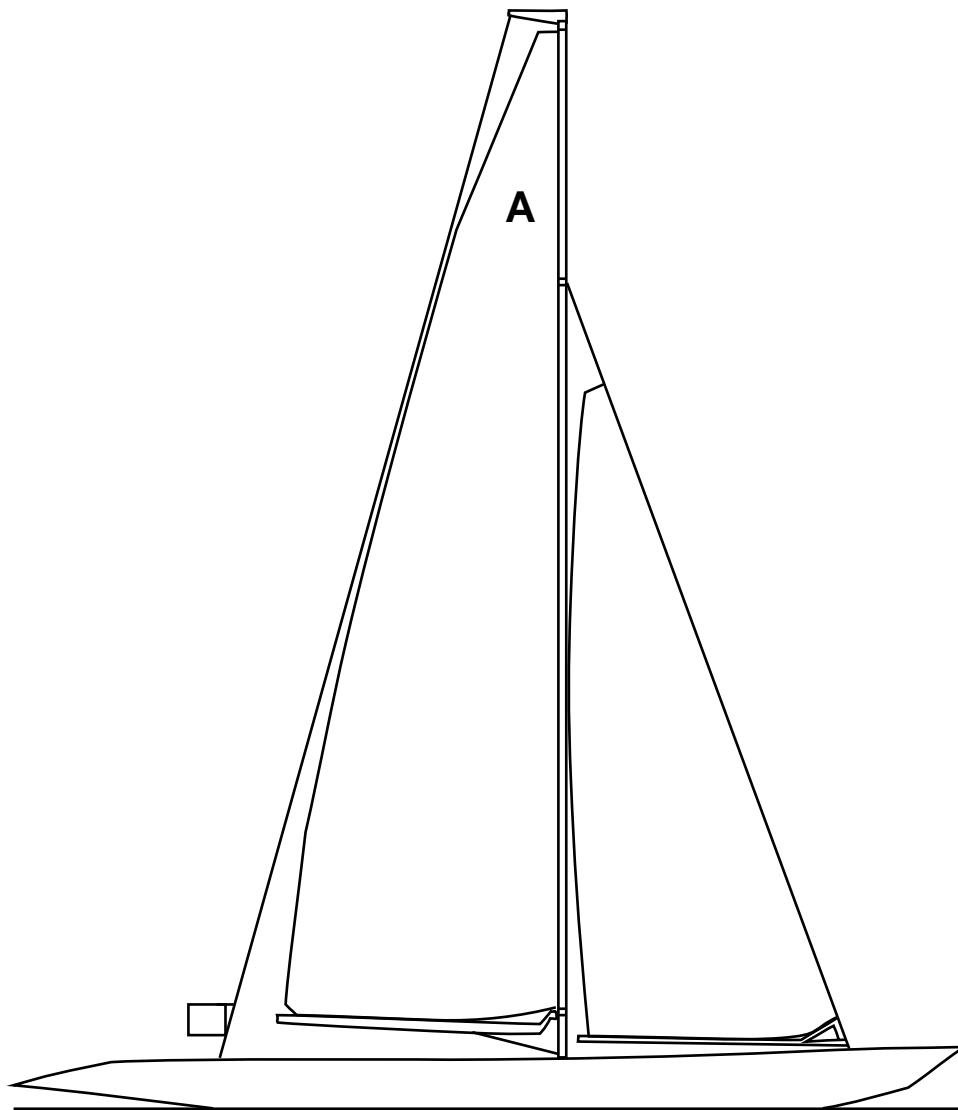




IRSA

A

# CLASS RULES 2020



The Yachting Monthly 6 Metre Class rating rule was devised in 1922 by Major Malden Heckstall-Smith and was adopted as the International A Class in 1927.

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# INTRODUCTION

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*This introduction only provides an informal background and the IRSA A Class class rules proper begin on the next page.*

## Certification and alterations

*A Class **hulls, hull appendages, rigs and sails** are **certified by certification control**.*

*A Class **hulls, hull appendages, rigs and sails** may, after initial **certification control**, only be altered to the extent permitted in Section C of the **class rules**.*

## Responsibility

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

*It is the responsibility of the owner and any other person in charge to ensure that a **boat** is maintained to comply with her **class rules** and that her **certificate** remains valid (RRS 78.1).*

## Deviations outside of tolerances

*When an **equipment inspector** or **official measurer** acting for the technical committee for an event decides that a **boat** does not comply with the **class rules**, RRS 60.4 (a)(2) obliges him to protest the boat.*

*When a protest committee finds that deviations in excess of tolerances specified in the **class rules** are not caused by normal wear and tear and/or do improve the performance of the **boat**, it shall penalise her.*

*When deviations between a **boat's** measurements and her **certificate** cannot be corrected as required by RRS 64.3 (a), a protest committee may consider accepting that the **boat** shall be brought into rating in another configuration before racing again.*

*If a protest committee decides that a **class rule** has been breached deliberately or knowingly by an owner, competitor, or support person it may call a hearing under rule 69.*

## Class rules

*The 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.*

*The **class rules** for the IRSA A Class are **open class rules** in which anything not specifically prohibited by the **class rules** is permitted. Individual rules may require, limit, or prohibit as necessary.*

# PART 1 – 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 Except where used in headings, when a term is printed in “**bold**” the definition in the current ERS applies, when a term is printed in “*italics*” the definition in the RRS applies, and when a term is printed “underlined” the definition in these **class rules** applies.

### A.1.4 DEFINITIONS

<u>Deck datum point</u>	The intersection of a transverse line, minimum 50 mm long, engraved in, bonded in or moulded into a non-removable part of the deck, and the centreplane.
<u>Hull datum point</u>	The intersection of the <b>hull</b> profile and the outboard edge of the <b>rudder</b> stock.
<u>Spar</u>	The main structural part(s) of the <b>rig</b> to, or from, which <b>sails</b> are attached and/or supported.
<u>Mast position dimension K</u>	The distance between the <u>deck datum point</u> and the forward edge of the <b>mast deck limit mark</b> .
<u>Batten pocket point</u>	The intersection of the extended centreline of the <b>batten pocket</b> , or batten if there is no <b>batten pocket</b> , and the <b>leech</b> .

### A.2 ABBREVIATIONS

- A.2.1 WS World Sailing  
IRSA International Radio Sailing Association  
MNA WS Member National Authority  
DNM Designated National Member, IRSA Member  
ICA International Class Association  
NCA National Class Association  
ERS Equipment Rules of Sailing  
RRS Racing Rules of Sailing

### A.3 AUTHORITIES

- A.3.1 Where one does not exist, the functions of the ICA, as specified in these **class rules**, shall be carried out by the IRSA.
- A.3.2 The **class authority** is the IRSA which shall co-operate with the ICA in all matters concerning these **class rules**.

A.3.3 No legal responsibility with respect to these **class rules**, or accuracy of **certification**, rests with:

WS;  
the IRSA;  
any MNA;  
any DNM;  
the ICA;  
any NCA;  
any **certification authority**;  
any **official measurer**.

No claim arising from these **class rules** can be entertained.

A.3.4 Notwithstanding anything contained herein, the **certification authority** has the authority to withdraw a **certificate** and shall do so on the request of the IRSA.

#### **A.4 ADMINISTRATION OF THE CLASS**

A.4.1 The IRSA has delegated its administrative functions of the class to DNMs. A DNM may delegate part or all of its functions, as stated in these **class rules**, to an NCA.

A.4.2 In countries where there is no DNM, or the DNM does not wish to administer the class, its administrative functions as stated in these **class rules** shall be carried out by the ICA which may delegate the administration to an NCA.

#### **A.5 SAILING INSTRUCTIONS**

A.5.1 These **class rules** shall not be varied by sailing instructions except as provided by A.5.2.

A.5.2 At World or Continental Championships the sailing instructions may vary these **class rules** only with the agreement of the ICA.

#### **A.6 CLASS RULES AMENDMENTS**

A.6.1 Amendments to these **class rules** shall be proposed by the ICA, or a DNM, and require to be approved by the IRSA.

#### **A.7 CLASS RULES INTERPRETATION**

##### **A.7.1 GENERAL**

Interpretation of **class rules** shall be made in accordance with the IRSA Regulations.

##### **A.7.2 AT AN EVENT**

Any interpretation of **class rules** required at an event may be made by an international jury constituted in accordance with the RRS. Such interpretation shall only be valid during the event and the organising authority shall, as soon as practical after the event, inform the IRSA, the DNM, and the ICA.

## **A.8 HULL REGISTRATION NUMBERS**

- A.8.1 Registration numbers shall be issued by the **certification authority**.
- A.8.2 Registration numbers shall be issued in consecutive order starting at “1”.
- A.8.3 Each hull shall have a unique registration number which shall include the national letters and the **certification authority**’s sequential registration number. Under no circumstances may a registration number be used on a **hull** other than the **hull** on which it was first used.

## **A.9 HULL CERTIFICATION**

- A.9.1 For the **certification** of a **hull** all items required by the **certification control** form(s) to be **certified** shall be **certified** by an **official measurer** and the details entered onto the form(s).
- A.9.2 The **certification control** form(s), and **certification** fee if required, shall be sent to the **certification authority** in the country where the **hull** is to be registered within 4 weeks after completion of **certification**.
- A.9.3 Upon receipt of a satisfactorily completed **certification control** form(s) and **certification** fee if required within the 4 week time limit, the **certification authority** may issue a **certificate**.

## **A.10 VALIDITY OF CERTIFICATE**

- A.10.1 A valid **certificate** is issued using the IRSA approved **certification control** documentation in accordance with the procedures in A.9 and A.12. Certificates from other documentation or sources are invalid.
- A.10.2 A **certificate** becomes invalid upon:
  - (a) a change of ownership;
  - (b) withdrawal by the **certification authority**.

## **A.11 COMPLIANCE WITH CLASS RULES**

- A.11.1 A **boat** ceases to comply with the **class rules** upon:
  - (a) use of equipment that does not comply, or causes the **boat** not to comply, with limitations in the **class rules**;
  - (b) use of equipment that does not comply, or that causes the **boat** not to comply, with limitations recorded on the **certificate**;
  - (c) alteration or repair of equipment required by the **certification control** form(s) to be **certified**, except where permitted by the **class rules**;
  - (d) a change of **class rules** that causes equipment in use to cease to comply, except where the equipment may comply with the **class rules** in force at the time of its previous **certification**.
- A.11.2 A **boat** that has ceased to comply with the **class rules** may be brought into compliance:
  - (a) when limitations affecting the equipment are in the **class rules** or on the **certificate**  
by an **official measurer** carrying out **certification control** of affected equipment;

- (b) and otherwise

by replacing equipment that does not comply with the **class rules** or **certificate** with equipment that does comply.

## **A.12 HULL RE-CERTIFICATION**

A.12.1 A **hull** may be issued with a new **certificate**, showing dates of re-**certification** and initial **certification** as applicable:

- (a) when a **certificate** becomes invalid upon change of ownership by application of the new owner to the **certification authority** in the country where the **hull** is to be registered. The application shall include the old **certificate** and re-**certification** fee if required. In the case of an imported **hull** the **certification authority** shall request the **certification control** form(s) from the previous **certification authority** and a new **hull** registration number shall be issued;
- (b) when a **certificate** has been withdrawn, or when the **certificate** and **certification control** form(s) cannot be located by application of the procedure in A.9;
- (c) when one or more alternative **certificates** are requested to be valid concurrently with an existing **certificate** by application of the procedure in A.9.

## **A.13 RETENTION OF CERTIFICATION DOCUMENTATION**

A.13.1 The **certification authority** shall:

- (a) retain the original documentation upon which the current **certificate** is based;
- (b) upon request, transfer this documentation to the new **certification authority** if the **hull** is exported.

# **Section B – Boat Eligibility**

For a **boat** to be eligible for *racing*, it shall comply with the rules in this section.

## **B.1 CLASS RULES AND CERTIFICATION**

B.1.1 The **boat** shall:

- (a) be in compliance with the **class rules**;
- (b) have a valid **certificate**; and
- (c) have valid **certification marks** as required.

## **B.2 CLASS ASSOCIATION MARKINGS**

B.2.1 A valid Class Association Sticker, if required by the NCA or the ICA, shall be affixed to the **hull** in a conspicuous position.

# PART 2 – REQUIREMENTS AND LIMITATIONS

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The competitor and the **boat** shall comply with the rules in Part 2 when *racing*. In case of conflict Section C shall prevail.

Conformity with rules of Section C is not checked as part of **certification control**.

The rules of Part 2 are **open class rules** in which anything not specifically prohibited by the **class rules** is permitted. Individual rules may require, limit, or prohibit as necessary.

**Certification control** and **equipment inspection** at an event shall be carried out in accordance with the current ERS except where varied in Part 2.

## Section C – Conditions for Racing

### C.1 GENERAL

#### C.1.1 RULES

The following ERS rules shall not apply:

- (a) B.1.2 Mast Lower Limit Mark.
- (b) B.2 HEADSAIL BOOMS.

### C.2 COMPETITOR

#### C.2.1 LIMITATIONS

- (a) One competitor only shall control the **boat**.
- (b) The competitor shall not be substituted during an event.

### C.3 ADVERTISING

#### C.3.1 LIMITATIONS

The **boat** may display only such advertising as permitted by the WS Advertising Code.

### C.4 BOAT

#### C.4.1 MEASUREMENT TRIM

When checked as in H.2.1:

- (a) the forward flotation waterline length measurement point shall fall at or aft of the forward flotation waterline length **limit mark**;
- (b) the aft flotation waterline length measurement point shall fall at or forward of the aft flotation waterline length **limit mark**;
- (c) if applicable the forward **certified** waterline length measurement point shall fall at or aft of the forward **certified** waterline length **limit mark**;
- (d) if applicable the aft **certified** waterline length measurement point shall fall at or forward of the aft **certified** waterline length **limit mark**.



#### C.4.2 LIMITATIONS

- (a) The **boat** shall sail with the **hull**, **hull appendages**, and **ballast** used at the **certification control** relating to the **certificate** used for the event.
- (b) The **boat** shall sail with the **mast spar** and **main boom spar** used at the **certification control** relating to the **certificate** used for the event.
- (c) The boat, **rig**, and **sails** shall comply with the dimensions recorded on the **certificate** used for the event.

### C.5 HULL

#### C.5.1 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) Except for fittings the geometry of the **hull** shell shall not be changed during an event.
- (b) The **hull** may be altered subject to C.4, C.5.1(a), and the rules of Section D.

#### C.5.2 IDENTIFICATION

The **hull** registration number shall be displayed on the external surface of the **hull** clearly and legibly with a minimum height of 20 mm.

### C.6 HULL APPENDAGES

#### C.6.1 MODIFICATIONS, MAINTENANCE AND REPAIR

The **hull appendages** may be altered subject to C.4 and the rules of Section E.

#### C.6.2 LIMITATIONS

When a **hull appendage** has been lost or damaged beyond repair any replacement may be made only with the approval of the race committee.

#### C.6.3 USE

The **hull appendages**:

- (a) shall not be moved, articulated, retracted, or extended; and,
- (b) except for **rudder(s)** and/or **trim tab(s)** which may each rotate about a single axis, shall not be rotated.

### C.7 RIG

#### C.7.1 MODIFICATIONS, MAINTENANCE AND REPAIR

The **rig** may be altered subject to C.4.2, C.7, and the rules of Section F.

#### C.7.2 LIMITATIONS

When the **mast spar** and/or **main boom spar** has been lost or damaged beyond repair any replacement may be made only with the approval of the race committee.

#### C.7.3 MAST

The forward edge of the **mast spar** at the deck shall not be more than 13 mm from the forward edge of the **mast deck limit mark**.

#### C.7.4 MAIN BOOM

The intersection of the aft edge of the **mast spar** and the **main boom spar** datum line, each extended as necessary, shall not be below the upper edge of the **mast lower limit mark**. Figure J.10.

#### C.7.5 HEADSAIL BOOM

The **headsail boom** shall not extend aft of the foreside of the **mast**.

#### C.7.6 HEADSAIL BOOM COUNTER BALANCE WEIGHT

RRS 51 is changed to the extent that the position of the **headsail boom** counterbalance weight may be changed.

### C.8 SAILS

#### C.8.1 MODIFICATIONS, MAINTENANCE AND REPAIR

The **sails** may be altered subject to C.4.2 and the rules of Section G.

#### C.8.2 LIMITATIONS

- (a) The **mainsail luff** length shall not be less than 1390 mm.
- (b) The minimum B dimension with which the **mainsail** complies shall not exceed the B dimension for the **boat**.
- (c) The minimum J dimension with which the **headsail** complies shall not exceed the J dimension for the **boat**.

#### C.8.3 MAINSAIL

##### (a) IDENTIFICATION

- (1) Sail identification marks shall comply with the IRSA Supplementary Class Rules.
- (2) The class insignia shall be the letter "A" of dimensions: height 25-30 mm, width 20-25 mm, thickness 5-7 mm. The insignia shall be placed above the **three quarter width**.

##### (b) USE

- (1) The **tack point**, projected at 90° to the **mast spar**, shall not be set below the upper edge of the **mast lower limit mark**.
- (2) **Luff** ropes shall be in the **spar** grooves or tracks.
- (3) One **mainsail** shall be set when *racing*.
- (4) The **sail** shall not be reefed.

#### C.8.4 HEADSAIL

##### (a) IDENTIFICATION

Sail identification marks shall comply with the IRSA Supplementary Class Rules.

##### (b) USE

- (1) When the **headsail** is held on the centreplane it shall not extend forward of a straight line between the foretriangle height **limit mark** and a point on the deck distance J forward of the forward edge of the **mast spar**.

- (2) The **headsail tack**, **headsail luff spar**, or **headsail boom** swivel shall be attached approximately on the centreplane of the **hull**.
- (3) The **clew** shall be attached to the **headsail boom spar**.

## C.9 EQUIPMENT

### C.9.1 PROHIBITED

- (a) Except where achieved by mechanical systems, automated control of **rig** and/or **sails**.
- (b) Except where achieved by mechanical systems, automated steering and/or navigation.
- (c) On board camera(s).
- (d) The use of pictures from any source while *racing*.
- (e) Except for the establishment and maintenance of a radio control link, control unit positioning information, signal strength, and battery status information, radio transmissions from the **boat** while *racing*.

### C.9.2 USE

During an event, remote control and related equipment:

- (a) if temporarily removed shall be refitted in the same position;
- (b) if replaced, shall be replaced by equipment of similar weight.

### C.9.3 OWNER'S FLAG

The owner's racing flag, rectangular in shape and of minimum dimensions 70 mm wide x 60 mm high shall be flown in the **rigging** when *racing*.

## C.10 EQUIPMENT INSPECTION

### C.10.1 AT AN EVENT

- (a) When **equipment inspection** or **certification control** is carried out at an event without access to full **certification control** equipment, the **boat** shall comply with the **class rules** and **certificate** within the following tolerances:

	lower tolerance	upper tolerance
<b>Rig</b> and <b>sail</b> dimensions	no lower limit	0
<u>Mast position dimension, K</u>	minus 1	1
<b>Hull</b> datum point to FLWL <b>limit mark</b> , M	minus 1	1
Boat weight in <b>measurement trim</b>	minus 0.1 kg	0.1 kg
Flotation waterline length, FLWL	minus 3	3
<b>Certified</b> waterline length, MLWL	minus 3	3
Draught, measured to flotation waterline length <b>limit marks</b>	no lower limit	2
Freeboard, measured to flotation waterline length <b>limit marks</b>	minus 2	no upper limit

- (b) When **equipment inspection** or **certification control** is carried out at an event with full **certification control** equipment, the **boat** in **measurement trim** shall comply with the **class rules** and **certificate** within the tolerances in C.4.1, C.10.1 (a) and the following tolerances:

	lower tolerance	upper tolerance
Quarter beam length	no lower limit	5
Draught, measured to waterplane	no lower limit	1
Freeboard, measured to waterplane	minus 1	no upper limit
Rating, found from new measurements	no lower limit	5

- (c) When a **boat** does not comply with the tolerances in C.10.1(a) and C.10.1(b), unless RRS 64.3(a) applies:
- (1) it shall be corrected before *racing*, or a revised provisional **certificate** shall be issued;
  - (2) RRS 78.1 has been broken;
  - (3) the **boat** shall be penalised in any races in which she has taken part; and
  - (4) the competitor may be protested under RRS 69.

## Section D – Hull

### D.1 GENERAL

#### D.1.1 RULES

The **hull** shall comply:

- (a) with the **class rules** in force at the time of its initial **certification control**;  
or
- (b) with the **class rules** relating to its **certificate**; or
- (c) with the current **class rules**.

#### D.1.2 IDENTIFICATION

The **hull** registration number shall be marked in an easily visible location on a non-removable part of the **hull** by any of the following means: painting on, engraving in, bonding in, moulding in.

### D.2 HULL

#### D.2.1 MATERIALS

- (a) The forward 20 mm of the **hull** shall be made of elastomeric material.

- (b) Except in remote control equipment, the density of material shall not exceed that of lead (11,340 kg/m<sup>3</sup>)

#### D.2.2 CERTIFICATION CONTROL

- (a) Where there is concavity in the bow profile across the forward flotation waterline length measurement point, the **certified** waterline length measurement point shall be taken as the intersection of the waterplane and a bridging line. Figures J.3 and J.4.
- (b) If the bridging line contacts the bow profile more than 20 mm below the waterplane, the bridging line shall be shortened so that the lower point of contact of the bridging line with the **hull** is 20 mm below the waterplane. Figure J.3.
- (c) If any underwater part of the **hull** projects beyond the flotation waterline length **limit mark**, the projection shall be included in the **certified** waterline length. Figure J.2.
- (d) The port and starboard quarter beam lengths shall not differ by more than 25 mm.

#### D.2.3 CONSTRUCTION

- (a) The **hull** shall be a **monohull**.
- (b) Except for trunking for the **hull appendages** on every transverse section below the waterplane 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 centreplane.
- (c) 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.
- (d) With the following exceptions, hollows in the surface of the **hull** between the waterplane and a distance 10 mm below the sheerline are prohibited:
  - (1) hollows forward of the forward flotation waterline length measurement point;
  - (2) hollows which do not exceed 2 mm in depth when checked with a straight edge 300 mm long;
  - (3) 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 or the waterline beam measurement points.
- (e) Except as in (f) the positive or negative 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. Figure J.6.
- (f) Local projections, hollows, recesses and voids in the deck, no bigger than are reasonably required for their purpose, are permitted for the following:
  - (1) a handle,
  - (2) the **mast**
  - (3) a **headsail** luff spar and its fittings,

- (4) access to rc equipment,
- (5) deck edge rail.
- (g) The deck datum point shall be aft of the **mast**.

#### D.2.4 LIMIT MARKS

- (a) **Limit marks** shall:
  - (1) contrast strongly with the colour of the surface they are placed on;
  - (2) be of uniform width between 2 mm and 6 mm wide;
  - (3) be long enough to be clearly visible when the **boat** is afloat.
- (b) Placement of **limit marks**
  - (1) The forward flotation waterline length **limit mark** shall be placed on the **hull** shell with the aft edge at or forward of the forward flotation waterline length measurement point.
  - (2) The aft flotation waterline length **limit mark** shall be placed on the **hull** shell with the forward edge at or aft of the aft flotation waterline length measurement point.
  - (3) The **mast** deck **limit mark** shall be placed on the deck with the forward edge at the **mast** measurement point.
  - (4) Where it is possible to move the **mast** fore and/or aft, additional **limit marks** shall be placed 13 mm fore and/or aft of the **mast** deck **limit mark** and foretriangle deck **limit mark**.
  - (5) The foretriangle deck **limit mark** shall be placed on the deck with the aft edge at the foretriangle deck measurement point.
- (c) Where there are projections beyond the flotation waterline length, as in D.2.2 and E.3, **certified** waterline length **limit marks** shall be placed on the **hull** shell as follows:
  - (1) The forward **certified** waterline length **limit mark** shall be placed with the aft edge at or forward of the forward **certified** waterline length measurement point.
  - (2) The aft **certified** waterline length **limit mark** shall be placed with the forward edge at or aft of the aft **certified** waterline length measurement point.

## Section E – Hull Appendages

### E.1 PROHIBITED

- (a) **Hull appendages** that join the **hull** more than 25 mm from the centreplane.
- (b) **Hull appendages** that join the **hull** aft of the aft flotation waterline length **limit mark**.
- (c) **Hull appendages** that join the **hull** forward of the point where the bow profile is 20 mm below the waterplane.

- (d) **Hull appendages** that cut the waterplane outboard of the flotation waterline length **limit marks**.
- (e) **Hull appendages** that extend outboard of the maximum beam.
- (f) **Ballast** with a higher density than that of lead (11,340 kg/m<sup>3</sup>).

## E.2 RULES

The **hull appendages** shall comply:

- (a) with the **class rules** in force at the time of its initial **certification control**; or
- (b) with the **class rules** relating to its **certificate**; or
- (c) with the current **class rules**.

## E.3 CERTIFICATION CONTROL

Where a **hull appendage** has a maximum thickness of more than 20 mm and it projects beyond the flotation waterline length **limit mark**, the projection shall be included in the **certified** waterline length. Figure J.1.

# Section F – Rig

## F.1 PARTS

A **rig** shall consist of no more than:

- (a) one **mast**,
- (b) one **headsail luff spar** and its fittings,
- (c) one **main boom spar** and its kicking strap/strut arrangement,
- (d) one **headsail boom spar** and its kicking strap/strut arrangement,
- (e) **standing rigging**,
- (f) **running rigging**,
- (g) wind indicators and owner's flag.

## F.2 GENERAL

### F.2.1 RULES

- (a) The **spars** and their fittings shall comply either with the **class rules** in force at the time of the initial **certification control** of the **hull** or with the current **class rules**.
- (b) The **standing rigging** and **running rigging** shall comply with the current **class rules**.
- (c) The kicking strap(s)/strut(s) may work in compression.

## F.2.2 CERTIFICATION CONTROL

Using the method given in the ERS, the **mast spar** curvature shall be tested between the foretriangle height **limit mark** and the point where the **mast** cuts the deck or the lowest point of the **mast** whichever is higher.

## F.3 MAST

### F.3.1 CONSTRUCTION

- (a) Rotating fairings and rotating **masts** are prohibited.
- (b) Any fitting that is faired into the spar shall be considered to be part of the spar.
- (c) No fitting shall be bigger than is reasonably required for its purpose.

### F.3.2 DIMENSIONS

	minimum	maximum
<b>Mast spar</b> curvature as defined in F2.3	minus 10	10
<b>Upper point</b> to mast deck <b>limit mark</b> , H		2167
Foretriangle height <b>limit mark</b> to deck <b>limit mark</b> , I		1625
<b>Limit mark width</b>	2	6

### F.3.3 LIMIT MARKS

- (a) **Limit marks** shall be of uniform width and contrast strongly with the colour of the surface they are placed on.
- (b) The following **limit marks** shall be applied to the **mast**:
  - (1) an **upper limit mark**;
  - (2) a foretriangle height **limit mark**;
  - (3) a **lower limit mark**.

## F.4 MAIN BOOM

### F.4.1 DEFINITION

The **main boom spar** datum line is taken through the upper edge of the spar. Figure J.9.

### F.4.2 CONSTRUCTION

- (a) Any fitting faired into a spar shall be considered to be part of the spar.
- (b) No fitting shall be bigger than is reasonably required for its purpose.

### F.4.3 DIMENSIONS

When measured at any point on the spar, the **boom spar cross section**, taken perpendicular to the **main boom spar** datum line shall not exceed the following:

	maximum
<b>Vertical boom spar cross section</b>	25
<b>Transverse boom spar cross section</b>	25



## Section G – Sails

### G.1 SAIL PLAN

The sail plan shall consist of one **mainsail** and, optionally, one **headsail**.

### G.2 GENERAL

#### G.2.1 RULES

The **sails** shall comply either with the **class rules** in force at the time of their initial **certification control** or with the current **class rules**.

#### G.2.2 CERTIFICATION

The **official measurer** shall **certify sails** and add the following marks at the **tack**:

- (a) the date of **certification control**;
- (b) on **mainsails**, mark the smallest B dimension with which the **sail** complies;
- (c) on **headsails**, mark the smallest J dimension with which the **sail** complies.

#### G.2.3 CERTIFICATION CONTROL AND EQUIPMENT INSPECTION

- (a) During **certification control** and **equipment inspection**:
  - (1) battens need not be removed;
  - (2) stays not exceeding 2 mm in diameter inside luff **tabling** need not be removed;
  - (3) tell tales overlapping the **sail edges** shall be ignored.
- (b) The **luff perpendicular**, **quarter width**, **half width** and **three-quarter width** shall be taken:
  - (1) on a **sail** with the **luff** set in a track in the spar: to the aft edge of the spar;
  - (2) on other **sails**: to the **luff**;
  - (3) discontinuous attachments on the **luff** shall be disregarded provided their total length measured along the **luff** does not exceed 10% of the **luff** length and the longest attachment is no more than twice the shortest;
  - (4) with hollows in the **leech** and/or **luff** bridged using the method described in the ERS H.5.2.
- (c) ERS G.4.1 is changed by adding the following:

Alternatively the **clew point** may be defined by a mark on the **sail edge**.
- (d) ERS G.4.3 is changed by adding the following:

Alternatively the **tack point** may be defined by a mark on the **sail edge**.
- (e) Parts of **stiffening** at the head which are less than 2 mm in diameter and not covered by sail material shall not be taken as parts of the **sail**.

### G.3 MAINSAIL

#### G.3.1 HEADBOARD LIMIT ZONE

The headboard limit zone extends 25 mm fore and aft and 25 mm in height. The maximum distance from the forward edge of the zone to the **head point** is limited to:

- (a) on a **double luff sail**, 15 mm;
- (b) on a **sail** with a luff rope, 5 mm;
- (c) on other **sails**, zero.

#### G.3.2 CONSTRUCTION

- (a) The construction shall be: **soft sail**.
- (b) The **sail** shall be trilateral bounded by the **luff**, **foot** and **leech**.
- (c) The **sail** shall have no more than four battens or **batten pockets** in the **leech**.
- (d) The **sail** may have **stiffening** at the **head** not extending outside of the headboard limit zone. Figure J.7.
- (e) The **leech** shall not extend more than 10 mm aft of straight lines between:
  - (1) the upper aft corner of the headboard limit zone and the upper batten pocket point;
  - (2) the **clew point** and the lower batten pocket point.
- (f) The **foot** shall not extend more than 25 mm below a straight line between the **tack point** and the **clew point**.

### G.3.3 DIMENSIONS

	minimum	maximum
<b>Luff perpendicular</b> where <b>sail</b> and <b>hull</b> are <b>certified</b> before 2016	-	B + 10
<b>Luff perpendicular</b> in other cases	-	B
<b>Quarter width</b>	-	0.75 B + 90
<b>Half width</b>	-	0.5 B + 110
<b>Three-quarter width</b>	-	0.25 B + 105
Aft edge of headboard limit zone to <b>aft head point</b>	-	10
Batten length		
uppermost batten	-	150
other battens	-	200
Batten width	-	25
Variation in the following measurements: between <b>clew point</b> and adjacent <u>batten pocket point</u> , between <u>batten pocket point</u> and adjacent <u>batten pocket point(s)</u> , between <b>head point</b> and adjacent <u>batten pocket point</u> .		40

## G.4 HEADSAIL

### G.4.1 CONSTRUCTION

The construction shall be: **soft sail**.

### G.4.2 DIMENSIONS

	minimum	maximum
<b>Half width</b>	none	0.5 J + 50

# PART 3 – APPENDICES

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The rules in Part 3 comprise **open class rules** where anything not specifically prohibited is permitted and **closed class rules** where anything not specifically permitted is prohibited.

**Certification control** and **equipment inspection** at an event shall be carried out in accordance with the current ERS except where varied in Part 3.

## Section H – Rating and Definitions

### H.1 RATING FORMULA

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

where Rating shall be no greater than 1000 mm  
L is the **CERTIFIED LENGTH** in mm  
S is the **CERTIFIED SAIL AREA** in mm<sup>2</sup>  
D is the **DISPLACEMENT** in mm<sup>3</sup>  
Penalties are as given in H.4

### H.2 MEASUREMENT TRIM

H.2.1 The waterplane shall be determined with the boat floating in **measurement trim** as follows:

- (a) in fresh water, rigged, in sailing condition and dry;
- (b) no **sails** on board;
- (c) a 100 gram weight placed with its centre of gravity at the **mast deck limit mark**;
- (d) the **mast spar** vertical with its fore side at the **mast** measurement point;
- (e) the heaviest **headsail boom spar**, heaviest **headsail luff spar** if used, their fittings and **rigging**;
- (f) slack **standing rigging**.

H.2.2 Except where specified otherwise, the definitions and the measurements used to determine the rating shall relate to the waterplane established with the boat in **measurement trim**.

### H.3 BOAT WEIGHT

H.3.1 The boat weight shall be determined in **measurement trim**.

### H.4 LIMITATIONS AND PENALTIES

H.4.1 CERTIFIED SAIL AREA

The **certified** sail area is found as: 
$$S = \frac{A \times B}{2} + \frac{0.85 \times I \times J}{2}$$

where A is the distance between the **mast upper limit mark** and the **mast lower limit mark**,  
B is the largest permitted **mainsail luff perpendicular**,  
I is the distance between the deck and the foretriangle **limit mark**,  
J is the distance between the **mast deck limit mark** and the foretriangle deck **limit mark**.

#### H.4.2 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 MLWL + 25 mm;
- (b) where the actual value of  $\sqrt[3]{D}$  is less than 0.2 MLWL + 10 mm, then the deficit shall be subtracted from the actual value to obtain the value of  $\sqrt[3]{D}$  used in the rating formula;
- (c) the value of  $\sqrt[3]{D}$  used in the formula shall not be less than zero.

#### H.4.3 DRAUGHT

The maximum draught without penalty is 0.16 MLWL + 89 mm. Three times any excess shall be included in the rating.

#### H.4.4 FREEBOARD

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

#### H.4.5 QUARTER BEAM LENGTH

The maximum QBL without penalty is a percentage of the MLWL where the percentage is  $100 - \sqrt{0.02 \text{ MLWL}}$ . Half any excess shall be added to the MLWL to give the **certified** length, L. Figure J.11.

### H.5 DEFINITIONS

#### GENERAL

##### H.5.1 WATERPLANE

The waterplane is the water surface level remote from the **hull** when in **measurement trim**.

##### H.5.2 DECK EDGE

The deck edge is taken as the lowest point of contact between the **hull**, ignoring any local projections as in D.2.3(f), and a tangent at 45 degrees to the horizontal.

##### H.5.3 SHEERLINE

The sheerline is the deck edge seen in profile.

#### H.5.4 PROFILE

The side-view of the **boat** viewed as if from infinity.

#### MEASUREMENT POINTS

##### H.5.5 FLOTATION WATERLINE LENGTH MEASUREMENT POINTS

The forward and aft flotation waterline length measurement points are where the bow and stern profiles of the **boat** cross the waterplane.

##### H.5.6 CERTIFIED WATERLINE LENGTH MEASUREMENT POINTS

(a) The forward **certified** waterline length measurement point is on the bow profile

(1) vertically above the point where the bridging line crosses the waterplane as in D.2.2(a) and D.2.2(b), or

(2) vertically above the forward most extension of any underwater projection as in D.2.2(c),

whichever is more forward.

(b) The aft **certified** waterline length measurement point is on the stern profile vertically above the aftermost extension of any projections as in D.2.2(c) and E.3.

##### H.5.7 FREEBOARD MEASUREMENT POINTS

The freeboard measurement points are the deck edges above the forward and aft **certified** waterline length measurement points and at a point midway between them.

##### H.5.8 WATERLINE BEAM MEASUREMENT POINTS

The waterline beam measurement points are located in the waterplane at the point of maximum waterline beam.

##### H.5.9 QUARTER BEAM MEASUREMENT POINTS

The quarter beam measurement points are located on the external surface of the **hull** shell one tenth of the waterline beam above the waterplane and one quarter of the waterline beam from the centreplane.

##### H.5.10 MAST MEASUREMENT POINT

The **mast** measurement point is on the deck, on the centreplane, distance  $K$  forward of the deck datum point and at the leading edge of the **mast spar** when vertical as in H.2.1.

##### H.5.11 FORETRIANGLE DECK MEASUREMENT POINT

The foretriangle deck measurement point is on the deck, on the centreplane and distance  $J$  forward of the **mast** measurement point.

#### MEASUREMENTS

##### H.5.12 DRAUGHT FOR CERTIFICATION CONTROL

The draught for **certification control** is taken from the lowest point of the **hull appendages** to the waterplane.

#### H.5.13 DRAUGHT FOR EQUIPMENT INSPECTION

The draught for **equipment inspection** is taken from the lowest point of the **hull appendages** to a line between the flotation waterline length **limit marks**.

#### H.5.14 DISPLACEMENT (D)

The displacement in mm<sup>3</sup> is the boat weight in kilograms multiplied by 1,000,000.

#### H.5.15 FREEBOARD (F)

The freeboard is the average of the heights above the waterplane of the freeboard measurement points.

#### H.5.16 WATERLINE BEAM

The waterline beam is the extreme beam at the waterplane.

### LENGTHS

#### H.5.17 FLOTATION WATERLINE LENGTH (FLWL)

The flotation waterline length is the distance between the forward and aft flotation waterline length **limit marks**.

#### H.5.18 CERTIFIED WATERLINE LENGTH (MLWL)

The **certified** waterline length is the distance between the forward and aft **certified** waterline length **limit marks**.

#### H.5.19 QUARTER BEAM LENGTH (QBL)

The quarter beam length is the mean distance between the forward and aft quarter beam measurement points.

#### H.5.20 CERTIFIED LENGTH (L)

The **certified** length is the **certified** waterline length, MLWL, plus half any QBL excess.

### H.6 MEASUREMENTS AND CALCULATIONS

#### H.6.1 Linear measurements of the following:

draught, freeboard, flotation waterline length, **certified** waterline length, quarter beam length, **rig** dimensions, **sail** dimensions,

shall be taken in millimetres and rounded up to the nearest whole number before being recorded on the **certificate**, used in subsequent calculations, or compared with a limiting value.

#### H.6.2 Maximum and minimum values of linear limitations in the **class rules** or **certificate** are in millimetres and shall be taken as absolute limiting values.

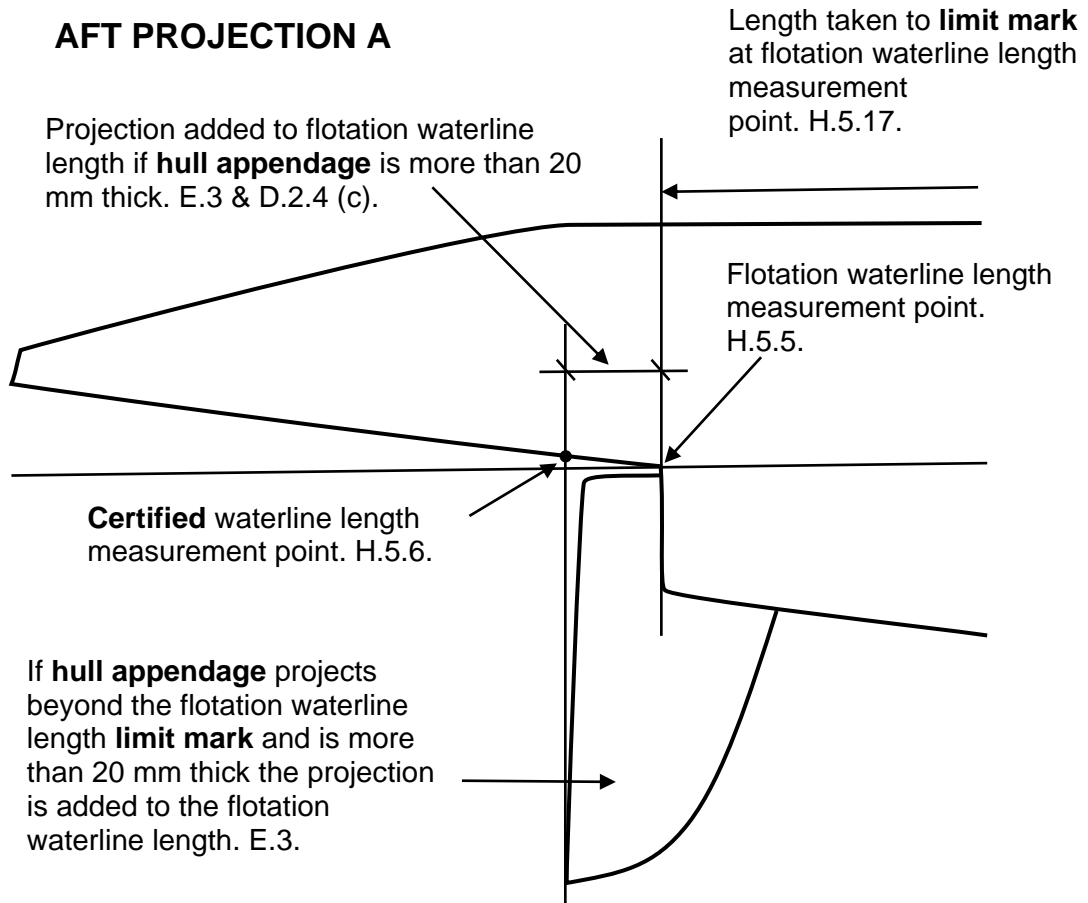
#### H.6.3 For **certification control** the boat weight shall be taken in kilograms using calibrated equipment and rounded to the nearest 0.1 kg before being recorded on the **certificate** and used in subsequent calculations.

- H.6.4 For **equipment inspection** or **certification control** at an event the boat weight shall be taken in kilograms using calibrated equipment and rounded to the nearest 0.02 kg before comparison with the limitations on the **certificate**.
- H.6.5 Calculated values shall be rounded to the nearest whole number before being recorded on a **certification control** form or **certificate**, used in any subsequent calculations, or compared with any limitation in the **class rules** or **certificate**.

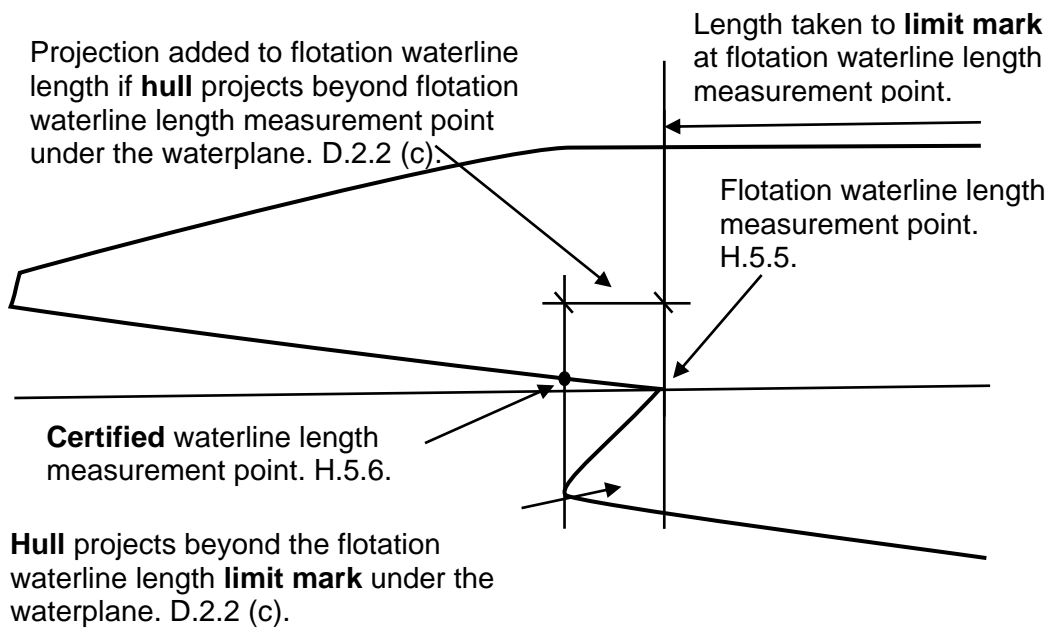


## Section J Figures

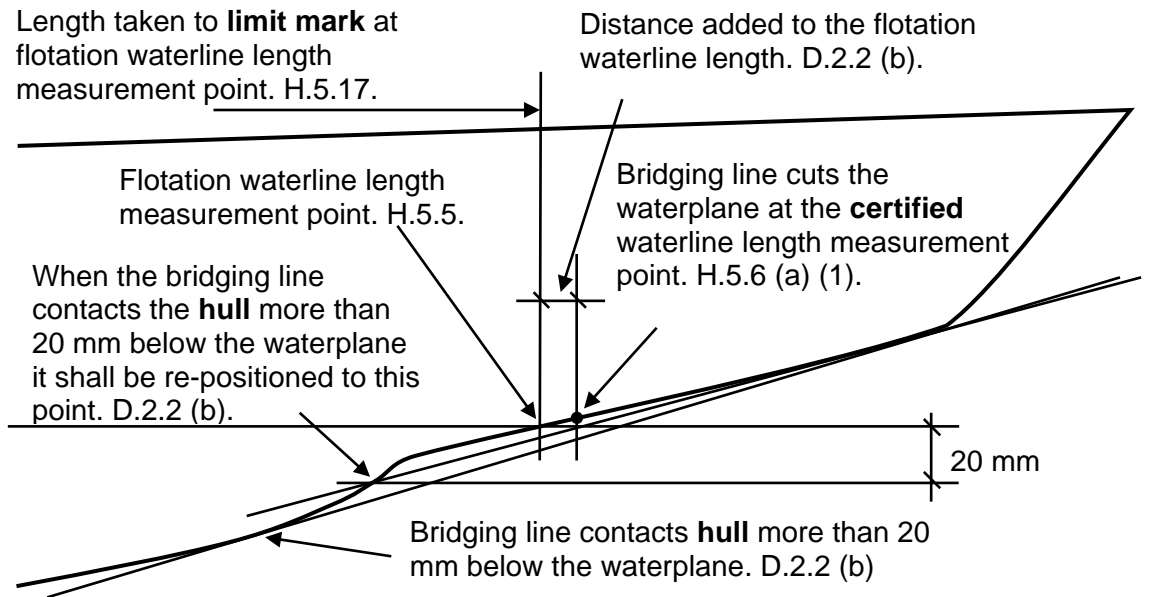
### J.1 AFT PROJECTION A



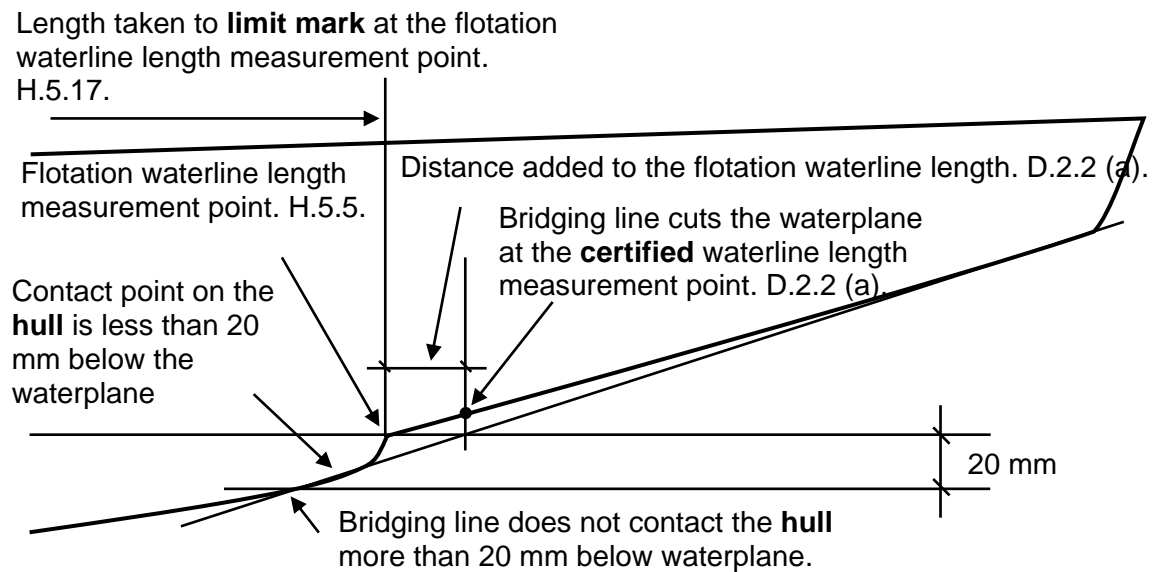
### J.2 AFT PROJECTION B



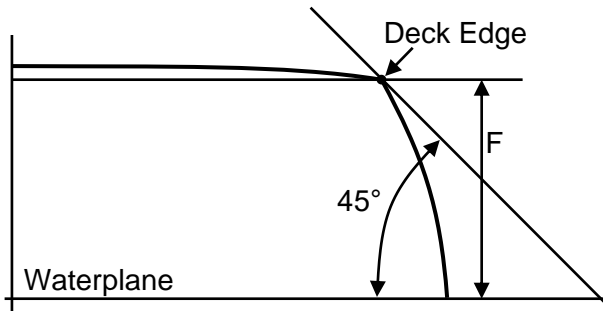
**J.3 BOW BRIDGING A – bridging line contacting hull 20 mm or more below waterplane**



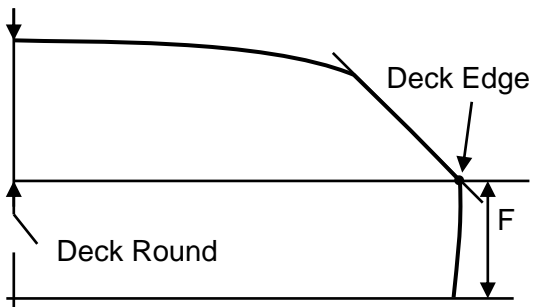
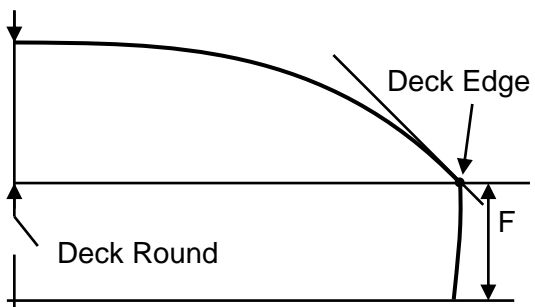
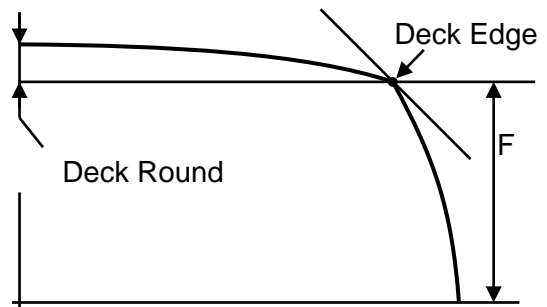
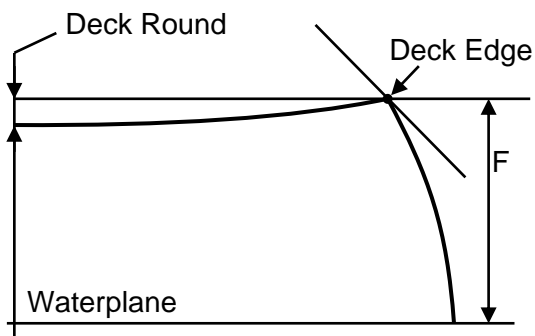
**J.4 BOW BRIDGING B – bridging line contacting hull less than 20 mm below waterplane**



### J.5 DECK EDGE, FREEBOARD

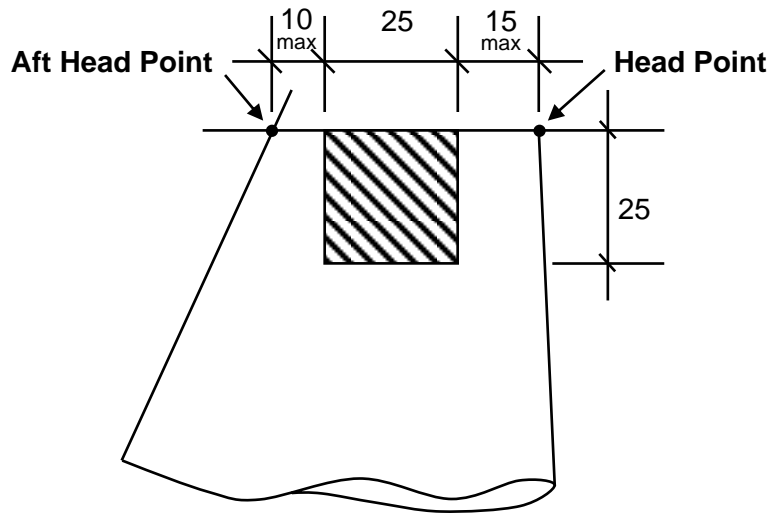


### J.6 DECK ROUND, FREEBOARD

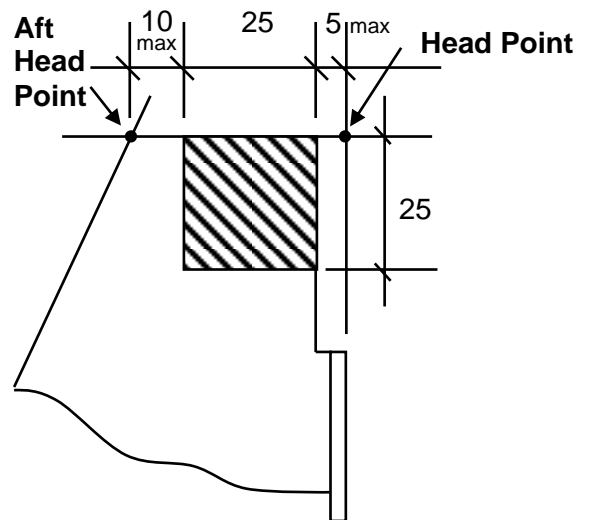


## J.7 HEADBOARD LIMIT ZONE

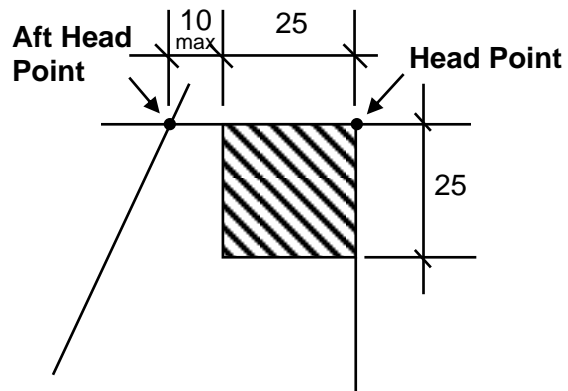
Where the sail has a double luff. G.3.1.2 (a).



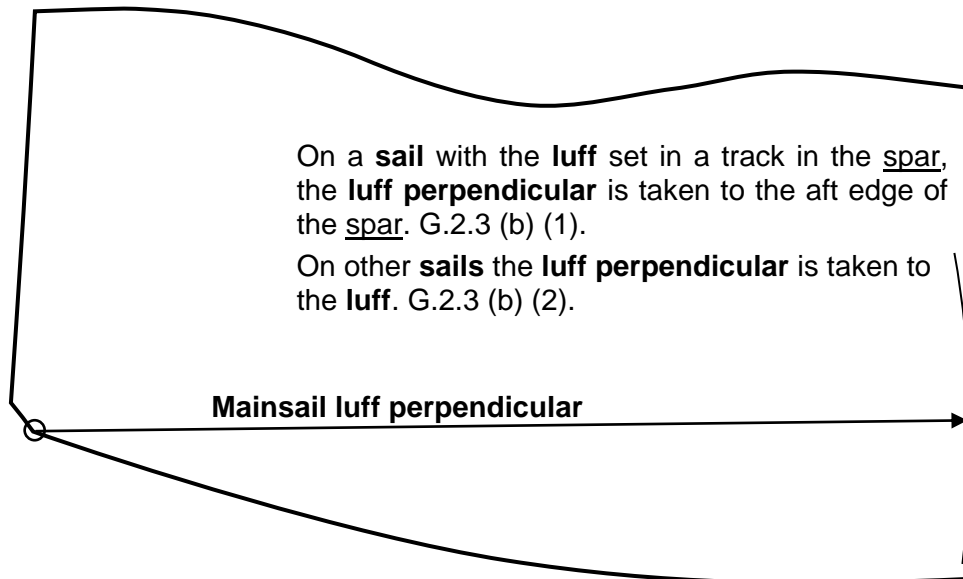
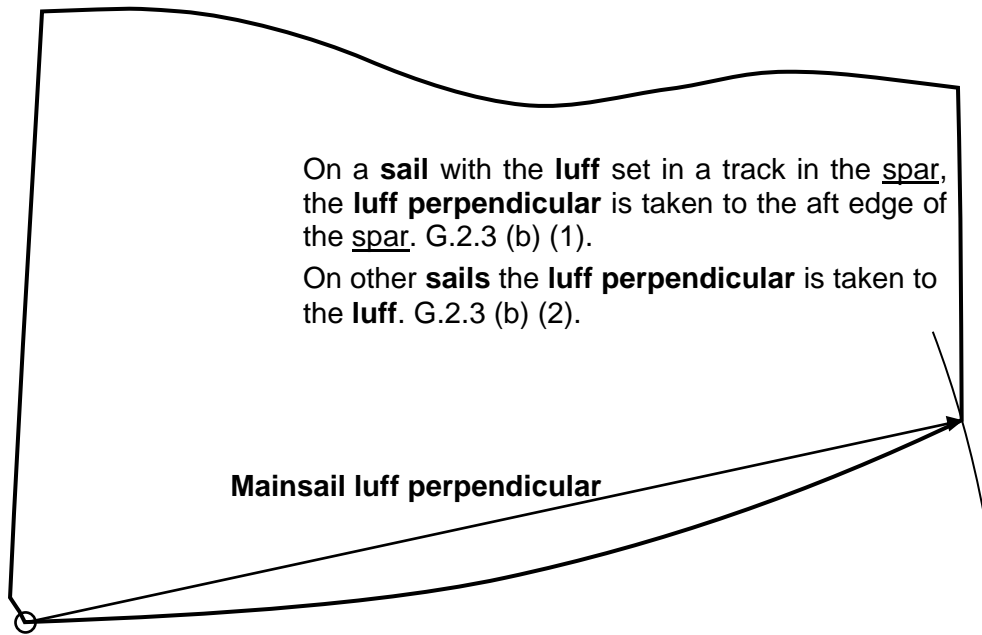
Where the sail has a luff rope or sliders. G.1.3.2 (b).



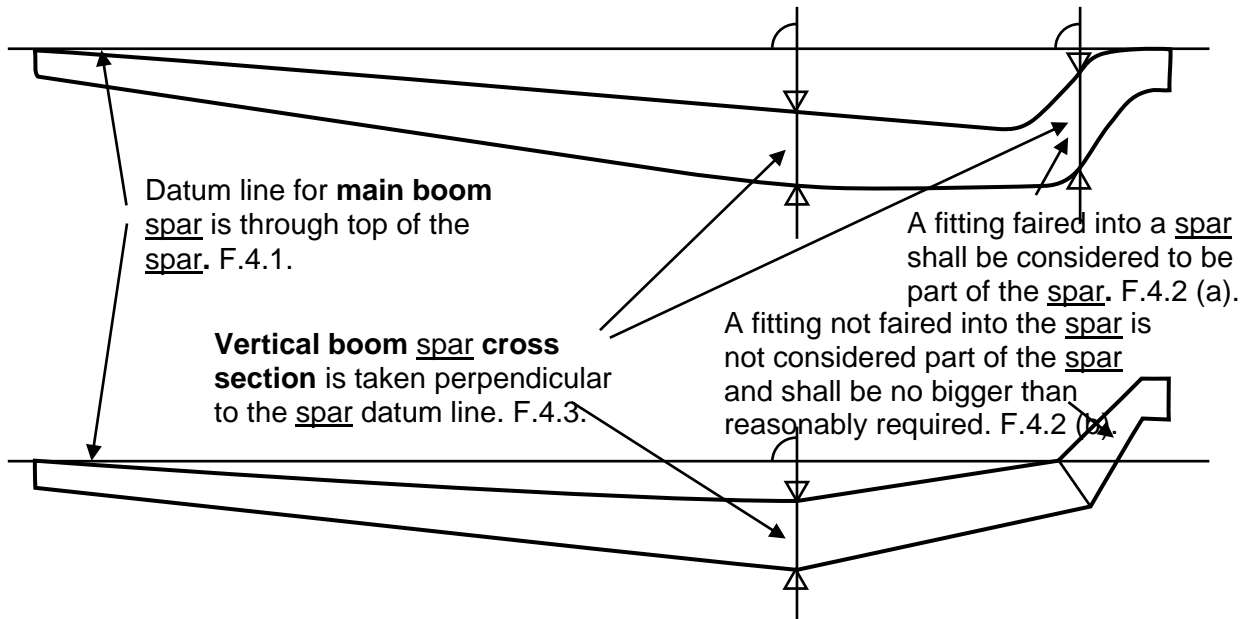
Other sails. G.3.1.2 (c).



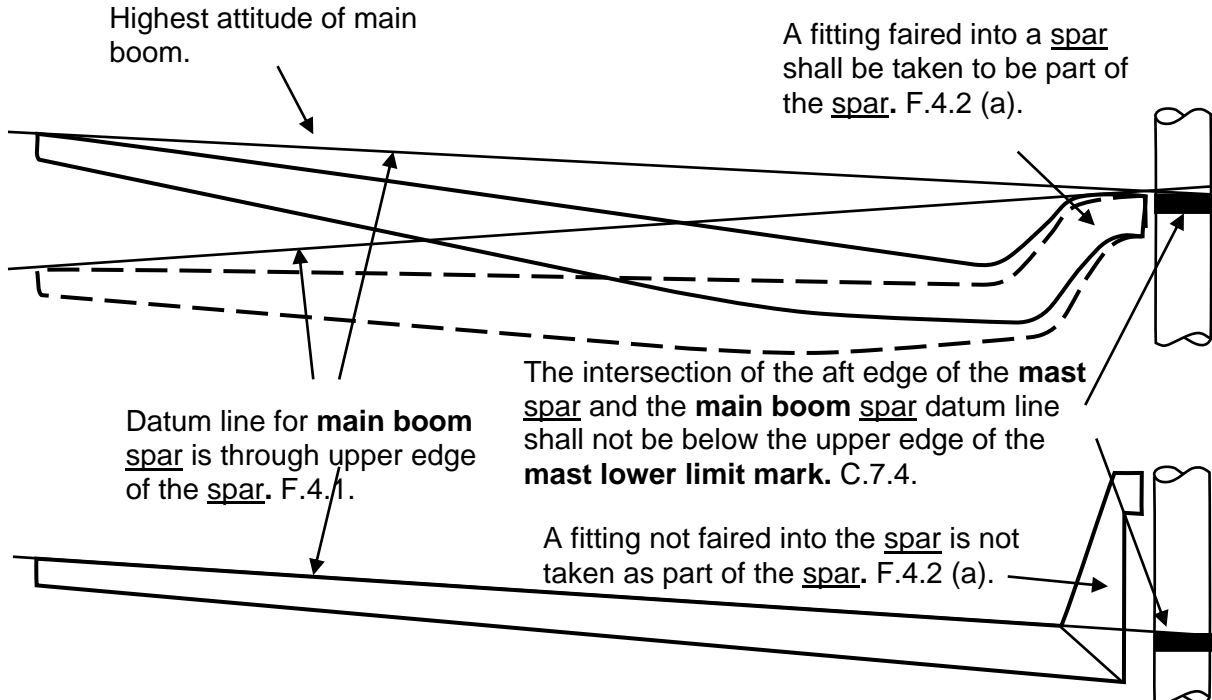
## J.8 MAINSAIL LUFF PERPENDICULAR



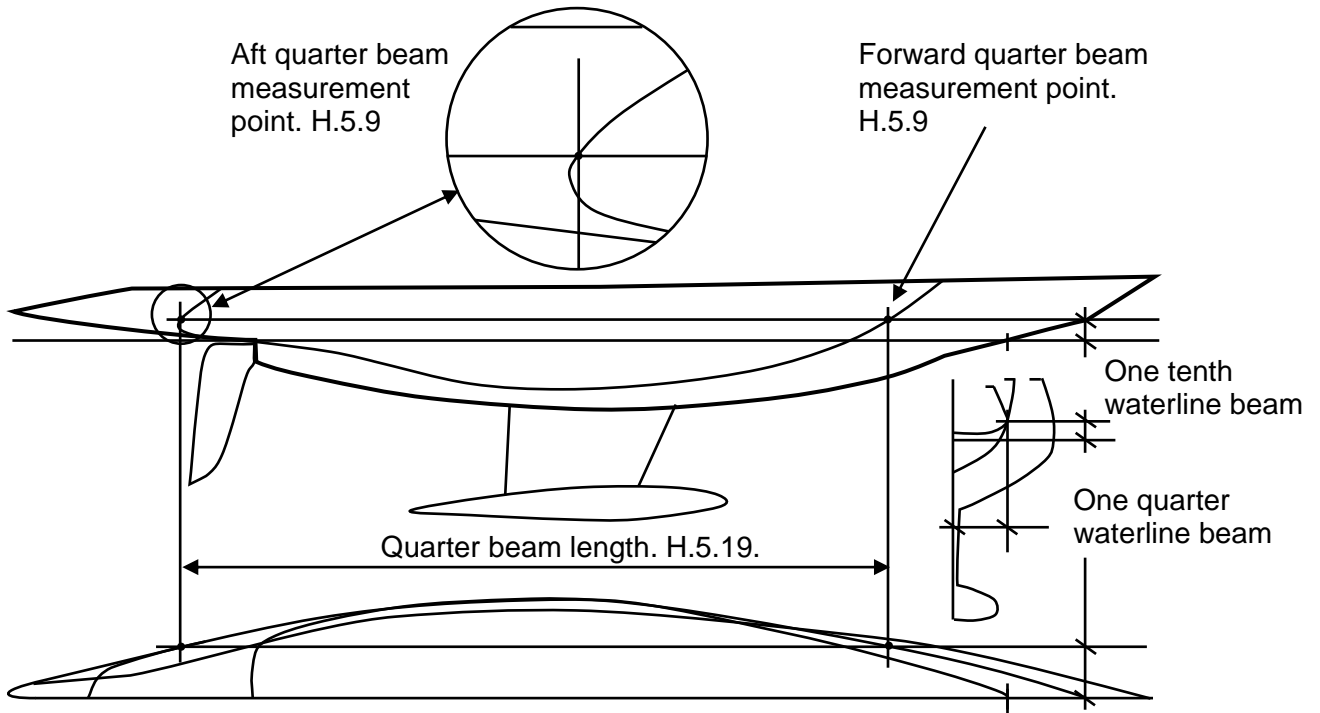
## J.9 MAIN BOOM SPAR DATUM LINE



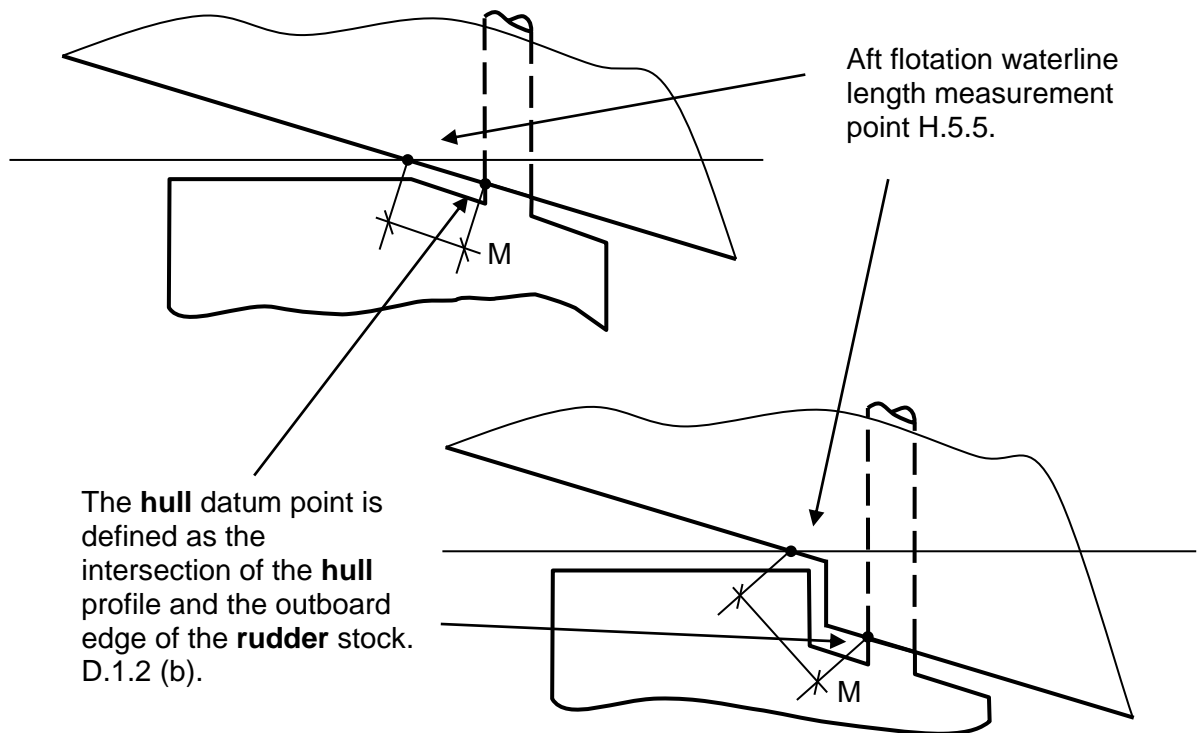
## J.10 INTERSECTION MAIN BOOM SPAR DATUM LINE WITH MAST



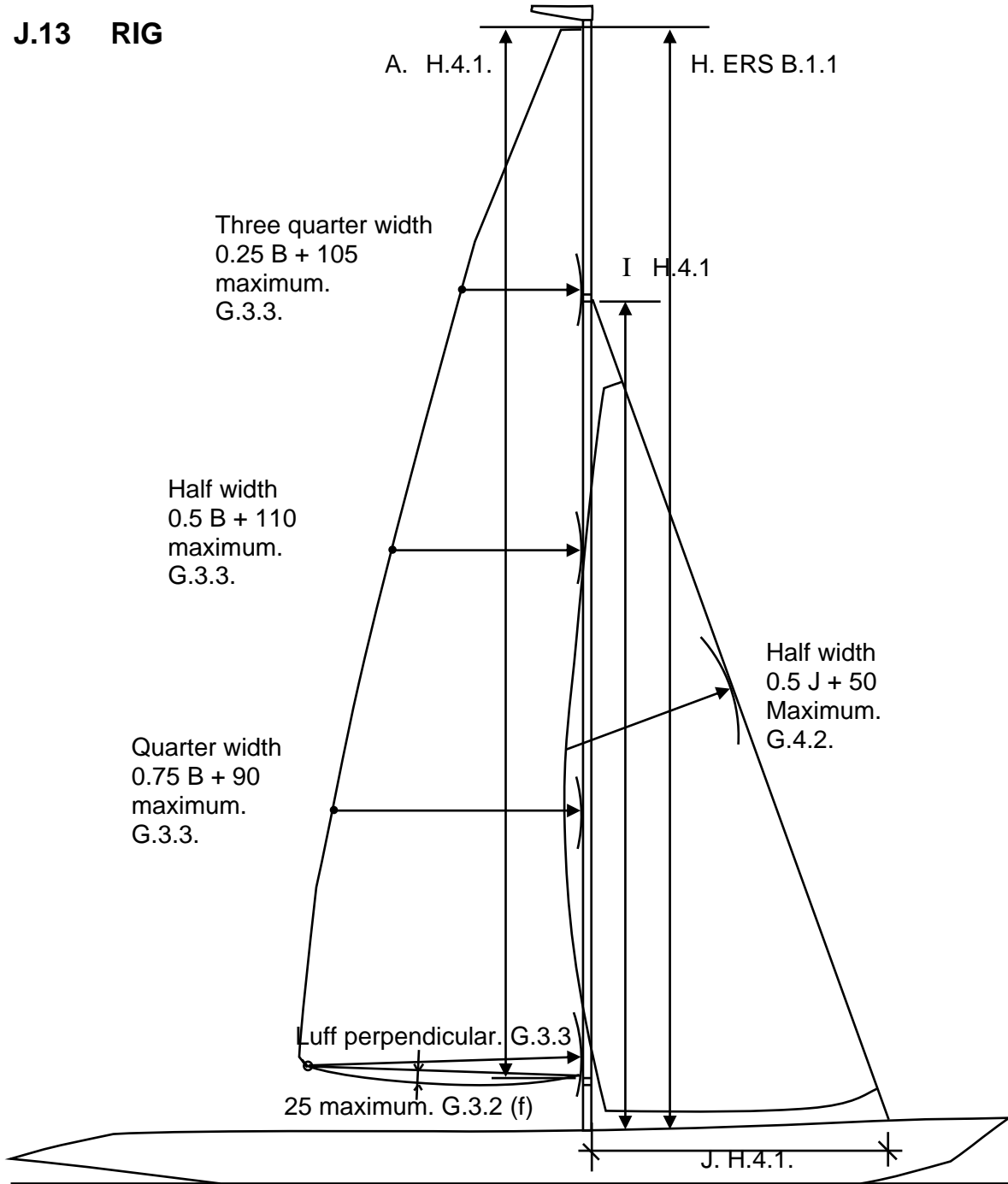
## J.11 QUARTER BEAM LENGTH



## J.12 HULL DATUM POINT



**J.13 RIG**



Effective: 1<sup>st</sup> March 2020  
 Previous issue: 1994; 1<sup>st</sup> April 2016; 1<sup>st</sup> April 2018

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