

# INTERNATIONAL MARBLEHEAD CLASS

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I Y R U MODEL YACHT RACING DIVISION

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ORGANISATION

# INTERNATIONAL MARBLEHEAD CLASS RULES 1992

## 1 GENERAL

The Marblehead Class is a Development RC (Remote Control) Racing Class of monohull yachts with the following basic restrictions: the overall length of the hull shall be 1276 mm minimum and 1289 mm maximum, and the measured sail area shall not exceed 0,5161 m<sup>2</sup>. The original rules were devised by Roy L. Clough in 1932.

## 2 ADMINISTRATION

### 2.1 Authority

- 2.1.1 The international authority of the class is the IYRU Model Yacht Racing Division (the Division), which will cooperate with the International Class Association (ICA), if this exists.
- 2.1.2 The IYRU, the Division and the ICA, if this exists, shall not accept any legal responsibility in respect of these class rules.

### 2.2 Language

- 2.2.1 The official language of the class is English and in the event of a dispute over translation the English text shall prevail.
- 2.2.2 The word 'shall' is mandatory and the word 'may' is permissive.
- 2.2.3 Whenever in these rules the words 'class rules' are used, they shall be taken to include the measurement diagrams and the measurement form.

### 2.3 Class Rules and their Interpretation

- 2.3.1 These rules are to be read in conjunction with the measurement diagrams and the measurement form.
- 2.3.2 In the event of a discrepancy between these rules, the measurement diagrams or the measurement form, the matter shall be referred to the Division.
- 2.3.3 Any interpretation shall be made by the Division which may consult the ICA, if this exists.

### 2.4 National Authorities

A National Authority (NA) may delegate the administration of the class, as stated in these rules, to a national class association which shall be affiliated to the ICA, if this exists.

### 2.5 Builders

The Marblehead class is a free construction class and no licence is required to become a builder. No building fee is due to the Division or the IYRU.

## **2.6 Registration and Measurement Certificate**

### **2.6.1 Registration procedure:**

- (a) The builder or the owner shall apply to the owner's NA for a registration number. Any registration fee shall be included;
- (b) Each NA shall issue registration numbers, and only one boat in each country shall have the same registration number;
- (c) An official measurer shall measure the boat and the measurement form shall, after having been properly completed and signed, be sent to the NA;
- (d) The NA shall check the measurement form. A measurement certificate may then be issued to the owner.

2.6.2 The measurement certificate is only valid when the owner is a current member of the national class association, if this exists.

2.6.3 Change of ownership invalidates the measurement certificate. The new owner shall send the original certificate to his NA, together with a written application containing the name, address and club, and any re-registration fee that may be required. A certificate shall then be issued to the new owner.

## **2.7 Measurement**

2.7.1 The boat shall be measured in accordance with the rules current when it was first measured, except that spars, rigging and sails shall comply with the current rules.

2.7.2 Only a measurer officially recognised by a NA shall measure a boat, its spars, sails and equipment and sign measurement forms.

2.7.3 A measurer shall not measure a boat, spars, sails or equipment owned or built by himself, or in which he is an interested party or has a vested interest.

2.7.4 Alterations, replacements or repairs to the boat shall be made in accordance with these rules and shall be checked by an official measurer where such items are required to be measured.

2.7.5 New or substantially altered sails shall be checked by an official measurer and dated and stamped or signed near the tack by the measurer.

## **2.8 Identification marks**

2.8.1 The boat shall carry, either painted, engraved or moulded in, the boat's national letter(s) and registration number.

2.8.2 On the external surface of the hull or deck these marks shall be displayed clearly and legibly, with a height of 20 mm minimum.

2.8.3 The sails shall carry marks as specified in rule 3.7.2.

## **3 CONSTRUCTION AND MEASUREMENT RULES**

### **3.1 General**

The boat shall be measured in accordance with the current IYRU Measurement Instructions, except where varied herein.

### **3.2 Hull**

- 3.2.1 The hull shall be a monohull and the overall length, including the bow bumper, shall be 1276 mm minimum and 1289 mm maximum.
- 3.2.2 The bow bumper shall be made of resilient material and shall project approximately 13 mm forward of the foremost part of the hull shell.
- 3.2.3 On any section no point shall be more than 3 mm below any other point around the skin girth between that point and the underwater centreline.
- 3.2.4 The deck shall not be artificially raised in the region of the mast.

### **3.3 Fins/Keels and Ballast**

- 3.3.1 Fins/keels that can be moved in any direction or rotated are prohibited. A fin/keel that can be removed and refitted in only one position is permitted.
- 3.3.2 Centreboards, leeboards and bilge boards are prohibited.
- 3.3.3 Ballast material shall not have higher density than lead (11,3 kg/dm<sup>3</sup>).

### **3.4 Rudders**

No part of a rudder shall extend beyond the limits of the hull overall length measurement.

### **3.5 Rigs and Sail Plans**

- 3.5.1 The sail plan shall not consist of more than one jib and one main.
- 3.5.2 The dimensions of not more than three rigs may be recorded on the certificate. These recorded rigs shall be designated 'A', 'B' and 'C'.
- 3.5.3 Smaller rigs are permitted if they do not exceed the dimensions of the recorded rig and comply with all other restrictions.
- 3.5.4 The height of the sail plan 'H' shall not exceed 2159 mm, measured from the deck at the mast to the lower edge of the upper mast band.
- 3.5.5 The jib hoist 'I' shall not exceed 80% of 'H', measured from the deck at the mast to the lower edge of the middle mast band. A line taken through the jib tack and head shall not cut the forward edge of the mast higher than the lower edge of the 'I' measurement mast band when the jib is held on the centreline of the hull.
- 3.5.6 No part of a rig shall extend beyond the limits of the hull overall length measurement when the sails are held on the centreline of the hull.

### **3.6 Spars**

#### **3.6.1 GENERAL**

- (a) No spar shall exceed 19 mm in diameter. A fitting that is completely faired into the spar with no discernable definition between the spar and the fitting shall be considered to be part of the spar.
- (b) Measurement bands on spars shall be of a colour which contrasts with the colour of the spar and shall not be less than 3 mm wide.
- (c) A fitting attached to a rotating spar and/or boom, shall be no bigger than is reasonably required for its purpose.

### 3.6.2 MASTS

- (a) Three measurement bands shall be placed on each mast to conform with the measurement diagram.
- (b) The upper and middle bands may be omitted on masts of smaller rigs if the length of the mast makes it impossible to exceed the 'H' and 'I' measurements of the recorded rig.
- (c) The lower band shall not be placed lower on masts of smaller rigs than on the recorded rig.

### 3.6.3 BOOMS

- (a) A sail is set on a boom when the foot is attached to the boom along part or all of its length.
- (b) When a mainsail is set on a boom, the 'B' measurement shall be taken as the length of the foot and a measurement band shall be placed on the boom to limit this measurement with the inner edge. If the boom is adjustable fore and aft, the band shall be placed correctly with the boom in the fully aft position.
- (c) When a jib is set on a boom, two bands shall be placed on the boom to limit the length of the foot with the inner edge.
- (d) When a sail is set on a boom, any curvature of the upper edge of the boom, achieved by permanent set or mechanical means other than sheet and kicking strap, shall be measured as shown in the measurement diagram.

## 3.7 Sails

### 3.7.1 GENERAL

- (a) Sails shall be constructed and measured according to the current IYRU Sail Measurement Instructions, except where varied herein.
- (b) Sails shall be capable of being rolled without permanent damage. Sails may be made of non-woven material, and sizes of reinforcements are not restricted. Battens shall not be removed when measuring.
- (c) Battens shall not exceed 102 mm in length and 19 mm in width. Battens shall be so placed that their centrelines divide the leech into parts where the maximum inequality does not exceed 25 mm.
- (d) The foot round of a loose-footed sail shall not exceed 25 mm measured to a line from tack to clew. The round shall be an approximately fair even curve so that when tack and clew are folded to all points on the foot and with the foot as flat as possible, the edges shall nowhere be more than 3 mm apart.
- (e) Discontinuous attachments on the sail luff shall be disregarded for the purpose of measurement, provided their total length, measured along the luff, does not exceed 10% of the length of the luff.
- (f) All sails shall be clearly marked at the clew with the designated rig letter. Sails of one rig may be used on another if they are marked accordingly and comply with the recorded rig measurements.

### 3.7.2 IDENTIFICATION MARKS

In addition to the following rules, class insignia, national letter(s) and sail numbers shall comply with IYRR rule 25 with the exception of clauses 25.1(a) and (c), 25.2(b) and (c), 25.3 and 25.4 which shall not apply.

- (a) The class insignia shall be the letter 'M' of the following dimensions: height and width 25 - 30 mm, thickness 6 - 8 mm.
- (b) The sail number shall be the last two digits, or the only digit where applicable, of the registration number.
- (c) There shall be space in front of the sail number for an additional '1' in accordance with (d) below. The additional number may be prescribed by the race committee in the event of a clash of sail numbers.
- (d) The sizes for national letters and sail numbers shall be as follows:

	Height	Width excluding no '1' and letter 'l'	Thickness	Space between adjoining letters or numbers
National letters	60 - 66	40 - 45	9 - 11	13 - 15
Sail numbers	100 - 110	60 - 73	12 - 18	20 - 25

- (e) The space between numbers, and between national letters, on opposite sides of the sail shall be 60 - 100 mm. The space between numbers and other identification marks shall be larger if possible. Where the sail is not large enough to achieve these spacing requirements, spaces shall be as large as possible but not less than 13 mm. If necessary smaller national letters and numbers may be used.
- (f) On all sails, the marks shall be at different heights on the two sides of the sail, those on the starboard side being uppermost. However, the class insignia may be back to back on the two sides of the sail.
- (g) On mainsails, the class insignia and sail number shall be above an imaginary line projecting at right angles to the luff from a point on the luff one-third of the luff length from the tack or, if this is not possible, as high as possible. The national letter(s) shall be below this line.
- (h) On jibs, the sail number only shall be below an imaginary line projecting at right angles to the leech from a point on the leech half of the leech length from the clew.
- (i) Identification marks on mainsails first measured before 1 May 1992 may conform with the 1988 class rules. However, at IYRU-MYRD regattas after 1 March 1993 all mainsails shall comply with rule 3.7.2.

### 3.7.3 MAINSAILS

- (a) Mainsails shall comply with the measurement diagram.
- (b) There shall not be more than 4 battens, which shall comply with rule 3.7.1(c).

### 3.7.4 JIBS

- (a) Jibs shall comply with the measurement diagram.
- (b) There shall not be more than 3 battens, which shall comply with rule 3.7.1 (c).

### | 3.7.5 SAIL AREA

- (a) The measured sail area shall not exceed 0,5161 m<sup>2</sup> and shall be calculated with 6 decimals and corrected to 4.
- (b) The measured sail area shall consist of the sum of the triangular areas of the mainsail and the jib and any additional areas.

## 4 ADDITIONAL RULES WHICH APPLY WHEN RACING

### 4.1 Equipment

- 4.1.1 Only three rigs of each designated rig letter and no fin/keel, ballast and rudder replacements shall be used during an event, except in cases of authentic damage or loss. All replacements shall be authorized by the race committee. Only one rig shall be used at any one time.
- 4.1.2 Self steering devices or electronic equipment for automatic steering or rig trimming are prohibited.

### 4.2 Crew

The crew shall consist of one person only.

### 4.3 Control Measurement

When control measured the boat shall comply with the measurements entered on the certificate. Larger measurements are not permitted, even if they would comply with the restrictions in these rules.

### 4.4 Class Rules

- 4.4.1 These rules shall not be varied by a race committee.
- 4.4.2 The body to which a protest committee shall refer a measurement protest when there is doubt concerning the interpretation or application of these rules, shall be the relevant issuing authority for certificates in the country where the event takes place.

### 4.5 Racing Rules

Class races shall be sailed under the International Yacht Racing Rules. At World, Continental or Regional Championships these rules shall be varied only with the agreement of the NA and the Division.

Markings in the margin indicate the changes made in this edition.

This edition is effective from 1 May 1992.

Previous edition 1 January 1988.

## MEASUREMENT DIAGRAMS

### Definitions of Measurement Points

Clew: The intersection of the leech and the foot

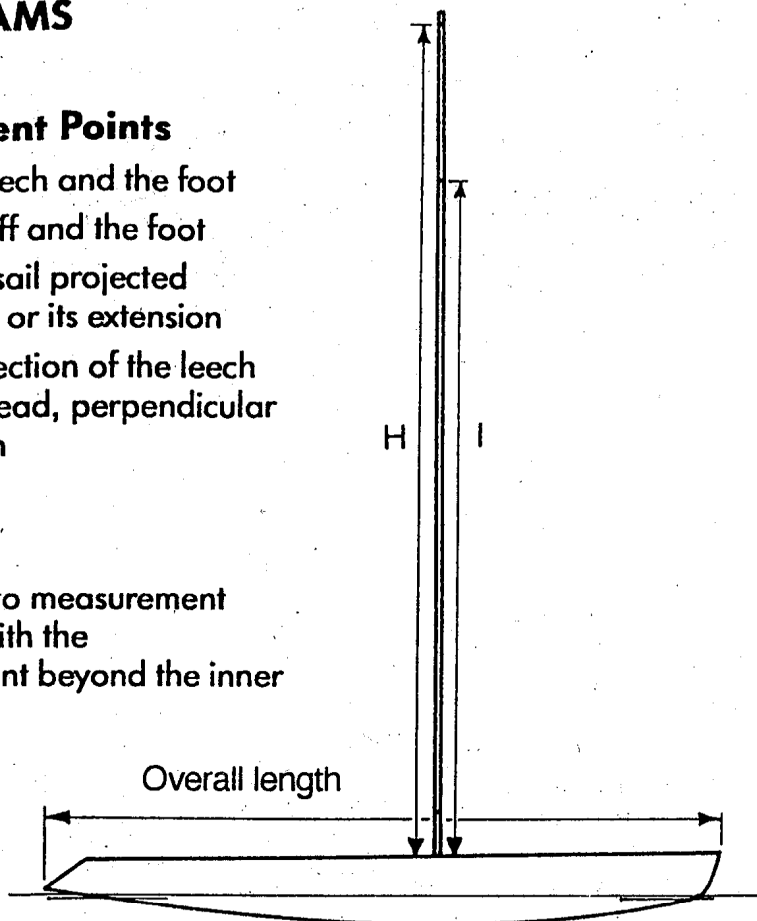
Tack: The intersection of the luff and the foot

Head: The highest point of the sail projected perpendicular to the luff or its extension

Aft point at the head: The intersection of the leech and a line through the head, perpendicular to the luff or its extension

### Measurement Bands

When measurements are taken to measurement bands, the sail shall not be set with the corresponding measurement point beyond the inner edge of such band.



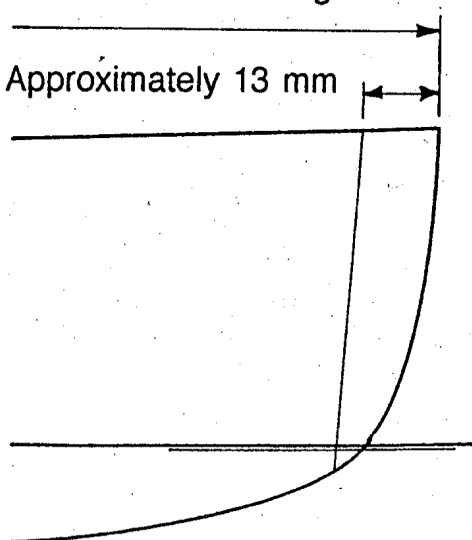
### Excesses in Cross Widths

Any excesses in cross width shall be entered in one of the following formulas, and the resulting additional sail area shall be added to the triangular sail area.

### Bumper

Overall measured length

Approximately 13 mm



Mainsails: 
$$\frac{A(2x + y + 2z)}{6}$$

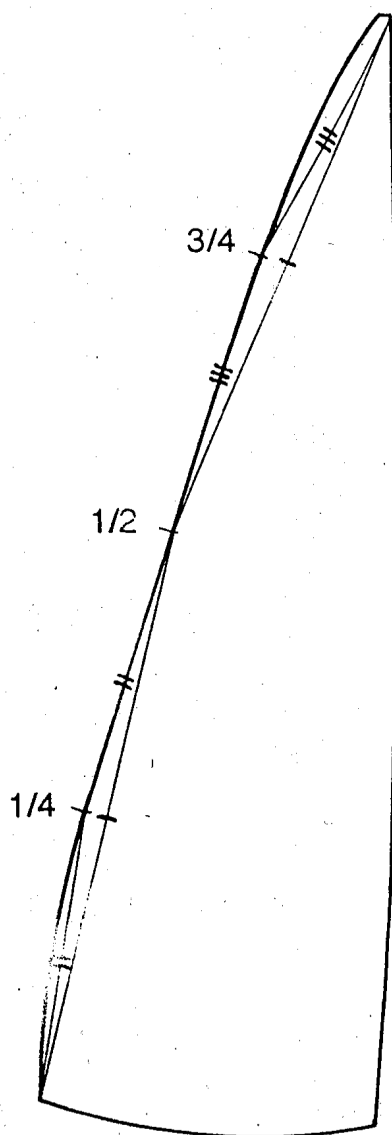
Jibs: 
$$\frac{Q(2x + y + 2z)}{6}$$

Where x is the excess at  $\frac{1}{4}$ -height  
y is the excess at  $\frac{1}{2}$ -height  
z is the excess at  $\frac{3}{4}$ -height

### Wire Supporting the Top of a Sail

Parts of a wire supporting the top of a sail, which are not more than 2 mm in diameter and not covered with sail material, shall not be taken as part of the sail.



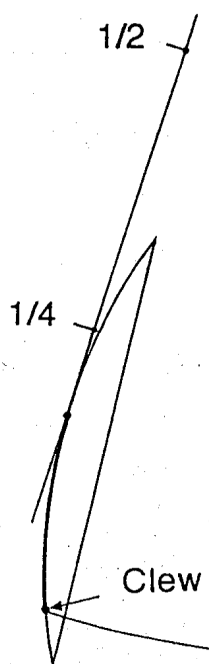
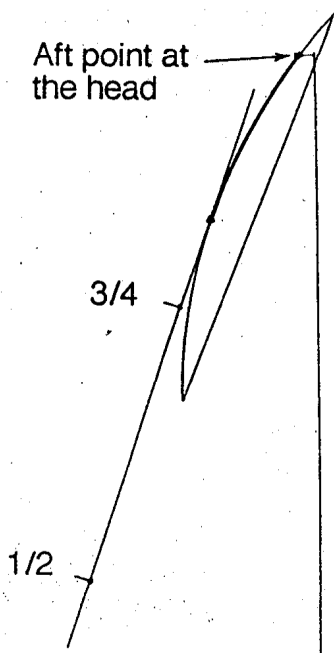
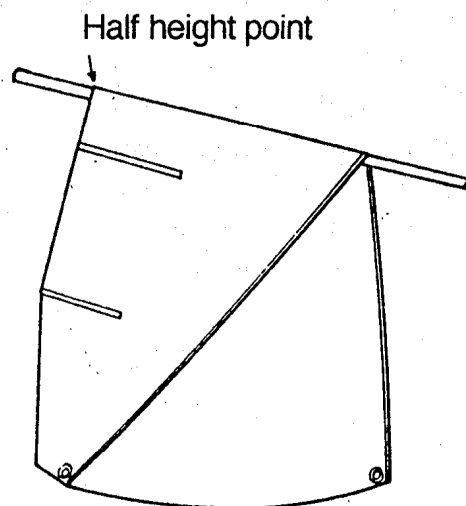


## Cross Width Measurement Points

If a sail is permanently attached to the spars, the cross width measurement points on the leech can be found by measuring equal distances as shown to the left.

Any hollows in the leech and the luff shall be bridged when measuring the cross widths.

If the cross width measurement points are determined by folding the sail, as prescribed in the IYRU Sail Measurement Instructions, this can be done over a rod to avoid creases.



## Control of the Upper and Lower Part of the Leech

A pattern consisting of a circle segment of 900 mm radius shall be used for this purpose.

At the head, the pattern shall be placed to touch the aft point at the head and a straight line through the two nearest cross width measurement points.

At the clew, the pattern shall be placed to touch the clew and a straight line through the two nearest cross width measurement points.

If a cross width measurement point, and/or a point where the centreline of a batten intersects the leech, falls outside the pattern between the positioning points, the pattern shall be repositioned to either point so that no point appears outside the pattern.

When the pattern is positioned according to the instruction above, the leech shall not project outside the pattern between the points of positioning.

## JIBS

## Triangular Sail Area

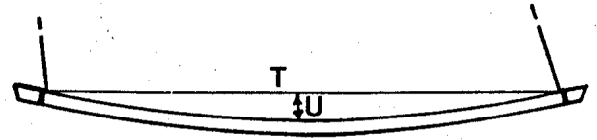
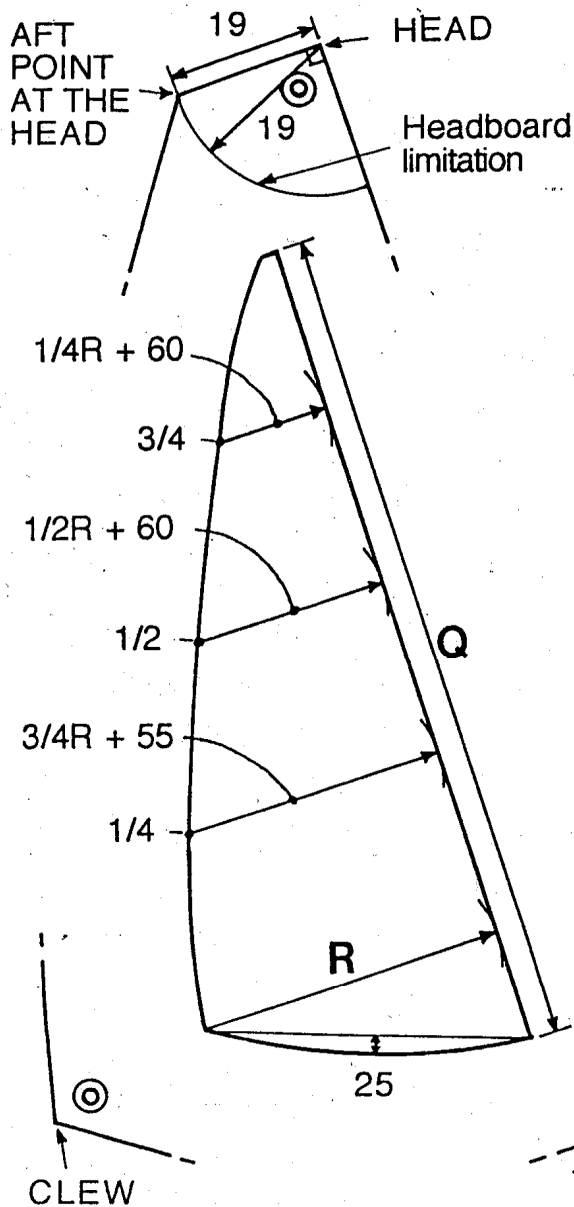
$$\frac{Q \times R}{2}$$

### Sail Set on a Luff Spar

If the sail is set on a luff spar (headfoil), the 'R' measurement and the cross widths shall be taken to the fore edge of the luff spar and the width at the head to the aft edge of the spar.

### Sails Set on a Boom

'T' shall be taken as the distance between the inner edges of the boom bands and 'U' shall be taken as any curvature of the upper edge of the boom according to rule 3.6.3.



Additional sail area:

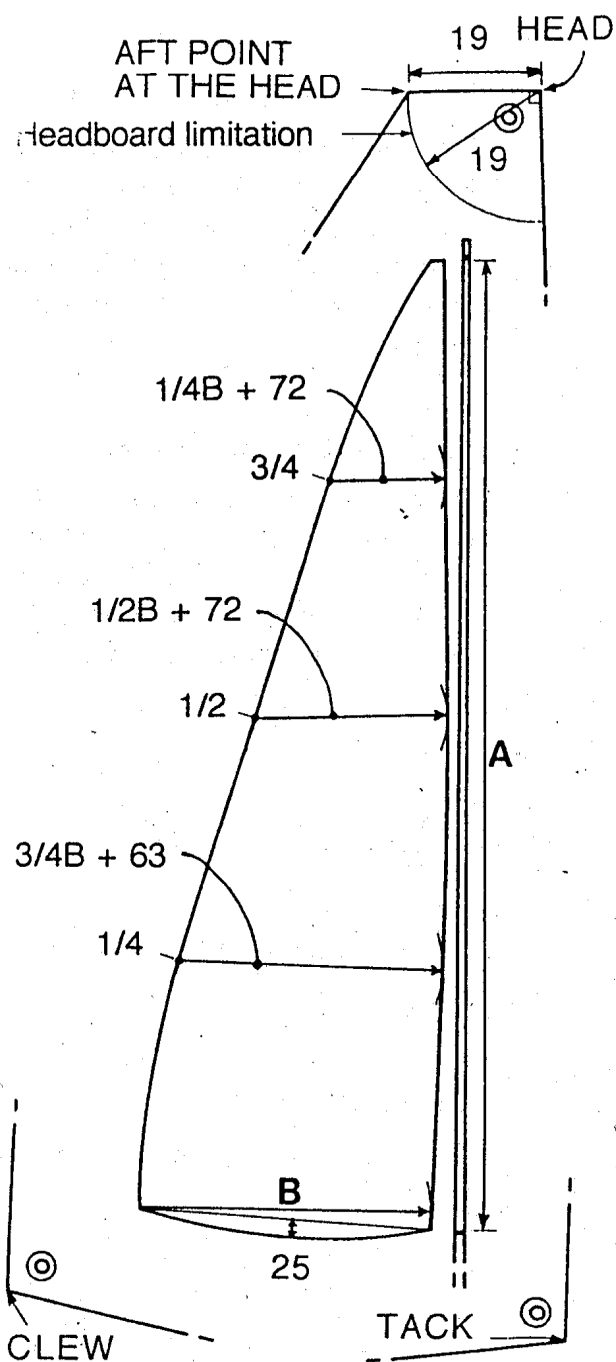
$$\frac{2(T \times U)}{3}$$

### Cross Widths

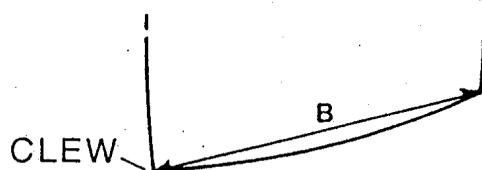
Cross widths to be measured as for mainsails.

All measurements in mm and maximum permitted.

# MAINSAILS



## Dropped Foot on a Loose-Footed Sail

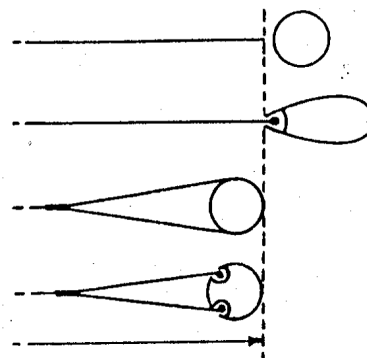


All measurements in mm and maximum permitted.

## Triangular Sail Area

$$\frac{A \times B}{2}$$

## Measurement Points on the Luff

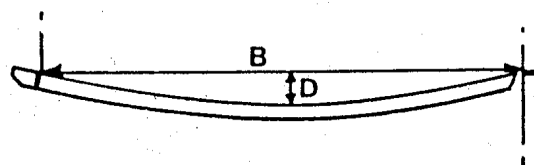


If the luff is set in a luff groove, the width at the head, the 'B' measurement and the cross widths shall be taken to the aft edge of the mast.

If the sail is double-luffed, the 'B' measurement and the cross widths shall be taken to the fore edge of the mast and the width at the head shall be taken to the aft edge of the mast.

## Mainsail Set on a Boom

The 'B' measurement shall be taken as the length of the foot



Additional sail area:  $\frac{2(B \times D)}{3}$

'D' is any curvature according to rule 3.6.3.