duty of the Council to consider and act upon applications for membership in the Association; to appoint special officers, representatives and committees; to frame racing rules and arrange dates for racing events for adoption by the Association, and to determine and settle all questions and disputes relating to Yacht Racing which may be referred to them for decision. And further, to take such steps as they may consider necessary and expedient to carry into effect the objects of the Association.

VII.—MEETINGS.

The Annual General Meeting of the Association shall be held at such place as the Council shall determine on the first Saturday in November in each year. The Council may call special general meetings whenever necessary, and shall do so upon the requisition in writing of three representatives. Two weeks' notice of every general meeting shall be given to the Secretary of each Club belonging to the Association.

Six representatives from not less than three Clubs shall constitute a quorum at any general meeting of the Association.

The business of the Council shall be carried on as far as possible by correspondence, but they shall meet at such times and places as they may consider expedient and appoint. One week's notice of a meeting shall be given to each member of the Council.

Three representatives from different Clubs shall constitute a quorum at any meeting of the Council.

VIII.—SUBSCRIPTION AND ASSESSMENT.

Each Club shall pay a subscription of \$15.00

in advance on the 1st day of November in each year. Should the amount thus provided be insufficient for defraying the current expenses of the Association, the Council may assess the Clubs for such further amount as may be required. No Club which is in arrear for any subscription or assessment shall be entitled to be represented at any meeting of the Association.

IX.—VOTING.

Each representative shall be entitled to one vote at all General Meetings of the Association.

Voting by proxy shall not be allowed except in the case of a proxy given by one representative to another representative of the same Club.

X.—AMENDMENTS.

Amendments to these rules or the Racing Rules may be adopted at any general meeting of the Association by a two-thirds vote of those present, provided that the notice of the meeting shall have contained any such proposed amendment in full.

RACING RULES.

I.—MANAGEMENT.

1. All races and all yachts sailing therein shall be under the direction of the Regatta Committee of the Association or of the Club by which the races are given. All matters shall be subject to their approval and control, and all doubts, questions and disputes which shall arise shall be subject to their decision. Their decision shall be based upon these rules as far as they apply, but as no rules can be devised capable of meeting every incident and accident of sailing, the Regatta Committee should keep in view the ordinary customs of the sea and discourage all attempts to win a race by other means than fair sailing and superior skill and speed. The decision of the Regatta Committee shall be final, unless the Regatta Committee of a Club think fit, on the application of the parties interested, or for other reasons, to refer the questions at issue for the decision of the Council of the Association, whose decision shall be final. No member of the Regatta Committee or Council shall take part in the discussion or

decision upon any disputed question in which he is interested.

2. The Council may, in any year, appoint an officer, at such remuneration as they shall think fit, whose duty it shall be to attend all Regattas held under the auspices of the Association, and (under the direction of the Regatta Committee) superintend the laying and logging of courses and laying of buoys, calculate the time allowances in the different classes, see that the guns are fired at the proper times, and with such assistance as may be necessary, take the times of the competing yachts at the finish, correct the same and generally do such work in connection with the management of the Regattas as may be reasonably required of him. He shall also send a record of the names and times of the starters in each race to the Secretary of the Association.

II.—APPLICATION

1. The rules shall apply to all yachts whether sailing in the same or different races.

2. Yachts shall be amenable to the rules from the time the preparatory signal is given until the finish of the race.

III.—MEASUREMENT.

1. Yachts (except in the 22-foot Knockabout Class) shall be rated by racing measurement, which shall be determined by adding together the load water line length, the beam, .75 of the girth, .5 of the square root of the sail area, and dividing the sum by 2.

Formula :

$$\frac{L.W.L. + B. + .75 G. + .5 \sqrt{\text{Sail Area.}}}{2} = R. M.$$

Yachts in the 22-foot Knockabout Class shall be rated for classification by racing length, which shall be determined by adding to the load water line length the square root of the sail area, and dividing the sum by 2.

Formula :

$$\frac{L.W.L. + \sqrt{\text{Sail Area.}}}{2} = R. L.$$

2. The load water line length shall be the distance in a straight line between the points furthest forward and furthest aft, where the hull, exclusive of the rudder stock, is intersected by the surface of the water, when the yacht is afloat in racing trim in smooth water, with any person or persons who may be aboard when the measurement is being taken, stationed amidships.

If any part of the stem, sternpost, or other part of the yacht below the load water line projects beyond the length thus measured, such projection shall be added to the measured length; and a form, resulting from the cutting away of the fair line of the stem, sternpost, or the ridge of the counter, for the apparent purpose of shortening the load water line, shall be measured between fair lines.

The measurement for load water line length and girth shall be made with the same number of persons on board as are allowed for crew in the yacht's class, whose average weight shall not be less than 150 pounds; or, at the option of the measurer, with a dead weight equivalent thereto.

The measurer, at the time of taking his measurements, shall affix a metal plate as a distinctive, permanent mark at each end of the load water line.

3. The beam shall be taken from outside to outside of the planking on the broadest part of the yacht, and no allowance shall be made for wales, double planks or mouldings of any kind.

4. The girth shall be taken from L.W.L. to L.W.L. under the keel at a point 0.6 of the

distance between the outer edges of the L. W. L. marks from the fore end. The girth shall be measured along the actual outline of the vertical cross section at that point at right angles to the L. W. L. If the draught forward of that point exceeds the draught at that point, twice such excess to be added to girth. In taking these measurements all hollows on the fore and aft under-water profile of the vessel to be treated as filled up straight.

To the girth of centerboard yachts must be added twice the distance between the lower side of the keel to the center of the area of the centerboard when lowered to its fullest extent. Centreboards when ballasted or solid metal centreboards exceeding in thickness that provided in the Scantling Table for the various classes or built up metal boards, or wooden boards weighted with metal the total weight of which exceeds that of a solid steel plate of the same superficial area and of the thickness allowed by the Scantling Table or Centreboards, fitted with bulbs, to be measured as fixed keels.

DIRECTIONS TO MEASURERS.

Measurers shall mark the points for measur-

ing the girth as follows: By fixing three metal plates on each side of the yacht not less than two inches, or more than six inches, above the L.W.L. level, and parallel thereto, and not less than three feet, or more than six feet, from end to end, and so that the center mark of the three coincides with the distance 0.6 from the fore edge of the bow marks. The measurer shall also place a plate coinciding with this center mark under the rail or covering board, and another on the side of the keel perpendicular to the L.W.L. level. The distances between the L.W.L. level and the horizontal marks to be measured when the yacht is afloat in smooth water, and deducted from the girth as obtained from center mark to center mark.

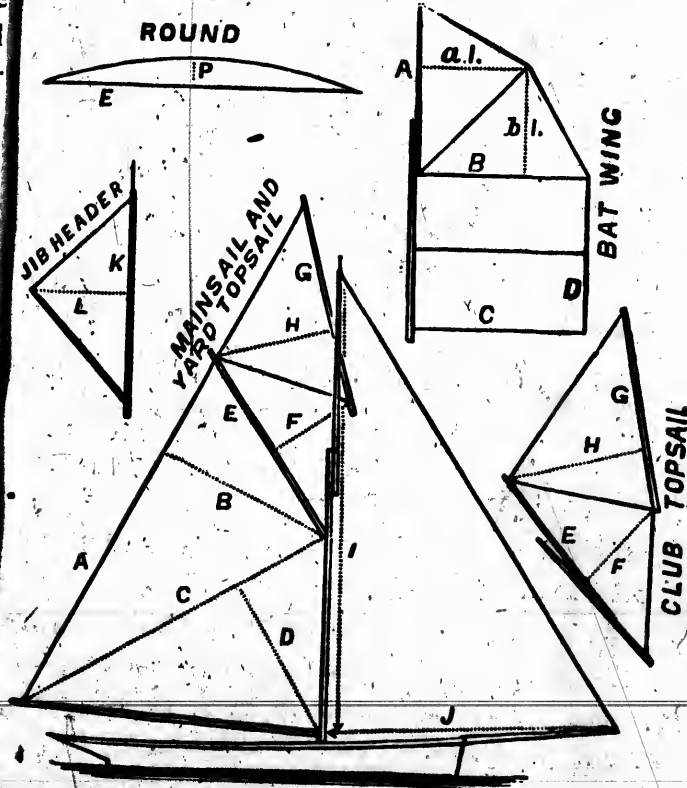
Measurers may accept for the measurement of girth the designer's written certificate or drawing, certified to as being correct by designer and builder, but this shall not relieve the owner from fixing the marks heretofore described, or relieve him from the responsibility of the accuracy of the certificate and proper position of the marks. In the event of a measurement protest, the yacht must be measured as heretofore provided.

MEASUREMENT MARKS.

The perpendicular and horizontal marks shall be brass plates $4'' \times 2'' \times \frac{1}{32}''$.

The bow and stern marks shall be $\frac{1}{2}''$ ($\frac{1}{2}$ oval) brass at least 4 inches long.

5. The sail area shall be ascertained as follows:



Mainsail.

A—Measured from top of boom at end to under side of gaff at end; any extension of gaff or boom to be considered part of gaff or boom, and to be extended when measured to its full limit.

B—Perpendicular to *A*, measured to under side of gaff close in to mast.

C—Measured from top of boom at end, or any extension thereof, when extended to its full limit to under side of gaff close in to mast.

D—Perpendicular to *C*, measured in to mast in a line with top of boom, or to tack cringle of mainsail if below top of boom.

Yard Topsail or Club Topsail.

E—Measured from upper end of gaff close in to mast to pin of sheave for topsail sheet, or to lacing-hole in jackyard.

F—Perpendicular to *E*, measured to lacing-hole in yard.

G—From lacing-hole to lacing-hole in yard.

H—Perpendicular to *G*, measured to pin of sheave for topsail sheet in gaff, or to lacing-hole in jackyard.

Jlb Header.

K—Measured from top of gaff close in to mast to pin of halyard sheave in topmast.

L—Perpendicular to *K*, measured to pin of topsail sheet sheave in gaff, or to lacing-hole in jackyard.

Headsails.

I—Measured from main boom goose-neck to shoulder of topmast, or in cases where no sails are attached to topmast-stay, or pole-stay, the measurement shall be taken from main boom goose-neck to pin of highest sheave in or on topmast or pole, or to pin of sheave of any block secured to topmast or pole, and used in either case for headsail or spinnaker. In the case of a schooner which has no fore-topmast, but has a main spinnaker, the perpendicular for the fore-triangle shall be measured from main boom goose-neck to shoulder of main topmast.

J—Measured from fore side of mast to top of cranse iron on bowsprit end, or where bowsprit is cut by line of topmast stay or pole stay; or, in cases where no sail or sails are attached to stay, the measurement shall be taken from the

fore side of mast to pin of sheave for jib out-haul.

In all cases if the distance from the centre fore and aft line of the mast to the outer end of spinnaker boom (when shipped in its place and square to the keel), exceeds the distance from the heel of the spinnaker boom when shipped in its place to the cranse iron on the bowsprit end (where cut by the line of topmast stay), or pin of sheave for jib out-haul, as the case may be, the excess shall be added to the base of the triangle formed by the headsails, and the area of the headsail shall be computed accordingly.

In case of a yacht having no headsail, but carrying a spinnaker, the area for headsail shall be computed from the length of spinnaker boom and the height from main boom gooseneck to shoulder of topmast, or highest pin in sheave of polemast, as provided for in this rule.

The length of head stick or head yard to spinnaker shall not exceed one-twentieth the length of spinnaker boom. Foot yards not allowed on spinnakers.

In the case of a yacht carrying a square sail, or square topsail, or raffee (together or separately), the actual area of the same shall be computed, and if such area exceeds the area of the fore triangle such excess shall be added thereto.

Foresail of Schooners.

A—Measured from fore side of mainmast (in a line with main boom goose-neck), to under side of gaff at end ; any extension of gaff to be considered part of gaff, and to be extended when measured to its full limit.

B—Perpendicular to *A*, measured to under side of gaff close in to mast.

C—Measured from fore side of mainmast (in a line with main boom goose-neck), to gaff close in to mast.

D—Perpendicular to *C*, measured in to mast in a line with top of fore boom or tack cringle.

Area of Mainsail.

To find the area of the mainsail : Multiply *A* by *B* and *C* by *D* and add the two products together and divide by 2.

Area of Yard Topsail or Club Topsail.

To find the area of yard topsail or club topsail: Multiply E by F and G by H and add the two products together and divide by 2.

Area of Jib Header.

To find the area of jib header: Multiply K by L and divide the product by 2.

Area of Headsails.

To find the area of headsails, jib topsail or spinnaker: Multiply I by J and divide by 2.

Area of Pole Mast Headsails.

To find the area of headsail for pole mast: Multiply I by J and divide by 2.

Area of Bat Wing Sails.

To find the area of bat wing sails: Multiply A by a_1 and B by b_1 and add the two products together and divide by 2, and multiply C by D and add the product to the others.

Area of Schooners' and Yawls' Sails.

The area of a schooner's sail or a yawl's sail would similarly be found. In the case of a yawl having a lug mizzen, the lacing-holes in the yard would be taken as the upper boundaries.

Area of Lugsails and Headsails.

In the case of a lugsail, standing lugsail or balance lugsail being carried, the actual area of the same shall be computed; and if headsail be also carried, the measurements for computing the area of the same shall be taken from fore side mast, etc., in accordance with the method provided in the rule for headsails.

Area of Round in Sail.

To compute the area bound by the round in the head of a lugsail or the foot of a loose-footed mainsail, when extending below the boom (or leach, luff, etc., if extended by battens), multiply the base E by two-thirds of the perpendicular P (see diagram).

Formula.

The following formula can be used at the option of the measurer :

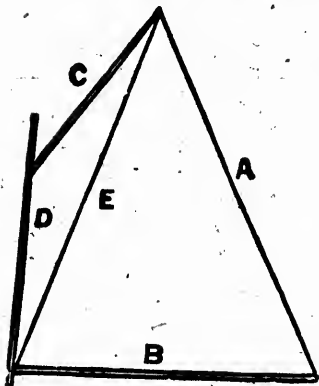
To find the area of any triangle of which the three sides are given—

In a triangle having sides a , b and c : Let S =Semi-Perimeter, *i. e.* one-half the sum of the three sides of

$$\frac{a+b+c}{2}$$

2

Then area of triangle = $\sqrt{S(S-a)(S-b)(S-c)}$.



Example :

To find area of a mainsail having the dimensions a, b, c, d and diagonal e

If $a=38, b=29, c=18, d=20$ and $e=37$,

Then 1st in triangle a, b, e ,

$$S = \frac{a+b+e}{2} = \frac{38+29+37}{2} = 52$$

\therefore Area of triangle a, b, e ,

$$= \sqrt{S(S-a)(S-b)(S-e)}$$

$$= \sqrt{52 \times 14 \times 23 \times 15}$$

$$= \sqrt{251160}$$

$$= 501.16$$

And 2nd in triangle c, d, e ,

$$S = \frac{c+d+e}{2} = \frac{18+20+37}{2} = 75$$

\therefore Area of triangle c, d, e ,

$$= \sqrt{75 \left(\frac{75}{2} - 18 \right) \left(\frac{75}{2} - 20 \right) \left(\frac{75}{2} - 37 \right)}$$

$$(S-b)(S-c).$$

$$= \frac{\sqrt{75}}{2} \times \frac{39}{2} \times \frac{35}{2} \times \frac{1}{2}$$

$$= \frac{\sqrt{102375}}{16}$$

16

$$= \frac{319.96}{4} = 79.99$$

area of a mainsail
e dimensions a , b ,
diagonal c

Therefore area of mainsail
= $501.16 + 79.99 = 581.15$.

Mode of Measuring.

In cases of disputed measurements, or if the necessary measurements cannot be obtained from the sailmaker, the sails can be measured in the manner following: Take the length of boom from mast to end and length of gaff from mast to end (any extension of gaff or boom to be considered part of gaff or boom, and to be extended when measured to its full limit), then hoist the sail with the tack fast and set the luff and peak up taut, and let go the topping lifts so that the weight of the boom comes on the leach of the sail. With a line and tape measure the leach and luff and the diagonal C . For the headsail measure the height I and the distance J , as provided for in the section deal-

$c = 37$,

$$\left(\frac{75}{2} - 37 \right)$$

ing with headsail. For topsail the sail would be hoisted and marked in a line with the gaff, then lowered and the other dimensions taken. From the measurements so taken a sail plan would be made and the areas calculated as described.

Sails of Unusual Form.

If the various methods of measuring sails as herein shown do not, in the opinion of the measurer, cover the case, he is to divide the sails into such triangles or figures as will get at accurate results, and a sail plan showing the manner in which the yacht has been measured, giving the different measurements and the points from which they have been taken, shall be furnished by the measurer to the owner of every yacht measured by him.

If a yacht, after having been officially measured, be increased in load water line length, beam, girth, or sail area, the yacht must be remeasured before starting in a race.

IV.—KNOCKABOUT CLASS.

The Cruising Knockabout Class shall have a maximum racing length of 22 feet, shall be

ail the sail would
ne with the gaff,
dimensions taken.
aken a sail plan
as calculated as

orm.

measuring sails as
e opinion of the
is to divide the
gures as will get
plan showing the
been measured,
ments and the
een taken, shall
to the owner of

been officially
ater line length,
yacht must be
race.

CLASS.

lass shall have
2 feet, shall be

cabin boats and shall sail without time allow
ance (except as herein provided).

All boats built or brought to the lakes after
Nov. 5, 1898 for this class shall in addition to
the conditions set forth in the "Table of Scant-
lings" be subject to the following restrictions.

Area of Midship Section.

The area of the immersed midship section
shall not be less than 10 feet.

Freeboard.

The freeboard at lowest point shall not be
less than 21 inches.

Beam.

The extreme beam shall not be more than
8 feet, 3 inches for keel boats, and 9 feet 3
inches for centreboards, and shall not at any
point exceed the L.W.L. beam at midship
section by more than 15 per cent.

Overhangs.

Neither forward nor after overhang shall
exceed 40 per cent. of the length of L.W.L.

Cabin.

Cabin shall have a height of 4 feet 6 inches
measured from top of floor to underside of

beams, at least for a distance fore and aft equal to one-third the L. W. L. length.

Sails.

The area of all sail abaft mainmast shall not exceed 85 per cent. of the total measured sail area.

Yachts of 22 feet R. L. or less, built prior to November 5, 1898, the area of whose midship section exceeds 6 feet may race in this class but shall give time allowance in accordance with their lack of displacement, the formula to be used in measuring such boats (for time allowance only) shall be

$$\frac{L + \sqrt{S.A.}}{2} + \frac{10}{D}$$

(" D ") is the area of midship section plus .4 of the difference between such area and 10 square feet.

In making the above measurements the largest transverse vertical section shall be taken as the midship section.

V.—RESTRICTION ON CONSTRUCTION.

The frame timbers, keels, planking, and other parts of all wooden yachts built after

fore and aft equal
th.
November 7, 1896, or brought to the lakes
after that date, shall be restricted to the mini-
mum sizes fixed in the table below.

t mainmast shall
e total measured
(NOTE.—This table is published in a supplement,
copies of which will be furnished on application to the
secretary).

VI.—CLASSIFICATION.

ess, built prior to
of whose mid-
may race in this
vance in accord-
displacement, the
ring such boats
as follows :

be
ection plus .4 of
a and 10 square
asurements the
ction shall be

1st Class, A—Yachts over 45 feet.
45-foot Class, B—Not over 45 feet, and over
40 feet.
40-foot Class, C—Not over 40 feet and over
35 feet.
35-foot Class, D—Not over 35 feet and over
30 feet.
30-foot Class, E—Not over 30 feet and over
25 feet.

STRUCTION.
planking, and
hts built after

25-foot Class, F—Not over 25 feet.
22-foot Knockabout Class, G—Not over 22
feet, (see Rule IV).

2. Each yacht shall be entitled to sail in her

own class and in no other, but any yacht enrolled in one of the clubs belonging to the Association at November 5, 1898, which by reason of the change in measurement, then adopted, shall have her measurement increased beyond the upper limit of the class which has been substituted for the class in which she had sailed prior to that date, shall be permitted to sail in the same class provided she has not increased her measurement, and shall give time allowance according to the appended table upon her actual racing length.

There shall be no time allowance in the 22-foot knockabout class except as is provided in Rule IV.

VII.—RESTRICTION ON DRAFT.

The maximum draft of any yacht built after November 7, 1896, or brought to the lakes after that date, when in racing trim, shall not exceed that specified for her class in the following table, exclusive of centreboard if it be not a board weighted for ballast, or if it be not a solid metal centreboard exceeding in thickness that provided in the Scantling Table for the various classes or a built up metal board or

er, but any yacht belonging to the 1898, which by measurement, then measurement increased the class which has in which she had all be permitted to ed she has not in d shall give time appended table

wooden board weighted with metal the total weight of which exceeds that of a solid steel plate of the same superficial area and of the thickness allowed by the Scantling Table or a Centreboard fitted with a bulb.

1st Class—10 feet draft.

45-foot Class—9 feet draft.

40-foot Class—8 feet draft.

35-foot Class—7 feet draft.

30-foot Class—6 feet draft.

25-foot Class—5 feet draft.

22-foot Knockabout Class—5 feet draft.

VIII.—TIME ALLOWANCE.

Time allowance shall be calculated on R. M. according to the appended table, but any yacht built or brought to the lakes after Nov. 5, 1898, or any yacht the measurement of which has been increased since that date for the purpose of placing her in a higher class than she previously sailed in, shall be rated for time allowance at the upper limit of the class in which she is sailing.

IX.—ALLOWANCE FOR RIG.

In races where yachts of different rigs sail together; schooners over 30 feet R.M. shall be

rated for time allowance at 85 per cent. of their R.M.; yawls over 30 feet R.M., at 93 per cent., and all other yachts at their actual R.M.

X.—OWNERSHIP.

1. No person shall be the owner of more than one yacht entered for a race in the same class.
2. Each yacht entered for a race must be the *bona fide* property of the person or persons in whose name she is entered, who must be a member or members in good standing of a recognized yacht club belonging to the Association, which club must not be in arrear for any amount owing by it to the Association. A yacht chartered for the season shall be considered the property of the person or persons chartering it.

XI.—ENTRIES.

1. All entries shall be in writing, and shall be signed by the owner or his representative, giving name of yacht, racing measurement and racing number, and shall be accompanied by a certificate of measurement in the form following signed by the measurer and secretary of the club to which the owner belongs, and

85 per cent. of
t R.M., at 93 per
their actual R.M.
IP.

must be lodged with the Regatta Committee,
or the Association Officer, not later than noon
of the day before the race, exclusive of Sundays,
unless otherwise ordered by the Committee.

owner of more
ace in the same

(Form of Certificate of Measurement).

LAKE YACHT RACING ASSOCIATION.

ace must be the
n or persons in
who must be a
standing of a
to the Associa-
arrear for any
association. A
shall be consid-
on or persons

Certificate of measurement of the.... rigged yacht....
..... owned by
Length over allft.
Load water line.....ft.
Beam.....ft. Girth (mark to mark, lower
edges).....ft. Line of immersion to girth
marks, lower edgesft. Excess of draft
forward of point of measurement (if any).....ft.
Bottom of keel to centre of area of centreboard (if any)
.....ft. Corrected girth.....ft. Area of
immersed midship section (for knockabout class).....
.....ft.

SAIL AREA.

ing, and shall
representative,
asurement and
panied by
e form follow-
l secretary of
belongs, and

Mainsailsq. ft. Headsail triangle
.....sq. ft. Topsail..... sq. ft.
Total sail area.....sq. ft. Square root of
sail area.....sq. ft.

Formula :

$$\frac{L. W. L. + B. + .75 G. + .50 \sqrt{S.A.}}{2} = \dots\dots\dots \text{ft.}$$

Racing measurement.

The above yacht was built at
Date..... Brought to Lake Ontario... ..

Measurement increased and is eligible to sail in the foot class at a R.M. of ft. (see Rules VI., VIII).

Time allowance for 1 nautical mile

Her owner is at present a member in good standing of the Yacht Club.

Dated at

.....
Measurer.

Secretary.

2. The Regatta Committee may refuse to accept any entry made after the time of closing.
3. The same yacht shall not be entitled to enter for a race under different rigs.
4. The Regatta Committee may, if they consider it expedient, reject any entry.

XII.—INSTRUCTIONS AND POST-PONEMENT.

1. Each yacht entered for a race shall at the time of entry, or as soon after as possible, be supplied with written or printed instructions as to the conditions of the race, the course to be sailed, marks, etc.
2. The Regatta Committee shall have power to change the courses or amend the instructions on or before the day of the race, provided

notice of such change is given to each yacht before the preparatory signal is given.

3. The Regatta Committee shall also have power to postpone any race should such a course appear to them desirable. No race, however, in which there is a time limit, shall be postponed merely because of lack of wind if any of the competing yachts shall have sailed round the course once within the allotted time, but should such race not be finished the prizes shall be awarded in the order in which the last completed round shall have been finished. The Regatta Committee may, in their discretion, suspend this rule in the case of special races.

XIII.—SAILS.

There shall be no restriction as to sails or the manner of setting or working them, but no yacht shall carry any sail for which she has not been measured.

XIV.—FITTINGS AND BALLAST.

1. Floors shall be kept down and bulkheads and doors left standing. All yachts shall keep their fixtures on board and in their proper places. All yachts must carry one serviceable

anchor and cable on board and a life buoy on deck.

2. Trimming by dead weight shall not be allowed after the preparatory signal. Ballast shall not be taken in or discharged after noon of the day preceding the race. A race postponed or resailed shall, so far as regards this rule, be considered a new race.

XV.—CREWS.

1. The total number of persons on board a yacht shall not exceed the allowance in the following schedule :

1st Class—1 person to every five feet of R. M.; or fraction thereof.

45-foot Class—9 persons.

40-foot Class—8 persons.

35-foot Class—7 persons.

30-foot Class—6 persons.

25-foot Class—4 persons.

22-foot Knockabout Class—4 persons.

2. No person shall board or leave a yacht after the starting signal has been given, except in case of accident or injury to a person on board.

3. In all races each yacht of 35 feet R. M., or

nder, must be steered by a Corinthian, who must be a member of a yacht club belonging to the Association.

XVI.—TIME OF MAKING RACES.

There shall be no limit to the time in which a race is to be sailed, except when it is otherwise specified in the instructions.

XVII.—RESAILED RACES.

No new entries shall be received for a race sailed, but a yacht duly entered shall be entitled to start though she originally failed to start, or having started was withdrawn. No yacht disqualified in a race shall be entitled to start in case the race shall be resailed.

XVIII.—NUMBERS.

Each yacht shall display a number, which shall be assigned to her, on both sides of the mainsail, above the reef bands, at an equal distance from the luff and leach.

XIX.—LIGHTS AND FOG SIGNALS.

The Government regulations regarding lights and fog signals shall be observed.

XX.—PROPULSION.

1. No means of propulsion other than sail shall be employed.
2. Manual power only shall be used for working a yacht.

XXI.—STARTING AND FINISHING.

1. All starts shall be flying, and shall be on gun starts.
2. Half an hour before the time of starting gun shall be fired and a flag hoisted as a signal for the yachts to approach the starting line. Ten minutes before the start, a preparatory gun shall be fired. At the expiration of ten minutes *exactly* the flag shall be hauled down and a third gun fired as a signal to start. Should the gun miss fire the lowering of the flag shall be the signal to start.
3. In the event of different classes starting in succession, not more than ten minutes apart the starting gun of each class shall be the preparatory gun for the next class to start. Each yacht shall be timed from the starting signal of her class.
4. If any yacht, or any part of her hull or spars, be on or across the line before the

SION.

on other than sail
 will be used for work
 must keep clear of all competing yachts.

FINISHING.

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 time of starting
 hoisted as a signa
 the starting line
 part, a preparator
 expiration of te
 will be hauled dow
 a signal to start
 the lowering of
 start.

5. A yacht shall be considered to have finished
 race, when, on completing the course, any
 part of her hull or spars shall be on or across
 the line.

XXII.—MARKS.

1. A mark is any vessel, boat, buoy, float or
 other object used to indicate the course.

2. Should any mark be absent or moved from
 its proper position during the race, the Regatta
 Committee shall, if possible, replace it or sub-
 stitute the Committee boat with a plain red flag
 hoisted, and call attention by gun or whistle.

ailing thus to re-establish the mark, the race
 may be ordered to be resailed or not, at the
 discretion of the Regatta Committee.

XXIII.—ANCHORING.

A yacht may anchor, but must weigh her
 anchor again and not slip. A yacht shall not
 tarp, or kedge, or make fast to a buoy, pier,

vessel or other object, except as provided under these rules.

XXIV.—RUNNING AGROUND AND FOULING.

A yacht running aground or fouling a buoy, pier, vessel or other object may use her anchor, warps, boats, etc., to get clear, but may not receive any assistance except from the crew of the vessel fouled. Any anchor, warp or boat so used must be taken on board again before continuing the race.

XXV.—ACCIDENTS.

Every yacht shall render all possible assistance to any vessel or person in peril, and if, in the judgment of the Regatta Committee, she shall thereby have impaired her chance of winning, they shall order the race to be resailed between such yacht and the winner in her class.

XXV.—SOUNDING.

No other means of sounding than the hand lead and line shall be employed.

XXVII.—RIGHT OF WAY.

When one yacht is approaching another s

to involve a risk of fouling, one of them shall keep clear of the other as follows :

1. On different points of sailing.

A yacht free shall keep clear of one close hauled.

2. On the same point of sailing with the wind on opposite sides.

When both yachts are close hauled, or both free, or both have the wind aft and on opposite sides, the yacht with the wind on the port side shall keep clear.

3. On the same point of sailing with the wind on the same side.

When both yachts are free, or have the wind aft and on the same side, the yacht to windward shall keep clear.

4. Wind aft.

A yacht with the wind aft is deemed to have the wind on the side opposite to that on which she is carrying her main boom. A yacht with the wind aft shall keep clear of a yacht on any other point of sailing.

5. Overtaking.

An overtaking yacht shall in every case, as

long as an overlap exists, keep clear of the yacht which is being overtaken.

6. *Definition of overlap.*

An overlap is established when an overtaking yacht has no longer a free choice on which side she will pass, and continues to exist as long as the leeward yacht by luffing, or the weather yacht by bearing away, is in danger of fouling.

7. *Altering course.*

When of two yachts one is obliged to keep clear the other shall not alter her course so as to involve risk of fouling.

8. *Luffing.*

A yacht may luff as she pleases in order to prevent another from passing her to windward, provided she begins to luff before an overlap is established.

9. *Bearing away.*

A yacht shall not bear away out of her course so as to hinder another in passing to leeward.

10. *Rights on new courses.*

A yacht shall not be entitled to her rights on a new course until she has filled away.

11. *Converging close-hauled.*

When two yachts, both close-hauled, on the same tack are converging by reason of the leeward yacht holding a better wind, and neither can claim the rights of a yacht being overtaken, then the yacht to windward shall keep clear.

12. *Passing and rounding marks.*

If an overlap exists between two yachts when both of them, without tacking, are about to pass a mark on the required side, then the outside yacht must give the inside yacht room to pass clear of the mark. A yacht shall not, however, be justified in attempting to establish an overlap, and thus force a passage between another yacht and the mark, after the latter has altered her helm for the purpose of rounding.

13. *Obstruction to sea room.*

When a yacht is approaching a shore, shoal, rock, vessel, or other dangerous obstruction and cannot go clear by altering her course without fouling another yacht, then the latter shall, on being hailed by the former, at once give room; and in case one yacht is forced to tack or bear away in order to give room, the

other shall also tack or bear away, as the case may be, at as nearly the same time as is possible without danger of fouling; but should such obstruction be a designated mark of the course, a yacht shall not force another to tack under the provisions of this rule.

XXVIII.—PROTESTS.

1. A yacht having cause during a race to protest against another yacht for a violation of these rules may display a flag in the rigging, and keep such flag flying till answered from the Regatta Committee's boat by the answering pennant.
2. Protests must be filed in writing with the Regatta Committee within twelve hours after the finish of the race, and must be signed by the owner or his representative.
3. If through protest the measurement of a yacht be called in question, the person protesting shall deposit with the Regatta Committee the sum of \$5.00, and the Regatta Committee shall thereupon direct such yacht to be remeasured by such measurer as they shall think fit, and the result as reported by him shall be final. The sum of \$5.00 shall be collected from the

away, as the case may be, at the same time as is possible; but should not be placed in any marked mark of the race, and should not be placed in any other to facilitate the race.

PROTESTS.

During a race to be sailed for a violation of the rules in the rigging, or in any other respect, a protest shall be answered from the boat by the answerer.

Writing with the protest, within twelve hours after the race, must be signed, by the protestor.

The measurement of a yacht by the person protesting shall be made by the Regatta Committee, and the decision of the Regatta Committee shall be final, and shall not be subject to appeal.

The owner of the yacht protested if the measurement be found wrong to a greater extent than one per cent. of the R.M. stated on the certificate, and if the measurement be found not greater than one per cent. of the R.M., the person protesting shall forfeit his deposit to the Regatta Committee.

XXIX.—DISQUALIFICATION.

1. Every yacht must go fairly around the course, and must not touch any mark, but shall not be disqualified if wrongfully compelled to do so by another yacht.

2. A yacht shall not, after crossing the finishing line, interfere with any yachts still in the race so as to affect the times of such yachts at the finish. A yacht so doing shall be disqualified.

3. A yacht in any way causing a mark boat to shift her position to avoid being fouled by such yacht may be disqualified.

4. A yacht, which, in consequence of her neglect or violation of any of these rules shall foul another yacht or compel another yacht to foul a mark or obstruction, or run aground,

may be disqualified, and shall pay all damages, and a yacht which shall wrongfully cause another to luff or bear away in order to avoid fouling, or shall without cause compel another yacht to give room or tack as otherwise provided in these rules, or shall herself fail to tack or bear away as required, or shall in any way infringe or fail to comply with any of these rules, may be disqualified.

5. The Regatta Committee may, without protest, disqualify any yacht should it come to their knowledge that she has committed a breach of these rules.

6. A yacht whose measurement has not been filed with the Regatta Committee prior to the start of the race may be disqualified and forfeit all claim to a prize, and such yacht may, at the discretion of the Regatta Committee, be debarred from entering any other race of the Association or club until her certificate of measurement has been filed with the Regatta Committee.

7. If a yacht which has been officially measured makes any alteration causing an increase in her racing length, or racing measurement, and starts in a race without having been

l pay all damages,
wrongfully cause
n order to avoid
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racing measure-
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remeasured or notifying the Regatta Committee
n writing previous to the start that such altera-
tion has been made, she shall be disqualified.

8. If a winning yacht be disqualified the next
yachts in order shall be awarded the prizes.

XXX.—AWARD OF PRIZES.

1. When a prize has been offered for compe-
tition any yacht duly entered may claim to sail
over the course, and shall be entitled to a prize
of not less than one-half the value of the first
prize, subject, however, to Rule XII.

2. Before receiving a prize, the owner of
a winning yacht, or, in his absence, the person
representing him on the yacht, shall sign a
declaration that the rules governing the race
have been complied with.

DEFINITIONS.

I.—CORINTHIANISM.

Corinthianism in yachting is that attribute
which represents participation for sport as dis-
tinct from gain, and which also involves the
acquisition of nautical experience through the

love of sport rather than through necessity or the hope of gain. It is consistent with the motive higher than mercenary found in the ranks of officers of the navy and naval architects, notwithstanding the remuneration they receive, while it is inconsistent with the trade of the fisherman, even though one following such a trade has never been a paid sailor. In this respect the following general definition is given :

No person who follows the sea as a means of livelihood, or who has accepted remuneration for services rendered in handling or serving on a yacht, or who is a professional in any other sport, shall be considered a Corinthian yachtsman.

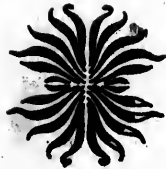
II.—YACHTS.

A yacht shall be defined as a vessel of not less than 16 feet L. W. L., and must carry not less than 300 pounds of ballast permanently stowed under the platform or in lockers, or have a beam of not less than one-third of her L. W. L. length. She must have standing rigging, or a fixed mast, and must be kept permanently on the water during the season, and must not be

rough necessity or engaged in trade. Yachts built after Novem-
 consistent with the ber 7th, 1896, or brought to the lakes after that
 ary found in the te, shall comply with the restrictions on draft
 and naval archi- d size of timbers, keels, planking and other
 remuneration they rts required by the rules.

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sea as a means of
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TABLE OF TIME ALLOWANCE.

The allowances in this table are based upon the rule accepted by naval architects, that within economic limits opportunities for speed vary in different vessels as the square roots of their respective lengths. As strong winds are required, however, to give to larger vessels the full extent of their advantage in size, and as such a scale of allowance is not adapted to ordinary summer racing, 50 per cent. only of the allowance due to the rule is given in the table, and may be stated thus :

Time equals $.5 \left\{ \frac{3600}{\sqrt{l}} - \frac{3600}{\sqrt{L}} \right\}$; 3,600 representing the number of seconds in an hour, l the smaller yacht and L the larger one. Practically the formula is $\frac{1800}{\sqrt{l}} - \frac{1800}{\sqrt{L}}$; 5-10ths of 3,600 being 1,800.

Rule for Using the Table.

The figures to be found in the table show seconds and hundredths of a second what

ALLOWANCE.

able are based upon architects, that with facilities for speed variations are roots of their measurements winds are required for vessels the full size, and as such adapted to ordinary only of the allowance in the table, and

$\frac{3600}{\sqrt{L}}$ } ; 3,600 re
nds in an hour, 1 th
er one. Practical
5-10ths of 3,600

Table.
the table show
a second what

height of the measurement opposite to these figures would be allowed by one of 130 feet in sailing one nautical mile. To find what a height of any measurement should receive from the larger one, take the figures to be found opposite to the smaller measurement; from these subtract the figures opposite to the measurement of the larger yacht, and the difference multiplied by the number of nautical miles the course will give the amount of the allowance due to the smaller vessel, in seconds and hundredths of a second.

EXAMPLE.

What time will a yacht of 39 feet racing length have to allow to one of 36.7 feet racing length in a course of 20 nautical miles?

| | |
|-------------------------------------|--------|
| the time opposite 36.7 feetis | 139 26 |
| “ “ 39 “ | 130 37 |
| | 8.89 |
| | 20 |
| allowance..... | 177.80 |

+ 2 minutes 57 4-5 seconds.

For part of a foot use the nearest fraction that can be expressed in hundredths, and take the proportion of the difference shown in the table between the time stated opposite to the

TIME ALLOWANCE FOR ONE NAUTICAL MILE In Seconds and Decimals.

is attached and the

E.

of 30 feet have
course of 30 nautical

..... 196.51
..... 195.83 195.
..... .68
..... .272 2

cal mile 196.1
" 170.7

t allows yacht
..... 25.3

..... 759.

is.

| Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. |
|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| | 292.11 | 20. | 244.62 | 24. | 209.56 | 28. | 182.30 |
| .1 | 290.76 | .1 | 243.62 | .1 | 208.80 | .1 | 181.69 |
| .2 | 289.42 | .2 | 242.63 | .2 | 208.04 | .2 | 181.09 |
| .3 | 288.08 | .3 | 241.64 | .3 | 207.28 | .3 | 180.49 |
| .4 | 286.73 | .4 | 240.66 | .4 | 206.53 | .4 | 179.89 |
| .5 | 285.39 | .5 | 239.69 | .5 | 205.79 | .5 | 179.30 |
| .6 | 284.05 | .6 | 238.72 | .6 | 205.05 | .6 | 178.71 |
| .7 | 282.70 | .7 | 237.76 | .7 | 204.32 | .7 | 178.12 |
| .8 | 281.36 | .8 | 236.81 | .8 | 203.59 | .8 | 177.54 |
| .9 | 280.02 | .9 | 235.86 | .9 | 202.86 | .9 | 176.96 |
| | 278.68 | 21. | 234.92 | 25. | 202.14 | 29. | 176.38 |
| .1 | 277.44 | .1 | 233.99 | .1 | 201.42 | .1 | 175.81 |
| .2 | 276.21 | .2 | 233.07 | .2 | 200.70 | .2 | 175.24 |
| .3 | 274.97 | .3 | 232.14 | .3 | 199.99 | .3 | 174.67 |
| .4 | 273.74 | .4 | 231.23 | .4 | 199.29 | .4 | 174.10 |
| .5 | 272.51 | .5 | 230.33 | .5 | 198.59 | .5 | 173.54 |
| .6 | 271.27 | .6 | 229.43 | .6 | 197.89 | .6 | 172.98 |
| .7 | 270.04 | .7 | 228.54 | .7 | 197.20 | .7 | 172.42 |
| .8 | 268.80 | .8 | 227.65 | .8 | 196.51 | .8 | 171.87 |
| .9 | 267.57 | .9 | 226.77 | .9 | 195.83 | .9 | 171.32 |
| | 266.34 | 22. | 225.89 | 26. | 195.15 | 30. | 170.77 |
| .1 | 265.21 | .1 | 225.02 | .1 | 194.47 | .1 | 170.22 |
| .2 | 264.08 | .2 | 224.16 | .2 | 193.79 | .2 | 169.68 |
| .3 | 262.95 | .3 | 223.30 | .3 | 193.12 | .3 | 169.14 |
| .4 | 261.82 | .4 | 222.45 | .4 | 192.45 | .4 | 168.60 |
| .5 | 260.69 | .5 | 221.60 | .5 | 191.79 | .5 | 168.06 |
| .6 | 259.56 | .6 | 220.76 | .6 | 191.14 | .6 | 167.53 |
| .7 | 258.43 | .7 | 219.93 | .7 | 190.48 | .7 | 167.00 |
| .8 | 257.30 | .8 | 219.10 | .8 | 189.83 | .8 | 166.48 |
| .9 | 256.17 | .9 | 218.28 | .9 | 189.18 | .9 | 165.96 |
| | 255.05 | 23. | 217.46 | 27. | 188.54 | 31. | 165.44 |
| .1 | 254.00 | .1 | 216.65 | .1 | 187.90 | .1 | 164.92 |
| .2 | 252.96 | .2 | 215.84 | .2 | 187.26 | .2 | 164.40 |
| .3 | 251.92 | .3 | 215.04 | .3 | 186.63 | .3 | 163.88 |
| .4 | 250.87 | .4 | 214.24 | .4 | 186.00 | .4 | 163.36 |
| .5 | 249.83 | .5 | 213.45 | .5 | 185.37 | .5 | 162.85 |
| .6 | 248.79 | .6 | 212.66 | .6 | 184.75 | .6 | 162.34 |
| .7 | 247.74 | .7 | 211.88 | .7 | 184.13 | .7 | 161.83 |
| .8 | 246.70 | .8 | 211.10 | .8 | 183.52 | .8 | 161.33 |
| .9 | 245.66 | .9 | 210.33 | .9 | 182.90 | .9 | 160.83 |

figure to which the fraction is attached and the next higher number.

EXAMPLE.

What time will a yacht of 30 feet have to allow one of 25.86 feet on a course of 30 nautical miles ?

| | | |
|--------------------------------------|--------|-------|
| The time opposite 25.8 feet is | 196.51 | |
| “ “ 25.9 “ | 195.83 | 195.8 |

| | | |
|-----------------------------|------|---|
| Difference | .68 | |
| 4-10ths of difference | .272 | 2 |

| | |
|--|--------|
| Time for 25.86 feet for one nautical mile | 196.10 |
| “ 30 “ “ “ “ “ | 170.7 |

| | |
|---|------|
| Number of seconds yacht 30 feet allows yacht 25.86 feet for one mile | 25.3 |
|---|------|

759

Or 12 minutes 39 96-100th seconds.

ment
1
.1
.2
.3
.4
.5
.6
.7
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.9
1
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.2
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1
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.8
.9

TIME ALLOWANCE—CONTINUED.

| Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. |
|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| 32. | 160.84 | 36. | 142.14 | 40. | 126.75 | 44. | 113.13 |
| .1 | 159.84 | .1 | 141.72 | .1 | 126.39 | .1 | 112.77 |
| .2 | 159.34 | .2 | 141.30 | .2 | 126.03 | .2 | 112.41 |
| .3 | 158.85 | .3 | 140.89 | .3 | 125.67 | .3 | 112.05 |
| .4 | 158.36 | .4 | 140.48 | .4 | 125.32 | .4 | 111.69 |
| .5 | 157.87 | .5 | 140.07 | .5 | 124.97 | .5 | 111.33 |
| .6 | 157.38 | .6 | 139.66 | .6 | 124.62 | .6 | 110.97 |
| .7 | 156.90 | .7 | 139.26 | .7 | 124.28 | .7 | 110.61 |
| .8 | 156.43 | .8 | 138.86 | .8 | 123.93 | .8 | 110.25 |
| .9 | 155.96 | .9 | 138.46 | .9 | 123.59 | .9 | 109.89 |
| 33. | 155.49 | 37. | 138.06 | 41. | 123.25 | 45. | 110.53 |
| .1 | 155.01 | .1 | 137.66 | .1 | 122.90 | .1 | 110.17 |
| .2 | 154.53 | .2 | 137.26 | .2 | 122.56 | .2 | 109.81 |
| .3 | 154.06 | .3 | 136.86 | .3 | 122.22 | .3 | 109.45 |
| .4 | 153.59 | .4 | 136.46 | .4 | 121.88 | .4 | 109.09 |
| .5 | 153.12 | .5 | 136.07 | .5 | 121.54 | .5 | 108.73 |
| .6 | 152.66 | .6 | 135.68 | .6 | 121.20 | .6 | 108.37 |
| .7 | 152.20 | .7 | 135.29 | .7 | 120.87 | .7 | 108.01 |
| .8 | 151.74 | .8 | 134.90 | .8 | 120.54 | .8 | 107.65 |
| .9 | 151.29 | .9 | 134.52 | .9 | 120.21 | .9 | 107.29 |
| 34. | 150.84 | 38. | 134.14 | 42. | 119.89 | 46. | 107.93 |
| .1 | 150.38 | .1 | 133.75 | .1 | 119.55 | .1 | 107.57 |
| .2 | 149.93 | .2 | 133.37 | .2 | 119.22 | .2 | 107.21 |
| .3 | 149.48 | .3 | 132.99 | .3 | 118.89 | .3 | 106.85 |
| .4 | 149.03 | .4 | 132.61 | .4 | 118.56 | .4 | 106.49 |
| .5 | 148.58 | .5 | 132.23 | .5 | 118.23 | .5 | 106.13 |
| .6 | 148.14 | .6 | 131.85 | .6 | 117.91 | .6 | 105.77 |
| .7 | 147.70 | .7 | 131.47 | .7 | 117.59 | .7 | 105.41 |
| .8 | 147.26 | .8 | 131.10 | .8 | 117.27 | .8 | 105.05 |
| .9 | 146.83 | .9 | 130.73 | .9 | 116.95 | .9 | 104.69 |
| 35. | 146.40 | 39. | 130.37 | 43. | 116.64 | 47. | 104.33 |
| .1 | 145.96 | .1 | 130.00 | .1 | 116.32 | .1 | 103.97 |
| .2 | 145.53 | .2 | 129.63 | .2 | 116.00 | .2 | 103.61 |
| .3 | 145.10 | .3 | 129.26 | .3 | 115.68 | .3 | 103.25 |
| .4 | 144.67 | .4 | 128.89 | .4 | 115.36 | .4 | 102.89 |
| .5 | 144.24 | .5 | 128.53 | .5 | 115.04 | .5 | 102.53 |
| .6 | 143.81 | .6 | 128.17 | .6 | 114.73 | .6 | 102.17 |
| .7 | 143.39 | .7 | 127.81 | .7 | 114.42 | .7 | 101.81 |
| .8 | 142.97 | .8 | 127.45 | .8 | 114.11 | .8 | 101.45 |
| .9 | 142.55 | .9 | 127.10 | .9 | 113.81 | .9 | 101.09 |

CONTINUED.

53
TIME ALLOWANCE—CONTINUED.

| | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | |
|--------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-------|
| 126.75 | | 44. | 118 | 101.95 | | 52. | 91.76 | 56. | 82.67 | 60. | 74.52 |
| 126.99 | | .1 | 113 | 101.67 | | .1 | 91.51 | .1 | 82.45 | .1 | 74.32 |
| 126.03 | | .2 | 112 | 101.40 | | .2 | 91.27 | .2 | 82.23 | .2 | 74.12 |
| 125.67 | | .3 | 112 | 101.13 | | .3 | 91.03 | .3 | 82.02 | .3 | 73.93 |
| 125.32 | | .4 | 112 | 100.86 | | .4 | 90.79 | .4 | 81.81 | .4 | 73.74 |
| 124.97 | | .5 | 111 | 100.59 | | .5 | 90.55 | .5 | 81.59 | .5 | 73.55 |
| 124.62 | | .6 | 111 | 100.32 | | .6 | 90.31 | .6 | 81.38 | .6 | 73.36 |
| 124.28 | | .7 | 111 | 100.06 | | .7 | 90.06 | .7 | 81.17 | .7 | 73.17 |
| 123.93 | | .8 | 111 | 99.81 | | .8 | 89.85 | .8 | 80.96 | .8 | 72.98 |
| 123.59 | | .9 | 110 | 99.55 | | .9 | 89.62 | .9 | 80.76 | .9 | 72.79 |
| 123.25 | | 45. | 110 | 99.29 | | 53. | 89.39 | 57. | 80.56 | 61. | 72.61 |
| 122.90 | | .1 | 110 | 99.02 | | .1 | 89.15 | .1 | 80.34 | .1 | 72.42 |
| 122.56 | | .2 | 109 | 98.75 | | .2 | 88.91 | .2 | 80.13 | .2 | 72.23 |
| 122.22 | | .3 | 109 | 98.49 | | .3 | 88.68 | .3 | 79.92 | .3 | 72.04 |
| 121.88 | | .4 | 109 | 98.23 | | .4 | 88.45 | .4 | 79.71 | .4 | 71.85 |
| 121.54 | | .5 | 108 | 97.97 | | .5 | 88.22 | .5 | 79.50 | .5 | 71.66 |
| 121.20 | | .6 | 108 | 97.71 | | .6 | 87.99 | .6 | 79.30 | .6 | 71.47 |
| 120.87 | | .7 | 108 | 97.46 | | .7 | 87.76 | .7 | 79.10 | .7 | 71.28 |
| 120.54 | | .8 | 108 | 97.20 | | .8 | 87.53 | .8 | 78.90 | .8 | 71.10 |
| 120.21 | | .9 | 107 | 96.95 | | .9 | 87.31 | .9 | 78.70 | .9 | 70.92 |
| 119.89 | | 46. | 107 | 96.70 | | 54. | 87.09 | 58. | 78.50 | 62. | 70.74 |
| 119.55 | | .1 | 107 | 96.44 | | .1 | 86.86 | .1 | 78.29 | .1 | 70.55 |
| 119.22 | | .2 | 106 | 96.18 | | .2 | 86.63 | .2 | 78.08 | .2 | 70.36 |
| 118.89 | | .3 | 106 | 95.93 | | .3 | 86.40 | .3 | 77.87 | .3 | 70.17 |
| 118.56 | | .4 | 106 | 95.68 | | .4 | 86.18 | .4 | 77.67 | .4 | 69.99 |
| 118.23 | | .5 | 106 | 95.42 | | .5 | 85.95 | .5 | 77.47 | .5 | 69.81 |
| 117.91 | | .6 | 106 | 95.17 | | .6 | 85.73 | .6 | 77.27 | .6 | 69.63 |
| 117.59 | | .7 | 105 | 94.92 | | .7 | 85.57 | .7 | 77.07 | .7 | 69.45 |
| 117.27 | | .8 | 105 | 94.67 | | .8 | 85.29 | .8 | 76.87 | .8 | 69.27 |
| 116.95 | | .9 | 104 | 94.43 | | .9 | 85.07 | .9 | 76.68 | .9 | 69.09 |
| 116.64 | | 47. | 104 | 94.19 | | 55. | 84.85 | 59. | 76.49 | 63. | 68.92 |
| 116.32 | | .1 | 104 | 93.94 | | .1 | 84.63 | .1 | 76.28 | .1 | 68.73 |
| 116.00 | | .2 | 104 | 93.69 | | .2 | 84.41 | .2 | 76.08 | .2 | 68.55 |
| 115.68 | | .3 | 103 | 93.44 | | .3 | 84.19 | .3 | 75.88 | .3 | 68.37 |
| 115.36 | | .4 | 103 | 93.20 | | .4 | 83.96 | .4 | 75.68 | .4 | 68.19 |
| 115.04 | | .5 | 103 | 92.95 | | .5 | 83.75 | .5 | 75.48 | .5 | 68.01 |
| 114.73 | | .6 | 103 | 92.71 | | .6 | 83.53 | .6 | 75.28 | .6 | 67.84 |
| 114.42 | | .7 | 102 | 92.47 | | .7 | 83.31 | .7 | 75.09 | .7 | 67.66 |
| 114.11 | | .8 | 102 | 92.23 | | .8 | 83.09 | .8 | 74.90 | .8 | 67.48 |
| 113.81 | | .9 | 102 | 92.09 | | .9 | 82.88 | .9 | 74.71 | .9 | 67.31 |

TIME ALLOWANCE—CONTINUED.

| Measure- ment | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. |
|------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| 64. | 67.14 | 68. | 60.42 | 72. | 54.27 | 76. | 48.6 |
| .1 | 66.96 | .1 | 60.25 | .1 | 54.12 | .1 | 48.6 |
| .2 | 66.78 | .2 | 60.09 | .2 | 53.97 | .2 | 48.3 |
| .3 | 66.60 | .3 | 59.93 | .3 | 53.82 | .3 | 48.1 |
| .4 | 66.43 | .4 | 59.77 | .4 | 53.67 | .4 | 48.0 |
| .5 | 66.26 | .5 | 59.61 | .5 | 53.53 | .5 | 47.8 |
| .6 | 66.08 | .6 | 59.45 | .6 | 53.38 | .6 | 47.7 |
| .7 | 65.91 | .7 | 59.29 | .7 | 53.23 | .7 | 47.6 |
| .8 | 65.74 | .8 | 59.14 | .8 | 53.09 | .8 | 47.5 |
| .9 | 65.57 | .9 | 58.99 | .9 | 52.95 | .9 | 47.4 |
| 65. | 65.40 | 69. | 58.84 | 73. | 52.81 | 77. | 47.3 |
| .1 | 65.22 | .1 | 58.68 | .1 | 52.66 | .1 | 47.2 |
| .2 | 65.05 | .2 | 58.52 | .2 | 52.51 | .2 | 46.9 |
| .3 | 64.88 | .3 | 58.36 | .3 | 52.37 | .3 | 46.8 |
| .4 | 64.71 | .4 | 58.20 | .4 | 52.23 | .4 | 46.7 |
| .5 | 64.54 | .5 | 58.04 | .5 | 52.09 | .5 | 46.6 |
| .6 | 64.37 | .6 | 57.89 | .6 | 51.95 | .6 | 46.5 |
| .7 | 64.20 | .7 | 57.74 | .7 | 51.81 | .7 | 46.3 |
| .8 | 64.03 | .8 | 57.59 | .8 | 51.67 | .8 | 46.2 |
| .9 | 63.87 | .9 | 57.44 | .9 | 51.53 | .9 | 46.0 |
| 66. | 63.71 | 70. | 57.29 | 74. | 51.39 | 78. | 45.9 |
| .1 | 63.54 | .1 | 57.13 | .1 | 51.24 | .1 | 45.8 |
| .2 | 63.37 | .2 | 56.97 | .2 | 51.09 | .2 | 45.6 |
| .3 | 63.20 | .3 | 56.81 | .3 | 50.95 | .3 | 45.5 |
| .4 | 63.03 | .4 | 56.66 | .4 | 50.81 | .4 | 45.4 |
| .5 | 62.86 | .5 | 56.51 | .5 | 50.67 | .5 | 45.2 |
| .6 | 62.69 | .6 | 56.36 | .6 | 50.53 | .6 | 45.1 |
| .7 | 62.53 | .7 | 56.21 | .7 | 50.39 | .7 | 45.0 |
| .8 | 62.37 | .8 | 56.06 | .8 | 50.25 | .8 | 44.9 |
| .9 | 62.21 | .9 | 55.91 | .9 | 50.12 | .9 | 44.7 |
| 67. | 62.05 | 71. | 55.76 | 75. | 49.99 | 79. | 44.6 |
| .1 | 61.88 | .1 | 55.60 | .1 | 49.85 | .1 | 44.5 |
| .2 | 61.71 | .2 | 55.45 | .2 | 49.71 | .2 | 44.4 |
| .3 | 61.54 | .3 | 55.30 | .3 | 49.57 | .3 | 44.2 |
| .4 | 61.38 | .4 | 55.15 | .4 | 49.43 | .4 | 44.1 |
| .5 | 61.22 | .5 | 55.00 | .5 | 49.29 | .5 | 44.0 |
| .6 | 61.06 | .6 | 54.85 | .6 | 49.15 | .6 | 43.8 |
| .7 | 60.90 | .7 | 54.70 | .7 | 49.01 | .7 | 43.7 |
| .8 | 60.74 | .8 | 54.55 | .8 | 48.87 | .8 | 43.6 |
| .9 | 60.58 | .9 | 54.41 | .9 | 48.74 | .9 | 43.5 |

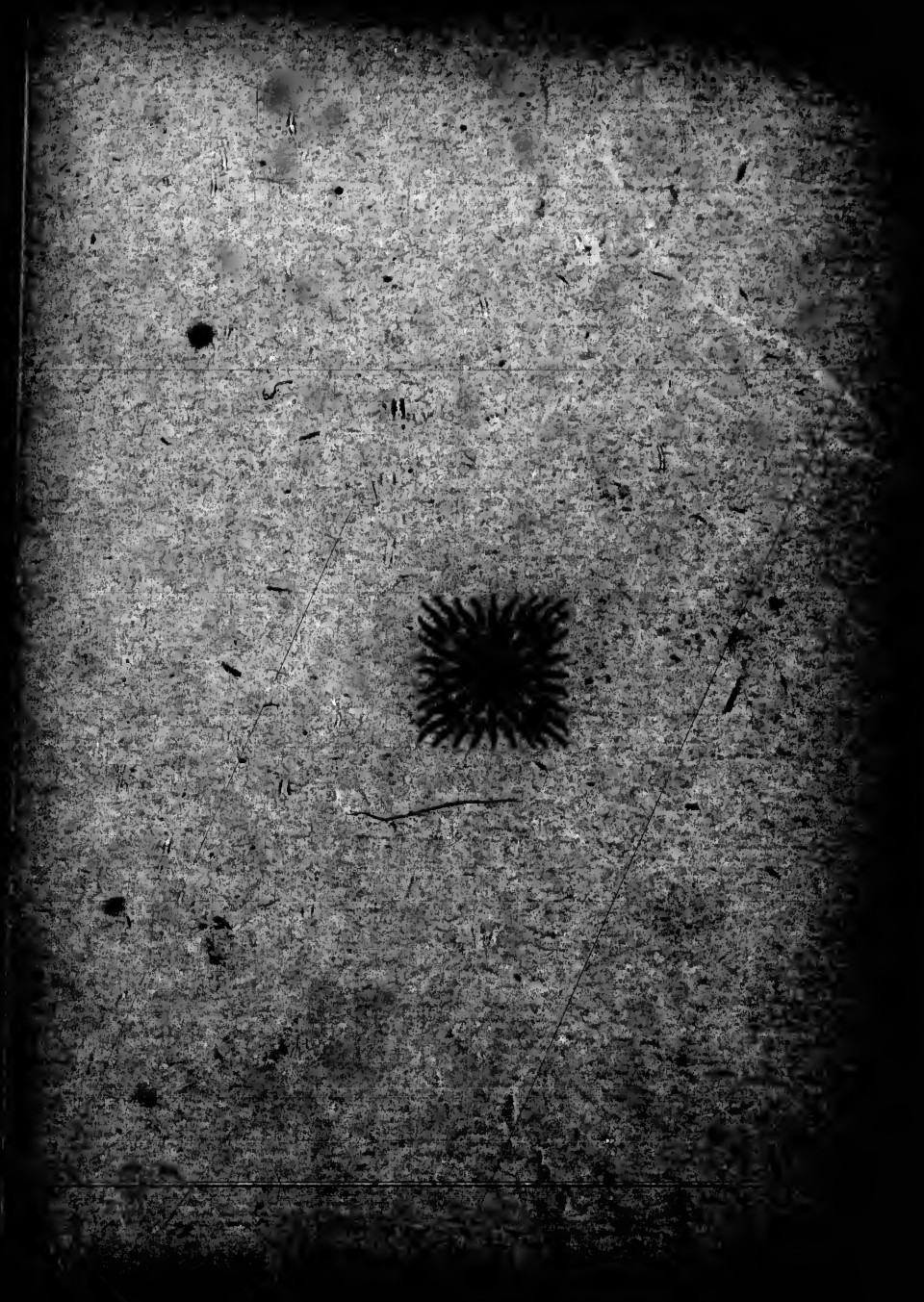
CONTINUED.

TIME ALLOWANCE—CONTINUED.

| Allow- ance. | Measure- ment. | Allow- ance. |
|-----------------|-------------------|-----------------|
| 54.27 | 76. | 48.6 |
| 54.12 | | 48.4 |
| 53.97 | | 48.2 |
| 53.82 | | 48.0 |
| 53.67 | | 47.8 |
| 53.53 | | 47.6 |
| 53.38 | | 47.4 |
| 53.23 | | 47.2 |
| 53.09 | | 47.0 |
| 52.95 | | 46.8 |
| 52.81 | 77. | 47.2 |
| 52.66 | | 47.0 |
| 52.51 | | 46.8 |
| 52.37 | | 46.6 |
| 52.23 | | 46.4 |
| 52.09 | | 46.2 |
| 51.95 | | 46.0 |
| 51.81 | | 45.8 |
| 51.67 | | 45.6 |
| 51.53 | | 45.4 |
| 51.39 | 78. | 45.8 |
| 51.24 | | 45.6 |
| 51.09 | | 45.4 |
| 50.95 | | 45.2 |
| 50.81 | | 45.0 |
| 50.67 | | 44.8 |
| 50.53 | | 44.6 |
| 50.39 | | 44.4 |
| 50.25 | | 44.2 |
| 50.12 | | 44.0 |
| 49.99 | 79. | 44.6 |
| 49.85 | | 44.4 |
| 49.71 | | 44.2 |
| 49.57 | | 44.0 |
| 49.43 | | 43.8 |
| 49.29 | | 43.6 |
| 49.15 | | 43.4 |
| 49.01 | | 43.2 |
| 48.87 | | 43.0 |
| 48.74 | | 42.8 |

| meas- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. | Measure- ment. | Allow- ance. |
|----------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| 1 | 43.39 | 81. | 42.14 | 82. | 40.91 | 92. | 29.79 |
| 2 | 43.26 | | 42.01 | 83. | 39.70 | 93. | 28.77 |
| 3 | 43.13 | | 41.88 | 84. | 38.52 | 94. | 27.79 |
| 4 | 43.00 | | 41.76 | 85. | 37.36 | 95. | 26.80 |
| 5 | 42.87 | | 41.63 | 86. | 36.22 | 96. | 25.84 |
| 6 | 42.75 | | 41.51 | 87. | 35.11 | 97. | 24.89 |
| 7 | 42.62 | | 41.39 | 88. | 34.01 | 98. | 23.96 |
| 8 | 42.50 | | 41.27 | 89. | 32.92 | 99. | 23.04 |
| 9 | 42.38 | | 41.15 | 90. | 31.86 | 100. | 22.12 |
| | 42.26 | | 41.03 | 91. | 30.82 | 101. | 21.24 |





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