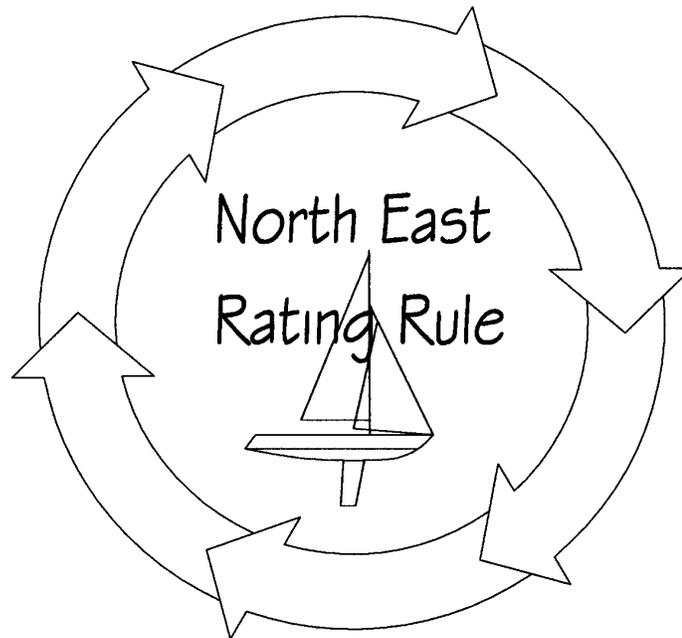


# NORTH EAST RATING RULE (NERR)



 - Revision bar indicator

## INTRODUCTION

The North East Rating Rule (NERR) is a system of measurement to produce ratings for offshore yachts. These ratings when combined with a time allowance system yield handicaps, which permit yachts of various sizes and types to race together. N.E.R.R. through its voluntary Rating Officer, and Measurement Officers appointed by the participating yacht clubs are responsible for the management of the North East Rating Rule.

The North East Rating Rule adopts similar methods and procedures as IRC and for yacht measurement complies with the ISAF Equipment Rules of Sailing, however, there is no absolute correlation to, participation or, collaboration with "Seahorse Rating Ltd." Both are independent rules for use as either body shall see fit.

It is not possible for the Rule neither to cover every eventuality nor to anticipate every innovation in design or construction. The Rule administrators therefore reserves the right, at any time, through the N.E.R.R. Measurement Committee to refuse a rating or to award such rating as it considers appropriate to any yacht, independently of the Rule. The interpretation of the clauses of the Rule, shall lie solely with the measurers Committee, which reserves the right to change the Rule at any time. Owners should make themselves familiar with the Rule, any yacht discovered to be racing in contravention to the Rule, in races organised under the auspices of any participating club or Regatta committee may be disqualified.

## RATING CERTIFICATES

The Club Measurement Officer will issue a certificate, based upon the measurements as provided to the Measurement Officer, or otherwise, of a yacht and its sails which describes its rating and handicap under a time allowance system. Such a certificate will be valid for one year unless any change is made in the Rule or the yacht is modified in such a manner so as to affect its rating or performance. No charge is made for either the measurement of the yacht or the issuing of a certificate. In any year owners are entitled to have their yacht re-measured following some change in its configuration. Further requests for re-measurement in the same year may involve a charge being levied by the Club to which the owner belongs to cover the expenses of the Measurer. Measurements are metric.

The N.E.R.R. Rating Officer or Measurement Committee acting on behalf of the Rating Officer, may issue a Provisional rating certificate for yachts who wish to race under the Rule in the event of there being insufficient or accurate information or time to complete the measurements before a race. Such certificates shall only apply until the yacht is measured and may only be used for periods longer at the discretion of the measurement committee. The provisional certificate shall consist of an estimate of the yachts rating and handicap under the time allowance system, which reflects the rating; the committee would expect to obtain on the basis of the measurements of the yacht.

## UNITS OF MEASUREMENT

All dimensions shall be in millimetres and weights shall be in Kilograms. A Yachts TCF is calculated on the basis of the value of the un-rounded Rating and is expressed to four decimal places.

## OWNERS RESPONSIBILITIES

The owner's responsibilities for yachts racing under N.E.R.R. generally conform to those used under IRC.

Owner's Responsibilities prior to Measurement.

- a) The owner shall present the yacht in measurement trim, (defined below) at a suitable location agreed by the Club Measurement Officer so that any measurements may be taken.

If the yacht is of a class for which standard measurements may be available, the owner shall declare any modifications which have been made to the hull, rig or engine installation so that the Measurer may determine the extent to which it conforms to its class.

The owner shall declare to the measurer all sails and spars, and their location when set so that they may be properly measured. The owner shall also declare whether a sail has abnormal shape due to the headboard, leech or roach, number and length of the battens used.

Owner's Responsibilities After Measurement

- a) The Owner shall declare to the Club Measurement Officer acting on behalf of the N.E.R.R. Officer, any change made to the yacht or its rig after measurement, which could modify its performance or any of its measurements under the Rule. In particular the owner shall notify the Club Measurement Officer under the following circumstances
  - 1) Change in the amount or location of tanks for water or fuel.
  - 2) Changes in the propeller, engine installation or position of engine.
  - 3) Changes in the position of any measurement bands. The addition of spars and new or re-cut sails whose dimensions differ from those obtained by measurement or which would be illegal or attract a penalty under N.E.R.R. due to their girth, headboard, and length, position and number of battens.
  - 4) Changes in the shape of the hull or the location of gear, which could affect its trim.
  - 5) Changes in the displacement of the yacht or the position of any ballast, including movement or extensions to the keel or fin of the yacht.
  - 6) Changes to the rudder of the yacht, the use of trim tabs or any other movable appendage.
  - 7) Changes to the underwater coating of the yacht which could modify its performance.

- b) The owner is responsible for ensuring that whilst racing
- 1) No ballast, whether movable or fixed, is shipped, unshipped or moved and that any equipment with which the yacht is measured may only be moved from storage for its primary purpose. Yachts measured with water ballast may adjust the ballast carried up to the limit obtained from measurement.
  - 2) Sails shall only be set in those areas declared for measurement and the rules governing the setting of sails is complied with.
  - 3) A drop keel, or other movable appendage, which has been declared as locked for measurement is suitably fastened.
  - 4) Except when tacking or gybing, and when guard rails (Life lines) are not fitted, Crew's shall not position their bodies over the side of the boat.  
( Hiking out is not allowed).

## MEASUREMENT OF THE YACHT

HULL MEASUREMENTS shall, in principle, be taken in two stages as follows:

1) Ashore where the principle hull measurements may most easily be taken. In the event, that the specification of the manufacturers of the yacht provides the required measurements, these values may be used in the place of the measured values, where the same definitions are employed. Further in the event, that the yacht holds a current I.R.C certificate, measurements may be taken from the certificate in place of the measured values.

2) Afloat where the measurements associated with the Load Water Line and Girth of the yacht may be taken when it is in measurement trim.

## MEASUREMENT TRIM

Measurement trim is defined under N.E.R.R. as follows:

a) The yacht shall be completely rigged and ready to sail. All standing rigging and related fittings used whilst racing shall be in their normal position. Sheets, guys, any running rigging not carried permanently on spars and portable deck equipment shall be stored abaft the mast (foremast in two masted yachts).

b) The mainsail and mizzen of a yawl or ketch shall be in place on their booms, which shall be secured in their normal positions. Sails except those mentioned above shall be stowed on the sole of the cabin floor abaft the mast (foremast in two masted yachts)). In the event, that there is insufficient room to place the sails on the sole of the cabin floor, they may be placed on top of one another provided they are evenly distributed over the length of the cabin. The sails, stored in this fashion, shall not exceed

- 1) Four jibs, including the largest and the smallest.
- 2) Two spinnakers.
- 3) Storm trysail and storm sail used before the mast.
- 4) The two largest staysails used on a yawl or ketch.

c) Any portable equipment, that is cushions, cooking appliances, navigational equipment, safety equipment etc shall be on board and stowed in its normal position. Any portable gear normally stowed forward of the mast, unless explicitly excluded below, shall be placed on the cabin sole abaft the mast (foremast).

d) No clothing, food or stores shall be on board.

e) All ballast, including batteries shall be secured against movement in their proper stowage, and may not be moved whilst racing other than in yachts measured with water ballast. Yachts shall be measured with at least one anchor, it may be stowed for the purposes of measurement together with any chain forward of the mast, in the bow, provided purpose designed stowage is available and may not be moved whilst racing other than for the purpose of anchoring. Anchor rope together with any additional anchors or chain may not be stored forward of the mast.

f) The condition of the fuel, water, and any hydraulic tanks shall be such as to maximise the rating of the yacht in the view of the Measurement Officer with respect to the flotation measurements. Generally tanks forward of the mast should be empty while those aft the mast should be full.

g) If an outboard motor, where it is the yacht's engine, is to be carried whilst racing, it shall be provided with a proper locker or secure stowage or mounting bracket abaft the mast, where it must be carried whilst racing.

h) All measurement bands shall be in place, all movable appendages which are to be locked for the purposes of the Rule whilst racing shall be locked, the bilges shall be pumped dry, no one may be on board whilst measurements are taken and the yacht's head or stern shall not be depressed through lying to a mooring or for any other reason.

#### DEFINITIONS OF HULL MEASUREMENTS

The Rule makes use of the following measurements of the hull of a yacht. Whenever possible, the same definition as that used under I.R.C is employed. A brief description of the procedure used to take each measurement is included with the definition.

##### 1) LENGTH OVERALL: LOA

The length overall of a yacht shall be measured to include the length of the hull, but not spars or projections fixed to the hull such as

- (i) bowsprits,
- (ii) bumpkins,
- (iii) pulpits,
- (iv) pushpits,
- (v) stem fittings which project beyond the stem,
- (vi) the rudder where this extends beyond the extreme after end of the hull.

The length overall shall be taken as the horizontal distance between the points consisting of:-

- a) the stem of the yacht, whether or not this is carried above the deck as in the form of bulwarks.
- b) the extreme aft end of the hull whether at, above or below deck level.

It may be measured by positioning two plumb lines at the measurement points and measuring the distance between them along the ground beneath the yacht. Boards in the vertical plane may be used in place of plumb lines, where it is more convenient to measure the length above the yacht. Where a manufacturer's specification is to be used in place of the actual measurement, the definition used by the manufacturer should be checked, in particular, care should be taken that it does not include pulpit, pushpit, rudder etc which they have been known to do. I.R.C measurements may be used without qualification.

## 2) BOW OVERHANG : BOH

The bow overhang of a yacht shall be measured as the horizontal distance between the point at which the bow cuts the water and a point at which a perpendicular dropped from the stem of the yacht as defined in (1) above, cuts the water.

This measurement should be taken with the yacht in measurement trim afloat, as it is very difficult to identify the point at which the bow cuts the water otherwise. It may be obtained by dropping a plumb line from the stem, and measuring the horizontal distance from the point at which the line intersects the water to the point at which the bow cuts the water with a 1.5m/5 ft ruler or some suitable length of timber.

## 3) STERN OVERHANG : SOH

The stern overhang of a yacht shall be measured as the horizontal distance between the points at which the aft end of the hull cuts the water at a distance of  $LOA/90$  ( or 1.111% of LOA) away from the centre line of the yacht in the cross sectional plane at which a perpendicular dropped from the extreme end of the hull body, i.e. excluding any skeg, at a distance of  $LOA/90$  ( or 1.111% of LOA) away from the centre line in the cross sectional plane, intersects the plane of the water.

The stern overhang is measured along a line, hereafter called the stern overhang line, which is displaced 10% of LOA from the centre line of the yacht in the cross sectional plane in order to avoid the problem of having to measure to a point inside the skeg. The existence of a skeg designed primarily to carry the rudder, may, for the purposes of the Rule, be defined as any part of the stern in which the convex curve of the hull in the cross sectional plane becomes concave i.e. involves a point of inflection.

A yacht shall be described as having a stern overhang of 0mm if its transom cuts the plane of the water line i.e. where the underwater form of the hull is not extended out of the water at the stern.

This measurement should be taken with the yacht afloat in measurement trim with an approved purpose designed measuring tool designed to obtain the required distance at the points defined together with the following three measurements which are based upon the stern overhang line.

## 4) INNER HEIGHT : IH

The inner height of a yacht shall be measured as the vertical height of the body of the hull above the plane of the water line at a point half way along the stern overhang line.

This measurement should be obtained with that of the stern overhang with the appropriate measurement tool. In the case of a yacht whose hull body does not extend above the water at the stern, i.e. a yacht with a stern overhang of 0 mm, the inner height is also set to 0 mm.

## 5) OUTER HEIGHT : OH

The outer height of a yacht shall be measured as the vertical height of the body of the hull above the plane of the water line at a point defined by the extreme outer end of the stern overhang line.

Like the inner height, this measurement should be obtained with that of the stern overhang with the required measurement tool. In the case of a yacht in which the hull body does not extend out of the water, i.e. when the stern overhang is 0 ft, this measurement is set to 0 mm.

6) WIDTH STERN : WS

The width stern of a yacht shall be measured as the distance in the plane of the water line between the points -

a) at which the hull body cuts the water as defined by the inner end of the stern overhang line.

b) at which the body of the hull is  $LOA(mm)/90 = 0.011 \times LOA$  above the plane of the water line in the cross sectional plane passing through inner end of the stern overhang line.

Like the previous three measurements, this measurement is best obtained with the measurement tool referred to above. In the case of a yacht whose hull body does not extend out of the water, i.e. a yacht with 0 mm stern overhang, this measurement is obtained in the cross sectional plane at which the transom cuts the water.

7) UNMEASURED LENGTH : UL

The unmeasured length of a yacht, shall be measured as the horizontal distance in the longitudinal plane, if any, between the points -

a) the extreme aft end of the hull as defined in the measurement of length overall

b) either the end of the hull body as defined by the outer end of the stern overhang line or where a reverse sloping transom cuts the water in the case of a yacht with a zero overhang.

Essentially this measurement is used to determine the degree to which the hull has a reverse sloping transom, like that on a Folkboat, which may or may not intersect the plane of the water line. It may be measured by dropping a plumb line from the extreme end of the hull and measuring the horizontal distance with long ruler or other stick, from the line to either the outer end of the stern overhang line or the point at which the transom cuts the water.

8) MAX GIRTH : G

The maximum girth of a yacht shall be measured as the maximum underwater distance round the cross section of the hull in the vertical plane, excluding keel, fin or other extrusion.

Essentially this measurement is used to assess the wetted surface area of the hull. Depending upon whether the max girth station is sighted so as to pass through the yachts keel or fin, its measurement takes two different forms.

- a) When the line of the hull in the cross sectional plane is not carried downwards through a reverse curve to form a keel, fin or other extrusion the max girth may be measured as follows. With the yacht in the water in measurement trim, a tape may be passed beneath the yacht and a series of girth measurements obtained in the area of the maximum beam at intervals of approximately 150mm. The largest of these measurements will describe the max girth. Note in some yachts with the engine placed amidships the propeller shaft can exit the hull in the region of the max beam station; in this case it may be necessary to use the second method for measuring the girth.
- b) When the line of the hull in the cross sectional plane is carried downwards through a reverse curve to form a keel, fin or other extrusion the max girth should be measured in the following manner:-
- i) With the yacht ashore, two lines, one on either side of the yacht should be identified, which will be described as lines of inflection, consisting of the points along the hull at which the cross section in the vertical plane changes from a concave section to a convex section. Such points of inflection may be found by running a short straight edge down the hull and noting the point at which the edge will no longer rock.
- ii) At stations of approx 150mm along the hull in the region of its max beam, measure on both sides of the yacht
- A - the angle in the vertical plane which the slope of the hull makes to the horizontal at the line of inflection. This angle may be measured with a protractor with a plumb line suspended from its centre.
- B - The horizontal distance between lines of inflection by suspending plumb lines from both sides of the hull and measuring the distance between them beneath the keel.
- C - the circumference of the hull from the line of inflection to a suitable line above the water line, such as the sheer line in the vertical plane with a tape.
- iii) The girth of the yacht to the line selected above the water line, at each section at which measurements were taken is given by the expression

$$GSL = 2 * (C1 + C2)/2 + B * \cos((A1 + A2)/2)$$

where A1 and A2 are the measurements of the angle A on either side of the hull and C1 and C2 are the measurements of the circumference on either side of the hull. The measurements are averaged in the above expression to take into account both any inaccuracies in the measurements and the possibility of the hull not standing in the vertical plane.

- iv) With the yacht afloat in measurement trim, measure on both sides of the yacht, the circumference from the water line to the line selected to measure the circumference C, at the stations along the hull at which the measurements of A, B, and C were taken. The girth at each of these stations is given by the difference between the value of the girth to the line, GSL, and the sum of the circumference measurements from the water line to the selected line. The maximum girth is then the largest girth obtained.

In general, although this procedure appears complex, in practice in a modern yacht in which the fin projects from the hull at a right angle, it is only necessary to measure the width of the fin together with the circumferences as the angles to the horizontal on both sides are 90 degrees, and  $\cos((0 + 0)/2) = 1$ . The full procedure is only normally required in the case of long keeled yachts.

#### 9) MAX BEAM - B

The maximum beam of a yacht shall be measured as the width of the hull excluding rubbing strakes at the section where it reaches its maximum value. It shall be measured between two points which are equidistant from the stem.

The beam of a yacht may be most conveniently measured with the yacht ashore, by placing two boards in the vertical plane on either side of the yacht which are equidistant from the stem and measuring the distance between them. If this measurement is taken at a number of stations in the region of the greatest beam, the value of the maximum beam will be the largest value obtained. Alternatively the Max beam can be obtained from the value of BMAX taken from an I.R.C certificate or the manufacturers specification of the yacht.

#### 10) MAX DRAFT - D

The maximum draft of a yacht shall be measured as, with the yacht in measurement trim, the vertical distance from the plane of the water line to the deepest point of the immersed hull or keel.

The maximum draft may be most conveniently found by first measuring, with the yacht ashore, the vertical distance between the sheer line and a board in the horizontal plane placed beneath the lowest point of the keel. If the freeboard of the yacht at this station with the yacht in measurement trim is obtained, the difference will describe the maximum draft. Alternatively this measurement may be obtained from an I.R.C. certificate or the manufacturers specification of the yacht.

#### 11) Displacement - W

The displacement of a yacht shall be measured as the total weight of the yacht in measurement trim with water tanks, including water ballast tanks empty.

The displacement of a yacht may be measured by either

a) weighing the yacht together with its fittings as defined in measurement trim using a crane and spring balance, or weighbridge. In either case it is permissible to weigh the various fittings such as the mast, boom and spinnaker pole separately. The weight of fuel or water if the tanks are not empty may be estimated or if possible calculated and then deducted from the weight of the boat. This approach should be used whenever factual information as to tank capacities is not available. In the event that the hull takes up water the displacement may be obtained after it has been immersed for a period.

b) estimating the weight of the yacht in measurement trim from its design displacement as described in the manufacturers specifications. In this case, the design displacement will be increased by a factor, obtained from a comparison of design displacements and actual displacements for different manufacturers, which depends upon the manufacturer.

## 12) PROPELLER TYPE - T

For the purposes of this Rule, yachts shall be described as having either :-

- a) an outboard engine which is raised out of the water whilst racing or no propeller.
- b) a folding or feathering propeller with a P drive.
- c) a fixed two bladed propeller with a P drive which is mounted on the centre line of the yacht.
- d) a fixed two bladed propeller with a P drive which is offset from the centre line of the yacht.
- e) a fixed three bladed propeller with a P drive which is mounted on the centre line of the yacht.
- f) a fixed three bladed propeller with a P drive which is offset from the centre line of the yacht.
- g) a fixed propeller Z drive ( Also known as a 'S' drive)
- h) a folding or feathering propeller Z drive. ( Also known as a 'S' drive )

## 13) ENGINE POSITION - EP

For the purposes of this Rule, the position of the engine may be measured as the horizontal distance of the midpoint of the engine from the midpoint of the keel. Not implemented.

## 14) HULL TYPE

For the purposes of this Rule a yacht shall be described as either :-

### a) Fin :-

Yacht whose rudder is not supported by the keel or skeg extending at least one quarter of the length of the rudder. This category shall include yachts with raisable keels which are fixed down for the purposes of racing.

### b) Fin and Half Skeg :-

Yacht whose rudder is supported by a skeg separate from the keel which either does not extend to the full length of the rudder or whose breadth halfway up the rudder is less than a quarter of the breadth of the rudder at that point.

### c) Fin and Skeg :-

Yacht whose rudder is supported by a skeg separate from the keel which extends the full length of the rudder and whose breadth is greater than one quarter of the breadth of the rudder at a point half way up the rudder.

d) Long Keel :-

Yacht whose rudder is supported by the keel.

e) Bilge Keel :-

Yacht with fixed bilge keels which provide the lateral resistance enabling the yacht to sail to windward and capable of supporting the yacht in an upright position ashore.

f) Bilge Keel and Fin :-

Yacht with bilge keels as described above and a central fin or fin and skeg.

g) Centreboard :-

Yacht with a centreboard of low aspect ratio which may be raised or lowered whilst racing by pivoting it about a point to effectively reduce the wetted surface area of the hull.

h) Daggerboard :-

Yacht with a centreboard of high aspect ratio which may be raised or lowered whilst racing by lowering it through the hull to effectively reduce the wetted surface area of the hull.

i) Wings :-

Yacht with projections from the keel designed to reduce the generation of vortices, such as end plates, swept back wings etc.

j) Tandem Keels :-

Yacht with two or more fins in line which may be attached.

k) Pencil Keel with Bulb:-

Described as a slim aerofoil blade with a torpedo shaped bulb fitted at the lowest point.

#### 15) OUTBOARD WELL

For the purposes of this Rule yachts shall be described as having an outboard well, that is an opening in the bottom of the hull through which an outboard may be lowered which can not be closed. Yachts with an outboard well will attract a rating benefit.

#### 16) MOVABLE APPENDAGE .

For the purposes of this Rule yachts shall be described as having a movable appendage consisting of either:-

- a) a trim tab on the keel or a keel which can be rotated about the centre line of the yacht to promote windward performance which will attract a penalty on the Draft correction.
- b) centreboard or dagger board which can be rotated in the fore and aft plane without effectively reducing the wetted surface area of the hull to promote downwind performance which will attract a penalty on the surfing planing correction.
- c) Tilting (canting) keel, which can be transversely canted port or starboard to enhance stability.  
Such keels will attract a penalty.

#### 17) RUDDER TYPES

A rudder shape that is either elliptical or trapezoid . The rudder length is expressed by its draft measurement. In addition its relationship to the keel is expressed by measuring the distance of the leading edge of the rudder to the trailing edge of the keel. Where both are not parallel, the minimum distance is recorded.

#### 18) KEEL CONFIGURATION

For the purposes of this Rule yachts shall be described as having a keel which either has a :-

- a) High centre of gravity
- b) Medium centre of gravity
- c) Low centre of gravity
- d) Penalty applied low centre of gravity. ( Used when an owner has modified the original keel design with the addition of lead or iron shoes to the tip of the keel)

Similarly the material of the keel shall be described in terms of whether it is

- a) made of iron
- b) made of a composite of iron or other material and lead.
- c) made of lead.
- d) made of wood or plastic i.e. without ballast

19) WATER BALLAST - WB

For the purposes of this Rule yachts shall be described as carrying water ballast if the yacht has tanks which can be filled with or emptied of water to increase the righting moment of the yacht. In such yachts, the maximum weight to the nearest kg of the water ballast which can be carried to increase the righting moment shall be measured and will attract a penalty.

20) DATE OF LAUNCH - A *( Not currently employed )*

For the purposes of this Rule the age of the yacht shall be described as the year in which it was first launched except for those yachts, which conform to a strict one-design specification.

Yachts belonging to such a one design class shall be given an age consisting of the average of the dates of launch of the members of the class in the fleet.

## DEFINITIONS OF SAIL MEASUREMENTS

### GENERAL

All sails must be set and trimmed in a manner consistent with the way they are measured.

Yachts with unusual rigs such as double luffed sails, loose footed mainsails, schooners and staysail ketches shall be measured and comply with I.RC measurement procedures and methods and the current version of the ISAF Equipment Rules of Sailing. Similarly, yachts which use sails which would be illegal under IRC or which would attract a penalty under IRC due to their headboards, girth, position, number and length of battens will attract a fixed penalty.

### DEFINITIONS OF TYPES OF SAILS

#### Headsail -

A headsail shall be defined as a sail set in the fore triangle of the yacht and can be either a jib, spinnaker, asymmetrical spinnaker or cruising chute.

#### Spinnaker-

A headsail shall be measured as a spinnaker if its mid-width (SHW) is 75% or more of the foot length.

#### Asymmetrical Spinnaker or Cruising Chute-

A headsail shall be measured as an asymmetrical spinnaker or cruising chute if its mid-girth is greater than 50% of its foot length, it is asymmetrical about a line joining its head and the centre of the foot.

#### Jib-

A headsail shall not be measured as a jib unless its mid-girth measured between the mid points of the luff and leech is less than 50% of the length of the foot and its luff is less than the length of the hypotenuse of the fore triangle.

#### LP line-

The LP line is defined as a line abaft and parallel to the forestay and separated from it by the distance of 1.5 of the BASE OF FORETRIANGLE (J).

#### Off Wind Sails-

Off wind sails are defined as either a spinnaker, asymmetrical spinnaker or cruising chute.

## RESTRICTIONS ON SETTING SAILS

The owner or skipper of the yacht is responsible for the correct setting of sails in line with the manner in which they have been measured.

In principle, restrictions in respect to sail setting shall comply with the current version of the Racing Rules of Sailing with the following being observed:

- a) No jib may be set under an off wind sail or another jib which is tacked in such a position that if the sail were trimmed flat parallel to the centre line of the yacht its LP would fall abaft the LP line.

Other than a storm headsail, no other sail shall be set as an alternative to a rated roller reefed headsail.

- c) Jibs may be sheeted to any part of the deck or rail, or spinnaker pole when the pole is set on the opposite side from the main boom but not to any other spar or outrigger.

The spinnaker pole when used shall be set such that its inboard end shall only be attached to the mast.

An off wind sail may be sheeted to any part of the rail, deck or main boom but not to any other spar or outrigger.

- f) A jib may be set as a spinnaker or asymmetrical spinnaker with either its tack or clew to the spinnaker pole. *This amends R.R.S. rule 50.3 (b)*
- g) If a mainsail and an off wind sail are not set, two spinnaker poles or the spinnaker pole and the main boom may be used simultaneously to sheet jibs.

A spinnaker and asymmetrical spinnaker shall not be used simultaneously.  
(R.R.S. 50.1)

## SAIL MEASUREMENTS

All sails which are to be used whilst racing should be made available to the measurer and the owner shall declare whether each sail could be used under the I.R.C Rule and whether it would attract any penalty due to its headboard, girth, number, position and length of battens. Any measurements taken from the sails will be done with such tension between the measurement points as will remove all wrinkles across the line of measurement, and must include the length of the fabric between the measurement points. The measurement point at the corner of a sail shall be the intersection of the adjacent outside edges projected. All other measurement points shall be the extreme outside of the rope, wire or fabric of the sails edge. Where measurement bands are displayed on spars to describe the extent to which the sails can be pulled out, the measurement shall be taken to the inner edge of the band. The definitions used for measuring sails follow those used by IR2000.

## DEFINITIONS

### FORE LUFF – LL

Length of the luff of the largest foresail measured from the edges of the sail.

### 2) FORE TRIANGLE BASE – J

The base of the foretriangle shall be measured as the horizontal distance between the fore side of the mast and the centre line of the outer forestay on which headsails are set or centre line of the luff if the headsails are set flying at the point at which it intersects the sheer line. The base of the foretriangle may usually be measured by finding the horizontal distance between the front of the mast and the point at which the forestay cuts the deck with a tape.

### MAINSAIL FOOT - E (or MIZZEN FOOT - ME)

The mainsail foot shall be measured as the distance along the boom from the after side of the mast (forward side of the luff groove if it projects from the mast) to the aftermost position to which the mainsail can be extended along the boom or the inner edge of a measurement band on the boom if fitted. The mainsail foot may be measured with a tape along the boom from the after side of the mast. It may be taken from the value of E in an I.R.C certificate or the manufacturers specification if given.

### 4) MAINSAIL HOIST - P (or MIZZEN HOIST - MP)

The mainsail hoist shall be measured as the distance along the after side of the mast from either the top of the highest sheave for jib headed mainsails or the upper inner edge of the throat cringle for gaff sails or the inner edge of a measurement band defining the limit to which the sail can be hoisted to the fair extension of the top of the boom (inner edge of the foot groove if one is employed) if the boom is fixed or the top of the boom in its lowest position if a sliding gooseneck is used or the inner edge of the measurement band defining the limit to which the sail may be pulled down the mast. The mainsail hoist may be conveniently be measured by hoisting a tape on the main halyard. If due allowance is made for the size of the shackle and the problem of lining up the end of the tape with the measurement band the distance can be easily obtained. This measurement may also be obtained from the value of P in an I.R.C certificate or manufacturers specification if given.

5) MAIN GAFF - MG (OR MIZZEN GAFF)

The mainsail gaff shall be measured as the distance between the point at which the fair extension of the gaff intersects the after side of the mast and the point at which the sail can be extended along the gaff or inner edge of a measurement band if fitted. This measurement may be obtained with the gaff in the lowered position in the same manner in which the mainsail foot is obtained. It can also be taken from an I.R.C certificate.

6) LENGTH OF PERPENDICULAR OF LARGEST JIB - LP

The LP of a the largest jib shall be measured as the perpendicular distance from the luff of the sail to its clew. The LP of a jib may be obtained by selecting the largest jib used whilst racing and placing a the end of a tape at the clew so that it can be rotated about that point. The value of LP is given by the shortest distance to the luff of the sail when the tape is rotated.

7) SPINNAKER LUFF - SLU (SPINNAKER LEECH - SLE)

The spinnaker luff / leech shall be measured as the length of the luff or leech measured along the edge of the sail of the largest spinnaker. These measurements may be obtained by running a tape down the edge of the luff or leech of the largest spinnaker or from the value of SL in an I.R.C certificate.

8) SPINNAKER WIDTH - SHW

The spinnaker width shall be measured as the maximum width of the sail whether at the foot or across the body of the sail between points equidistant from the head of the sail of the largest spinnaker. This measurement can be obtained by folding the sail in half along its centre line and finding the maximum perpendicular distance from the fold to the edge of the sail or from the value of SMW in an I.R.C certificate.

9) SPINNAKER FOOT - SF

The spinnaker foot shall be measured as the maximum foot of the sail off the largest spinnaker.

10) ASYMMETRICAL SPINNAKER LUFF - ASLF

The asymmetrical spinnaker luff shall be the distance along the luff of the sail between head and tack.

11) ASYMMETRICAL SPINNAKER LEECH - ASLC

The asymmetrical spinnaker leech shall be the distance along the leech of the sail between head and clew.

12) ASYMMETRICAL SPINNAKER HALF WIDTH - ASHW

The width of an asymmetrical spinnaker shall be measured as the distance across the sail between the points half way up the luff and leech.

13) ASYMMETRICAL SPINNAKER FOOT – ASFT

The foot of an asymmetrical spinnaker shall be measured as the distance across the sail between the tack and the clew.

14) SPINNAKER POLE LENGTH - SPL (ASYMMETRIC POLE LENGTH -ASPL)

The length of the spinnaker pole shall be measured as the distance between the front of the mast and the extreme outer end of the pole or any fittings attached to the end when it is at its maximum extension. In the case of extendable spinnaker poles used with asymmetrical spinnakers when the pole is not attached to the mast, the length of the pole can be obtained by measuring the distance between the extreme outer end of the pole when extended and the front of the mast with a tape.

15) RIG TYPE

For the purposes of this Rule a yacht shall be described as:

- a) (i) Single mast.
- (ii) Single mast with Bowsprit
- (iii) Ketch.
- (iv) Stay Sail Ketch
- (v) Schooner
- (vi) Stay Sail Schooner
  
- b) (i) Bermudan Rig
- (ii) Gaff rigged
  
- c) (i) Having a means of controlling whilst racing, the position or manner in which the mast is bent other than by tensioning the backstay led to the top of the mast. In particular, the rig will be described in terms of the following parameters.
  - a) Mast material - aluminium, wood or carbon fibre
  - b) Straight or tapered mast
  - c) Number of Spreaders
  - d) Whether or not Runners are used
  - e) Whether or not check stays are used
  - f) Whether or not Jumpers are used
  - g) Whether or not an adjustable baby stay is used
  
- e) (i) Having a Main Sail made of Mylar or Terelene - Medium Tech material.
- (ii) Having a Kevlar or Carbon Fibre Main Sail - Medium Tech material.
- (iii) Having a moulded 3DL Main Sail - High Tech material.
  
- f) (i) Having a Fore Sail made of a Mylar or Terelene. - Medium Tech Material.
- (ii) Having a Kevlar or Carbon fibre Fore Sail. - Medium Tech Material.
- (iii) Having a moulded 3DL fore sail. - High Tech material.
  
- g) (i) Having a non IRC penalty Main Sail
- (ii) Having an IRC penalty Main Sail

- h) (i) Having a Non IRC penalty Fore Sail  
(ii) Having an IRC penalty Fore Sail
  
- i) (i) Having non IRC penalty Battens (One Full top batten allowed)  
(ii) Having at least two full length Battens throughout the sail.
  
- j) (i) Having Roller Reefing on the mainsail  
(ii) Having Roller Reefing on the foresail - (Sports boats are not applicable.)