

CLASS RULES - B - THE MEASUREMENT RULES – Exposure Draft September 2005

Comments on this draft are invited before 15 October 2005

1.0 General

- 1.1 The 505 is a racing dinghy of 5.05 metres L.O.A. designed by John Westell. It is an International Class recognised by the International Sailing Federation ("ISAF").
- 1.2 The administering authority is the International 505 Class Yacht Racing Association (the "International Association"), subject to its constitution and subject to the rules of the ISAF.
- 1.3 The official language of the class is English and in case of dispute over translation the English text shall prevail. The word "shall" is mandatory and the word "may" is permissive.
- 1.4 The ISAF Equipment Rules of Sailing 2005-2008 (ERS) apply, except as varied by these **class rules** (these Rules"). Except where used in headings, when a term is printed in "**bold**" the definition in the ERS applies and when a term is printed in "*italics*" the definition in the racing rules of sailing (RRS) applies
- 1.5 The class is measurement controlled. All **boats** shall be built, measured and registered in accordance with these Rules. These Rules comprise this text and the measurement diagrams. In the event of a conflict, the written text shall prevail.
- 1.6 Any **boat** having a **certificate** or any **sail** bearing a **certification mark** dated prior to the date of these Rules may be measured in accordance with the Rules prevailing at the date when the boat or **sail** was first measured unless these Rules state to the contrary or unless the **boat** or **sail** has been altered, modified or renewed after the date of any relevant change to these Rules. Any equipment which is altered, modified or renewed shall conform to the current Rules.
- 1.7 Neither the designer nor the International Association nor the ISAF nor any National Association accepts any legal responsibility in respect of these Rules or the designer's drawings or any claims arising from them.

2.0 Fees

- 2.1 Upon completion of a new **hull**, the builder shall apply to the International Association for a sail number. The application shall be accompanied by a fee determined from time to time by the International Association. This registration fee will include the designer's royalty, the ISAF building plaque and a set of measurement forms.

3.0 Registration

- 3.1 Sail numbers are issued by the International Association upon receipt of the registration fee. Sail numbers shall be issued in consecutive order.
- 3.2 Registration of a **boat** as an International 505 is completed by satisfactory completion and return of the measurement forms to the International Association and the issuing of a **certificate**.
- 3.3 For a boat to be eligible for racing, it must comply with these Rules and have a valid **certificate**. Its owner and helmsman shall be members of the International Association.

4.0 Certification

- 4.1 An approved measurer is a person appointed or recognised by the Member National Authority of the country where the control takes place to carry out **certification control**, or a person

appointed by the International Association. The **certification authority** is the International Association.

- 4.2 **Certification control** shall be carried out by an approved measurer using the documents supplied by the International Association, namely these Rules and the measurement forms (including the instructions to measurers), and the official templates.
- 4.3 Upon receipt of satisfactorily completed documentation signed by an approved measurer, the International Association may issue a **certificate**. Sails do not have to be included for a **certificate** to be issued to a **boat**.
- 4.4 In addition to the particulars required by the measurement forms, the measurer shall report on the forms anything which he considers to be a departure from the intended nature and design of the **boat** or to be against the general interest of the Class. In exceptional cases the International Association may grant dispensation and issue a certificate. Such dispensation shall be recorded on the measurement form and the **certificate**.
- 4.5 Sails must be **certified** by an approved measurer and carry a **certification mark** next to the tack or, in the case of spinnaker, next to the head.
- 4.6 It shall be the owner's responsibility to ensure that the boat complies with these Rules at all times. Replacement spars and sails shall be **certified** before use.
- 4.7 Re-measurement may be ordered by the International Association or a National Association at any time.
- 4.8 The **certification authority** shall retain the original documentation upon which the current **certificate** is based.

5.0 The Hull

- 5.1 Materials and methods of construction are not restricted except as provided by these Rules. The designer's drawings show a method of constructing in moulded plywood.

5.2 Hull Shape

- 5.2.1 The hull shape shall conform to the designer's drawings and the offsets annexed within the tolerances specified by the measurement diagrams and these Rules.
- 5.2.2 Hull moulds shall be checked by reference to plugs, moulds and production hulls before general use and after any modifications. Any builder constructing a new mould shall inform the International Association that it conforms to these Rules. The International Association may check moulds at any time.
- 5.2.3 Station 11 is defined as the plane at right angles to the base line shown in the measurement diagram and passing through the aftermost point of the **hull**, excluding rudder fittings. The hull **datum point** is the point on the **hull** centreplane where the outer surface of the keel band would, if projected intersect Station 11, neglecting any actual rounding of the keel band. Other measurement stations are planes parallel to Station 11 at the specified distance from it.
- 5.2.4 No part of the after edge of the **hull** shall be more than 7.5mm from Station 11. No part of the after end of the seat-tank shall be more than 20mm forward of the after edge of the **hull**. The design of the transom is free in other respects.

5.3 Keel Band

- 5.3.1 Along the centreline from stem to transom a flat keel-band shall project not less than 3mm and not more than 4.5mm from the surface of the **hull** (with keelband removed) and may be rounded to a radius of not more than 3mm. At the sides of the centreboard slot the section may be 'half-round' instead of flat.
- Keel band widths shall be within the following limits:

	min (mm)	max (mm)
Transom	30	75
Station 9	65	75
Station 6	65	75
Station 3	25	35

Forward of Station 3 the keel band may be faired into the hull.

5.4 Foredeck

- 5.4.1 The after edge of the foredeck (which need not be straight between the centreline and the gunwale) shall lie within the tolerances set out in the Measurement Diagram. The after edge of the foredeck at any point along its length shall be at or above the "top of gunwale". The "top of gunwale" is defined as being a point 20mm inside the extreme edge of the **hull** regardless of construction.
- 5.4.2 Forward of the most forward position of the after edge of the foredeck the only apertures permitted are:
- Spinnaker chute
 - A combined area of not more than 5000 mm² for rigging and controls
 - One or two areas not exceeding 120,000 mm² each, no part of which shall be further than 3486mm from Station 11, or within 100mm of the **hull** centreplane, or within 250mm of the "top of gunwale".

5.5 Forward Watertight Compartments and Seat-Tanks

- 5.5.1 The forward compartment and the seat-tanks shall be separate watertight compartments.
- 5.5.2 The watertight bulkhead and seat-tanks shall conform to the drawings within the tolerances specified in the Measurement Diagram.
- 5.5.3 The forward compartment may include one spinnaker chute only, the volume of which shall not exceed 20% of the total volume of the forward compartment. The construction of the spinnaker chute shall not impair the watertight integrity of the forward compartment.
- 5.5.4 The watertight diagonal bulkheads at the forward ends of the seat-tanks shall lie at or forward of the after edge of the foredeck.

5.6 Centreboard Case and Thwarts

- 5.6.1 The internal dimensions of the centreboard case shall conform to the tolerances specified in the Measurement Diagram. No temporary or movable insert in the centreboard case is permitted.
- 5.6.2 ~~A thwart shall connect the top of the centreboard case to the inner faces of the seat-tanks. It shall not be more than 153mm wide, may be curved or straight, and its after edge shall lie between 1375mm and 2591mm from Station 11. *~~
- 5.6.3 ~~Additional~~ * Thwarts or other stiffening or reinforcing members may be fitted across the hull within 3581mm of Station 11. These members shall not be constructed in such a manner as to form a second cockpit floor or an additional buoyancy chamber.

(* removal subject to ballot)

5.7 Not in use

5.8 Weight

- 5.8.1 For **certification control**, **boats** shall be weighed in a dry condition after an uninterrupted period of two weeks without having touched water.
- 5.8.2 The sailing weight of the **boat** without **sails** and battens in dry condition (hereafter referred to as 'sailing weight') shall not be less than 127.4kg. Fittings and components

of exaggerated weight and artificially heavy areas construction are not permitted: examples include use of lead or other heavy metals, except for **corrector weights** permitted under Rule B-5.8.3.

- 5.8.3 If the sailing weight is less than 127.4kg, the difference, without limit, shall be made up by metal **corrector weights** fixed against the centreboard case or spine and visible when viewed from a standing position next to the **boat**, half between 1100mm and 1500mm and half between 2900mm and 3500mm from Station 11, such **corrector weights** to be retained for the life of the **boat** or until the **boat** is reweighed in accordance with Rule B - 5.8.5.
- 5.8.4 Each corrector weight shall be hard stamped in a visible place with its weight in kilograms to the nearest 0.1 kilograms and a serial number to identify each corrector weight and the total number of **corrector weights** used in the **boat**.
- 5.8.5 **Boats** may be reweighed at any time by a Class Measurer providing that immediately prior to reweighing, the **boat** has not touched water for a period of at least two weeks, The sailing weight and the number and weight of **corrector weights** shall be recorded on the certificate by the Measurer. The **corrector weights** referred to in Rule B - 5.8.3 may only be removed or reduced at a reweighing commissioned by the owner under this paragraph and such reweighings may only take place at intervals greater than 12 months.

5.9 Sail Number

- 5.9.1 The sail number of the **boat** shall be clearly carved or impressed on the transom, spine, or aft end of the centreboard case in numbers of 15mm minimum height.
- 5.9.2 The ISAF building plaque bearing the registered sail number shall be fixed on the transom, spine or aft end of the centreboard case.

6.0 Centreboard, Rudder and Tiller

- 6.1 One **rudder** and one **centreboard** only shall be used at anyone time. At all times when sailing, both sides of the **centreboard** and **rudder** shall have similar profiles. Leeboards, **daggerboards**, hydrofoils, **trim tabs**, fences and similar devices are prohibited.
- 6.2 The **centreboard** shall fit within the centreboard case not extending below the bottom of the **hull** when fully raised. The trailing edge may project above the centreboard case top when in the raised or partly raised position. No part of the leading edge which is more than 300mm from the tip and is capable of protruding below the **hull** shall be capable of being raised more than 200mm above the bottom of the **hull**. No part of the **centreboard** shall be capable of protruding more than 1450mm below the **hull** *
- 6.3 The **rudder** shall be hung at the transom and no part of the **rudder** assembly shall pass through the skin of the **hull**. The tiller may be shipped through a port in the transom or over the top.

(* inclusion subject to ballot)

7.0 Spars

7.1 General

- 7.1.1 The object of these Rules is to maintain the sail plan of the Class to substantially the same design, whilst giving owners freedom to arrange the **rigging** as they wish.
- 7.1.2 A **boat** shall not have facilities for setting more than one **mainsail**, one **headsail** and one **spinnaker**. No changes of **sail** are permitted during a race.
- 7.1.3 Except for fittings, **spars** shall be constructed solely either from aluminium alloy containing not less than 90% by weight of aluminium or from wood. Construction is otherwise unrestricted.

7.2 Mast

- 7.2.1 The **mast** may be stepped on the deck or into the **hull**. With the **mast spar** perpendicular to the base line, the after side at deck level shall not be less than 3048mm and not more than 3202mm forward of Station 11. The **mast spar** may be fixed or rotating. No dimension of the **mast spar cross section** shall exceed 102mm.
- 7.2.2 A maximum of 30mm **mast spar curvature** is permitted.
- 7.2.3 **Limit marks** not less than 10mm in width shall be placed round the **mast** at the following three positions measured with the **mast** standing perpendicular to the baseline.
- **Deck limit mark:** upper edge level with the top of the deck. - tolerance 1 mm (**mast datum point**).
 - **Lower limit mark:** upper edge not less than 381mm above the **mast datum point** (lower point).
 - **Upper limit mark:** lower edge not more than 6858mm above the **mast datum point** (upper point).
 - The **top point** of the **mast spar** shall be not more than 7011mm above the **mast datum point**.
- 7.2.4 The **spinnaker hoist height** shall be not more than 5955 mm nor less than 5054 mm. No rigidly fixed point for attachment of the block, sheave or fairlead shall be more than 35 mm from the surface of the **mast spar**.
- 7.2.5 The highest point of entry onto the block, sheave or fairlead for the **headsail** halyard shall not be more than 4750mm and not less than 4648mm above the **mast datum point**. A prolongation of the **luff** of the **headsail** when set shall cut the fore-side of the **mast** between these limits.
- 7.2.6 These measurements apply to **masts** whether fitted with mastjacks or otherwise. At all times when sailing, an extension of the upper surface of the deck shall intersect the **mast** at the upper edge of the deck **limit mark**.
- 7.3 **Boom**
- 7.3.1 No dimension of the **boom spar cross section** shall exceed 102mm.
- 7.3.2 A maximum of 25mm **boom spar curvature** is permitted.
- 7.3.3 An **outer limit mark** not less than 10mm in width shall be placed around the **boom spar**. The **outer point distance** shall be not less than 2858mm.
- 7.3.4 The overall length of **boom** from the aft edge of the **mast spar** to outer end of **boom** shall not exceed 3308mm.
- 7.4 **Spinnaker Pole**
- 7.4.1 The **spinnaker pole length** shall not exceed 2516mm. The **spinnaker pole fitting projection** shall not exceed 50mm.
- 8.0 **Sails**
- 8.1 **General**
- 8.1.1 Sails shall be of **soft sail** construction, otherwise the choice of **sail** material is optional.
- 8.1.2 Stretching after measurement resulting in the maximum dimensions being exceeded is not permitted and continued conformity with Class Rules is the responsibility of the owner
- 8.1.3 No **sail** shall have a hole or aperture other than the normal reefing and attachment points.
- 8.1.4 **Sail reinforcement** is not restricted.
- 8.2 **Mainsail**
- 8.2.1 The **mainsail** shall conform with the Class Rules and the measurement diagrams, except that a **sail** smaller in any dimension except batten position is allowed.
- 8.2.2 The **luff** and the foot shall be secured to the **mast spar** and **boom spar** respectively over at least 80 per cent of their lengths.

8.2.3 The following dimensions, including boltropes where fitted, shall not be exceeded:

- **Top width** 127mm
- Width at **upper leech point** 325mm from **head point** 270mm
- **Three-quarter width** 1120mm
- **Half width** 1950mm
- **Leech length** 6960mm

8.2.4 The **mainsail** shall have not more than four battens in the **leech**. At the leech, the centre of the top **batten pocket** shall be between 1450mm and 1550mm from the **head point**, and the centre of the bottom **batten pocket** shall be between 1250mm and 1490mm from the **clew point**. No **batten pocket** shall be located less than 1000mm from any other **batten pocket**. No batten or **batten pocket** shall exceed 1180mm in length

8.2.5 The Class insignia to be displayed on the **mainsail** shall be in accordance with the shape and tolerances shown in the Measurement Diagram.

8.3 Headsail

8.3.1 The **headsail** shall conform to the official rules and diagrams, except that a **sail** smaller in any dimension except batten position is allowed.

8.3.2 The leech shall not extend beyond a straight line from the **aft head point** to the **clew point**.

8.3.3 The following dimensions shall not be exceeded:

- **Luff length** 4510mm
- **Foot length** 2287mm
- **Leech length** 4000mm
- **Top width** 40mm

8.3.4 Not more than three battens shall be used in the **leech** of any **headsail**. The outer ends of the battens shall be located within 102mm of marks dividing the **leech** into four (if three battens) or the appropriate number of equal parts. Not more than one batten, part of which shall be within 50mm of the centre, is permitted in the **foot**. No batten or **batten pocket** shall exceed 305mm in length and 51mm in width.

8.3.5 No part of the **foot** shall lie outside a measurement taken in the following way:
Lay out the **headsail** on a flat surface.

Fold the **tack** onto the clew and smooth the **headsail** to find the "intersection point" where the **luff** is intersected by the fold from the centre of the **foot**.

The measurement is the distance taken from the "intersection point" to the **tack** and the **clew**. No part of the **foot** shall lie at a greater radius from the "intersection point" with all wrinkles removed from the **sail** on the line of measurement.

8.3.6 A sleeve **luff** may be made to enclose the forestay but the width of such a sleeve shall not exceed 76mm.

8.3.7 An extension of the **headsail luff** when set shall cut the centreline of the deck between the stemhead and a point 400mm abaft the stemhead.

8.3.8 There shall be a window in the lower part of the **headsail** of a minimum size of 0.15m².

8.4 Spinnaker

8.4.1 The **spinnaker** shall be a symmetrical three-cornered **sail** in accordance with the Class Rules and Measurements Diagrams except that a **sail** smaller in any dimension is allowed.

8.4.2 The following dimensions shall not be exceeded:

- **Leech length** 6000mm
- **Foot median** (head point to mid foot point) 7096mm
- **Foot length** 4500mm
- **Half width** 4500mm

8.4.3 *RRS Appendix G paragraph 1.3(d)* is replaced by the following Class Rule in accordance with *Appendix G5*:

" The number shall be displayed symmetrically on the front side of the **spinnaker**. It shall be displayed wholly below an arc whose centre is the head point and whose radius is 40% the mean length of the two leeches and wholly above an arc whose radius is 60% of that dimension."

9.0 Materials

9.1 Except where prescribed by these rules, either directly or by inference, there are no restrictions on the use of any materials in construction.

9.2 The use of particular materials may be prohibited or limited:

9.2.1 On the proposal of at least two National Associations and passed by a two-thirds majority of those attending the international Annual General Meeting and entitled to vote on changes on these rules as prescribed by the International Constitution, and

9.2.2 If such proposal is approved by the International Rules Committee and the ISAF.

9.3 Such prohibition or limitation will continue either

9.3.1 For such period from the 1st January next following as maybe prescribed being not less than 1 year nor more than 3 years when it shall lapse unless renewed by the procedure in Rule B-9.2.1, or

9.3.2 until a permanent change is made to these Rules in accordance with the International Constitution either to incorporate such a prohibition or limitation or to make another provision which is inconsistent with it.

9.4 The prohibition or limitation may be expressed to apply to all parts of a **boat** when the prohibition or limitation comes into force. Such prohibition or limitation shall not apply to hulls completed before it comes into force.

10.0 Buoyancy

10.1 At measurement the measurer shall use his best endeavours to determine the integrity of the watertight compartments, to satisfy himself that they are tight.

10.2 The owner shall maintain the integrity of the watertight compartments in an efficient condition and the Measurement Certificate will automatically become invalid should he fail to do so.

11.0 Equipment

11.1 Devices which indicate remotely or transmit or correlate data about wind direction, wind speed, **boat** speed or location shall be prohibited.

12.0 Crew and Weight of Clothing and Equipment

12.1 The **crew** shall consist of two people.

12.2 Only one person may be suspended outboard from **spars** or **rigging**. No device attached to the **hull** and projecting outboard beyond the line of the gunwale shall be used.

12.3 A competitor's clothing and equipment shall not weigh more than 10 kilograms, excluding a hiking or trapeze harness and clothing (including footwear) worn only below the knee. In all other respects, the provisions of *RRS 43* shall apply.

13.0 Propulsion

13.1 In accordance with *RRS 86.1(c)*, *RRS 42.3(c)* is not applicable and the following Class Rule is substituted:

"Except on a beat to windward, when surfing (rapidly accelerating down the leeward side of a wave) or planing is possible, the **boat's crew** may pull the sheet and guy controlling any **sail** in order to initiate or maintain surfing or planing, but not more than three repeated pulls and releases of the **sail** may be made for each wave or gust of wind."

14.0 Advertising

14.1 Category C advertising in accordance with ISAF regulation 20.3.1(b) is permitted.

15.0 Temporary Rules

16.0 Effective Date

16.1 These **class rules** are effective from 1 March 2006

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