

INTERNATIONAL

A

CLASS

TABLE OF CONTENTS

1	GENERAL	1
1.1	Purpose of the Measurement Rules	1
1.5	Units of Measurement	1
2	ADMINISTRATION	2
2.6	Measurement	2
3	HULL	2
3.1	General	2
3.2	Definitions and Abbreviations	2
3.3	Hull	3
3.4	Identification Marks	4
3.5	Flotation and Waterline Length	4
3.6	Limits and Penalties	4
3.7	Measurement Marks	5
4	APPENDAGES AND BALLAST	5
4.1	Appendages	5
4.2	Ballast	5
5	RIG	5
5.1	Mast	5
5.2	Main Boom	5
5.3	Spinnaker Boom	6
5.4	Fittings	6
5.5	Measurement Bands	6
6	SAILS	6
6.1	Sail Plan	6
6.2	General	6
6.3	Mainsails	7
6.4	Headsails	8
6.5	Spinnakers	8
6.6	Identification Marks	9
6.7	Sail Area	9
7	EQUIPMENT	9
7.1	Replacements	9
8	ADDITIONAL RULES	9
8.2	Owner's Flag	9

INTERNATIONAL YACHT RACING UNION
MODEL YACHT RACING DIVISION



I Y R U
RECOGNISED
ORGANISATION

INTERNATIONAL A CLASS RULES 1994

1 GENERAL

1.1 Purpose of the Measurement Rules

1.1.1 The 'A' Class is a Development Class.

1.1.2 The intention of these class rules is to give the designer and builder the freedom in design and construction, within the scope of these class rules, to build and produce boats which rate no greater than 1000 mm calculated by the following formula

$$\text{Rating} = \frac{L + \sqrt{S}}{4} + \frac{L \times \sqrt{S}}{12 \times \sqrt[3]{D}} + \text{Penalties}$$

where: L is the measured length given in 3.2.7.

S is the total measured sail area given in 6.7.1.

D is the displacement given in 3.2.8. and 3.6.1.

Penalties are as given in 3.6.2 and 3.6.3.

1.1.3 Anything not specifically prohibited by these class rules is permitted.

1.1.4 If it is uncertain how any feature of the hull or its rig shall be measured, the details shall be reported on the MF and sent to the relevant issuing authority which may seek advice from the MYRD.

1.5 Units of Measurement

1.5.1 Unless specified to a greater number of decimal places, measurements and calculated values shall be taken and recorded as follows:

Measurement	Units	Decimal Places Measurement	Decimal Places Calculation
Length	millimetres	0	0
Cube root D	millimetres	-	0
Rating	millimetres	-	0
Area	square millimetres	-	0
Displacement	cubic millimetres	-	0
Weight	kilograms	1	-

1.5.2 Maximum and minimum values shall be taken as absolute limiting values. Measurements shall not be rounded before comparison.

1.5.3 Calculated values shall be correctly rounded to the required number of decimal places before recording.

1.5.4 Any previously calculated value used in subsequent calculations shall be the correctly rounded recorded value.

2.6 Measurement

2.6.2 The hull and hull appendages shall conform with the class rules in force when the boat was first measured. Boats registered before 1 June 1994 and which did not at that time have the headsail tack or the jib boom swivel placed approximately on the centreline of the hull need not comply with 6.1.2. On all other boats the rig, sails and equipment shall conform with the current class rules.

2.6.5 When control measured at an event, provided the boat weighs within 0.1 kg of the recorded weight and complies with the rig and sail measurements on the certificate it shall be considered to conform to the class rules. Larger rig or sail measurements are not permitted even if they would comply with the restrictions in these class rules.

3 HULL

3.1 General

3.1.1 The boat shall be a monohull.

3.2 Definitions and Abbreviations

3.2.1 WATERLINE denotes the water surface level remote from the hull.

3.2.2 MEASURED WATERLINE LENGTH (LWL) is the horizontal distance between the forward and aft waterline endings and including where applicable:

a) any part of an appendage which cuts the waterline when centred

b) any bridged hollow in the bow profile as defined in 3.3.4.

c) any projections below the waterline as defined in 3.3.5.

3.2.3 WATERLINE BEAM is the extreme beam at the waterline.

3.2.4 QUARTER BEAM MEASUREMENT POINTS are located on the surface of the hull one tenth of the waterline beam above the waterline and one quarter of the waterline beam from the centreline.

3.2.5 QUARTER BEAM LENGTH (QBL) is the mean distance between the fore and aft quarter beam measurement points measured parallel to the centreline.

3.2.6 QUARTER BEAM LENGTH EXCESS is the amount by which the actual QBL exceeds the maximum QBL without penalty.

3.2.7 MEASURED LENGTH (L) is the measured waterline length plus half any quarter beam length excess.

3.2.8 DISPLACEMENT (D) is the weight of the boat in kilograms multiplied by 1,000,000.

3.2.9 The DECK EDGE at any section is the junction between the deck and top sides. This is taken as the lowest point of contact between the hull and a tangent at 45 degrees to the horizontal. Rail, fender or other projections are to be ignored.

- 3.2.10 The SHEERLINE is the deck edge seen in profile.
- 3.2.11 FREEBOARD MEASUREMENT POINTS are the deck edges at the centre, forward and aft ends of the measured waterline length.
- 3.2.12 FREEBOARD is the average of the heights above the waterline of the freeboard measurement points.
- 3.2.13 The PROFILE is the side-view of the boat viewed as if from infinity.

3.3 Hull

- 3.3.1 On every section below the waterline no point A shall be more than 3 mm below any other point which is on the skin girth between point A and the underwater centreline.
- 3.3.2 The sheerline between a point 25 mm aft of the foremost point on the hull and the aft freeboard measurement point shall be a fair and continuous concave curve.
- 3.3.3 There shall be no hollows in the surface of the hull between the waterline and the sheerline aft of the forward end of the measured waterline length except:
 - a) Above a distance 10 mm below the sheerline.
 - b) Hollows which do not exceed 2 mm in depth when checked with a straight edge 300 mm long.
 - c) Hollows which do not exceed 0.5 mm in depth when checked with a straight edge 50 mm long within a 50 mm radius of the QBL measurement points and waterline beam measurement points.
- 3.3.4 Any concavity in the line of the bow profile shall be bridged by a straight line which shall be tangential to the hull and/or appendage at the points of contact with the hull and/or appendage.

If the bridging line contacts the hull or appendages more than 20 mm vertically below the waterline the bridging line shall be shortened so that the lower point of contact of the bridging line with the hull or appendages is 20 mm vertically below the waterline. The forward waterline ending shall be taken as the intersection of the bridging line with the waterline.
- 3.3.5 If any underwater part of the hull, or appendage if more than 20 mm thick, projects beyond a waterline ending the projection shall be included in the measured waterline length.
- 3.3.6 The forward 20 mm of the hull shall be made of elastomeric material.

3.4 Identification Marks

- 3.4.1 The boat shall carry, either painted, engraved or moulded in, the boat's national letters and registration number.
- 3.4.2 On the external surface of the hull or deck these marks shall be displayed clearly and legibly, with a minimum height of 20 mm.

3.5 Flotation and Waterline Length

- 3.5.1 The waterline shall be established with the boat floating in fresh water in sailing trim and dry with the heaviest suit of sails, including spinnaker and spinnaker boom in their normal positions if used.
- 3.5.2 All other measurements shall correspond to this trim.

3.6 Limits and Penalties

3.6.1 Displacement

Displacement is unrestricted except that:

a) The cube root of the displacement, $\sqrt[3]{D}$, used in the rating formula shall not exceed $0.2 \text{ LWL} + 25 \text{ mm}$.

b) Where the actual value of $\sqrt[3]{D}$ is less than $0.2 \text{ LWL} + 10 \text{ mm}$, then the deficit shall be subtracted from the actual value to obtain the value of $\sqrt[3]{D}$ used in the rating formula. The value of $\sqrt[3]{D}$ used in the formula shall not be less than zero.

3.6.2 Draught

The maximum draught without penalty is $0.16 \text{ LWL} + 89 \text{ mm}$. Three times any excess shall be included in the rating.

3.6.3 Freeboard

The minimum freeboard without penalty is $0.28 \sqrt[3]{D} + 23 \text{ mm}$. Any deficit shall be included in the rating.

3.6.4 Quarter Beam Length

The maximum QBL without penalty is a percentage of LWL where the percentage is $100 - \sqrt[2]{(0.02 \text{ LWL})}$. Half any QBL excess shall be added to LWL to give the measured length, L.

3.6.5 Deck Round

The deck round at every section between a point 25 mm aft of the foremost point on the hull and the aft freeboard measurement point shall not exceed one twenty-fourth of the local beam measured deck edge to deck edge.

3.7 Measurement Marks

3.7.1 Measurement marks shall be of a colour which contrasts strongly with the colour of the hull or deck and shall be of uniform width between 2 mm and 6 mm wide.

3.7.2 Hull

a) The forward waterline measurement mark shall be placed with its aft edge at the forward waterline ending as defined in 3.2.2.

b) The aft waterline measurement mark shall be placed with its forward edge at the aft waterline ending as defined in 3.2.2.

3.7.3 Deck

a) The mast measurement mark shall be placed with its forward edge at the foreside of the mast.

b) The fore triangle measurement mark shall be placed with its aft edge at the measurement point.

c) Where it is possible to move the mast fore and/or aft, additional marks shall be placed 13 mm forward and/or aft of the mast and fore triangle measurement marks.

4 APPENDAGES AND BALLAST

4.1 Appendages

4.1.1 Appendages which join the hull more than 25 mm from the centreline, appendages which move fore and aft and retracting appendages are not permitted.

4.2 Ballast

4.2.1 Ballast material shall not have a density higher than lead (11.3 kg/dm³).

5 RIG

5.1 Mast

5.1.1 Masts with rotating fairings and rotating masts are prohibited.

5.1.2 The mast may be moved 13 mm from the measured position without requiring re-measurement provided the fore triangle base, J, is not exceeded.

5.1.3 Any fitting that is faired into the mast shall be considered to be part of the mast.

5.1.4 Permanent set in the foreside of the mast between the middle mast measurement band and deck level shall not exceed 10 mm.

5.2 Main Boom

5.2.1 The cross section shall not exceed 25 mm depth and 25 mm width.

5.3 Spinnaker Boom

- 5.3.1 The cross section shall not exceed 25 mm diameter.
- 5.3.2 The maximum distance between the centreline of the mast and the outermost point of attachment of the spinnaker shall not exceed J.
- 5.3.3 The spinnaker boom shall be controlled independently from the main boom.

5.4 Fittings

- 5.4.1 Any fitting that is faired into a boom shall be considered to be part of the boom.
- 5.4.2 No fitting attached to a boom shall be bigger than is reasonably required for its purpose.

5.5 Measurement Bands

- 5.5.1 Measurement bands shall be of a colour which contrasts strongly with the colour of the spar and shall be of uniform width between 2 mm and 6 mm wide.
- 5.5.2
 - a) The upper mast measurement band shall be placed with its lower edge no higher than the 2167 mm above the deck.
 - b) The middle mast measurement band shall be placed with its lower edge no higher than 1625 mm above the deck.
 - c) The lower mast measurement band shall be placed with its upper edge where a line extended through the top of the main boom cuts the aft side of the mast.
- 5.5.3 The main boom measurement band shall be placed with its forward edge at the measurement point.

6 SAILS

6.1 Sail Plan

- 6.1.1 The sail plan shall consist of not more than one mainsail, one headsail and one spinnaker.
- 6.1.2 The headsail tack or the jib boom swivel shall be placed approximately on the centreline of the hull.

6.2 General

- 6.2.1 Sails shall be *soft sails* made and measured in accordance with the current 'IYRU Sail Measurement Rules', except where varied herein. Where a term defined or a measurement given in the IYRU Sail Measurement Rules is used in these rules it is printed in *'italic'* type.
- 6.2.2 Battens need not be removed from sails during measurement.

- 6.2.3 Discontinuous attachments on a 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*.
- 6.2.4 Where a sail is fitted with a bolt rope or sliders which is/are held in a recess in a spar, the sail shall be measured ignoring the bolt rope or the sliders in the recess.
- 6.2.5 *Double luff* sails are not prohibited by 5.1.1.

6.3 Mainsails

- 6.3.1 The mainsail shall be basically triangular and bounded by the *luff*, *foot* and *leech*.
- 6.3.2 A maximum of four battens is permitted. They shall divide the *leech* into approximately equal parts and shall be placed no more than 20 mm from the correct positions.
- 6.3.3 Battens shall be no longer than 200 mm except the top batten which shall be no longer than 150 mm.
- 6.3.4 A headboard is not considered to be part of the mainsail but it shall not exceed 25 mm wide by 25 mm high.
- 6.3.5 The *aft head point* shall not extend more than 25 mm aft of the mast.
- 6.3.6 The *leech* between the centreline of the upper batten and the *aft head point*, and between the centreline of the lower batten and the *clew*, shall not lie more than 10 mm outside a straight line between those points.
- 6.3.7 The *foot* shall not project more than 25 mm below a straight line joining the lower mast measurement band and the top of the main boom at the main boom measurement band.
- 6.3.8 The *head point* shall not be hoisted above the lower edge of the upper mast measurement band.
- 6.3.9 The *tack point* shall not extend below the upper edge of the lower mast measurement band.
- 6.3.10 The *clew point* shall not extend aft of the forward edge of the main boom measurement band.
- 6.3.11 *Quarter*, *half* and *three-quarter widths* shall not exceed the dimensions given in the diagram.

6.4 Headsails

6.4.1 Jib

- a) When the jib is held on the centreline the *tack point*, *head point* and any part of a luff spar shall not fall outside a straight line between the middle mast measurement band and the fore triangle measurement mark.
- b) A boom is permitted but it shall not extend aft of the fore side of the mast.
- c) The cross width measured from the mid point of the *luff* to the nearest point on the *leech* shall not exceed $0.5 J + 50$ mm.

6.4.2 Other Headsails

- a) These have a cross width in excess of that permitted under 6.4.1.c.
- b) The *foot* length shall not exceed $2 J$.
- c) These sails shall not be set on a boom.
- d) Battens are not permitted.
- e) The attachment points of the head and tack shall not fall outside a straight line between the middle mast measurement band and the fore triangle measurement mark.
- f) When set other headsails or jibs shall be removed or furled.

6.5 Spinnakers

- 6.5.1
 - a) A headboard with maximum width and height not exceeding $0.05 J$ is permitted.
 - b) The *head point* shall be taken as the mid point where the spinnaker is $0.05 J$ wide.
 - c) The length of the *leeches* shall not exceed the height of the fore triangle, I .
 - d) The *foot*, *quarter*, *half* and *three-quarter widths* shall not exceed $2J + 152$ mm
 - e) The *half width* shall not be less than $J + 100$ mm.
 - f) Battens are not permitted.
- 6.5.2 A spinnaker may be attached by the head, clew and tack only.
- 6.5.3 The attachment point of the head shall not be outside a straight line between the middle mast measurement band and the fore triangle measurement mark.

6.6 Identification Marks

- 6.6.1 Sails shall carry identification marks in accordance with the IYRR.
- 6.6.2 The class insignia shall be the letter 'A', 25-28 mm in height, 20-22 mm in width and 5-7 mm in thickness.

6.7 Sail Area

- 6.7.1 The total measured sail area, S, is given by:

$$S = \frac{A \times B}{2} + \frac{0.85 \times I \times J}{2}$$

where

A, Mainsail Luff, is measured from the upper edge of the lower mast measurement band to the lower edge of the upper mast measurement band.

B, Luff Perpendicular, is measured from the forward edge of the main boom measurement band to the nearest point on the aft side of the mast above the lower mast measurement band, except when the mainsail has a *double luff*.

When the mainsail has a *double luff*, the luff perpendicular is measured from the forward edge of the main boom measurement band to the nearest point on the fore side of the mast above the lower mast measurement band.

I, Fore Triangle Height, is measured from the lower edge of the middle mast measurement band to the deck.

J, Fore Triangle Base, is measured from the forward edge of the deck mast measurement mark to the aft edge of the fore triangle measurement mark.

7 EQUIPMENT

7.1 Replacements

- 7.1.1 The boat shall sail with the mast, main boom, appendages and ballast as measured. In the case of authentic damage or loss during an event, replacements may be used provided they are substantially the same as the originals. No replacements shall be made until authorised by the race committee.

8 ADDITIONAL RULES

8.2 Owner's Flag

- 8.2.1 The owner's racing flag, rectangular in shape and of minimum dimensions 70 mm wide by 60 mm high, shall be carried.

Effective 1 June 1994

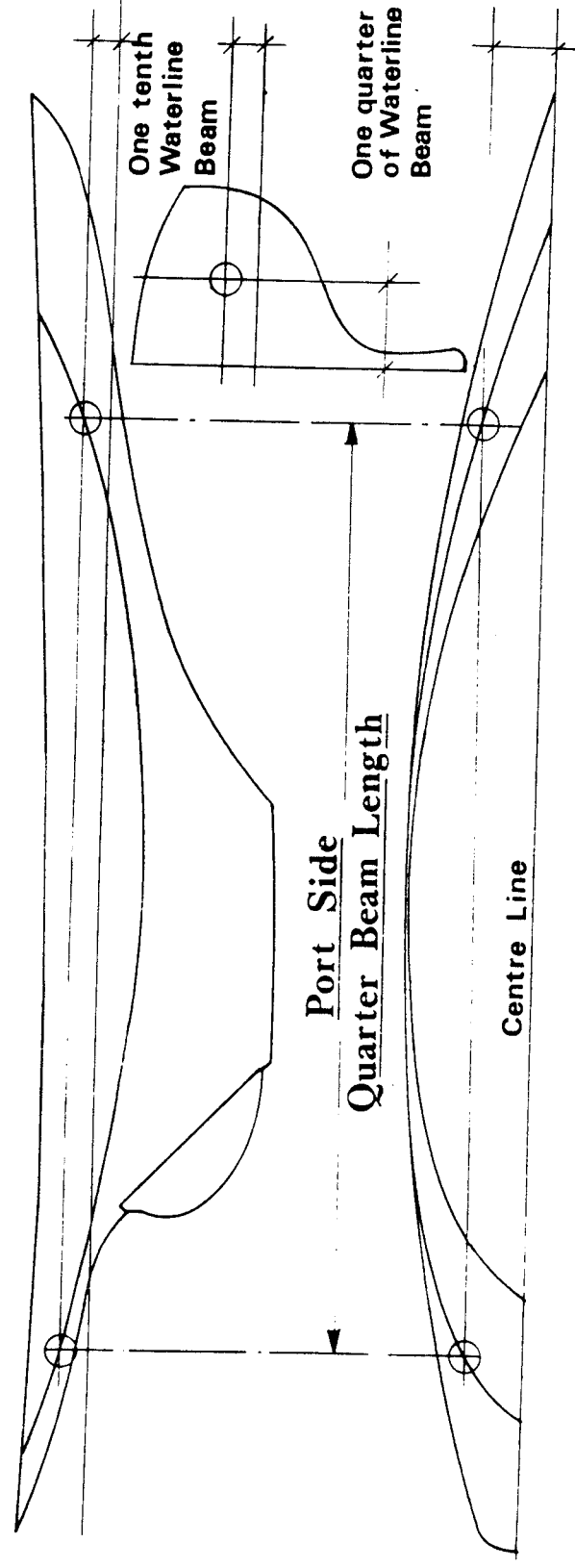
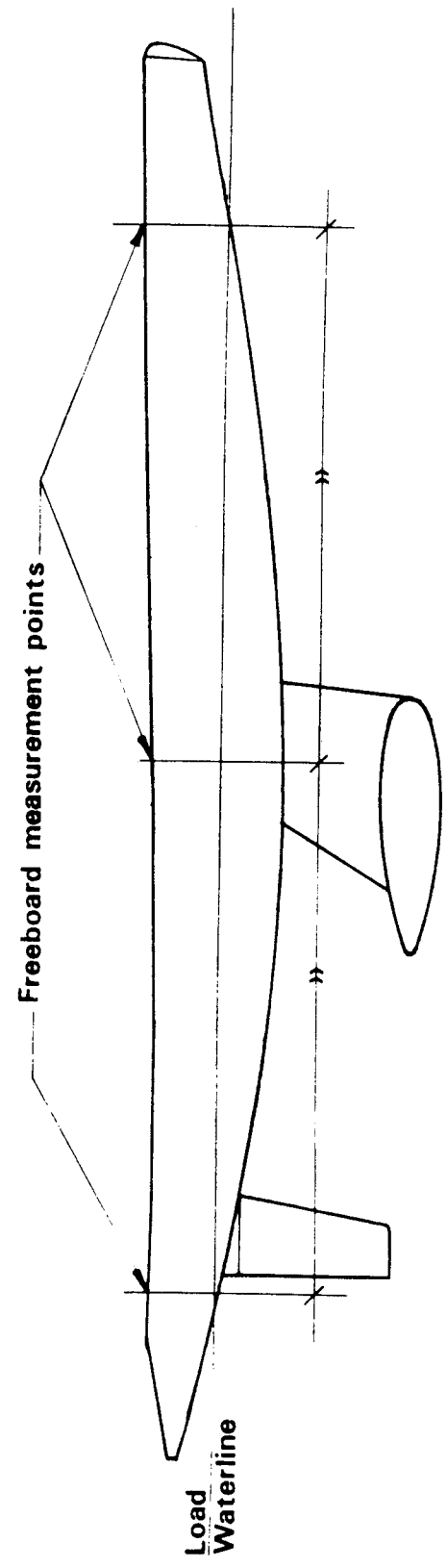


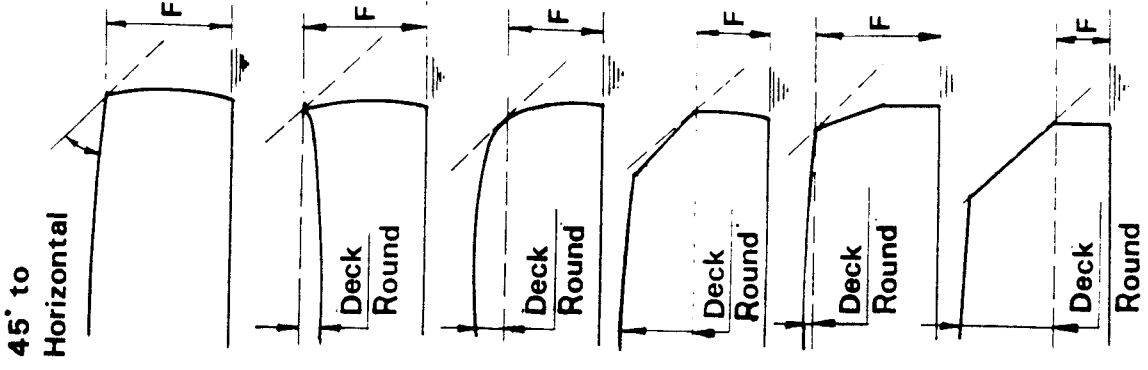
DIAGRAM 1

Quarter Beam Measurement Points



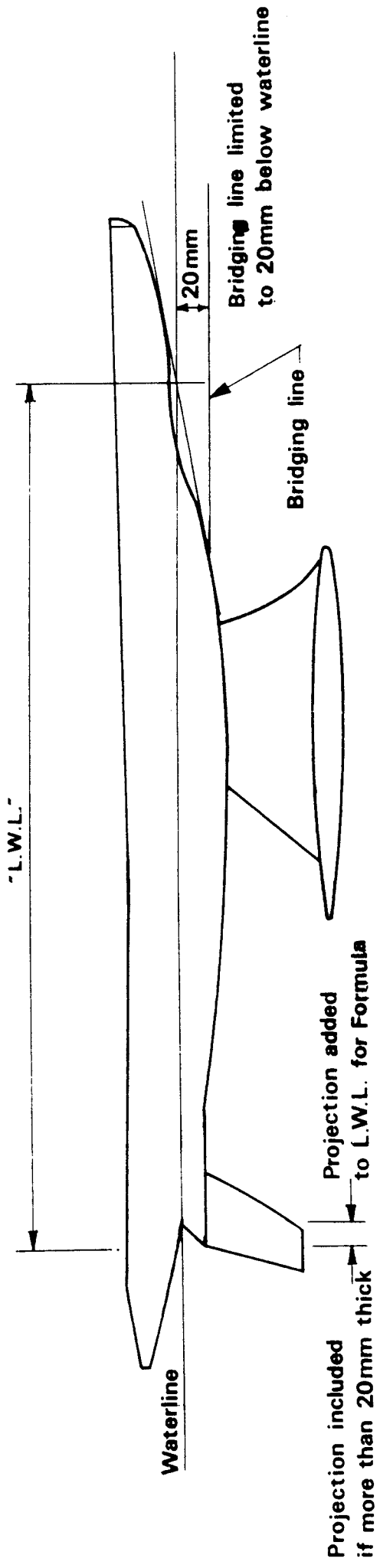
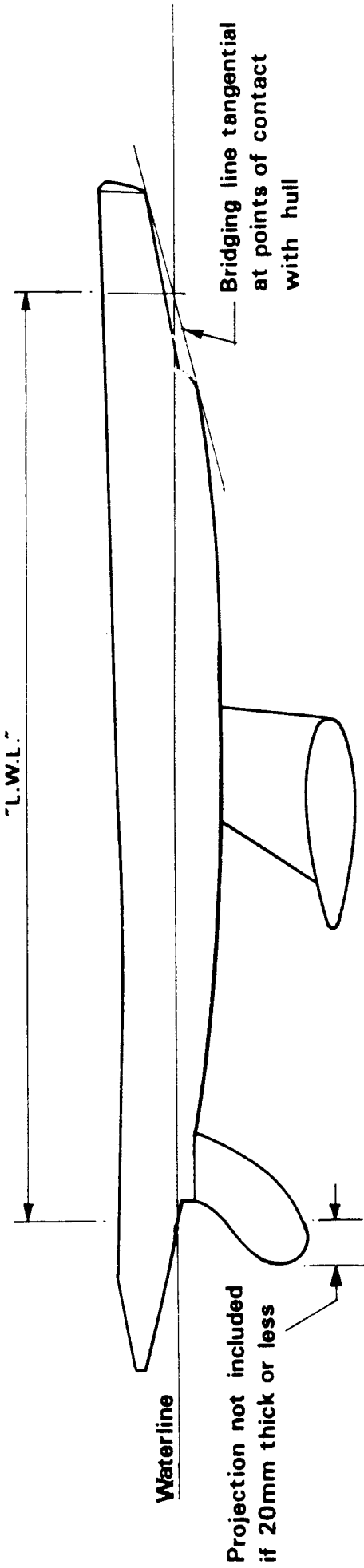
Freeboard Measurement Points

DIAGRAM 3

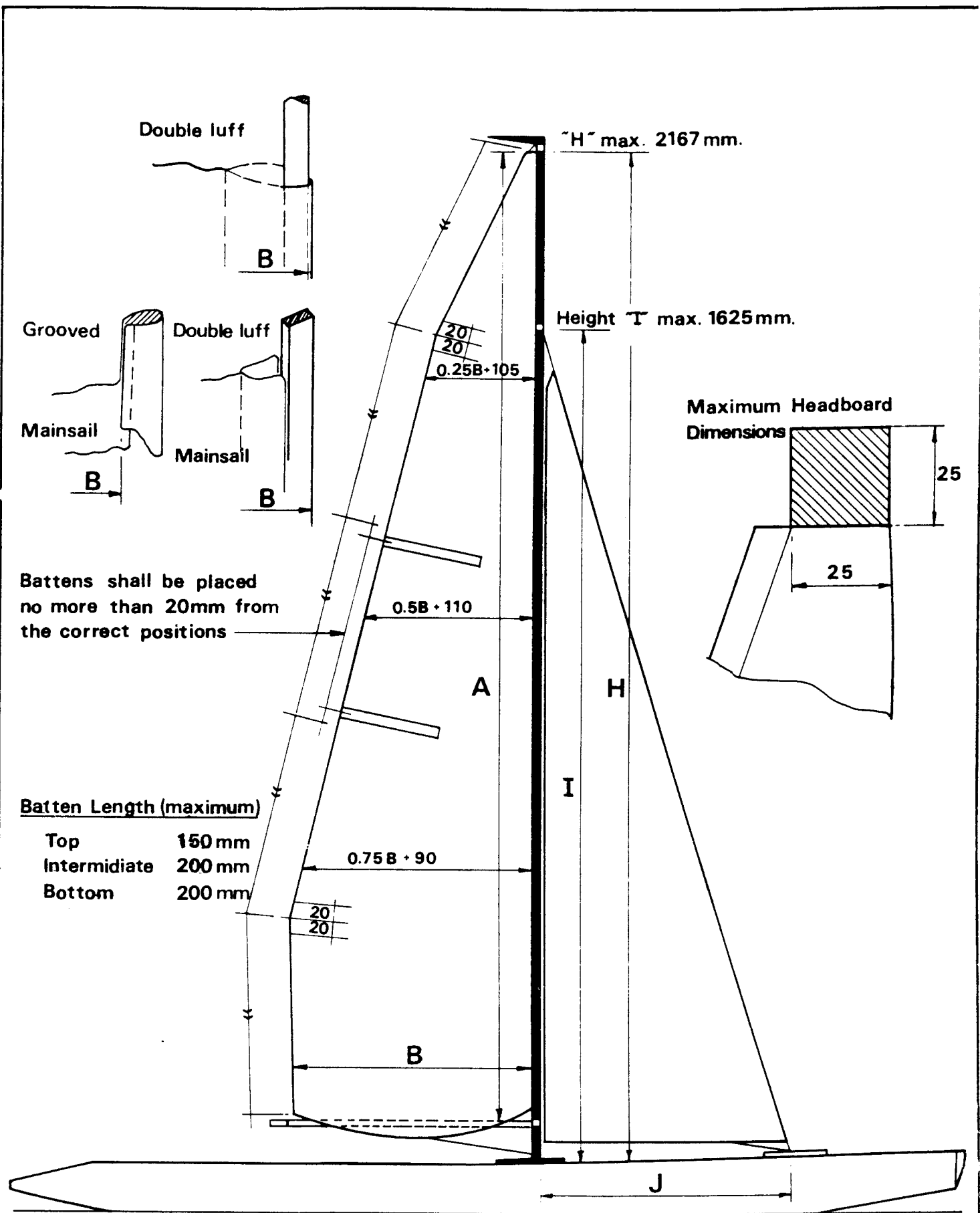


Freeboard

DIAGRAM 2



Measurement Waterline Length



Batten Length (maximum)

Top	150 mm
Intermediate	200 mm
Bottom	200 mm

Sail Measurement

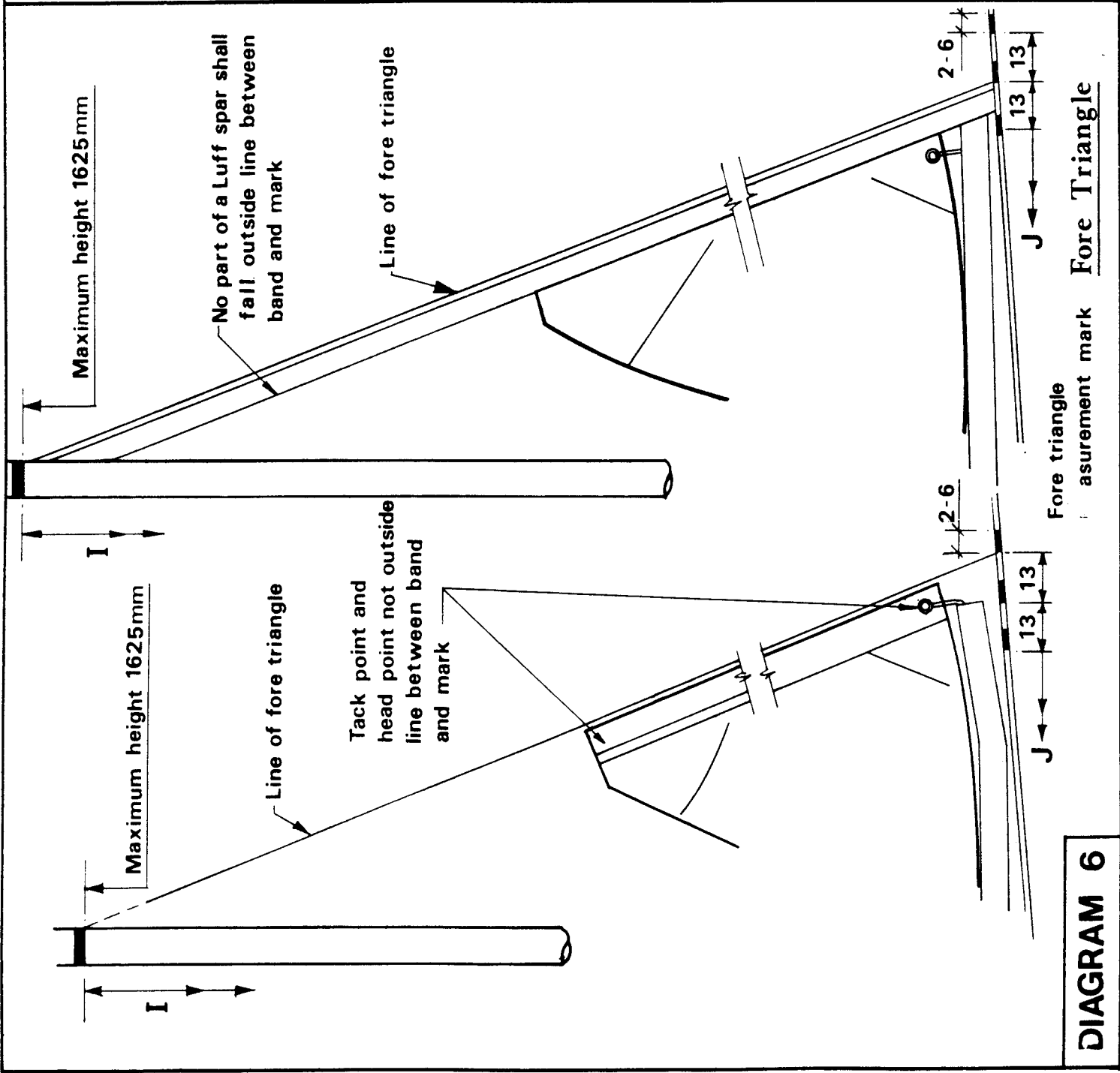


DIAGRAM 6

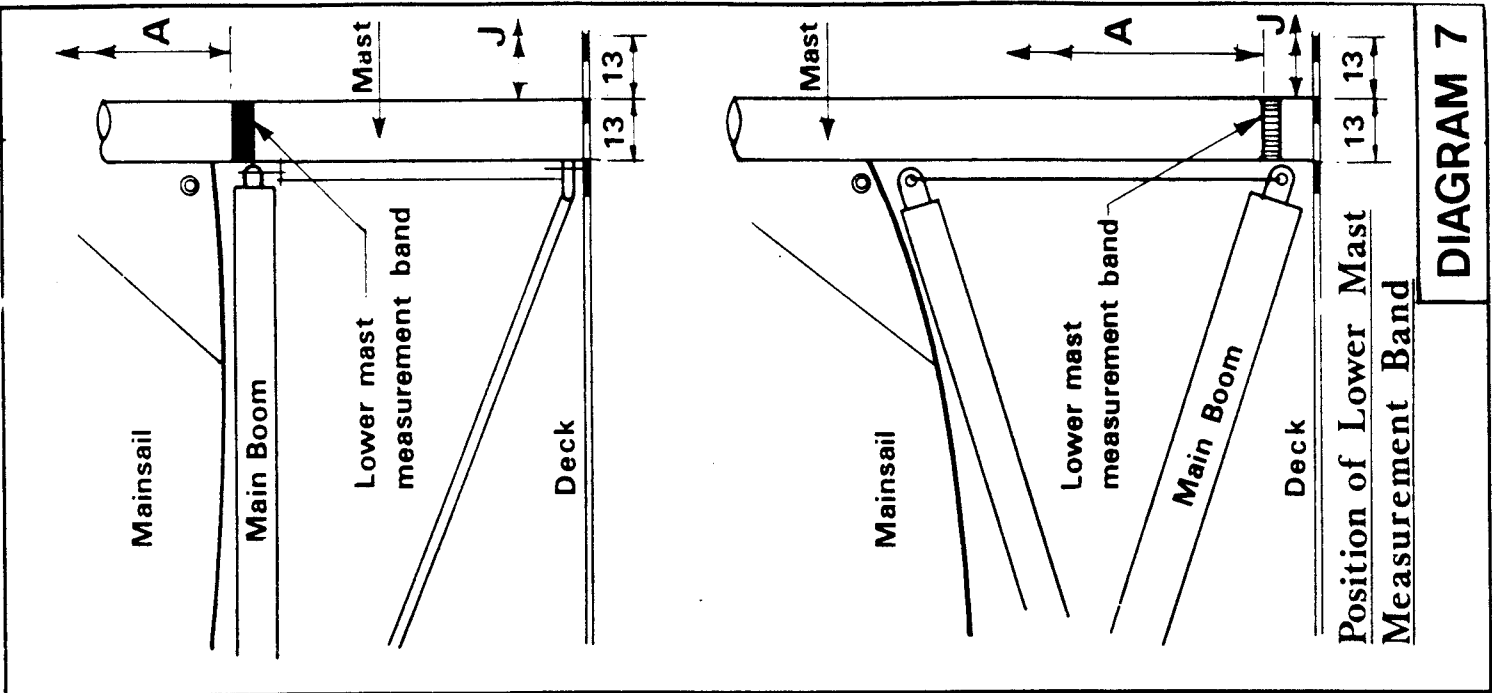


DIAGRAM 7