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# Class Rules

## International Finn Class Association



The Finn was designed in 1949 by Rickard Sarby and was used at the Olympic Games from 1952 to 2020.

sport / nature / technology



World Sailing  
Class Association



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# INTRODUCTION

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*FINN **hulls**, **hull** appendages, rigs and sails are measurement controlled.*

*FINN mast spars and sails shall be **certified** before leaving the manufacturer. The rules provide an option for using an approved in-house measurer.*

*Owners and **helmspersons** should be aware that compliance with rules in Section C is NOT checked as part of the certification process.*

*Rules regulating the use of equipment during a race are contained in Section C of these class rules, in ERS Part I and in the Racing Rules of Sailing.*

## PLEASE REMEMBER:

THESE RULES ARE **CLOSED CLASS RULES** WHERE EXCEPT FOR ITEMS EXPLICITLY LISTED AS OPTIONAL, IF IT DOES NOT SPECIFICALLY SAY THAT YOU MAY – THEN YOU SHALL NOT.

COMPONENTS, AND THEIR USE, ARE DEFINED BY THEIR DESCRIPTION.



# PART I – ADMINISTRATION

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## Section A – General

### A.1 LANGUAGE

- A.1.1 The official language of the class is English and in case of dispute over translation the English text shall prevail.
- A.1.2 The word “shall” is mandatory and the word “may” is permissive.
- A.1.3 These **class rules** shall be read in conjunction with the ERS and the RRS.
- A.1.4 Except where used in headings, when a term is printed in “**bold**” the definition in the ERS applies and when a term is printed in “*italics*” the definition in the RRS applies.”

### A.2 ABBREVIATIONS

- A.2.1 WS     World Sailing
- MNA    Member National Authority
- IFA     International Finn Association
- NFA     National Finn Association
- ERS     Equipment Rules of Sailing
- RRS     Racing Rules of Sailing

### A.3 AUTHORITIES AND RESPONSIBILITIES

- A.3.1 The international authority of the class is WS which shall co-operate with the IFA in all matters concerning these **class rules**.
- A.3.2 No legal responsibility with respect to these **class rules**, or accuracy of measurement, rests with:
  - WS,
  - the MNA,
  - the IFA,
  - an NFA,
  - the **certification authority**,
  - a **certification measurer**.No claim arising from these **class rules** can be entertained.
- A.3.3 Notwithstanding anything contained herein, the **certification authority** has the authority to withdraw a **certificate** and shall do so on the request of WS.

### A.4 ADMINISTRATION OF THE CLASS

- A.4.1 The **class authority** and **certification authority** is the IFA. The **certification authority** may delegate part or all of its functions, as stated in these **class rules**, to an IFA approved **certification measurer**. A listing of IFA approved **certification measurers** is available on the IFA website or from the IFA Executive Director/Secretariat.



## A.5 CLASS RULE VARIATIONS

- A.5.1 At World and European Championships, the Notice of Race or Sailing Instructions may vary these **class rules** only with the agreement of the IFA and WS.
- A.5.2 At other Events, the Notice of Race and/or Sailing Instructions may vary these **class rules** only with the agreement of the IFA.

## A.6 CLASS RULES AMENDMENTS

- A.6.1 Amendments to these **class rules** shall be proposed by the IFA and require approval by WS in accordance with WS Regulations.

## A.7 CLASS RULES INTERPRETATIONS

- A.7.1 GENERAL  
Interpretation of **class rules** shall be made in accordance with WS Regulations.

## A.8 INTERNATIONAL CLASS FEE(S) AND WORLD SAILING PLAQUE NUMBER

- A.8.1 The builder shall pay the International Class Fee on every **hull** built, whether or not it is subsequently measured and registered, and attach a WS Hull Plaque to the **hull**.
- A.8.2 If the WS Hull Plaque is excessively damaged or missing, a replacement plaque shall be obtained from WS. WS shall notify the IFA when a replacement sticker is issued.

## A.9 SAIL NUMBERS

- A.9.1 A **boat** may *race* under the *National Sail Letters of the MNA of the crew* and:  
(a) a sail number issued by the owner's NFA, for each NFA the numbers issued shall be in consecutive order starting from '1', or  
(b) a Personal Sail Number greater than '0', issued by the owner's NFA. (see A.9.2)
- A.9.2 In accordance with RRS Appendix G1.1 (c), the MNA or NFA may issue personal sail numbers (Sail numbers staying with the owner for every boat he legally possesses as long as he sails Finns) for which the authority may raise a fee. The personal number issued shall not conflict with existing numbers of active boats. After the sale of the boat, the new owner shall use her original sail number or their own personal number.
- A.9.3 Competitors may use the sail number of any hull still owned by them, on any boat chartered or owned by them.

## A.10 CERTIFICATION AND MEASUREMENT RECORDS

- A.10.1 The required **certificates** shall be:  
(a) The boat measurement **certificate**;  
(b) The hull Measurement Form, and;



(c) Mast Card(s)

A.10.2 **Certification control** shall be carried out by an IFA approved **certification measurer** who shall complete the appropriate documentation. A list of IFA approved **certification measurers** is available on the class website: [www.finnclass.org](http://www.finnclass.org)

A.10.3 From 1 March 2013, **hulls** and **centreboards** undergoing initial **certification** measurement shall have their identification and measurement information entered into the online IFA database.

A.10.4 MEASUREMENT FORM

For equipment first certified after 1 March 2011, the Measurement Form for the **hull** and **centreboard combined** shall be in the latest form approved found in the WS website:

<https://www.sailing.org/classes/finn/#Documents>

A.10.5 MAST CARD

The Mast Card prescribed by rules A.10.1 and F.2.2 shall be in a form approved by IFA. Manufacturers are invited to use the reverse side of the Mast Card to record the bend characteristics of the **mast**.

**SUGGESTED FORMAT FOR MAST CARD**

Supplier's Letterhead with any Logo, Address, Telephone, E-Mail etc.  
*Suppliers of International Finn Class Masts... etc. (not more than one line)*

**This is to Certify** that the Mast has been built in accordance with the current Rules of the International Finn Class, that the Mast Label has been correctly obtained from the International Finn Association, and that to the best of my knowledge and belief the mast has passed correct measurement from the **certification measurer** below.

**Signed** (Mast Manufacturer or Representative) .....

**Date** ..... **Date of Manufacture** .....

**INTERNATIONAL FINN CLASS MAST MEASUREMENT CARD**

F.2.2 (a) Measurer ..... Measurer's Signature .....

Measurer authorized by ..... Date of Certification Control  
.....

F.2.2 (b) IFA Mast Label attached ..... Number  
.....

F.2.3 **Materials** .....

F.2.3 (c) Material of the sail track .....



## A.11 VALIDITY OF CERTIFICATES

A.11.1 A **certificate** becomes invalid upon:

- (a) the change to any items recorded on the **certificate**, unless updated as per rule A.12.2, or;
- (b) withdrawal by the **certification authority**, or;
- (c) the issue of a new **certificate**.

## A.12 RE-CERTIFICATION

A.12.1 The **certification authority** may issue a **certificate** to a previously **certified** boat:

- (a) when it is invalidated under A.11.1(a) or (b), after receipt of the old **certificate**, and certification fee if required.
- (b) when it is invalidated under A.11.1 (c), at its discretion.
- (c) in other cases, by application of the procedure in A.10.

A.12.2 The **certification authority** may update a **certificate** to a previously certified boat by crossing out the outdated **certificate** and attaching Reweighing Forms signed by an IFA approved **certification measurer** to the current **certificate**.

## A.13 GRANDFATHERING RULES

A.13.1 The following rules always apply: C.9.4, D.9 (except those related to gunwale rubbing strakes), E.2.5 (b), G.1 and G.2.

A.13.2 Subject to A.13.1, a **hull** or other equipment not complying with current **class rules**, but complying with the **class rules** in force at a previous **certification control**, may retain **certification**.

A.13.3 In particular, Rule A.13.2 can be applied with respect to **hull** materials, **centreboard** thickness, **centreboard coating**, **centreboard** arm dimensions, **centreboard** weight, rudder fittings, gunwale rubbing strakes, **mast** centre of gravity, mast bearing diameters and boom attachment arrangement. If Rule A.13.2 is applied with respect to the boom attachment arrangement, then a mast **lower limit mark** must be made, complying with the older **class rules** (minimum distance of **lower point** 860 mm above the **heel point**, **limit mark width** minimum 13 mm).

A.13.4 All alterations involving removal of weight including correctors shall be made under the supervision of an IFA approved **certification measurer**, who shall issue a signed Reweighing Form for the **certification authority** to update the **certificate**.

A.13.5 **Corrector weights** may be removed if the **hull** and **centreboard** are then reweighed and retested together using the Lamboley Test.

A.13.6 As an exception, If the initial distance  $\lambda$  is greater than 2110 mm, a simple magnetic compass and its mounting may be removed, and corrector weight may be removed from a position between 1000mm and 2100mm longitudinally from the **hull datum point**. The **hull** with **centreboard** shall then be reweighed. If the **certification measurer** has reasonable doubt about whether Rule D.9.3 (c) may be contravened, he shall require compliance with A.13.5.



## Section B – Boat Eligibility

For a **boat** to be eligible when *racing*, the rules in this section shall be complied with.

### B.1 CLASS RULES AND CERTIFICATION

B.1.1 The **boat** shall:

- (a) be in compliance with the **class rules**,
- (b) have valid **certificates** as required by A.10.1. **Certificates** shall be held by the **crew** and shall be available upon request of the **certification authority**.
- (c) have valid **certification marks** as required.

### B.2 CLASS MARKS

- B.2.1 The **mast** shall carry a valid IFA Mast label and have a valid Mast Card.
- B.2.2 The **sail** shall have a valid IFA Sail Label permanently attached near the **tack**.
- B.2.3 The **centreboard**, **rudder** and **boom** shall carry valid **certification marks**.



## PART II – REQUIREMENTS AND LIMITATIONS

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The **crew** and the **boat** shall comply with the rules in Part II when *racing* and at any other time when *rules* specify. The Notice of Race or the Equipment Regulations may specify that compliance shall be in effect from the moment equipment is presented for **event equipment inspection**. Measurement to check conformity with rules of Section C is not part of **certification control**.

The rules in Part II are **closed class rules**. Measurement shall be carried out in accordance with the ERS except where varied in this part.

### Section C – Conditions for Racing

#### C.1 GENERAL

##### C.1.1 RULES

- (a) If the average wind speed is clearly over 10 knots across the course the Race Committee may signal in accordance with RRS Appendix P5 that pumping, rocking and ooching are permitted after the starting signal, except when the boat's proper course is close-hauled or above. This changes rules 42.2(a), 42.2(b) and 42.2(c). A Notice of Race or Sailing Instructions may state a wind speed limit of 12 knots instead of 10.
- (b) See C.3.1 for amendments to RRS 50.1(b)

#### C.2 CREW

##### C.2.1 LIMITATIONS

The **crew** shall consist of 1 person.

##### C.2.2

The **crew** shall be a member of an NFA in good standing with the IFA.

#### C.3 PERSONAL EQUIPMENT

##### C.3.1 MANDATORY

- (a) The boat shall be equipped with a **personal flotation device** for each **crew** member to the minimum standard ISO 12402-5, or USCG Type III, or AS 4758 Level 50 or equivalent. Inflatable buoyancy vests are not permitted.

##### C.3.2 OPTIONAL

- (a) Electronic or mechanical timing devices which may include a compass but do not have any other function/capability.
- (b) A heart rate monitor.
- (c) Smart watches when permitted by a Notice of Race or Sailing Instructions.

##### C.3.1 TOTAL WEIGHT

In accordance with RRS 50.1(b), the maximum weight for a competitor's clothing and equipment is 10kg.



## **C.4 ADVERTISING**

### **C.4.1 LIMITATIONS**

Advertising shall only be displayed in accordance with the World Sailing Advertising Code.

## **C.5 PORTABLE EQUIPMENT**

### **C.5.1 FOR USE**

#### **(a) MANDATORY**

Any equipment supplied or required by the Organising Authority, the Notice of Race or Sailing Instructions.

#### **(b) OPTIONAL**

- (1) Electronic or mechanical timing devices.
- (2) Magnetic compasses having no electronics.
- (3) One electronic self-contained compass, using magnetic input. If electronic, the compass may have only heading and timing functions..

The display may show only the following:

- heading (damping may be adjusted manually),
- heading  $\pm$  a tacking angle (which may be adjusted manually),
- time,
- race timing information,
- identification,
- battery condition, system error, adjustment and calibration information.

Race timing information may be transmitted by sound. The electronic compass shall not deliver, store or correlate information in any way except as described here.

- (4) Other equipment and fittings normally carried in boats such as hand bailers, buckets, flags, mechanical wind indicators, anchors and anchor warps, fenders, bags, bottles, manual recorders, writing equipment and spares.
- (5) Electronic equipment, when permitted/specified by the Notice of Race or Sailing Instructions.

### **C.5.2 NOT FOR USE**

#### **(a) MANDATORY**

- (1) A towing rope minimum 8 m long of not less than 8 mm in diameter, capable of floating. The towing rope must be readily available without contravening Rule C.6.1 (b).

#### **(b) OPTIONAL**

- (1) One paddle.
- (2) Mobile phones or other electronic devices capable of communication (including GPS). These shall be sealed inside a buoyancy tank and not used, either to make or receive voice transmissions, radio or data



communications while *racing*, except in an emergency. This equipment may be restricted by the Notice of Race or Sailing Instructions.

## C.6 BOAT

### C.6.1 FLOTATION

- (a) Buoyancy shall ensure that in the event of complete flooding, a fully rigged boat with intact buoyancy units will float approximately level.
- (b) It is the owner's responsibility to see that the buoyancy apparatus is kept securely fastened and fully effective when afloat. Hatch covers and drainage plugs for buoyancy units shall be kept in place at all times.
- (c) **Certification measurers** or **equipment inspectors** may require that a buoyancy test be satisfactorily completed at any time.

### C.6.2 LIMITATIONS

When this rule is invoked by the Notice of Race or Sailing Instructions, the following equipment limitations shall apply:

Not more than 1 **hull** with 1 **centreboard**, 1 **mast**, 1 **boom**, 1 **rudder** and 2 **sails** may be used during an event. When an item has been lost or damaged beyond repair the **event technical committee** may approve additional replacement equipment.

### C.6.3 FITTINGS

- (a) Except where restricted elsewhere by these **class rules**, non-slip material, padding for protection of equipment, tape and low friction material may be added anywhere in the boat as long as it does not change the stiffness of that part.
- (b) All **fittings**, fastenings and local reinforcement for fittings shall be only for their normal purpose and shall not be used to increase the weight of the **boat** or its parts, or for the alteration of the **hull** weight distribution.

## C.7 HULL

### C.7.1 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) The **hull** shall not be altered in any way except as permitted by these **class rules**.
- (b) Holes not bigger than necessary for the installation of **fittings** and passage of lines may be made in decks and bulkheads, but not for the passage of lines through Buoyancy Units.
- (c) Routine **maintenance** such as coating and **polishing** is permitted without re-measurement and re-**certification**.
- (d) If any **hull** moulding is **repaired** in a way that might cause Rules C.6.1 or D.9 to be contravened, an IFA approved **certification measurer** shall satisfy himself that the equipment remains within the **class** rules. The IFA approved **certification measurer** shall also describe the details of the **repair** on the **certificate**.
- (e) The lower part of the moulded centreboard slot may be filled where the lowered **centreboard** leaves a gap.



## C.7.2 WEIGHT AND WEIGHT DISTRIBUTION

After completion of **certification control**, if **fittings** or other items are moved in a way that might cause Rules D.9.2 and D.9.3 to be infringed, Rule A.13.1 shall apply and a new **certification control** under Rules D.9.2 and D.9.3 is required.

## C.7.3 FITTINGS

- (a) The mast bearings may be adjustable for position fore and aft when not *racing*, but any adjustable or movable part, whether permanently part of the step or not, shall always be forward of Station 7.
- (b) The use of roller and ball bearings is prohibited in the mast ring, mast foot, deck ring and mast step fittings.
- (c) The fore-and-aft movement at the masthead due to play at the deck and heel bearing systems, shall not exceed the amount measured as follows:  
With the **boat** held stern down, a light line shall be rigged at a constant tension from the masthead halyard sheave to the top of the transom. The **mast** shall be pushed maximum forward and maximum aft to take up play at the bearings. The difference in the distance from the masthead to the transom shall not exceed 10 cm.
- (d) Hiking pads, attached to but removable from the **hull** are permitted. They shall extend not more than 10 mm outboard of the vertical plane of the gunwale rubbing strake.
- (e) Other **fittings** are permitted, subject to the following limitations:
  - (1) The **fitting** shall cause no other rule to be infringed.
  - (2) It shall be possible to remove a **fitting** without damaging the structure.
  - (3) Holes and recesses may be cut to receive a **fitting**.
  - (4) **Fittings** having a significant effect on the **hull** weight distribution shall be recorded on the measurement **certificate**.

## C.7.4 LIMITATIONS

- (a) Only one **hull** shall be used during an event except in case of damage beyond **repair**.

# C.8 CENTREBOARD AND RUDDER

## C.8.1 MAINTENANCE & REPAIRS

- (a) Maintenance such as painting, **sanding** and **polishing** is permitted without remeasurement and re-**certification**.
- (b) If an **appendage** is **repaired**, an IFA approved **certification measurer** shall satisfy himself that the equipment remains within the **class rules**.

## C.8.2 LIMITATIONS

- (a) Only one **centreboard** shall be used during an event, except when a **centreboard** has been lost or damaged beyond **repair**.
- (b) Any number of **rudders** may be used at an event except when CR C.6.2 is invoked.



### C.8.3 CENTREBOARD

#### (a) USE

There shall be an arrangement to prevent the **centreboard** from retracting completely if the boat is upside down.

- (b) No **fitting** or device shall be attached, installed or applied to the inside of the centreboard case that may cause the **centreboard** to gybe (angle to windward).

### C.8.4 RUDDER

#### (a) USE

(1) There shall be a **fitting** to prevent the **rudder** from falling off if the **boat** is upside down.

(2) Except as allowed in (3) below, lifting rudder blades shall be pinned or bolted so that the rudder assembly complies with E.3.4.

(3) The **rudder** blade shall be in its fully lowered position when *racing*. However, for races sailed in shallow water or where local conditions justify it, the Sailing Instructions may prescribe that lifting of the **rudder** blade is allowed.

## C.9 RIG

### C.9.1 MAINTENANCE & REPAIRS

Maintenance and repairs are permitted without re-measurement and re-**certification**.

### C.9.2 LIMITATIONS

(a) Any number of **masts** may be used at an event except when CR C.6.2 is invoked.

### C.9.3 MAST

#### USE

(1) The **spar** shall be fitted in such a way that it cannot come out of the step when the **boat** is capsized.

(2) Except for normal sail controls, arrangements to introduce pre-bend or twist, or to vary the stiffness of a **mast** during the race are prohibited.

(3) EITHER a stop shall be fitted so that ERS B1.1(a) cannot be contravened OR a halyard lock arrangement fitted within 1m of the **upper point** shall be used.

### C.9.4 BOOM

#### (a) DIMENSIONS

minimum maximum

**Limit mark width** ..... 13 mm

**Outer point distance** ..... 3270 mm

#### (b) USE

(1) The **boom** shall be fitted to the **mast** so that all parts rotate together. Arrangements allowing over rotation of the **mast** are prohibited.



- (2) Mainsheet and mainsheet block attachments on the **boom** allowing additional athwartship travel are prohibited.
- (3) A stop shall be fitted so that rule C.10.4 (d) cannot be contravened.
- (4) If an IFA approved **certification measurer** finds that the diameter the boom pin hole exceeds the stated maximum, he may approve the equipment item if he is satisfied that the error is the result of fair wear and tear in service, that it does not improve the performance of the boat, and that Rule C.9.4 (b) (3) is satisfied.

## C.10 MAINSAIL

### C.10.1 MODIFICATION, MAINTENANCE AND REPAIR

- (a) **Repairs** and **maintenance** are permitted without re-measurement and re-**certification**.
- (b) National flags of any country and of nominal size 740 x 443 may be placed on **sails** below the second lower batten, with the distance to the **leech** and batten pocket a minimum of 50 mm and maximum of 100 mm.

### C.10.2 LIMITATIONS

- (a) Any number of **mainsails** may be used at an event except when CR C.6.2 is invoked.

### C.10.3 IDENTIFICATION

- (a) The national letters and sail numbers shall comply with the RRS Appendix G except where prescribed otherwise in these **class rules**. National letters and sail numbers shall be made from additional material of contrasting colour, firmly attached to the **sail**. National letters and sail numbers shall not be painted on.
- (b) As an exception to G.2.1 (a), for winners of the Finn Gold Cup and for Olympic Gold Medallists in the Finn Class, the sail insignia waves may be coloured gold.

### C.10.4 USE

- (a) The **sail** shall be hoisted on a **halyard**. The arrangement shall permit hoisting and lowering of the **sail** while *afloat*.
- (b) **Luff** and **foot** boltropes shall be in the **spar** grooves or tracks.
- (c) ERS B.1.1(a) applies
- (d) The aftmost visible part of the **sail**, projected at 90° to the boom **spar**, shall not be set outboard of the boom **outer point**. This changes ERS B.1.3



## Section D – Hull

### D.1 PARTS

#### D.1.1 MANDATORY

- (a) Hull shell and transom
- (b) Deck
- (c) Centreboard case
- (d) Thwart
- (d) Buoyancy Units
- (e) Gunwale rubbing strakes
- (f) Floorboards or double bottom
- (g) Keel bands

#### D.1.2 OPTIONAL

- (a) Bulkheads

### D.2 GENERAL

#### D.2.1 CERTIFICATION

- (a) The **hull** and **centreboard** shall be measured together, and details shall be recorded as specified by Rule A.10. If a new **centreboard** is fitted, then **certification control** is required under Rule D.9, and measurement under E.2.5 (b).

#### D.2.2 DEFINITIONS

- (a) The three major axes of the boat at 90° to each other – vertical, longitudinal and transverse, shall be related to the baseline and the **hull** centreplane. The terms “above” and “below” assume that the **hull** is upright.
- (b) **Hull Datum Point**  
The intersection, on the centreplane of the **hull**, between the underside of the shell (excluding keelband if fitted) and the transom.
- (c) **Baseline**  
The Measurement Baseline shall be on the centreplane of the **hull** at the following vertical distances:
  - (1) 201 mm below the **hull datum point**.
  - (2) at Station 8:52 mm below the keelband.
- (d) **Stations**  
With the Baseline horizontal, the Measurement Stations are the vertical planes normal to the Baseline, with Station 0 at the **hull datum point**, Station 1 at 500 mm forward of the **hull datum point**, Station 2 at 1000 mm forward of the **hull datum point**, and so on.
- (e) **Hull length** is the distance parallel to the baseline from the plane of Station 0 to the outside of the stemband, excluding any gunwale rubbing strake.



- (f) The Stem Template Datum Point is at the underneath of the keelband/stemband, at a position forward or aft of Station 8 by the amount that the hull length is greater or less than 4495mm.

#### D.2.3 BUILDERS

- (a) The Finn may be built by any professional or amateur builder
- (b) Professional builders shall be responsible for supplying boats or kits complying with the Finn **class rules**. The builder shall, at his own expense, correct or replace any boat that fails to pass **certification control**, due to omission or error by the builder, provided that the boat is submitted for **certification control** within 12 months of purchase.
- (c) From 1 March 2013, builders of GRP hulls shall have the first hull (prototype) measured by an International Measurer appointed by IFA whenever they bring into service new moulds for the **hull**, decks or inner **hull**.

#### D.2.4 IDENTIFICATION

- (a) The World Sailing plaque prescribed by Rule A.8 shall be permanently placed in a visible spot on the aft bulkhead of the cockpit.
- (b) Any number required by government legislation shall be moulded, engraved or carved into the **hull**. It should be on the starboard side of the aft trailing edge of the transom, but may be elsewhere if this is necessary to comply with such legislation.

### D.3 HULL

#### D.3.1 MATERIALS

The **hull** shall be made from wood or glass reinforced plastic, except that:

- (a) Core materials may be of foam or other material not containing carbon fibre.
- (b) Rules D.6.1 and D.8.1 apply.
- (c) Stern drain tubes may be of any material not containing carbon fibre.
- (d) Except for D.3.1 (c), this rule does not apply to **hull fittings** and **corrector weights**.

#### D.3.2 CONSTRUCTION

- (a) The concave corners where **hull** panels, deck, thwart, centreboard case and bulkheads meet may be rounded to a radius of not more than 30 mm.
- (b) If the centreboard pivot pin is movable, it must not allow Rule E.2.5 (b) to be contravened. It must not be moved during a race. For **certification control** under Rules D.9.2 and D.9.3, the centreboard pivot pin must be in its aftmost position.
- (c) The pivot pin shall pass through the walls of the centreboard case.
- (d) Longitudinal tapering and rocking points on the centreboard box are prohibited.
- (e) Centreboard box sealing strips are prohibited.
- (f) From Station 0 to Station 6, hollows in the **hull** form are prohibited. From Station 6 to the stem, hollows in the plane of the Sections are prohibited. Minor distortion due to curing of plastic hulls is acceptable.



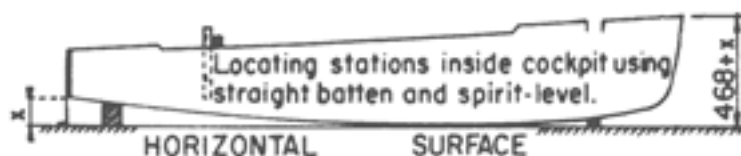
- (g) Except at the sides of the keelband position, knuckles and chines are prohibited.

## D.4 DECK

### D.4.1 CONSTRUCTION

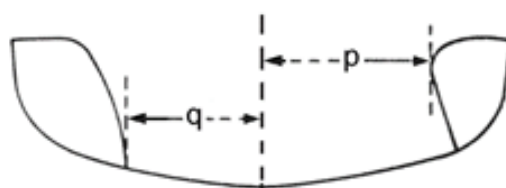
- (a) The shapes of the decking and built in tanks (if fitted) shall be approximately the same on both sides of the boat.
- (b) The general arrangement of the decking and cockpit shall be substantially as shown in the plans except as varied by the **class rules**.
- (c) The ends of the cockpit may be either straight across the boat or faired into the side decks.
- (d) Pads and recesses to mount or locate **fittings** are permitted, but not at the **sheerline**.

### D.4 - Setting up the hull for cockpit measurement



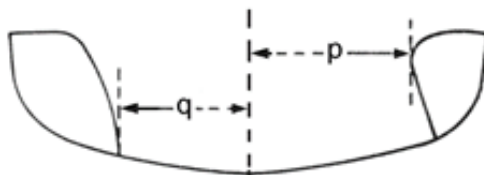
### D.4 - Cockpit minimum width

p and q are examples showing the distance from centreplane to side decks or built in tanks.



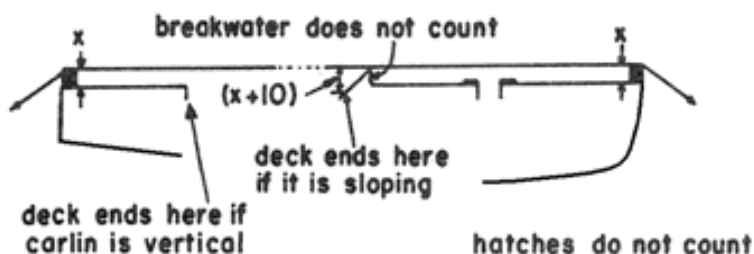
## D.4 - Cockpit minimum width

p and q are examples showing the distance from centreplane to side decks or built in tanks.



## D.4 - Deviation of the top of the deck at centreplane from a straight line between the stemhead and St.0.

Limit of variation from a taut line is  $(x \pm 10\text{mm})$ .



## D.5 BUOYANCY

### D.5.1 DEFINITION

- (a) Buoyancy Units are bags, tanks or foam blocks enabling compliance with D.5.2, D.5.3 and C.6.1.
- (b) A tank having holes for **running rigging** or for the **mast** shall not be considered as a Buoyancy Unit.
- (c) Other buoyancy may be fitted, providing that no other rule is infringed.

### D.5.2 CONSTRUCTION

- (a) At least 4 separate Buoyancy Units shall be fitted, so that the flooded **boat** can satisfy the buoyancy requirements of D.9.1.
- (b) Every buoyancy tank shall be fitted with an inspection hatch.
- (c) Buoyancy tanks may be fitted with drain holes. If so, they shall be capable of being securely plugged.
- (d) There shall be no surplus buoyancy within the cockpit area above the floorboards, except that flexible bags may bulge within this area as long as their main volume and their anchorages for the fixation straps are outside it.



### D.5.3 INSPECTION AND TESTING

- (a) The **certification measurer** shall satisfy himself that the Buoyancy Units and arrangement are effective to ensure compliance with D.5.2 (a) and (b) and with C.6.1.

## D.6 GUNWALE RUBBING STRAKES

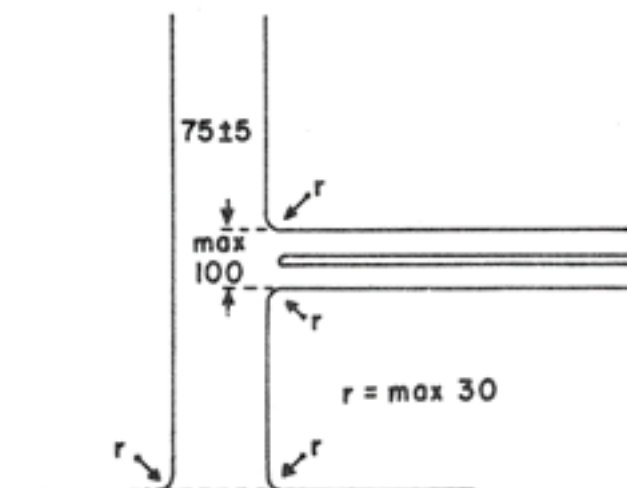
### D.6.1 MATERIALS

The gunwale rubbing strakes may be formed as part of the **hull**. If made separately, they shall be made from any resilient material.

### D.6.2 CONSTRUCTION

- (a) Gunwale rubbing strake dimension minima are not applicable within 100 mm of the stem and 100 mm of Station 0.
- (b) Gunwale rubbing strakes may be rounded on the outside and hollowed on the underside.
- (c) Gunwale rubbing strakes shall be capable of supporting the hull for the pendulum test.

D.3.2 and D.9.1 - Radius at concave corners; thwart and centreboard case dimensions.



## D.7 FLOORBOARDS OR DOUBLE BOTTOM

### D.7.1 CONSTRUCTION

- (a) The floorboards shall extend at least from Station 4 to the aft end of the cockpit. They shall lie in a straight line athwartships and have sufficient support to enable them to remain substantially flat when under load.
- (b) The floorboards may be pierced with holes totalling not more than 10% of their nominal area.
- (c) The floorboards may be part of the **hull** to form a double bottom.



#### D.7.2 OPTIONAL

Forward of Station 4, floorboards if fitted need not comply with D.7.1 (a) and (b).

### D.8 KEEL BANDS AND STEM BAND

#### D.8.1 MATERIALS

Between Stations 0 and 8, keel bands where fitted shall be made from any resilient material.

#### D.8.2 CONSTRUCTION

- (a) The keel bands are optional from Station 0 to the forward end of the moulded centreboard slot
- (b) Forward of the moulded centreboard slot the stem band and keel band are mandatory.
- (c) Between Station 0 and 8 keel bands where fitted shall be made separately from the **hull**.
- (d) Between Station 8 and the top of the stem, the stem band may be part of the **hull**, and may be **faired** into the **hull**.

The forward keel band may be tapered vertically for up to 25mm from the forward end of the centreboard slot.

#### D.8 - Keel bands and stem band.

D.8.1 (c) and (d): Fairing and padding are not allowed for the keel bands, but are allowed for the stem band forward of Station 8. The stem band radius must not be less than 6 mm.





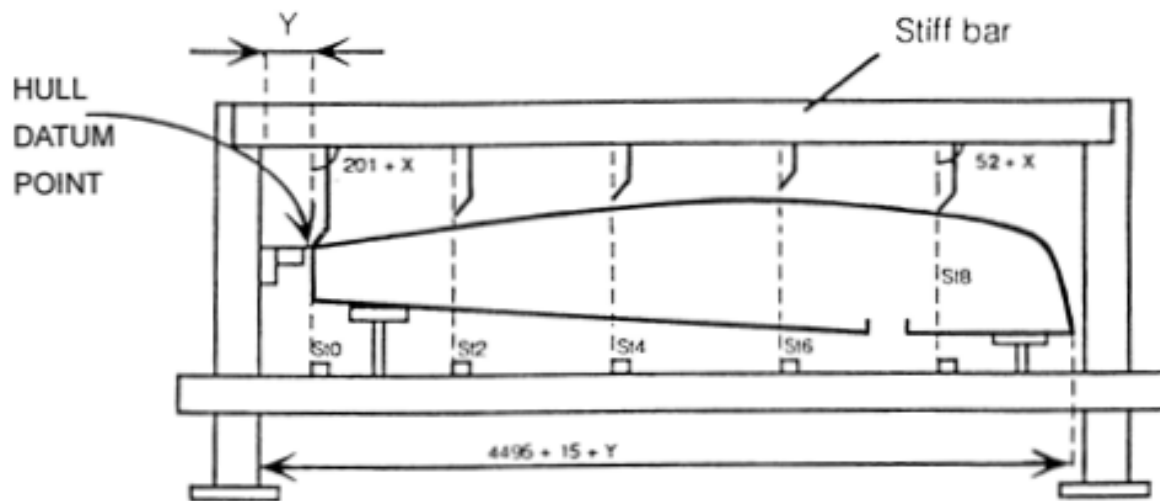
## D.9 ASSEMBLED HULL

### D.9.1 DIMENSIONS

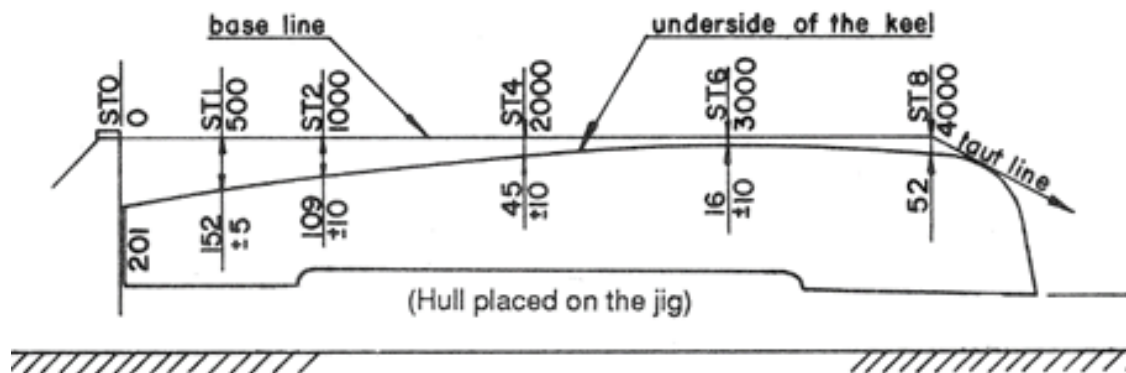
	minimum	maximum
<b>Hull length</b> .....	4480 mm	4510mm
Transom forward of Station 0:.....	0 mm	5 mm
<b>Baseline below hull:</b>		
at Station 1 .....	147 mm	157 mm
at Station 2 .....	99 mm	119 mm
at Station 4 .....	35 mm	55 mm
at Station 6 .....	6 mm	26 mm
Stem profile (outside stem band) to template: .....	0 mm	10 mm
<b>Sheer</b> above position marked on stem template:.....	-10 mm	+10 mm
Keel band section radius (half round) .....	6 mm	
Stem band (forward of Section 8) radius.....	6 mm	
<b>Centreboard case;</b>		
slot width .....	8 mm	12 mm
overall width.....		100 mm
centre of centreboard pivot pin above underside of keel	40 mm	50 mm
Fore and aft adjustment for centreboard pivot pin .....		20 mm
<b>Hull to hull template:</b>		
at station 0, 2, 4, 6 and 8 .....	0 mm	10 mm
<b>Sheerline</b> above position marked on template:		
	(Port)	(Starboard)
	minimum maximum	minimum maximum
at station 0, 2, 4, 6 and 8 ...	-10 mm 10 mm	-10 mm +10 mm
Length of foredeck .....	1350 mm	1450 mm
Length of aft deck .....	550 mm	650 mm
<b>Distance between side decks or built in tanks and the centreplane:</b>		
	minimum	maximum
at Station 2 .....	410 mm	
at Station 3 .....	500 mm	
at Station 4 .....	490 mm	
at Station 5 .....	440 mm	
<b>Distance between side decks or built in tanks and the centreplane, at some point between the sheerline and 100mm below the sheerline:</b>		
	minimum	maximum
at Station 2 .....		520 mm
at Station 3 .....		560 mm
at Station 4 .....		550 mm
at Station 5 .....		500 mm



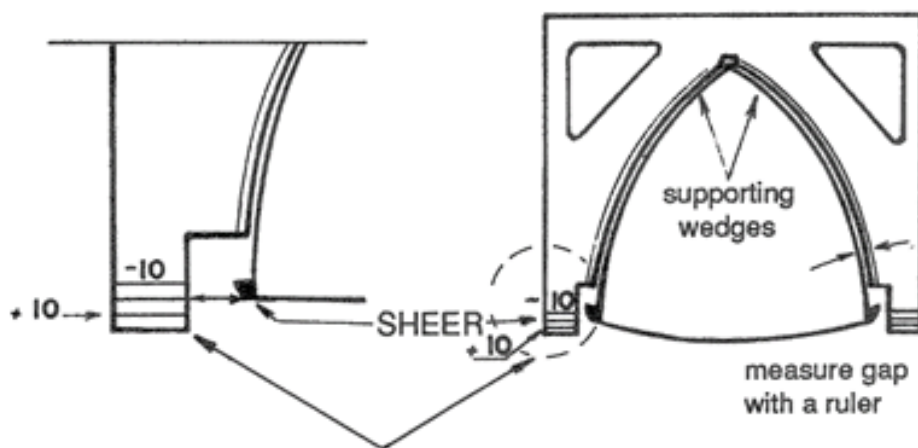
	Minimum	maximum
Top of the deck at centreplane above the <b>sheer</b>		
at Station 0 .....	45mm	55 mm
Top of the deck at centreplane above a straight line between the stemhead and Station 0 (excluding breakwaters, hatches, cockpit coamings and mast deck bearing arrangements) .....	-10 mm	10 mm
Inside diameter of buoyancy tank inspection holes .....	95 mm	
Gunwale rubbing strakes;		
depth (down from the <b>sheerline</b> around the <b>hull</b> ) .....	20 mm	35 mm
width (at a right angle to the hull).....	20 mm	25 mm
Width of floorboards;		
at Station 2 .....	800 mm	
at Station 3 .....	880 mm	
at Station 4 .....	720 mm	
Floorboards or double bottom below <b>sheer</b> ;		
At Station 2 .....	285 mm	
At Station 3 .....	325 mm	
At Station 4 .....	375 mm	
At Station 5 (If fitted).....	375 mm	
At Station 6 (If fitted).....	390 mm	
Thwart;		
depth .....	16 mm	50 mm
width .....	70 mm	80 mm
aft side forward of Station 0 .....	1950 mm	2050 mm
top of thwart below <b>sheer</b> .....		130 mm
Mainsheet traveller block (centreline of attachment);		
Travel from centreplane of boat.....		550 mm
Travel forward of Station 4.....		150 mm
Height of mast heel above underside of keel band .....		56 mm
Height of mast bearing surface above deck.....		10 mm
Horizontal play in bearings.....		5 mm
Number of holes in the transom .....		4
Diameter of 2 largest transom holes .....		150 mm
Diameter of 2 other holes.....		30 mm
Bearing at transom pintle above <b>hull datum point</b> .....	52 mm	57 mm
Bearing at transom gudgeon above <b>hull datum point</b> .....	262 mm	267 mm
Axis of transom pintle aft of Station 0 ( $\alpha$ ) .....	10 mm	30 mm
Axis of transom gudgeon aft of Station 0 ( $\beta$ ).....	10 mm	30 mm
Difference between ( $\alpha$ ) and ( $\beta$ ) .....		2 mm
Diameter of pintle and of gudgeon hole .....	7.9 mm	8.1 mm



Section D - Principles of hull measurement when using a jig



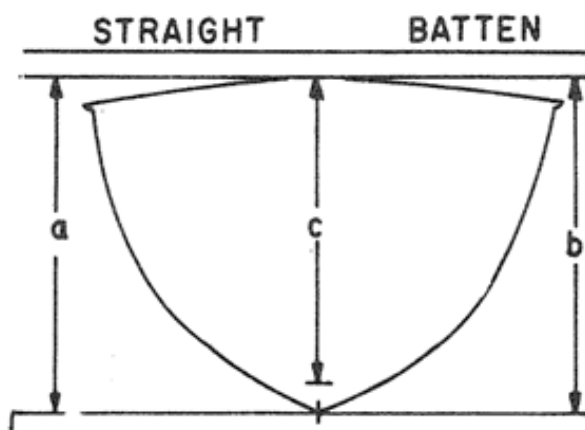
Section D – Keel Profile



Section D.9.1 - Hull shape measured with templates

### D.9.1 - Height of mast step above underside of keel band

$$\left(\frac{a+b}{2}\right) - c \text{ is maximum } 56 \text{ mm}$$



### D.9.2 WEIGHT

#### (a) Condition for weighing

For the purpose of Rules D.9.2, D.9.3 and D.9.4, the weighing condition for the assembled **hull** with **centreboard** installed is as follows:

- (1) If the centreboard pin, mast step and deck bearing are movable, they shall be in their maximum aft positions.
- (2) The weight shall be taken including **centreboard**, hiking pads, compass mountings and magnetic compasses having no electronics, other **fittings**, securely fastened containers, and normal lines, but excluding timer, electronic compass, rudder assembly, mainsheet and painter.
- (3) The **hull**, **fittings** and lines shall be in a dry condition.
- (4) Control lines shall be pulled tight and wrapped around the thwart.
- (5) The **centreboard** shall be raised so that its lower corner is level with the underneath of the **hull** (keel bands excluded).

(b) Weight minimum maximum  
The weight of the **hull** and **centreboard** in dry condition . 116.0 kg

### D.9.3 HULL WEIGHT DISTRIBUTION AND CENTRE OF GRAVITY

- (a) See Appendix H.3 for details of the **Hull** Weight Distribution and Centre of Gravity Measurement.
- (b) The following measurements shall be taken;
  - (1) Distance  $\lambda$  from the centre of gravity to Station 0.
  - (2) Distance  $d$  of axis  $O_1$  to the underneath of the keel (keel bands excluded).
  - (3) Periods of oscillations:  $T_1$  around axis  $O_1$ .  $T_2$  around axis  $O_2$ .



(c) Dimensions	minimum	maximum
Distance $\lambda$ .....	2100 mm	2290 mm
Distance h from underneath the <b>hull</b> (keel bands excluded) to the centre of gravity (see H.3).....	210 mm	
Radius of gyration $\rho$ .....	1100 mm	

#### D.9.4 CORRECTOR WEIGHTS

- (a) **Corrector weights** of lead shall be securely **fastened** to the **hull** if necessary to ensure compliance with D.9.2 and D.9.3. **Corrector weights** shall be visible to allow for inspection without the use of tools.
- (b) The total weight of such **corrector weights** shall not exceed 5 kg. The number, position and size of the **hull corrector weights**, and notes of other **fittings** (such as compasses and hiking pads) having a significant effect upon compliance with D.9.2 and D.9.3, shall be recorded as prescribed by Rule A.10.
- (c) **Hull corrector weights** shall be shaped as blocks of standard sizes in multiples of 0.25kg or 1.0kg.

#### D.9.5 LAMBOLEY TEST

##### (a) Weight Distribution and Centre of Gravity: Principles

The degree of concentration of the weight in the boat is described by her radius of gyration. A boat with "light ends" has a short radius of gyration.

In Diagram D.9.5.1, if "a" is the distance from the oscillation axis  $O_1$  to the centre of gravity G, "p" is the radius of gyration, and "g" is the acceleration due to gravity, then the oscillating period  $T_1$  is given by:

$$T_1 = 2\pi \sqrt{\frac{a^2 + \rho^2}{ag}}$$

We can measure T but we have two unknowns "a" and "p"; so we need two equations. Another is obtained by choosing a new oscillation axis  $O_2$  exactly 200 mm lower:

$$T_2 = 2\pi \sqrt{\frac{(a - 0.2m)^2 + \rho^2}{(a - 0.2m)g}}$$

Hence by measuring  $T_1$  and  $T_2$  we may calculate "a" and "p".

Solutions applicable to the Finn are presented in the Lamboley Graph.

The setting up of the axes  $O_1$  and  $O_2$  may be achieved with the equipment illustrated in diagrams D.9.5.2 and D.9.5.3. The brackets are designed to keep distance "a" short, to aid accuracy. The distance  $O_1 O_2$  shall be correct to within 1 mm.

## (b) Weight Distribution and Centre of Gravity: Practice

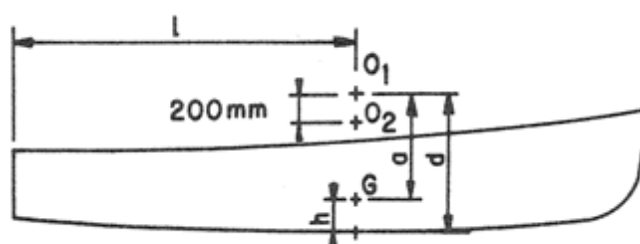
It is essential that the measurements be made in a sheltered place. The boat shall be hung from the brackets on axis  $O_1$ ,  $O_2$  and the periods of oscillation  $T_1$ ,  $T_2$  measured.

Plot the position with co-ordinates  $T_1$ ,  $T_2$  on the graph, and read off the values for "a" and "p" from the curves. The distance "l" is measured parallel to base line from Station 0 to axis  $O_1$  (diagram 20). If "l" is found close to limit values make sure that base line is level as in the diagram at D.4. The distance "d" can usually be measured from axis  $O_1$  to the underneath of the hull (excluding keelband) by means of a rule or tape passed down through the centreboard box (diagram D.9.5.1). If this is impossible, use the principle shown in diagram D.9.1 (Height of Mast Step). It is wise to provide a protection under the boat but the boat shall not touch anything while oscillating. The peak to peak movements of the bow shall remain between 200 mm and 160 mm during the time when the period of oscillation is measured. There shall be no twisting oscillations about a vertical axis. There shall be no movement of the supports. The measurement of periods  $T_1$  and  $T_2$  requires most care. It is recommended to operate in the following way: two time keepers stand on either side of the boat, they shall start their stopwatches when the boat passes the rest position which is made easier with two rods placed opposite each other as in diagram D.9.5.4; they count ten pitching periods and if they get the same result within 0.1s, the measurement is satisfactory (the result being thus 0.01s accurate).

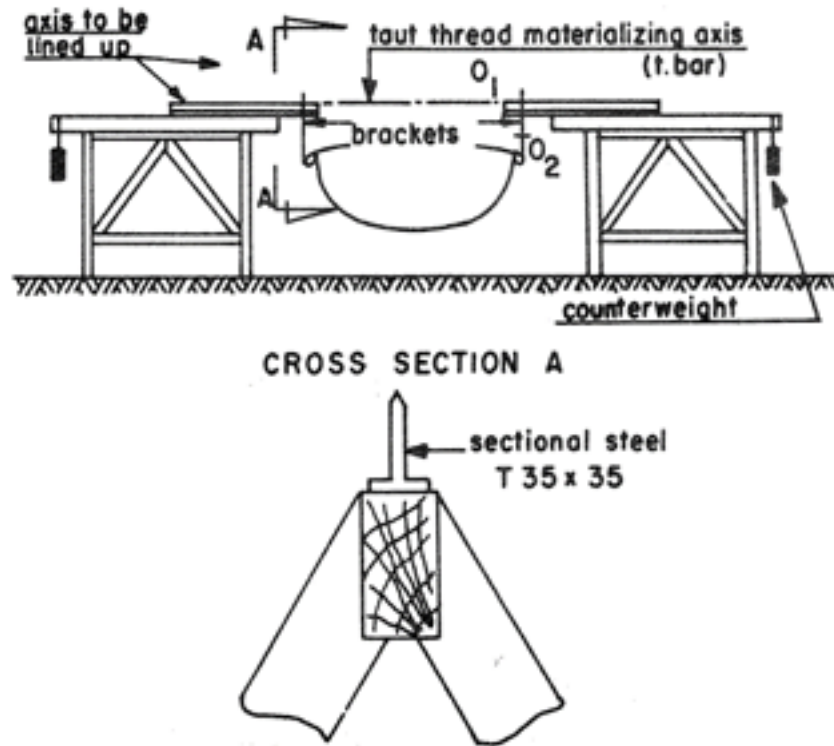
Stopwatches accurate to 0.05s shall be used. If a stopwatch only accurate to 0.1s is used, twenty pitching periods shall be measured.

If correction is necessary to achieve permissible figures, record only the results obtained after correction.

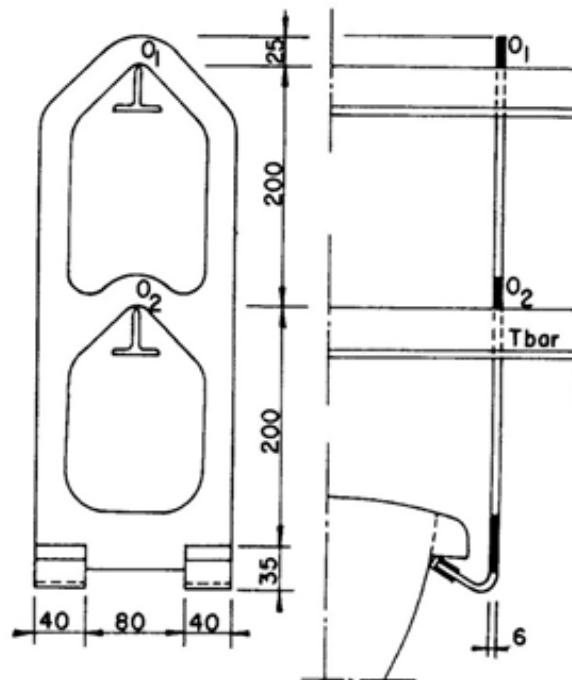
(See Diagrams D.9.5.3 and D.9.5.4.)



D.9.5.1 Weight Distribution



D.9.5.2 Lamboley Test Set-up

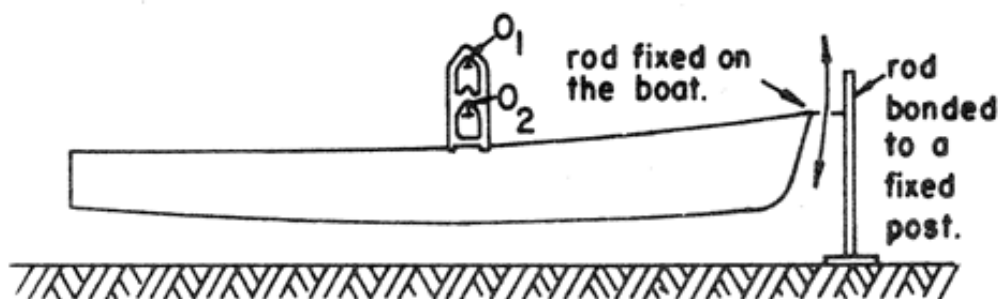


**Material: Mild Steel**

**Mass (2 hooks): 2.70 kg min, 3.30 kg max**

**Detailed drawings are available and should be used for construction.**

D.9.5.3 Hooks



D.9.5.4

## ALTERNATIVES TO THE GRAPH

If preferred, a calculator may be programmed to obtain the values of "a" and "ρ".

*Pocket Calculator programme:*

Input  $T_1$  (sec)                      Input  $T_2$  (sec)

Input  $b=0.2$  (m)                      Input  $g$  (m/sec<sup>2</sup>)

Calculate  $k = \frac{g}{4\pi^2 b}$

Calculate  $a = b \frac{kT_2^2 + 1}{k(T_2^2 - T_1^2) + 2}$

Calculate  $\rho = \sqrt{abkT_1^2 - a^2}$

Show or print **a** and **ρ** (m)

Check program with  $g = 9.81 \text{ m/sec}^2$   $T_1 = 3.31 \text{ sec}$   $T_2 = 3.81 \text{ sec}$

Result should be  $a = 0.593 \text{ m}$   $\rho = 1.124 \text{ m}$

As another alternative, a simple Computer Spreadsheet can be constructed or obtained from IFA Technical Committee.



## Section E – Centreboard and Rudder

### E.1 GENERAL

#### E.1.1 CERTIFICATION

**Centreboards** manufactured after 1 March 2011 shall be certified and a Measurement Form as per CR A.10.4 filled.

#### E.1.2 MANUFACTURERS

Rule D.2.3 applies to **hull appendages**.

### E.2 CENTREBOARD

#### E.2.1 DEFINITION

The Centreboard Theoretical Reference Point is where the straight line extension of the leading edge meets the largest radius measured.

#### E.2.2 CERTIFICATION AND IDENTIFICATION.

- (a) Each **centreboard** shall have its own identifying number. It shall be engraved, etched or stamped on the centreboard arm, visible in the raised position.
- (b) An IFA approved **certification measurer** shall **certify centreboards** by fixing, signing and dating a **certification mark** on the centreboard arm, visible in the raised position.
- (c) The **certification mark** shall be a durable sticker produced under the authority of the IFA, or an IFA approved **certification measurer's** personal mark.

#### E.2.3 MATERIALS

- (d) The **centreboard** shall be of aluminium alloy of 8 mm uniform thickness, except that the leading and trailing edges may be bevelled (see E.2.5(a)).
- (e) The **centreboard** may be anodised or **coated** with a clear **coating**.
- (f) Fibre and opaque reinforcement are permitted only to repair corrosion and other damage.

#### E.2.4 FITTINGS

##### (a) MANDATORY

- (1) A stop shall be fitted to prevent the **centreboard** from contravening rule E.2.5 (b).
- (2) The **centreboard** shall have a hole to accept the centreboard pivot pin.



E.2.5 DIMENSIONS

(a) Centreboard

The centreboard arm shall fit within the area shown in the diagram.

	minimum	maximum
Large radius.....	885 mm	..895 mm
Small radius .....	30 mm	... 40 mm
Chord length .....	815 mm	. 825 mm
Thickness.....	7.9 mm	....8.1 mm
Edge shaping distance.....		... 25 mm

(b) Centreboard fitted in hull

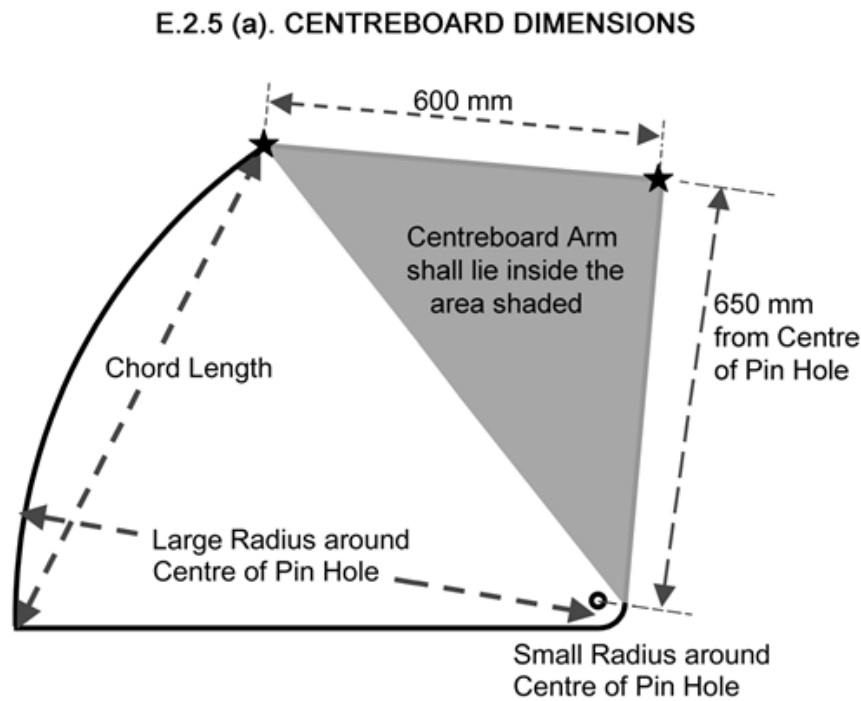
Hole diameter larger than pivot pin diameter .....0 mm .....2 mm

Centreboard Theoretical Reference Point

below hull (excluding keelbands) .....700 mm

Distance from hull datum point to aft edge of  
partially or fully extended centreboard,  
measured along the hull shell .....2050 mm

Projection below hull shell when fully raised .....0  
mm.....



E.2.6 WEIGHT

	minimum	maximum
.....	11 kg	..... 13 kg



## E.3 RUDDER ASSEMBLY

### E.3.1 DEFINITIONS

- (a) Point “k” is the leading edge at the waterline position taken from the **rudder** template.
- (b) The leading edge above point “k” is a line passing through point “k”, running parallel to the main axis of the rudder gudgeon and pintle upwards to deck level.

### E.3.2 CERTIFICATION

- (a) Each **rudder** shall have its own identifying number. It shall be moulded, engraved, etched or stamped on the side of the rudder stock.
- (b) An IFA approved **certification measurer** shall **certify** rudders by fixing, signing and dating a **certification mark** on the side of the rudder stock.
- (c) The **certification mark** shall be a durable numbered sticker produced under the authority of the IFA, or an IFA approved **certification measurer’s** personal mark.

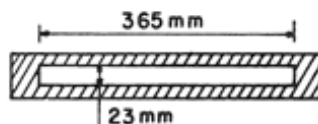
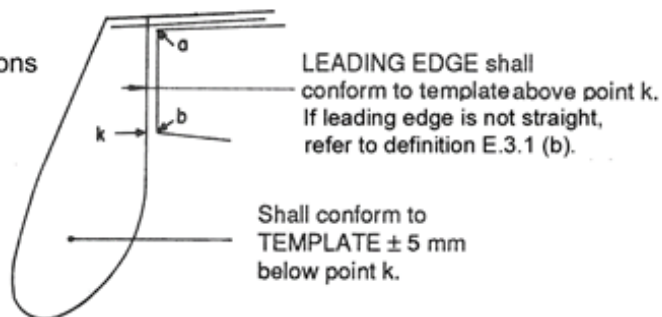
### E.3.3 MATERIALS

- (a) Materials for **rudder** construction are free.

### E.3.4 DIMENSIONS

	minimum	maximum
Distance from leading edge to the rudder template		
Above point k .....	0 mm	0 mm
Distance from the edge to the rudder template		
Below point k.....	-5 mm	5 mm
Thickness of rudder blade below point k.....		23 mm
Bearing at rudder gudgeon above point k .....	52 mm	57 mm
Bearing at rudder pintle above point k .....	262 mm	267 mm
Point k aft from axis of rudder gudgeon and pintle.....	10 mm	15 mm
Diameter of gudgeon hole and of pintle .....	7.9 mm	8.1 mm

#### E.3.4 - Rudder Dimensions



RUDDER GAUGE for thickness cut in 6 mm aluminium plate

#### E.3.5 WEIGHTS

minimum maximum

- (a) **Rudder assembly weight**, including tiller, extension and **fittings** ..... 4 kg
- (b) The total weight of such **corrector weights** ..... 1 kg

**Corrector weights** of lead shall be securely **fastened** to the outside surface of the **rudder** if necessary to ensure compliance with E.3.5 (a).



## Section F – Rig

### F.1 GENERAL

#### F.1.1 MANUFACTURERS

Rule D.2.3 applies to **spars**.

### F.2 MAST

#### F.2.1 DEFINITIONS

(a) Main Central Axis.

The Main Central Axis of the **spar** shall be taken as a straight line passing through the following points;

- (i) Centre of the heel bearing
- (ii) A point 20 mm forward of the aft edge at the **upper point**

(b) **Mast heel point** is the **mast datum point**.

(c) Aft Edge Line.

The aft edge of the **mast** between the **upper point** and the point where the sail leaves the **mast**, and its extensions. Any **mast spar curvature** shall be removed when taking measurements depending on the Aft Edge Line.

#### F.2.2 CERTIFICATION AND IDENTIFICATION

- (a) **Masts** shall be measured by an IFA approved **certification measurer** before leaving the **mast** builder's premises.
- (b) Each **mast** shall have its own identifying number. It shall be moulded, engraved, etched or stamped within 1m of the deck bearing.
- (c) Each **mast** shall have a numbered IFA Mast Label attached within 1 m of the deck bearing.
- (d) Each **mast** shall have a Mast Measurement Card, complying with the requirements of A.10.5.
- (e) The IFA approved **certification measurer** shall sign and date the IFA Mast Label, and shall **certify masts** by completing the Mast Measurement Card.

#### F.2.3 MATERIALS

- (a) The **spar** shall be made of wood, fibre reinforced plastic, aluminium alloy or a combination of these materials.
- (b) Anodising and protective **coatings** are permitted.
- (c) Plastic extruded sail track is permitted.

#### F.2.4 CONSTRUCTION

- (a) Holes shall be provided so that water drains readily from near the **heel** of the **spar**.
- (b) Flexible fairings are not permitted
- (c) The whole top of the **spar** above the **upper point** shall be painted in a distinctive colour.



## F.2.5 FITTINGS

### (a) MANDATORY

- (1) Rigidly attached or integral mast bearing surfaces.
- (2) A fork fitting shall be rigidly attached to the **mast**, to accept the **boom**.

### (b) OPTIONAL

- (1) Mechanical wind indicators.
- (2) Cleats, fairleads, lead blocks, halyard lock, halyard crane and other arrangements for **halyard** and control lines.

## F.2.6 DIMENSIONS

- (a) The **mast spar fore-and-aft cross-section**, including sail track but not deck ring nor other **fittings** shall not exceed

- (1) From **heel** to 2060 mm above the **heel**: 100 mm; thence
- (2) A uniform taper to 55 mm at 6560 mm above the **heel**.

Example fore-and-aft dimensions;

Distance from heel.....	maximum
2060 mm .....	100 mm
2560 mm .....	95 mm
3560 mm .....	85 mm
4560 mm .....	75 mm
5560 mm .....	65 mm
6560 mm .....	55 mm

- (b) The **mast spar transverse cross-section** shall be not less than

- (1) From below the **heel bearing** to 1000 mm above the **heel**: 60 mm;
- (2) From (**heel** + 1000 mm) a uniform taper from 60 mm to 28 mm at (**heel** + 5000 mm)
- (3) From (**heel** + 5000 mm) to (**heel** + 6573 mm): 20 mm

Example transverse dimensions;

Distance from heel.....	minimum	
10 mm .....	60 mm	
1000 mm .....	60 mm	
2000 mm .....	52 mm	
3000 mm .....	44 mm	
4000 mm .....	36 mm	
5000 mm .....	28 mm	
		minimum maximum

- (c) Distance from Main Central Axis to outer surface of **mast** or mast bearings (excluding other **fittings**) ..... 60 mm

- (d) Other Dimensions:

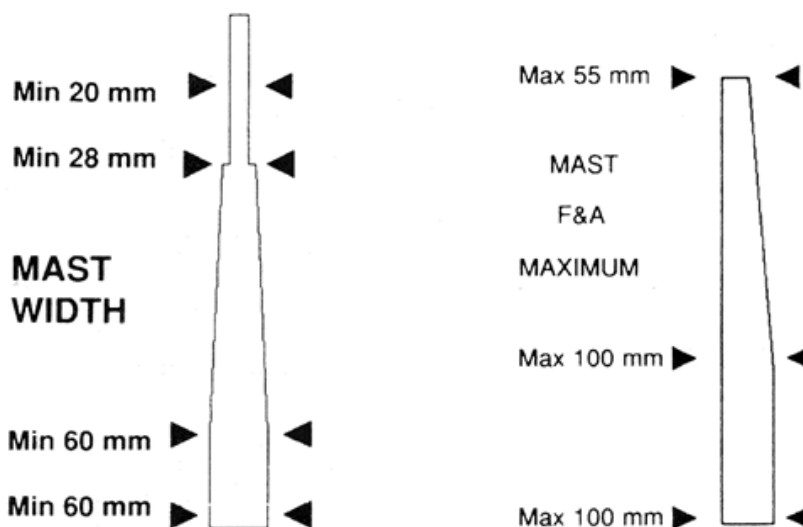
<b>Upper point height</b> .....	6560 mm
Depth of extruded sail track (if fitted) .....	20 mm
Diameter of mast heel bearing .....	62 mm ..... 64 mm
Diameter of mast deck bearing .....	102 mm ... 104 mm

Width between arms of the boom fork fitting .....	37 mm .....	40 mm
Centre of boom pin holes in fork fitting above heel .....	820 mm	
Centre of boom pin holes aft of the Aft Edge Line.....	40 mm	
Diameter of boom pin holes .....	15.5 mm ..	16.5 mm
<b>Mast spar curvature</b> between the <b>upper point</b> and the point where the <b>sail</b> leaves the <b>mast</b> .....		
	10 mm	

## F.2.6 - Mast cross-section dimensions

Mast fore-and-aft shall not exceed the dimensions from the formula

Mast width shall not be less than the dimensions from the formula



## F.2.7 WEIGHTS

	minimum	maximum
<b>Mast weight</b> .....		8 kg
<b>Corrector weights</b> made of lead, and securely fastened to the outside of the <b>mast</b> above deck level.....		1 kg
<b>Mast</b> centre of gravity above <b>heel</b> , including <b>halyard</b> and shackle, with halyard hoisted and tail of halyard wound around mast below boom fork, with <b>corrector weights</b> but excluding boom pin .....		2400 mm

## F.2.8 RIGGING

- (a) **Standing rigging** is prohibited
- (b) The only permitted **running rigging** on a **mast** is a halyard.

## F.3 BOOM

### F.3.1 CERTIFICATION AND IDENTIFICATION

- (a) Each **boom** shall have its own identifying number. It shall be moulded, engraved, etched or stamped on a side of the **boom** within 1 m of the forward end.



- (b) An IFA approved **certification measurer** shall **certify booms** by fixing, signing and dating a **certification mark** on a side of the **boom** within 1 metre of the forward end.
- (c) The **certification mark** shall be a durable numbered sticker, or a **certification measurer's** personal mark.

### F.3.2 MATERIALS

- (a) The **spar** shall be of wood; glass reinforced plastic, aluminium alloy or a combination of these materials.
- (a) Anodising and protective **coatings** are permitted.

### F.3.3 CONSTRUCTION

The **boom spar** shall include a sail track.

### F.3.4 FITTINGS

#### (a) MANDATORY

- (1) There shall be a hole, reinforced if necessary, to accept the boom pin.
- (2) There shall be a boom pin to attach the **boom** to the **mast**.
- (3) A **boom outer limit mark** which shall be distinctively coloured and painted on.

#### (b) OPTIONAL

- (1) Arrangements for attaching the **mainsheet**.
- (2) Arrangements for sail control lines and boom vang.
- (3) A fairlead where the sail leaves the **spar**.
- (4) A chafing pad beneath the outboard end of the **spar**.
- (5) Pads to protect the **crew**

### F.3.5 DIMENSIONS

minimum maximum

**Boom spar** cross section between 460 mm and 3243 mm aft of the centre of the boom pin hole;

**vertical** ..... 77 mm ... 82 mm

**transverse** ..... 32 mm ... 37 mm

**Boom spar curvature** ..... 5 mm

Centre of boom pin hole below upper edge of **boom**..... 40 mm

Diameter of boom pin hole ..... 15.5 mm .. 16.5 mm

**Outer point** from centre of the boom pin hole ..... 3230 mm

**Limit mark width** ..... 13 mm

Length of **sail** groove ..... 2700 mm

### F.3.6 WEIGHTS

minimum maximum

Boom weight, including mast pin, blocks, boom vang

outhaul and other **fittings** normally removed with

the **boom** but excluding **mainsheet**. ..... 5 kg

**Corrector weights** made of lead, and securely

**fastened** to the outside of the **boom** within 1000mm

of the centre of the boom pin hole..... 0.5 kg



## Section G – Sail

### G.1 GENERAL

#### G.1.1 RULES

**Sails** shall comply with the current **class rules**.

#### G.1.2 CERTIFICATION

- (a) WS or an MNA may appoint one or more **In-House certification measurers** to measure and **certify sails** produced by that manufacturer.
- (b) **Sails** shall be measured and **certified** by an IFA approved **certification measurer** before leaving the sail loft
- (d) Every **sail** shall have an IFA-issued Sail Label permanently attached near the **tack**.
- (e) The IFA approved **certification measurer** shall **certify sails** by signing and dating the **sail** across the **certification mark**.

#### G.1.3 SAILMAKER

- (a) No license is required.

### G.2 MAINSAIL

#### G.2.1 IDENTIFICATION

- (a) The class sail insignia shall be two blue waves approximately 700 mm long. From left to right they shall go up, then down and up again. They shall be placed in accordance with Appendix G of the RRS.



- (b) The class insignia shall be made from additional material of contrasting colour, firmly attached to the **sail**. Painted class insignia are prohibited.

#### G.2.2 MATERIALS

- (a) The **sail** may be made of any materials.
- (b) Battens may be of any material.

#### G.2.3 CONSTRUCTION

- (a) The construction shall be: **soft sail, single ply sail**, with luff bolt rope and foot bolt rope.
- (b) Continuous layers or fibres crossing the **seams** are prohibited
- (c) The **sail** shall have five **batten pockets** in the **leech**.
- (d) The following are permitted: **Seams**, stitching, glues, tapes, **tabling**, unlimited **primary reinforcement** and **secondary reinforcement**, corner eyes, headboard with fixings, Cunningham eye or block, flutter patches,

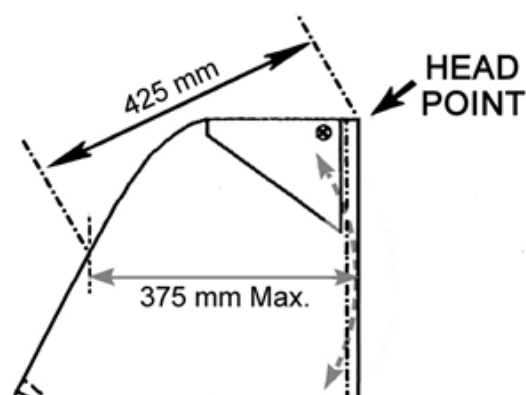
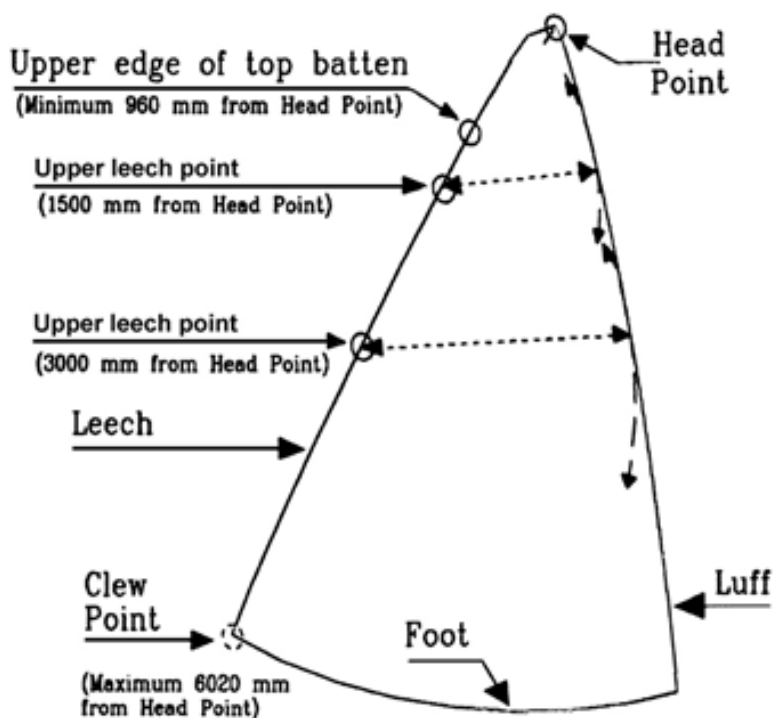


battens, **batten pocket patches**, batten pocket elastic, batten pocket end caps, headboard slides extending not more than 200mm down from the **head point**, track slides, leech line with cleat, Velcro fastening, tell tales, sail shape indicator stripes, sail identification, sailmaker labels and National Flag

#### G.2.4 DIMENSIONS

In alteration to ERS H.5.1, **sails** may be measured with the battens in position.

	minimum	maximum
<b>Leech length</b> .....		6020 mm
Distance from <b>head point</b> to any part of the <b>sail</b> .....		6050 mm
<b>Upper width at upper leech point</b> 3000 mm		
from the <b>head point</b> .....		1935 mm
<b>Upper width at upper leech point</b> 1500 mm		
from the <b>head point</b> .....		1075 mm
<b>Upper width at upper leech point</b> 425 mm		
from the <b>head point</b> .....		375 mm
<b>Top width</b> .....		165 mm
Width of <b>single ply</b> panels .....		1000 mm
Depth of headboard from <b>head point</b> .....		200 mm
Width of headboard .....		150 mm
Thickness of headboard .....		20 mm
<b>Clew point to:</b>		
aft end of <b>foot</b> bolt rope .....		150 mm
forward end of <b>foot</b> bolt rope .....		2500 mm
<b>Batten lengths:</b>		
uppermost batten: .....		400 mm
second batten: .....		600 mm
third batten: .....		700 mm
fourth batten: .....		600 mm
lowest batten: .....		500 mm
<b>Batten pocket width, inside</b> .....		50 mm
<b>Head point</b> to intersection of <b>leech</b> and upper part of		
uppermost <b>batten</b> .....		960 mm
Distance from lower part of a <b>batten</b> at the <b>leech</b> to		
the upper part of the <b>batten</b> below at the <b>leech</b>		
or to the <b>clew point</b> .....		900 mm



## **OFFICIAL PLANS**

1	Lines Plan	2011
3	Class Insignia (Full size)	2011
4	Full Size Sections	2011
5	Full Size Templates	2011
6	Full Size detail of Stem	2011
7	Lambolely Graph	2025

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