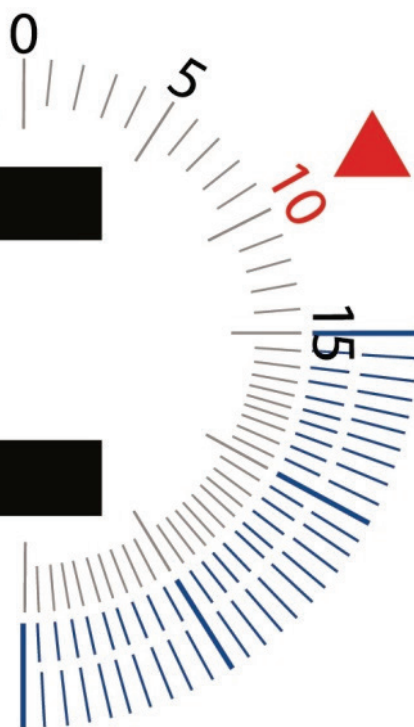


International Rating Certificate

**IRC**



**2019**

[www.ircrating.org](http://www.ircrating.org)



World Sailing

IRC is a World Sailing recognised International Rating System



EFFECTIVE 1 JANUARY 2019

IN COUNTRIES WITH JUNE-MAY VALIDITY, EFFECTIVE 1 JUNE 2019

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## PREAMBLE

Any changes herein have no authority until 1 January 2019 (1 June 2019 in countries where certificate validity is 1 June to 31 May).

IRC is a rating rule providing racing for 2 separate classes of boats. Part C permits advertising in accordance with World Sailing Regulation 20, Advertising Code. Part D does not permit advertising. Organising Authorities should specify in a Notice of Race either Part C or Part D. If neither is specified, then by default Part C shall apply.

## TERMINOLOGY

A term used in its defined sense is printed in “**bold**” type if defined in the ERS, in “*italic*” type if defined in the RRS and in “underscore” type if defined in IRC Rules. Any abbreviation given in Appendix 1 is used in its defined term unless specified otherwise.

Equipment Rules of Sailing (ERS) – [www.sailing.org/ers](http://www.sailing.org/ers)

Racing Rules of Sailing (RRS) – [www.sailing.org/rrs](http://www.sailing.org/rrs)

Offshore Special Regulations (OSR) – [www.sailing.org/specialregs](http://www.sailing.org/specialregs)

Or download the free rules app for iOS, Android and Windows by searching for World Sailing.

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## PART A- RULE POLICY

### 1 INTRODUCTION

- 1.1 The Rule is in two parts, Part C, IRC, advertising permitted, and Part D, IRC, advertising not permitted. IRC is a rating rule based upon owner-supplied information and will remain unpublished. The emphasis is on simplicity and concise rules.

### 2 FUNDAMENTAL POLICY

- 2.1 IRC is a system of measurement which classifies a broad range of cruising and racing ballasted monohull keel boats for competition by providing ratings comprising single figure allowances based on time. Except for designs first rated before 1<sup>st</sup> January 2016, **boats** shall have a minimum **hull length** of 5.00 m.
- 2.2 The IRC concept protects the existing IRC fleet.
- 2.3 IRC encourages design innovation consistent with stability, rounded performance, seaworthiness and safety.
- 2.4 IRC discourages unnecessary expense at all levels.
- 2.5 The spirit of IRC requires that owners and designers shall not seek means of artificially reducing the rating of a **boat**, e.g. increasing performance without a corresponding increase in rating.
- 2.6 Calculation of IRC ratings is unpublished and based on measurement and data input only.
- 2.7 IRC ratings may rely on owner submitted data (see Rules 8.5 and 9) but a Rule Authority (as defined in Rule 4.1) may require that **boats** be weighed and measured by an appointed measurer for certificates issued under their jurisdiction. Some or all of the dimensions of class production **boats** may be standardised.
- 2.8 Any exploitation of the inherent simplicity of the IRC Rule will be discouraged. The RORC Rating Office and UNCL therefore reserve the right to make adjustments or amendments to any part of IRC at any time in order to prevent undesirable or unforeseen lines of development.

### 3 IMPORTANT NOTICE

- 3.1 The safety of a **boat** rated under IRC and its entire management including insurance shall be the sole responsibility of the owner/competitor who must ensure that the **boat** is fully found, thoroughly seaworthy, and operated by a **crew** sufficient in number and experience who are physically fit to face bad weather. The owner/competitor must be satisfied that:
- 3.1.1 The **hull, hull appendages, spars, rigging, sails** and all gear are sound.
- 3.1.2 All safety equipment is properly maintained, stowed and in date.
- 3.1.3 The **crew** know where such equipment is kept and how it is to be used.
- The ultimate decision on whether or not to race remains the sole and inescapable responsibility of the owner or the owner's representative.
- 3.2 None of the establishment of these Rules, their use by race organisers, the issue of a rating certificate under these Rules, nor any inspection of the **boat** under these Rules shall constitute any representation or warranty by the Rating Authority as to the seaworthiness of any **boat** or the safety of any gear and shall not in any way limit the absolute responsibility of the owner/competitor referred to in Rule 3.1. This notice shall be brought to the attention of any person who sails on a **boat** in respect of which a rating certificate has been issued under these Rules.
- 3.3 Ratings issued under IRC are calculated in good faith from the data available. Neither the Rating Authority nor any Rule Authority shall have any liability whatsoever for any error in the application of these Rules or the determination of any factor which may affect the rating or the exercise of any judgement in the application of these Rules or the issue of a certificate or for changes in these Rules.
- 3.4 The establishment of an IRC Crew Number in respect of any **boat** does not constitute any representation or warranty as to the safety of the **boat** when sailing with this or any other number of **crew** (see Rule 3.1). When domestic law invokes any form of **crew** limitation different from the IRC Crew Number, this limitation shall replace IRC Crew Number.

## PART B- GENERAL INFORMATION

### 4 ADMINISTRATION

- 4.1 IRC is administered by Seahorse Rating Ltd (referred to in these Rules as the RORC Rating Office) and the UNCL Centre de Calcul (referred to as UNCL) only. The expression Rating Authority is defined as the RORC Rating Office and the UNCL Centre de Calcul acting jointly. The expression Rule Authority is defined as any other individual or body authorised by the Rating Authority to act for the Rating Authority on a local basis for the administration of IRC in a defined geographical area.
- 4.2 In order to ensure the integrity of the unpublished elements of the IRC Rule all details of the IRC Rule are the sole property of the RORC Rating Office and UNCL who shall appoint an IRC Technical Committee comprised solely of those persons who have knowledge of the unpublished elements of the Rule. This committee shall be solely responsible for any changes in the Rule algorithms.
- 4.3 IRC TCCs are the copyright of RORC Rating Office and UNCL jointly and shall not be modified by any third party. Action may be taken against any third party using IRC-derived handicaps, whether precise or amended for the purpose of race handicapping any **boat** without a current IRC certificate. Adjustment of elapsed time to effectively amend an IRC TCC is considered to be modification of the IRC TCC by a third party unless:
- (a) agreed in writing by the Rating Authority for a specific purpose, or
  - (b) applied due to an infringement of a *rule* while *racing* as defined in the sailing instructions which would otherwise be a matter for a protest committee, or
  - (c) application of a penalty by a protest committee.
- Stability and Safety Screening numerals are RORC Rating Office copyright.
- 4.4 The IRC Policy Steering Group is responsible for the overall direction of IRC. The IRC Policy Steering Group comprises representatives appointed by RORC and UNCL and a representative appointed by the International IRC Owners Association.
- 4.5 Additionally there shall exist an International IRC Owners' Association comprising owners of boats holding current IRC certificates. The International IRC Owners' Association shall have international representation which reflects the distribution of certificated boats, and shall be a forum for owners to discuss and, if agreed, to make recommendations or suggestions to the IRC Technical Committee and the IRC Policy Steering Group.

### 5 INTERPRETATIONS

- 5.1 Requests for interpretation of the IRC Rule shall be made in writing through Rule Authorities to the Rating Authority who will consult and communicate any decision to Rule Authorities.

### 6 DISPENSATIONS

- 6.1 The Rating Authority may grant dispensations to the IRC Rule on an individual **boat** basis at its entire discretion. Any such dispensations shall be noted on a **boat's** IRC certificate.

### 7 LANGUAGE AND RULE DEFINITIONS

- 7.1 The languages of IRC shall be English and French. In the event of any discrepancy, the English text shall prevail. The meaning of any word shall be by reference to the Oxford English Dictionary in the context in which it appears. The words 'shall' and 'must' are mandatory, the words 'may' and 'can' are permissive. The word 'should' is advisory.
- 7.2 Any reference to the Racing Rules of Sailing (RRS) is defined as the current version of the World Sailing Racing Rules of Sailing. Reference to the Equipment Rules of Sailing (ERS) refers to the current version of the World Sailing Equipment Rules of Sailing. Reference to Special Regulations (OSR) is defined as the current version of World Sailing Offshore Special Regulations.
- 7.3 ERS shall apply except where deleted or amended by IRC Rules or Appendix 1.

- 7.4 Any dispute arising out of the administration of the IRC Rules by the Rating Authority or a Rule Authority shall be referred to the IRC Policy Steering Group referred to in Rule 4.4 - which shall allow the applicant to be given a fair opportunity to make his case either in writing or in person (as the IRC Policy Steering Group may determine). The decision of the IRC Policy Steering Group shall be final.

## 8 RATING CERTIFICATES

- 8.1 All IRC ratings will be calculated by and rating certificates issued by the Rating Authority. Rule Authorities may be authorised to print rating certificates under licence.
- 8.2 Each **boat racing** under IRC shall hold a current valid IRC certificate. A **boat** shall not hold more than one valid IRC rating certificate at any time except as permitted by Rule 8.2.1.
- 8.2.1 A **boat** may additionally hold a separate short-handed certificate. This short-handed certificate shall be valid only for racing in classes, or divisions of classes, for no more than 2 **crew**, included in a Notice of Race. When specified in a Notice of Race, **boats** holding short handed certificates, and **racing** in a short handed class or division, may also be scored in the overall results of the race. The short-handed certificate will be clearly identified and shall only vary from the primary certificate in respect of, **mainsail widths**, headsail dimensions, single furling headsail allowance, the use of stored power, SPA, STL, **spinnaker pole/bowsprit**, **moveable ballast** and **variable ballast**. A **boat** holding a shorthanded certificate shall use that certificate for races for no more than 2 **crew**.
- 8.2.2 Issue of any new rating certificate automatically invalidates the old one.
- 8.2.3 A copy of the current rating certificate(s) shall be kept on board the **boat**.
- 8.3 An IRC certificate is valid for racing under Part C, IRC, advertising permitted and Part D, IRC, advertising not permitted.
- 8.4 Rating certificates will be issued with the heading of the Rule Authority and any sponsorship as appropriate.
- 8.5 An ENDORSED IRC certificate is one for which the data on the certificate has been audited and if necessary verified by measurement, or other methods in accordance with current published standards. An owner may apply to their Rule Authority to have an IRC rating certificate Endorsed. The Rule Authority will inform the owner of any measurement, including weighing, or other checks required prior to issue by the Rating Authority of a certificate carrying (irrespective of certificate print language) the notation ENDORSED under the IRC Rating Authority stamp (see also Rule 13).
- 8.6 On IRC certificates for all **boats** rated to carry spinnakers (see Rule 21.6), a non spinnaker TCC is also printed. The non spinnaker TCC shall be valid only for races for which the Notice of Race includes a non spinnaker division or class. Owners shall declare their intention to enter such a non spinnaker class using the non spinnaker TCC a minimum of seven days before the race, or first race if a series of races, and shall not then be permitted to race using a spinnaker for the race or races. This Rule may be amended by a Notice of Race.
- 8.7 The Rating Authority may at its sole discretion re-issue or may refuse to issue or to re-issue an IRC certificate if in its sole opinion Rule 2.5 may be infringed, or for any other reason. No reason need be stated.
- 8.8 Change of ownership and/or any changes in sail number will automatically invalidate the rating certificate.
- 8.9 Physical changes which might affect the performance of the **boat** shall be declared and may invalidate the rating certificate.
- 8.10 Rated Dimensions
- 8.10.1 Values stated on certificates for **LH**, **Hull Beam**, Bulb Weight, **Draft**, x, P, E, J, FL, MUW, MTW, MHW, HLU<sub>max</sub>, HSA, PY, EY, LLY, LPY, Cutter Rig HLU<sub>max</sub>, SPA, STL are maximum values.
- 8.10.2 Values stated on certificates for **Boat Weight**, BO, h, SO, y, and **Internal Ballast** are minimum values.
- 8.10.3 If during **Equipment Inspection** by an **Equipment Inspector**, or during measurement carried out under Rules 10.2 or 13.6, any rated dimension is found to exceed a maximum value or to be less than a minimum value, then the **boat** is not in compliance with her certificate.

8.10.4 Attention is drawn to Rule 13 and to RRS 78, Compliance with Class Rules; Certificates.

- 8.11 When the Rating Authority has reasonable evidence that a **boat** does not conform to its certificate, or that there has been a breach of these Rules, or that there has been an error in the determination of the rating, or that there has been a gross breach of the IRC Rules or of good manners or sportsmanship, the certificate may (at the absolute discretion of the Rating Authority) be withdrawn without compensation and the owner shall be informed in writing.
- 8.12 Certificates will normally be valid on payment of the appropriate fee for the current calendar year only, but at the discretion of the relevant Rule Authority, and with agreement from the Rating Authority, the year may run from 1 June to 31 May of the following year.
- 8.13 Irrespective of where a **boat** is registered, she shall apply for her IRC certificates to the appointed Rule Authority in the country in which she predominantly races. Exceptionally, with the agreement of the Rating Authority, she may apply through another Rule Authority.
- 8.14 On request and payment of a fee, and in accordance with any administrative rules published by the Rating Authority, the Rating Authority may supply a copy of a **boat's** valid or immediately expired IRC certificate, including owner name, to any interested party.

## 9 RATING REVIEW

Rule 9 does not apply to **equipment inspection** at an event.

- 9.1 Review of a **boat's** rating may be requested at any time by the owner who should submit a review request through their Rule Authority to the Rating Authority. A fee may apply.
- 9.2 Anyone who has a valid interest in a **boat's** certificate may also request a rating review from the Rating Authority, by submitting a review request through their Rule Authority to the Rating Authority. A fee may apply. The owner of the **boat** subject to review will be requested to file a reply as soon as possible.
- 9.3 The Rating Authority may also review a rating at any time.
- 9.4 A review shall be based on all the available evidence. Where necessary, rated data shall be re-measured by an authorised measurer. The decision of the Rating Authority on any review shall be final.
- 9.5 For series produced **boats**, the rated data may have been standardised by the Rating Authority. Standard data shall not be subject to third party review or protest. A rating review may be requested by the manufacturer or the class association of a series produced **boat**. Modifications to standard data shall be declared by the owner.
- 9.6 Where the TCC is reviewed and found to be not more than 0.005 greater than before, the contested rating shall be valid up to the date that the request for review was lodged with the Rating Authority, or in the case of a protest up to but excluding the race in which the protest was lodged, except that if Rule 8.9 applies then from the date of the change. This Rule may be amended by Notice of Race only to the extent that the 0.005 limit may be reduced.
- 9.7 Where the TCC is reviewed, either as a result of a rating review or a protest, and found to be more than 0.005 greater than before, the contested certificate is invalid from the date of issue.
- 9.8 In either case where the TCC is reviewed, the certificate becomes invalid if any re-measurement which increases the **boat's** rating differs from the measurement shown on the certificate by more than 1% of: LH, LWP, **Hull Beam**, **Draft**, P, E, J, FL, STL, HLUmax, MUW, MTW, MHW (see Appendix 1); by more than 2% of SPA or HSA; by more than 5% of y, x or h; or by 5% in respect of weights; or if specific detail is clearly in error.
- 9.9 Following review and re-measurement, a new certificate may be issued which may be back-dated to the date that any erroneous data was supplied.
- 9.10 The owner of a **boat** requesting review of his own **boat's** rating is liable for all measurement and rating costs. In all other cases, unless as a result of review a **boat's** certificate is invalidated under Rules 9.7 or 9.8, the person requesting the review shall pay measurement and rating costs unless the Rating Authority orders otherwise.



## 10 RATING PROTESTS

- 10.1 As permitted by the RRS, a rating protest may be submitted to a protest committee. A protest committee may refer the matter to the Rating Authority with the appropriate fee.
- 10.2 In the event of protest, the **boat's** rated data may be re-measured by an authorised measurer.
- 10.3 A **boat** whose certificate is invalidated as a result of an error or omission by a Rule Authority or by the Rating Authority, of which the **boat** could not reasonably have been aware, may be penalised at the discretion of the protest committee. Additionally, a protest committee may order that races scored using the invalidated certificate shall be re-scored using the corrected TCC.
- 10.4 A **boat** whose certificate is invalidated in accordance with Rule 9.6 may be penalised at the discretion of a protest committee. Additionally, a protest committee may order that races under its jurisdiction scored using the invalidated certificate shall be re-scored using the corrected TCC.
- 10.5 Subject to the RRS, when a **boat** is penalised by a protest committee as a result of her certificate being invalidated under Rules 9.7 or 9.8, her owner shall be liable for measurement and rating costs unless the protest committee orders otherwise. In all other cases, the protestor shall be liable for measurement and rating costs.
- 10.6 When as a result of an action in a race or series, or the withdrawal of a certificate by the Rating Authority, a **boat's** rating is reviewed and its TCC changes, the **boat's** Member National Authority may be requested by the Rating Authority to investigate the circumstances and report its findings to the Rating Authority.

## 11 CHANGES TO CLASS RULES

- 11.1 A Rule Authority Prescription or Notice of Race may vary the requirements of IRC Rules 8.6, 9.6, 14.1, 15.1, 21.1.5 (d) (e) and (f), 21.8.4, and 22.4. Any Rule Authority prescriptions shall have been approved by the national IRC Owners' Association when such exists. No other IRC Rules may be amended.
- 11.2 A Rule Authority may prescribe that for races under its jurisdiction requiring compliance with OSR Category 3 or above, Rule 21.6.1 is varied to the extent that a **boat** may carry one more spinnaker than shown on her current IRC certificate of area not greater than rated SPA without an increase in rating.
- 11.3 Where a Rule Authority has made a Prescription to a Rule, a Notice of Race shall not vary that Rule or Prescription without the permission of the Rule Authority. Rule Authority Prescriptions shall be referenced in a Notice of Race.

## 12 UNITS OF MEASUREMENT AND CORRECTED TIMES

- 12.1 Measurements shall be taken in units of the metric system. Sail measurements shall be taken in metres to two decimal places. All other linear measurements shall be taken in metres to three decimal places and rounded to two decimal places for input. Weight shall be taken to the nearest kilogram except in the case of **boat weight** which shall be to the nearest 10 kilograms. Normal mathematical conventions shall apply, with 0.5 rounding up. Full calculated values will be carried forward to subsequent calculations. Final ratings shall be rounded to three decimals places.
- 12.2 The IRC rating is calculated as a Time Corrector (TCC) to three places of decimals. Corrected time for each **boat** is calculated by multiplying its elapsed time by its TCC. Corrected times shall be rounded to the nearest second with 0.5 seconds rounding up.

## 13 MEASUREMENT AND COMPLIANCE

- 13.1 Measurement data shall be obtained by direct measurement or derived from another rating certificate whenever possible. If another rating certificate is being used as the basis for data then any changes since the issue of that certificate shall be notified to the Rating Authority.
- 13.2 Measurements shall be taken in accordance with ERS Part 3 – Rules Governing Equipment Control and Inspection. ERS H.5.4 is amended by the addition of:

The batten specified in ERS H.5.4. shall be a standard 1m World Sailing blue batten. If an alternative length batten is required to achieve a consistent and repeatable measurement, the measurer shall use a batten of consistent bend characteristics and of a length not longer than the greater of 1m or 25% of **foot length**. If a batten longer than 1m is used, the measurer shall report the batten length and the reason for using the alternative batten to the Rating Authority.

- 13.3 The accuracy of measurements supplied shall be the owner's responsibility. An IRC measurement service is available on application to a boat's Rule Authority.
- 13.4 It is a breach of the Rules of IRC for any owner or individual to intentionally supply false information. Attention is drawn to Rule 8.7 and to RRS 69, Allegations of Gross Misconduct.
- 13.5 The Rating Authority will use the data supplied by a Rule Authority as a basis for rating but reserves the right to overrule specific data or to standardise the dimensions of a class of production **boats**.
- 13.6 The Rating Authority or a **boat's Rule Authority** may require a **boat** to be submitted for measurement at any time without giving reasons. Measurement will be undertaken by authorised measurers of the Rating Authority. A new certificate will be issued by the Rating Authority based on the new measurement data.
- 13.7 In the particular case of a **boat** issued with a one-design certificate, as noted on the certificate, the rating requires compliance with one-design class rules. In the event of conflict, IRC Rules shall take precedence. See also Rule 22.4.1.

## 14 SAIL NUMBERS

- 14.1 Each **boat** shall hold a sail number as prescribed by its Member National Authority. Sail numbers shall be displayed in accordance with RRS 77, Identification on Sails. This Rule may be amended by Notice of Race.

## 15 MANUAL POWER

- 15.1 RRS 52, Manual Power, shall not apply. This Rule may be amended by Notice of Race.
- 15.2 (a) The use of stored power for the hoisting of **mainsails**, or the reefing or furling of **sails** need not be declared.
- (b) **Boats** using stored power solely for the adjustment or operation of **backstays** shall declare this to the Rating Authority.
- (c) **Boats** using stored power for the adjustment or operation of **running rigging** other than as noted in Rules 15.2(a) & (b) shall declare this to the Rating Authority.

## PART C- IRC, ADVERTISING PERMITTED

### 16 ADVERTISING

- 16.1 Advertising may be displayed in accordance with World Sailing Regulation 20, Advertising Code.

### 17 BOAT WEIGHT

- 17.1 **Boat Weight** is measured in accordance with the following **Conditions for Weight and Flotation Measurement**:

The **boat** shall:

- be dry.
- be in compliance with the **class rules** (ie. IRC Rules)

Unless otherwise specified in the *rules*, any of the following shall be included:

- rig** including **spinnaker pole(s)**, **whisker poles** and/or jockey pole
- main sheet** and **mizzen sheet**,
- vang,
- inboard engine or outboard engine in stowed position,
- fitted berth cushions on board in their normal positions if carried *while racing*
- all permanent fixtures and fittings and items of accommodation.

Unless otherwise specified in the *rules*, any of the following shall be excluded:

**sails**

fuel, water, **variable ballast** or the content of any other tanks,  
gas bottles  
portable safety equipment  
and all other unfitted or loose equipment.

17.2 Spare.

17.3 When for practical reasons it is not possible to remove all items and equipment (e.g. fuel), it is acceptable to deduct the weight of these from the gross weight. The Rating Authority reserves the right to refuse such data when inadequate detail is supplied.

17.4 The Rating Authority will calculate the **boat weight** of an un-weighed **boat** based on information contained on another rating certificate, designer data or from any other source.

17.5 In the absence of other information, **boat weight** may be calculated by deduction of the items detailed by Rule 17.1 from a **boat's** sailing displacement or sailing weight.

## 18 OVERHANGS AND DRAFT

18.1 Measurements shall be taken with the **boat** in **flotation trim**. The measurement points for various configurations of **boats** are shown on the diagrams for hull shapes and are defined in Appendix 1.

## 19 HULL APPENDAGES

19.1 Full details of a **boat's hull appendages** shall be supplied to the Rating Authority at the time of rating application.

19.2 Any keel fin fairings with a nominal density, including any cavities and/or core material, significantly lower than the main structural elements of the keel fin shall be declared. For the purpose of this rule, a keel fin fairing does not include surface fairing, filling and painting materials up to a total thickness of 10 mm, measured normal to the local surface of the keel fin.

19.3 Drop keels, **centreboards**, **bilgeboards** and other moveable **hull appendages** shall be declared. Unless fixed down while *racing*, drop keels will be rated as moveable **hull appendages**.

19.4 In the construction of **hull appendages**, no material with specific gravity greater than 11.3 is permitted.

19.5 **Boats** including material in their **hull appendages** with specific gravity greater than 11.3, and with **age date** of 2005 or earlier, and holding a valid IRC certificate on 31<sup>st</sup> December 2005 are exempt from Rule 19.4. Apart from routine maintenance, any such **boat** changing the quantity of material of specific gravity greater than 11.3 shall comply with Rule 19.4 and will not subsequently be eligible for exemption from compliance with Rule 19.4.

19.6 Any material in the keel fin of a keel type 10, 11 or 12 with a specific gravity greater than 8.0 (eg. lead) shall be declared in writing.

## 20 ENGINE AND PROPELLER

20.1 **Boats** will be rated with either:

20.1.1 No engine.

20.1.2 Outboard engine (i.e. an engine where the propeller may be removed from the water while *racing*).

20.1.3 Inboard engine, including strut drive and stern-drive configurations. Propeller type shall be declared at the time of rating application.

20.2 Inboard engines shall be capable of producing a minimum speed of  $1.8 * LWP^{0.5}$  knots. Outboard engines shall be securely fastened in their normal stowage positions for *racing*.

## 21 RIG AND SAILS

21.1 General

21.1.1 Single and twin masted rigs only may be rated under IRC.

- 21.1.2 'Cat' rig is defined as a **rig** where no **sails** are set forward of the **mast(s)** when sailing to windward.
- 21.1.3 'Gaff' rig includes square, spritsail and other similar rig configurations.
- 21.1.4 Mizzen staysails shall be declared.
- 21.1.5 There is no limitation on the number or type of **sails** on board while *racing* under IRC except:
- (a) the limitation on spinnaker numbers (see Rule 21.6.1).
  - (b) the limitation on **sails** containing exotic materials (see Rule 21.4).
  - (c) the limitation on headsail numbers for **boats** rated with a single furling headsail. Except in the cases of significant damage or storm and heavy weather **sails**, **boats** claiming a rating allowance for using a single roller furling headsail shall use the same headsail for all races in any series of races. (see Rule 21.8.1)
  - (d) during a regatta run on consecutive days, including any lay days, the **sails** on board shall remain the same and be on board for all races. This Rule may be amended by Notice of Race.
  - (e) a spare **mainsail** may be on board but may not be used as a *racing* replacement, either during a race or during a regatta run on consecutive days, including any lay days. This Rule may be amended by Notice of Race.
  - (f) exceptionally, in the case of significant damage or loss, **sails** may be replaced with similar **sails**. A Notice of Race may require that **boats** obtain permission from the Race Committee before replacing a **sail**. This Rule may be amended by Notice of Race.
  - (g) **sails** shall be set in close proximity to the **boat**.
  - (h) **sails** with detachable sections of sail cloth are not permitted.
- 21.1.6 (a) Adjustment or detachment of forestay and/or **shrouds** including diagonal and jumper shrouds, or movement of the **mast** at the foot or the deck while *racing* is not permitted except:
- (i) in the case of a **boat** without **running backstays**, **checkstays** or adjustable **backstay** when the forestay may be adjusted but not detached.
  - (ii) in the case of **boats** with LH less than 10m and without lifelines that are explicitly permitted by their own **class rules** to move the **mast** at foot or deck level, or to adjust or detach the forestay and **shrouds** while *racing*.
  - (iii) as permitted by Rule 21.1.6 (b).
- (b) A **boat** fitted with or carrying on board systems to adjust the forestay while *racing* shall declare this to the Rating Authority. This includes a system with the power system disconnected or removed from the **boat**. The **boat** may then adjust the forestay while *racing*, but shall not detach the forestay. Locked conventional turnbuckles that are not adjusted while *racing* need not be declared.
- A **boat** fitted with or carrying on board systems, to adjust the mast foot while *racing* shall declare this to the Rating Authority. Unless the **boat** declares that such systems will not be used while *racing*, the **boat** may then adjust the mast foot vertically and/or longitudinally while *racing*.

## 21.2 Rig Factor

- 21.2.1 Rig factor (RF) is calculated by the Rating Authority to evaluate the **rig** and **sail** features of the **boat** and their character and efficiency when compared to a basic cruising configuration with substantial spars and basic rig controls.
- 21.2.2 RF may be increased for: fractional, racing and lightweight rigs, high aspect ratio and efficient plan forms, wing and double luff **sails**, specialised **sail stiffening**, large headboards/cranes, permanently bent or highly controllable **spars**, hi-tech rigging, exotic rig materials, advanced winch and deck gear arrangements, flush/efficient deck design, and any other feature which increases sailing efficiency that is not already rated through the rated dimensions.

- 21.2.3 RF may be decreased for less efficient **rigs** and **sail** plans, cruising furling **sails**, motor sailers with large deck houses, cruisers with weight/windage aloft or with basic deck gear only, or any other feature which reduces sailing efficiency that is not already rated through the rated dimensions.
- 21.2.4 Full **rig** details shall be supplied at the time of rating application. The Rating Authority reserves the right to apply a high rig factor until full detail is supplied.
- 21.3 Sheeting of **Sails**, **Sail** Definitions, **Bowsprits** and **Spinnaker Poles**
- 21.3.1 No headsail or spinnaker may be sheeted from more than one point on the **sail**.
- 21.3.2 All **sails** shall be set and sheeted in accordance with RRS 50, Setting and Sheeting Sails, with the following additions:
- 21.3.3 RRS 50.3(a) is amended to the extent that a spinnaker or a headsail may be tacked to a **bowsprit**.
- 21.3.4 Deleted for 2016
- 21.3.5 **Boats** will be rated according to whether they use a **spinnaker pole** and/or a **bowsprit** according to the following configurations:
- (a) No **spinnaker pole** (spinnaker tacked on deck) or a centre line **bowsprit** only.
- (b) An articulating **bowsprit** only.
- (c) A **spinnaker pole** or poles either with or without a **bowsprit**.
- 21.4 Sailcloth
- 21.4.1 Sailcloth containing exotic materials (at present none) will carry an additional rating tax.
- 21.4.2 Sailcloth containing exotic materials shall be declared on initial application for rating, revalidation, or when amending a **boat's** sail inventory.
- 21.4.3 Only specific **sails** containing exotic materials which have been declared and noted on a **boat's** certificate may be used while *racing* under IRC.
- 21.5 Mainsails
- 21.5.1 The following shall be declared: MUW, MTW, MHW.
- 21.5.2 MUW, MTW and MHW will be shown on the **boat's** certificate as the maximum permitted values.
- 21.5.3 The highest visible point of a **mainsail**, **mizzen** or **foremast sail** projected at 90° to the mast **spar**, shall be set below the **upper point**, or in the absence of an **upper limit mark**, below the top of highest sheave used for the halyard.
- 21.5.4 The aftmost visible point of the **mainsail**, **mizzen** or **foremast sail** projected at 90° to the boom **spar**, shall be set forward of the **outer point**, or in the absence of a **boom outer limit mark** the outer measurement point shall be taken as the aft end of the boom.
- 21.6 Spinnakers
- 21.6.1 Boats shall not carry on board more than the number of spinnakers on their IRC certificate while racing.
- 21.6.2 Spinnaker area (SPA) shall be calculated from:
- $$SPA = ((SLU + SLE)/2) * ((SFL + (4 * SHW))/5) * 0.83$$
- SLU, SLE, SFL and SHW of the largest area spinnaker on board shall be declared. The calculated area of this spinnaker will be shown on a **boat's** certificate as the maximum permitted SPA.
- 21.7 Headsails
- 21.7.1 Headsail area (HSA) shall be calculated from:
- $$HSA = 0.0625 * HLU * (4 * HLP + 6 * HHW + 3 * HTW + 2 * HUW + 0.09)$$
- If foot offset is greater than 7.5% of HLP, then foot offset shall be declared and foot offset shall be added to HLU in the calculation of HSA.
- 21.7.2 The following shall be declared. HLU, HLP, HHW, HTW, HUW and HLUmax.
- 21.7.3 HSA, HLU, HLP, HHW, HTW and HUW of the largest area headsail, and HLUmax will be shown on the **boat's** certificate. HSA and HLUmax are the maximum permitted values.

21.7.4 Any number of headsails may be set simultaneously when racing under IRC provided that headsail data is measured and declared as defined in Appendix 1.

## 21.8 Furling Headsails

21.8.1 **Boats** may apply for a rating credit for using a single roller furling headsail. To be eligible:

- (a) A **boat** shall be fitted with a complete headsail furling system including at least a drum, furling headfoil, and top swivel.
- (b) Rated HLP shall be greater than  $1.3 \cdot J$ . Exceptionally, this rule shall not apply to **boats** of LH greater than 30.5m and with IRC DLR greater than 60.
- (c) Only a single headsail shall be used while *racing*, whose HSA shall not be less than 95% of rated HSA except that alternatively a storm jib (see Appendix 1) may be used.

21.8.2 A **boat** may declare that she may alternatively use a heavy weather jib (see Appendix 1). Provided that she complies with Rule 21.8.1(a) and (b), she will remain eligible for the rating credit but at a reduced rate.

21.8.3 Except in the cases of significant damage or a storm jib or heavy weather jib as appropriate, the same headsail shall be used for all races in any series of races.

21.8.4 Any other headsail may be on board. This Rule may be amended by Notice of Race.

## 22 EQUIPMENT AND LOADING

### 22.1 Detachable items

22.1.1 Detachable items (such as but not limited to bunk cushions) permitted by Rule 17 to be aboard for measurement shall be carried in their normal positions while *racing*. For races requiring compliance with OSR Category 4 only (or local equivalent), a Notice of Race may state that **boats** rated with bunk cushions on board may remove the bunk cushions. No compensating weight need be carried.

### 22.2 Hull Factor

22.2.1 Hull factor (HF) is calculated by the Rating Authority and is an evaluation of features of the **boat** and their character and efficiency.

22.2.2 Stripped out interiors, the use of light and hi-tech structures and/or materials, removal of furniture or other fitted equipment, etc. may lead to the application of higher than standard hull factor to compensate for potential increase in performance. Such features shall be declared to the Rating Authority.

22.2.3 The rated Hull Factor assumes that the **boat** is fitted out at least to the production specification and materials and/or to the condition when last measured/inspected. This does not negate owners' responsibilities under Rules 8.9, 22.2.2 and RRS 78.1.

### 22.3 Moveable Ballast and Variable Ballast

22.3.1 A **boat** may request permission from the Rating Authority to use **moveable ballast** and/or **variable ballast** for the purpose of increasing stability. The Rating Authority will generally only grant permission to **boats** specifically and originally designed to carry **moveable ballast** and/or **variable ballast** and may deny permission without giving any reason. RRS 51, Moving Ballast, and RRS 52, Manual Power, are modified in respect of **moveable ballast** and/or **variable ballast** systems to the extent required by this class Rule.

22.3.2 Any such system shall be declared to the Rating Authority.

22.3.3 There is no limit to the **list angle** with ballast tanks fully filled on one side of the **boat** or with **moveable ballast** moved fully to one side. For **boats** with **variable ballast**, the maximum weight of water that can be carried on each side of the **boat** shall be declared. For **boats** with **moveable ballast**, the maximum **list angle** in the **boat weight** condition (see Rule 17) with the ballast moved fully to one side shall be declared. A physical, mechanical limit shall be fitted to **moveable ballast** to prevent it being moved further than the position for the declared **list angle**. Such a system shall not rely on sensors or measurement to prevent the declared **list angle** being exceeded unintentionally.

22.4 Crew Number/Weight

22.4.1 **Boats** rated as one-designs, as noted on the **boat's** certificate, shall conform with their one-design class rules in respect of **crew** number/weight limitations unless freed from this requirement by notice of race. See also Rule 13.7

22.4.2 The crew weight shall not exceed 85kg multiplied by the Crew Number printed on the certificate. This Rule does not apply to short-handed certificates issued under rule 8.2.1.

22.4.3 Rule 22.4 may be amended by Notice of Race.

22.5 Crew Classification

22.5.1 There are no rules on the classification of **crew** within IRC unless stated in a Notice of Race.

22.6 Crew Position

22.6.1 RRS 49.2 is modified by deleting "sitting on the deck" in the second sentence.

**23 SEAWORTHINESS AND SAFETY**

23.1 The issue of a rating certificate does not imply that a **boat** is necessarily of satisfactory design, safe or seaworthy, nor that a **boat** complies with any category of Offshore Special Regulations. See Rule 3.

23.2 Race committees may impose limits for race entry on safety grounds at their discretion. An SSS number, specific to the **boat**, and when data is available IRC/ISO STIX, AVS and IRC/ISO Design Category will be printed on each **boat's** certificate for the guidance of owners and race organisers.

24 Deleted for 2018.

**PART D - IRC, ADVERTISING NOT PERMITTED**

**25 RULES**

25.1 With the exception of Rule 16, Advertising, the IRC Rules Part C shall apply.

**26 ADVERTISING**

26.1 Competitors' advertising displayed on the **boat** is not permitted in accordance with World Sailing Regulation 20, Advertising Code.

## APPENDIX - IRC MEASUREMENT DEFINITIONS AND ABBREVIATIONS

- Measurement Note:** World Sailing Equipment Rules of Sailing (ERS) Part II, Definitions, shall apply to measurement except as stated by IRC Rules or this Appendix. Measurements shall be taken in accordance with ERS Part III, Measurement Rules, Section H.
- Terminology:** A term used in its defined sense is printed in “**bold**” type if defined in the ERS. Any abbreviation given below is used in IRC Rules in its defined term unless specified otherwise.

### MISCELLANEOUS

- Series date** The date on which the first **boat** of the design or the production series was first launched, whichever is earlier. Series Date does not change if the **boat** is modified.
- Age date** The date on which the **boat** was first launched, or the date on which the **boat** was re-launched following any hull shell modification, excluding the transom, whichever is the later.
- Hull Shell** The hull shell excluding all of the following: any transom, the deck, any superstructure, the internal structure including any cockpit, fittings associated with these parts and any **corrector weights**.
- Measurement Condition** As defined by Rules 17.1.
- Stored Power** Power other than power provided by the **crew**.
- Rating Authority** As defined in Rule 4.1.
- Rule Authority** As defined in Rule 4.1.
- RORC** The Royal Ocean Racing Club
- UNCL** L’Union National pour la Course au Large.

### HULL & APPENDAGES

- LH** **Hull Length.**
- BO** The longitudinal distance between the foremost point on the **hull** and the foremost point of the **waterline**.
- x** The horizontal distance between the **waterline** and the lowest point on the stem at a tangent of 45° to the longitudinal axis
- h** The vertical distance between the **waterplane** and the lowest point on the stem at a tangent of 45° to the longitudinal axis.
- SO** The longitudinal distance between the aftmost point on the **hull** and the aftmost point of the **waterline**.
- y** The vertical distance between the aftmost point on the **hull** and the **waterplane**. In the case of a counter stern, the vertical distance between the aftmost point on the **hull** below the transom projected to the line of the aftmost point of the **hull**, and the **waterplane**.
- LWP** **Waterline length.** (LH – BO – SO).
- Wingspan** The maximum horizontal width in any transverse section of any wings attached to any **hull appendage**.
- Bulb Weight** The weight of the **Bulb**.
- LIFTING FOILS:**
- No. of Foils:** The maximum number of foils that may be actively in use simultaneously.



With the **boat** upright in **flotation trim**, for each foil:

Foil Span: The maximum transverse distance outside the hull shell between any two points on the foil in its fully extended position.

Foil Chord: The maximum longitudinal distance of the foil.

The IRC Rating Authority reserves the right to require additional detail to be supplied and also to modify the above definitions on a case by case basis in accordance with IRC Rule 2.8.

## RIG

- P The distance between the **mainsail** (in the case of a **schooner**, the **foremast sail**) **upper point**, and the top of the boom when set at right angles to the **mast**, or the **mainsail tack point** whichever is lower, on the **mainmast** (in the case of a **schooner**, the **foremast**). The **upper limit mark** shall be permanently marked by a 25mm band of contrasting colour. If there is no **upper limit mark** the upper measurement point shall be taken as the top of the highest sheave used for the halyard. In the case of a gaff rig, the upper measurement point is the **peak point** of the **mainsail** or the **head point** of the topsail if on board.
- PY The distance between the **mizzen** (in the case of a **schooner**, the **mainmast sail**) **upper point**, and the top of the boom when set at right angles to the **mast**, or the **mizzen tack point** whichever is lower, on the **mizzenmast** (in the case of a **schooner**, the **mainmast**). The **upper limit mark** shall be permanently marked by a 25mm band of contrasting colour. If there is no **upper limit mark** the upper measurement point shall be taken as the top of the highest sheave used for the halyard.
- E The **outer point distance** of a **mainsail** (or in the case of a **schooner**, a **foremast sail**). The **outer limit mark** shall be permanently marked by a 25mm band of contrasting colour. If there is no **outer limit mark** the outer measurement point shall be taken to the aft end of the boom. For the measurement of **outer point distance**, ERS H.4.2 shall not apply. Fittings, local curvature, local cutaway and any increase in the fore/aft dimension of a sail track and/or sail track support, shall be ignored.
- EY The **outer point distance** of a **mizzen** (or in the case of a **schooner**, a **mainsail**). The **outer limit mark** shall be permanently marked by a 25mm band of contrasting colour. If there is no **outer limit mark** the outer measurement point shall be taken to the aft end of the boom.
- Forestay The ERS definition of **forestay** shall not apply. Forestay is defined as: Permanently attached **rigging** providing forward support for a mast **spar**.
- FL The forestay length measured from the forward end of J to the forestay rigging point.
- J The longitudinal distance between the intersection of the fore side of the mast **spar**, extended as necessary, and the deck including any superstructure; and the intersection of the centreline of the forestay, extended as necessary, and the deck, or bowsprit **spar**.
- STL The greatest horizontal distance from the forward face of the **mast spar**, ignoring any fittings and tracks, measured on or near the centreline of the **boat**, to any of the following:
- the extremity of the **spinnaker pole**, **whisker pole** or **bowsprit**, ignoring any **outer limit marks**;
  - the spinnaker tack point on deck projected vertically as necessary;
  - if a headsail may be tacked forward of the forestay, the headsail tack point on deck projected vertically as necessary or to the extremity of the **bowsprit**.
- Aft rigging: The total number of **stays** and/or sets of **stays** connected to the mast **spar** above the top of the boom set horizontal providing aft support and/or control.
- (a) Any pairs of **stays** attached to the mast **spar** at the same position port and starboard on the mast **spar** shall count as one set of **stays**. Eg, whether there be a single standing **backstay** or twin **running backstays** these are counted as one set of **stays**.

- (b) Any deflectors or adjusters attached between the top most **stay** and the mast **spar** shall also be counted. Any deflectors or adjusters attached between any other **stay** and the mast **spar** with separation from the attachment point of the primary **stay** of 10% of P or greater shall also be considered as a separate **stay** for these purposes.

## SAILS – GENERAL

Spinnaker	RRS 50.4 shall not apply. A <u>spinnaker</u> is defined as a <b>sail</b> set forward of the foremost <b>mast</b> with <b>half width</b> (measured as a <u>spinnaker</u> ) equal to or greater than 75% of <b>foot length</b> and without <u>battens</u> . A <u>spinnaker</u> may be set reefed by any means while <i>racing</i> under IRC provided that when measured in any reefed condition it continues to satisfy the IRC definition of a <u>spinnaker</u> .
Headsail	RRS 50.4 shall not apply. Any <b>sail</b> tacked down forward of the foremost <b>mast</b> which does not meet the definition of a <u>spinnaker</u> . A <u>headsail</u> may be hoisted from above the <u>forestay rigging point</u> .
Batten	Any material added to the <b>sail</b> , as either a removable element, permanent stiffening, or other contrivance, the purpose of which is to support and/or stiffen the <b>sail</b> .
HWJ	Heavy Weather Jib. See OSR paragraph 4.26.
Storm Jib	See OSR paragraph 4.26.

## SAILS - HEADSAILS

HSA	The maximum permitted <u>headsail</u> area.
HLU	The <b>luff length</b> of the largest area <u>headsail</u> on board and which may be used while <i>racing</i> .
HLUmax	The longest <b>luff length</b> of any <u>headsail</u> on board and which may be used while <i>racing</i> .
LLY	The longest <b>luff length</b> of any <b>mizzen</b> staysail.
HLP	The <b>luff perpendicular</b> of the largest area <u>headsail</u> on board and which may be used while <i>racing</i> .
LPY	The longest <b>luff perpendicular</b> of any <b>mizzen</b> staysail.
HHW	The <b>half width</b> of the largest area <u>headsail</u> .
HTW	The <b>three-quarter width</b> of the largest area <u>headsail</u> .
HUW	The <b>seven-eighths width</b> of the largest area <u>headsail</u> .
Foot Offset	The maximum offset between the edge of a <b>headsail foot</b> and a straight line between <b>tack point</b> and <b>clew point</b> .
Cutter Rig	A cutter rigged boat is any <b>boat</b> that sets more than one <u>headsail</u> when on a beat to windward while <i>racing</i> . These values will be used in place of standard headsail dimensions where relevant in IRC Rules for a cutter rigged boat.
Cutter Rig HLU	<u>Headsail luff length</u> measured parallel to the <u>forestay</u> as the distance from the lowest <b>tack point</b> to the highest <b>head point</b> of any <u>headsails</u> set simultaneously while <i>racing</i> on a beat to windward.
Cutter Rig HLUmax	As <u>Cutter Rig HLU</u> .
Cutter Rig HLP	The shortest distance from the aftmost <b>clew point</b> of any <u>headsail</u> when set on the centre line of the <b>boat</b> , to the foremost <u>headsail luff</u> which may be set simultaneously while <i>racing</i> on a beat to windward.
Cutter Rig HHW	The greater of 50% of <u>Cutter Rig HLP</u> or HHW of the largest area <u>headsail</u> .
Cutter Rig HTW	The greater of 25% of <u>Cutter Rig HLP</u> or HTW of the largest area <u>headsail</u> .
Cutter Rig HUW	The greater of 12.5% of <u>Cutter Rig HLP</u> or HUW of the largest area <u>headsail</u> .

**SAILS - MAINSAIL**

MHW	The <b>half width</b> of the <b>mainsail</b> .
MTW	The <b>three-quarter width</b> of the <b>mainsail</b> .
MUW	The <b>seven-eighths width</b> of the <b>mainsail</b> .

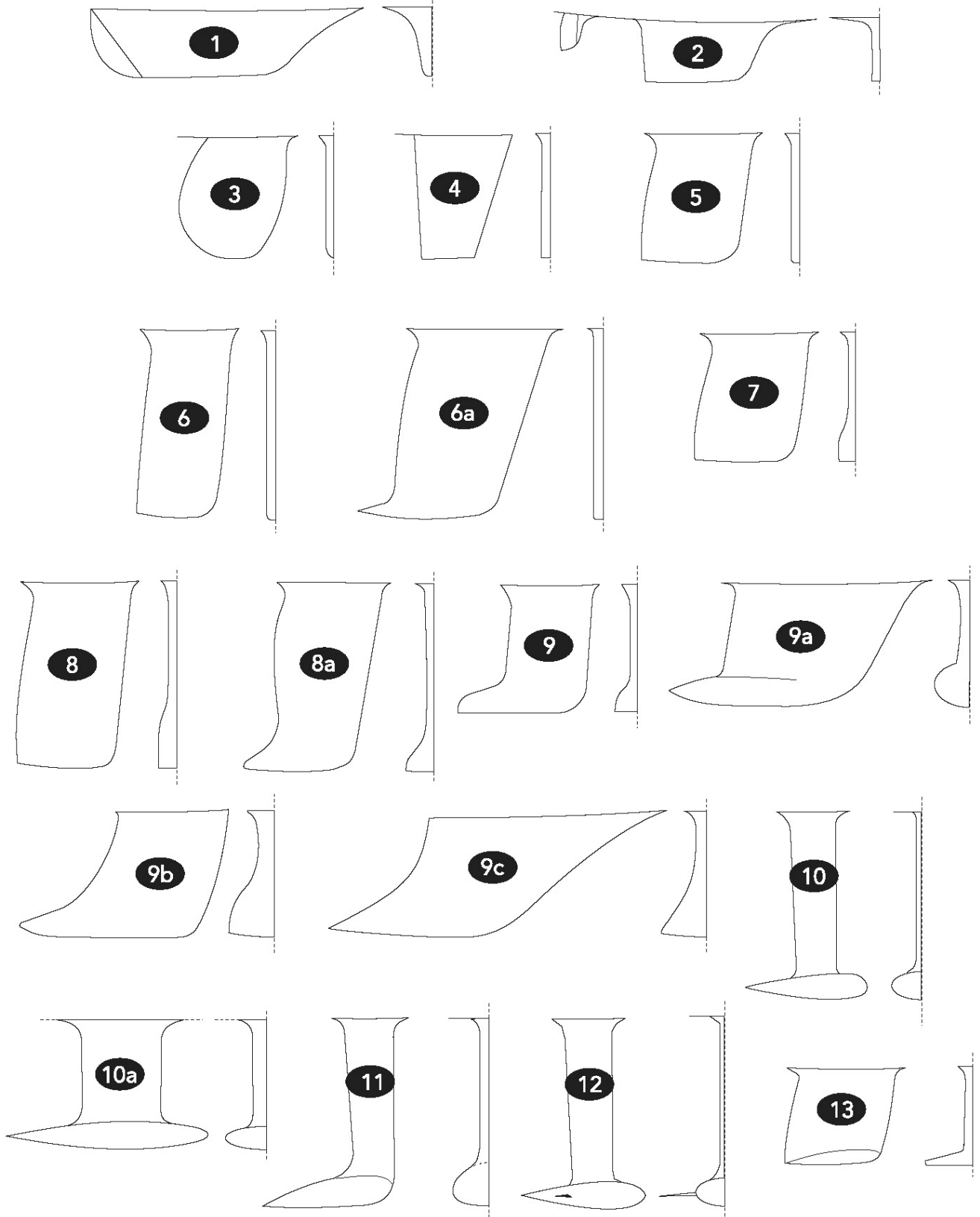
**SAILS - SPINNAKER**

SPA	The maximum permitted <u>spinnaker</u> area.
SLE	The <b>leech length</b> of the largest area <u>spinnaker</u> on board.
SLU	The <b>luff length</b> of the largest area <u>spinnaker</u> on board.
SFL	The <b>foot length</b> of the largest area <u>spinnaker</u> on board.
SHW	The <b>half width</b> of the largest area <u>spinnaker</u> on board.

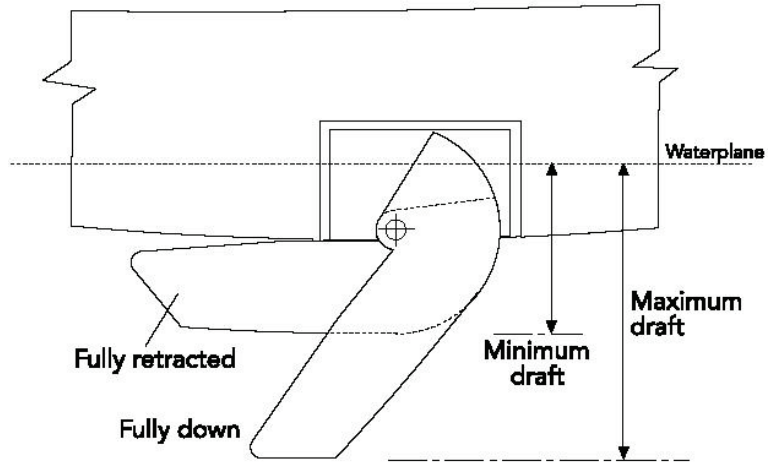
**APPENDIX - IRC MEASUREMENT DIAGRAMS**

**FIN KEEL TYPES**

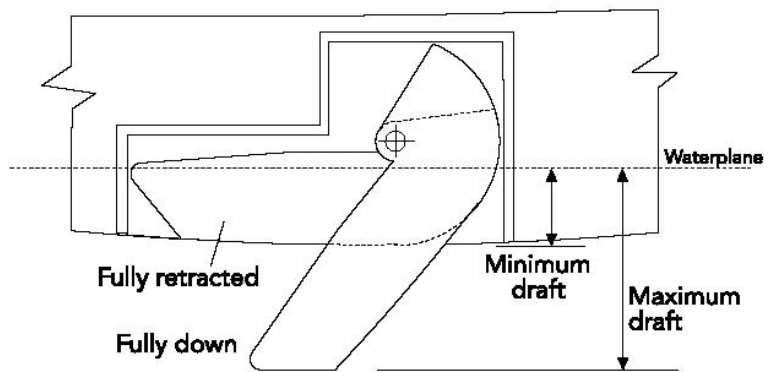
Used for guidance only. Select the number that closest resembles the keel on the boat.



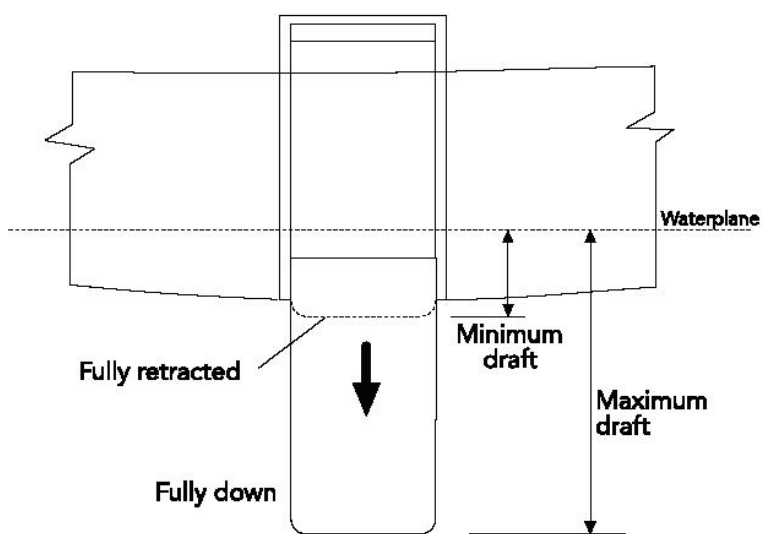
**SWING KEEL**



**CENTREBOARD**

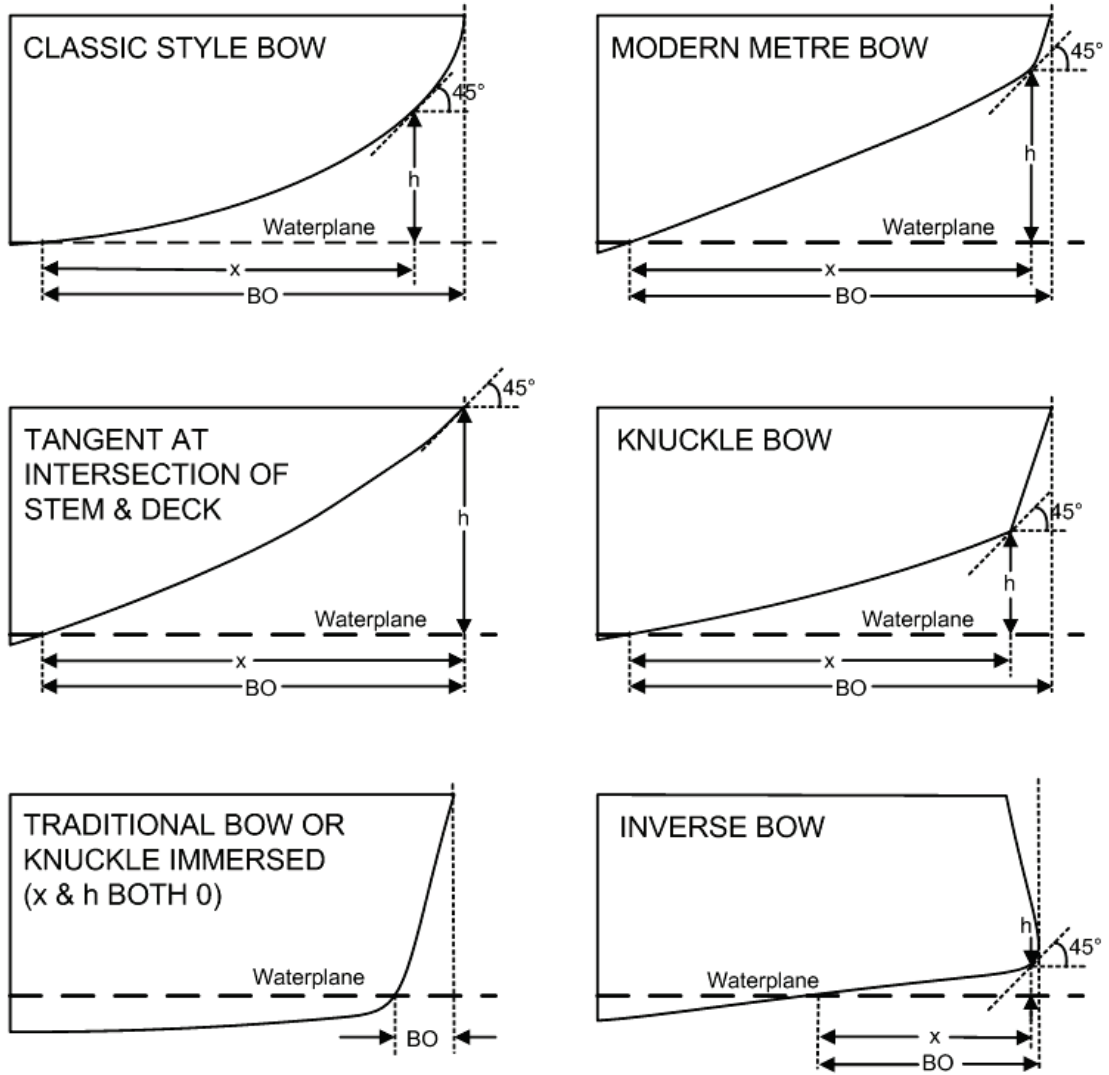


**DROP KEEL**

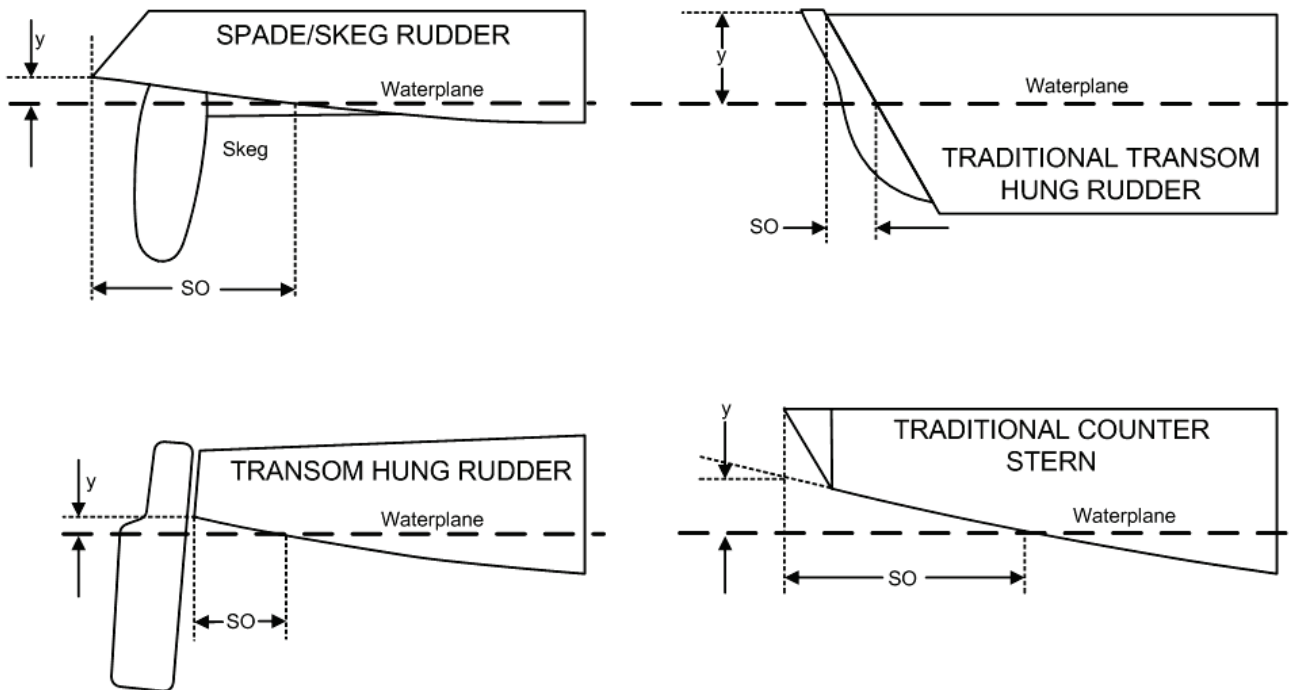


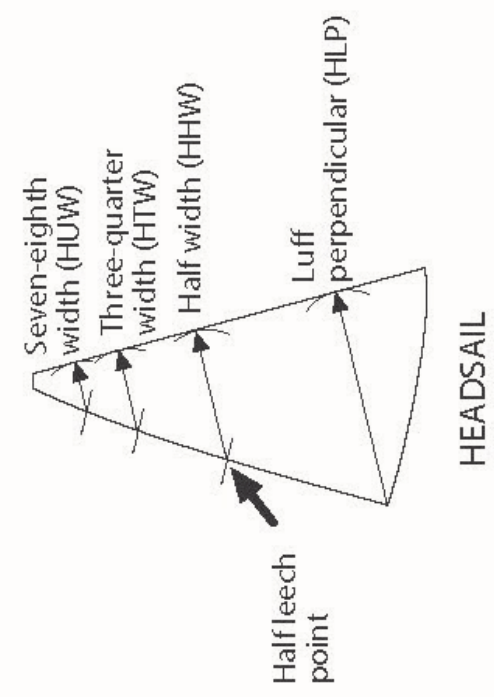
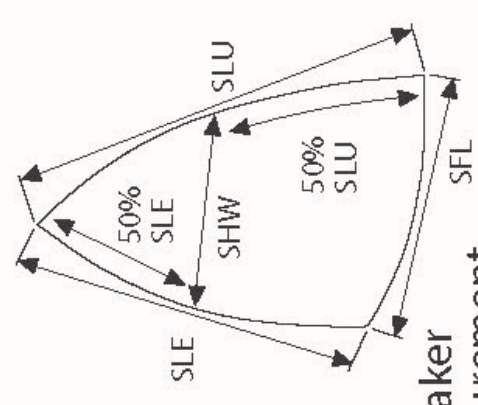
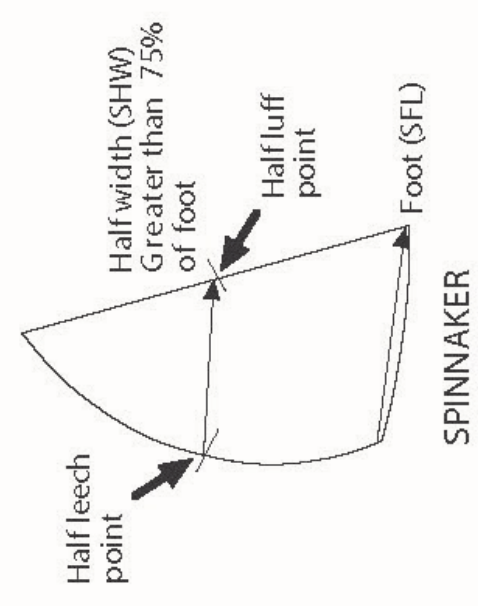
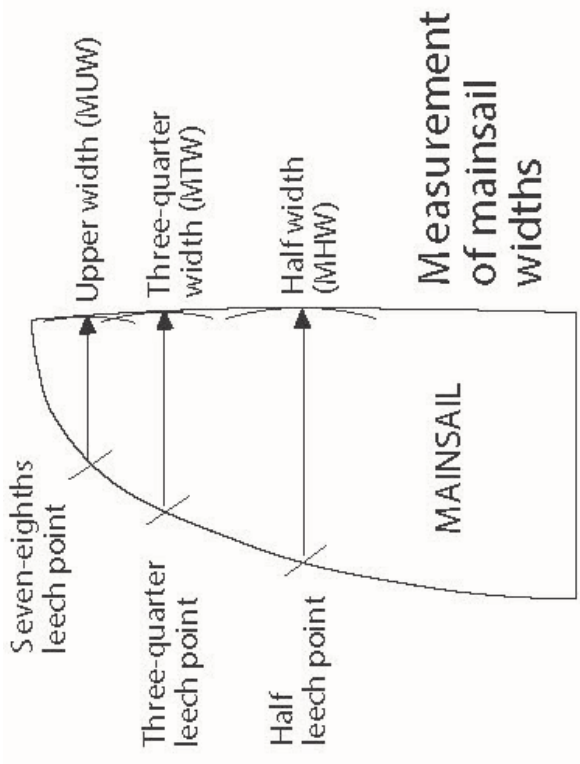
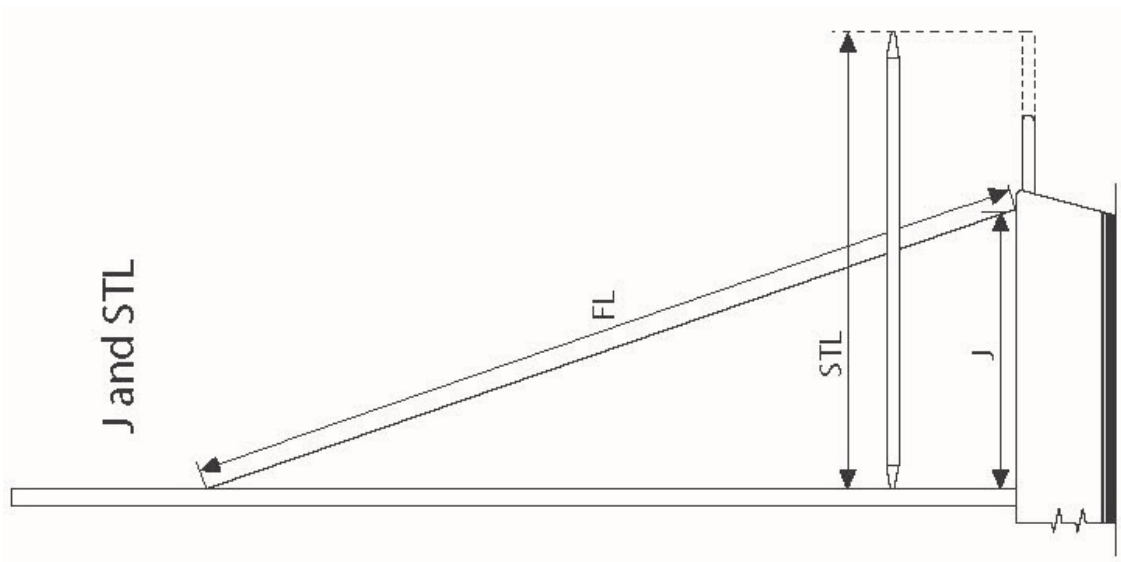
Indicate on the application form whether the keel is fixed down when racing

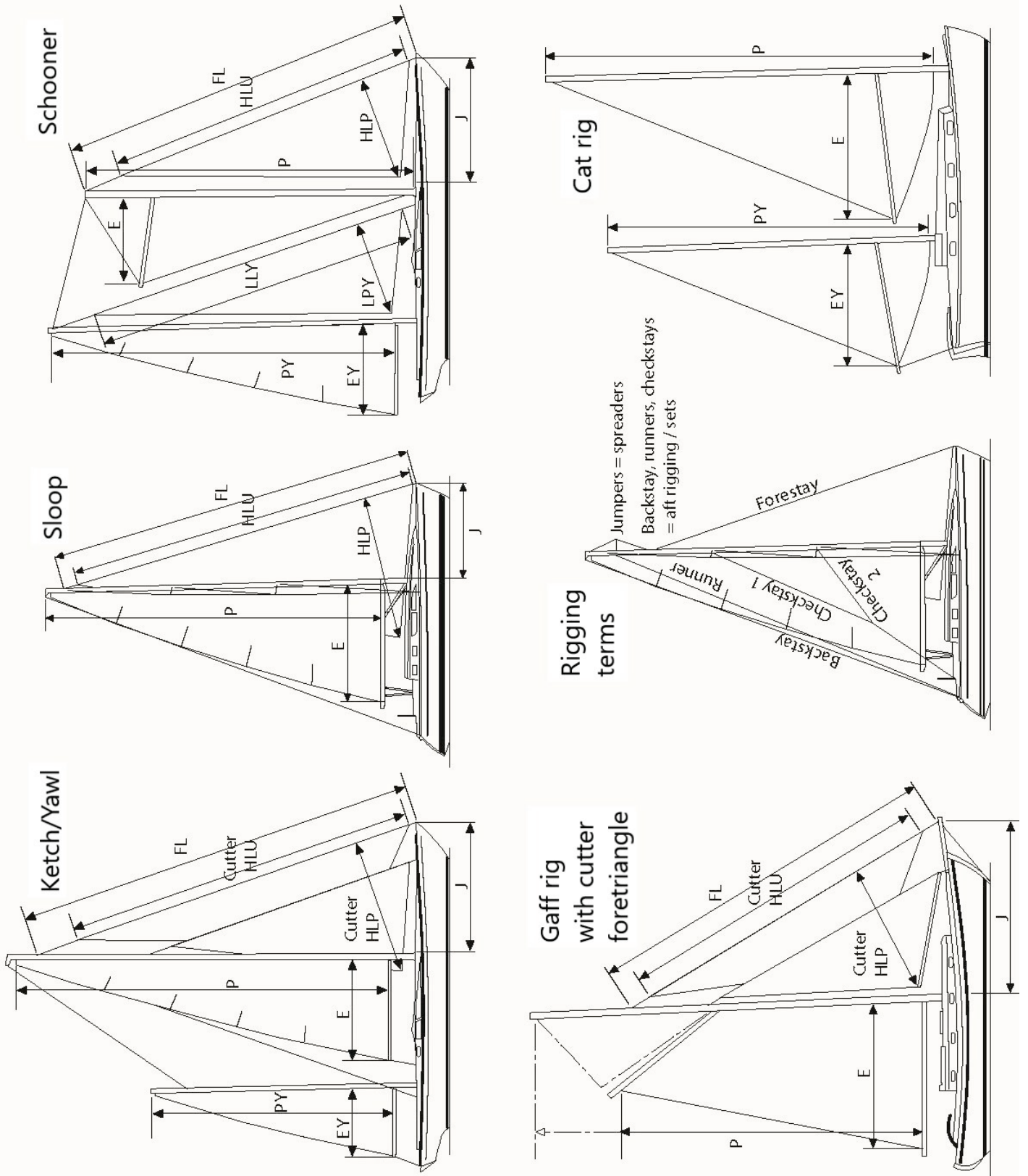
**BOW OVERHANGS**



**STERN OVERHANGS**

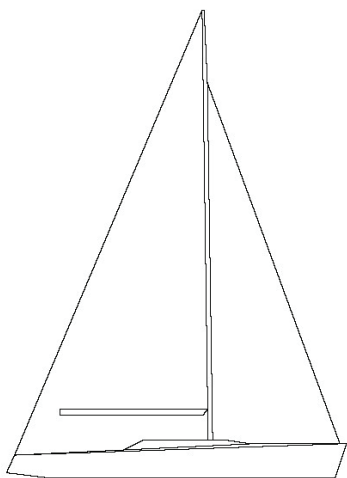




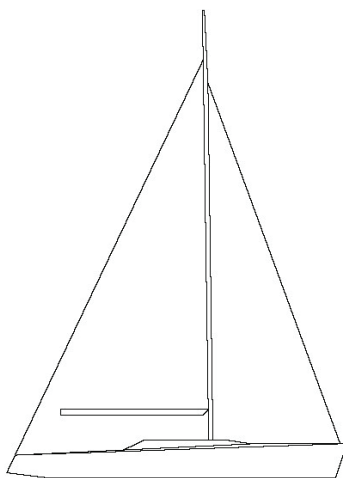




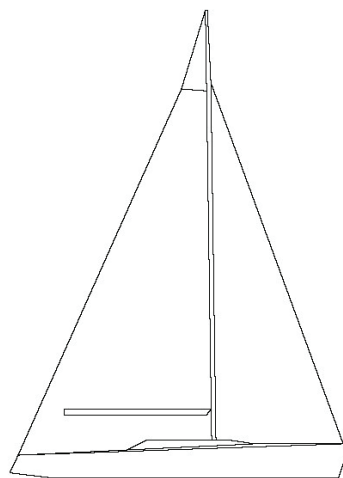
### AFT RIGGING



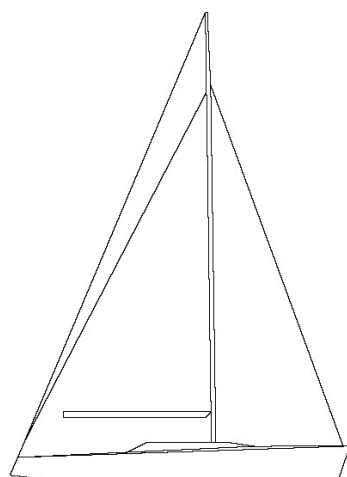
One stay/set of stays



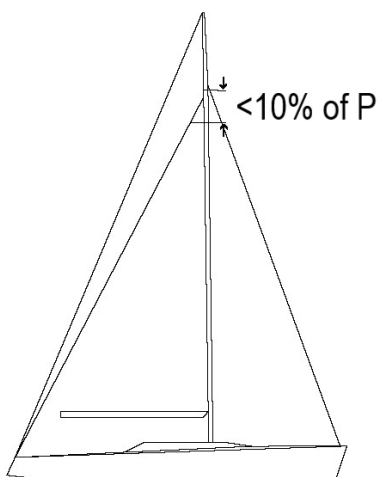
One stay/set of stays



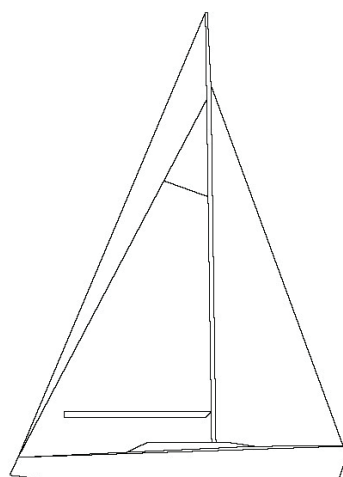
Two stays/sets of stays



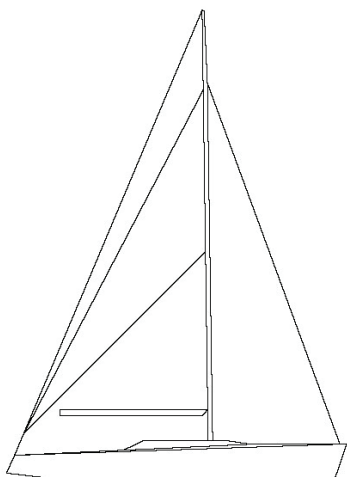
Two stays/sets of stays



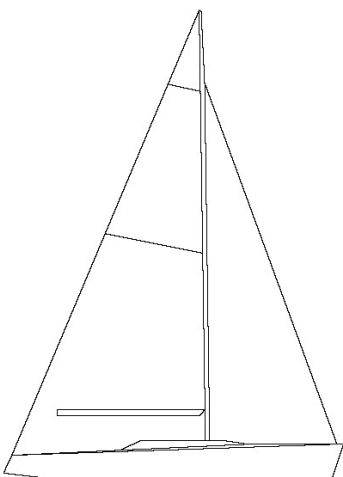
Two stays/sets of stays



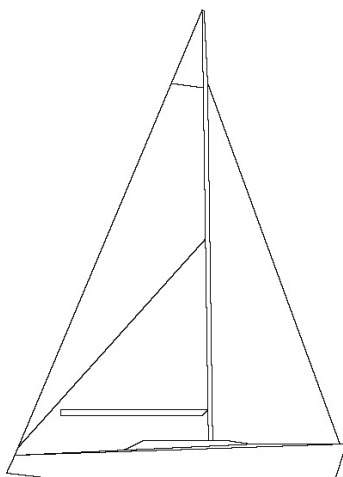
Three stays/sets of stays



Three stays/sets of stays



Three stays/sets of stays



Three stays/sets of stays

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# spinlock

BE ADVENTURE-PROOF

## SAIL-SENSE

SAIL MONITORING & MANAGEMENT



Sail-Sense attaches permanently to the sail, measuring key performance data including hours of use, flogging, tacking, UV and location.

### FEATURES

- \\ Negligible size and weight
- \\ Tamper proof record of a sails lifetime history
- \\ See how, when and where a sail has been used
- \\ Measures: hours in use, UV exposure, G-Force and Flogging
- \\ Sail can be tracked, traced and located
- \\ App allows users to log, review and export the data recorded

### TECHNICAL DETAILS

- \\ Sewn attachment to the sail
- \\ Fitted during sail manufacture or added as an aftermarket accessory
- \\ 5 years battery hours depending on use

