

Jeff: Friedman 6/4/97 1:12 PM

When fixed to the mast the distance between the extreme outboard end, including fittings, and the nearest point of the mast at the mast fixing attachment, shall not exceed 2025mm.

19.2 Section Size

The spinnaker boom, complete with fittings, shall be capable of passing through a ring 64mm in diameter.

19.3 Jibstick

The spinnaker boom may be used as a jibstick.

20 SAILS

20.1 Sail Measurement

20.1.1 Each sail shall be approved by an official measurer who shall sign and date a mainsail or foresail near the tack and a spinnaker near the head. Details (maker and number) shall be entered on the Measurement Certificate. When the owner already has a certificate this shall be done by an official measurer.

20.1.2 All Sails shall be measured in a dry state on a flat surface with just sufficient tension to remove wrinkles across the line of the measurement being taken. Battens in the leech of the mainsail shall be removed.

20.1.3 Sails used in International Championships shall comply with the current rules with no exceptions under IFCR 6.5.

20.2 Material

Sails shall be made of single-ply woven fibre cloth. The body of the sail shall be flexible and be capable of being folded flat in any direction without damaging the fibres. Any finishing material or coating applied to the cloth shall not prevent the sail being folded flat. Sails shall be capable of being stowed completely in a normal sail bag.

For a material to be considered as woven, when it is torn it shall be possible to separate the fibres without leaving evidence of a film.

20.3 Stiffening and Reinforcement

20.3.1 Reinforcement of any woven cloth having the effect of stiffening the sail is permitted only at each corner of the sail and at the Cunningham eye adjacent to the luff. This reinforcement shall be within a distance from the relevant measurement point or Cunningham eye of : Mainsail : 320mm, Foresail : 280mm, Spinnaker : 280mm.

20.3.2 Other reinforcement, as a continuation of the 'stiffening' as specified above comprising not more than two additional layers of the same cloth as the body of the sail is permitted, provided it can be folded as described in IFCR 20.3.1 above, and it does not extend more than : Mainsail 960mm, Foresail : 840mm, Spinnaker : 840mm measured from the relevant measurement point or eye, and is not stiffened by the addition of bonding agents, close stitching or otherwise ("close stitching" consists of parallel, or nearly parallel, lines of stitching, which are 40mm apart or less and are not sewing the edges of reinforcing patches). Glued seams shall not be considered as stiffening provided that they can be folded as described above.

20.3.3 Normal tabling (as defined below) at the edges of the sail is permitted provided it is not stiffened ("normal tabling" is the hem, or the equivalent finishing of the outside edges of a sail. It shall be flexible and conform to IFCR 20.2. It may be of multiple layers of material of sufficient strength to support and/or enclose bolt ropes and check wires. It may cover, or be within, the permitted reinforcement, seams and 'flutter patches'. On each edge where tabling is used it shall be of uniform width with a tolerance of \pm 5mm and extend the full length of the luff, leech or foot, except for a headsail when any extension of tabling beyond an area of corner reinforcement may be tapered towards the outside edge of the sail for the last 100mm).

20.3.4 Notwithstanding the requirements of IFCR 20.3.1, a chafing patch is permitted where the sail touches a spreader, or where the spinnaker pole normally touches the luff of the headsail. These chafing patches may be fitted on both sides of the sail and shall be of cloth not heavier than the body of the sail and they may be self-adhesive. The size of the patches shall not be larger than is necessary to resist the chafe but in any case shall not exceed the following dimensions in any direction : Mainsail - 960mm, Foresail - 840mm.

20.3.5 Small reinforcements on the leech to reduce fluttering ('flutter patches') are permitted at the end of

each seam. Such reinforcements shall be of cloth not heavier than the body of the sail and shall not exceed the following dimensions in any direction : Mainsail - 105mm, Foresail - 75mm, Spinnaker - 75mm.

20.3.6 Spinnakers may have reinforcement patches for use with a recovery line.

20.4 Mainsail

20.4.1 The leech measurement shall be not greater than 6350mm. The length of the leech shall be taken as the straight line distance between the head (the highest point of the sail projected perpendicular to the luff or its extension) and the clew (the aftmost part of the sail projected to the foot or its extension).

20.4.2 The cross width measurement of the sail shall not exceed the following:

At quarter height 2550mm $\rightarrow 8.366'$

At half height 1940mm $6.365'$

At three quarter height 1140mm $\rightarrow 3.74'$

The cross width measurements shall be the distances from the leech measurement points (defined below) to the nearest points on the luff of the sail including the bolt rope. The points on the leech from which the cross measurements are taken shall be determined by bridging any hollows in the leech with straight lines. The mid-point of the leech shall be determined by folding the head to the clew, and the quarter and three-quarter leech points by folding the clew and the head to the mid-point.

20.4.3 The headboard shall not extend more than 180mm aft of the head nor exceed 160mm in depth. $\rightarrow 3'10"$

20.4.4 The number of battens in the mainsail shall be four: The top batten shall not exceed 1170mm in length and shall extend to the mast. The distance of the top of the upper batten at the leech from the head shall not be less than 1280mm. The bottom batten shall not exceed 690mm in length and shall nowhere be less than 800mm from the bottom edge of the footrope. The two intermediate battens shall not exceed 840mm in length. The battens shall not exceed 50mm in width.

20.4.5 One transparent panel may be fitted in the mainsail. It shall not exceed 0.28m² in area, nor be less than 150mm from any edge of the sail.

20.4.6 A double luffed or loose footed mainsail is prohibited.

20.4.7 No reefing points are permitted. Reefing points are defined cringles or attachments to the mainsail, the purpose of which may be to assist in reducing the effective area of the sail. In addition to the normal tack eyelet, one other cringle, eyelet, pulley or attachment, is allowed within a 400mm radius of the tack.

20.5 Foresail

20.5.1 The foresail shall be a three cornered sail. A convex curve is permitted in the foot, but not in the leech. Only one cringle, eye or ring is permitted in the vicinity of the clew.

20.5.2 The length of the luff shall not exceed 4320mm. If the cloth is not permanently attached to a luff wire, the measurer shall be satisfied that the luff cannot be stretched to exceed this dimension.

The length of the luff shall be the distance between the lowest part of the sail on the luff wire at the tack and the highest point of the sail on the luff wire at the head. However, if a measurer considers that a sail is measured either favourably or unfavourably by this method, he should define the point of measurement at the tack as the point where the extension of the luff meets the extension of the foot, and the point of measurement at the head as the point where the extension of the luff meets the extension of the leech, ignoring any round or hollow in the leech.

20.5.3 The diagonal measurement shall not exceed 1525mm. The measurement shall be taken from the outside edge of the sail at the intersection of the leech and the foot to the nearest point on the outside of the luff.

20.5.4 The length of the centre measurement shall not exceed 155mm plus the mean of the measurements of the luff and leech. The length of the centre measurement shall be taken as the distance between the highest point of the sail on the luff and the lowest edge of the sail at the mid-point of the foot. The mid-point of the foot shall be determined by placing the centre of the clew cringle over the centre of the tack cringle and tensioning both halves of the foot equally. The length of the leech shall be the distance between the lowest part of the sail directly below the centre of the clew cringle and the highest part of the sail at the head. However, if a measurer considers that a sail is measured either favourably or unfavourably by this method, he should define the point of measurement at the clew as the point where the extension of the leech meets the extension of the foot, and the point of measurement at the head as the point where the extension of the luff meets the extension of the leech, ignoring any round or hollow in the

leech.

20.5.5 No battens or other form of stiffening are allowed in the foresail other than reinforcing patches made of similar material to that of the sail.

20.5.6 One transparent panel may be fitted in the foresail. It shall not exceed 0.28m² in area, nor be less than 150mm from any edge of the sail.

20.5.7 The luff of the foresail shall not enclose the forestay.

20.6 Spinnaker

20.6.1 The spinnaker shall be a symmetrical three cornered sail. No headboard, battens or other stiffening device, other than normal woven cloth reinforcing is allowed.

20.6.2 When measuring, the sail shall be folded in half with the tack and clew laid on top of each other.

20.6.3 The length of the leeches shall not exceed 4350mm. The length of the leeches shall be taken as the distance between the highest point of the sail at the head and the lowest point of the sail on the leech, measured round the edge of the sail.

20.6.4 The length of the centre fold shall not exceed 5100mm. The centre fold length shall be taken as the distance between the head and the mid point of the foot, measured round the fold of the sail. The centre fold may be measured with the tape laid along the sail's centreline while the sail is suspended by its corners.

Foot 9.843

20.6.5 The half width of the foot shall not exceed 1500mm. The half width of the foot shall be taken as the distance between the lowest points on the centrefold and the leech, measured round the foot of the sail.

20.6.6 The half width shall at no point exceed 1800mm - this measurement shall be taken at right angles to the luff.

20.6.7 The half height, half width measurement shall not be less than 1500mm. This measurement shall be found by folding the sail so that the highest point of the sail is placed directly over the centre of the tack and clew cringles - the resulting fold at half height must be made free of wrinkles and the measurement be taken round the edge of the half height fold.

20.6.8 Where the clew and the tack cringles are fixed outside the edges of the sail, the point of measurement shall be the intersection of the lines drawn along the edges of the luffs and the foot of the sail.

20.6.9 Only one spinnaker may be carried in the boat.

20.7 Class Insignia

The International Fireball Class insignia shall be a red disc 510mm ± 13mm in diameter placed back to back on the two sides of the mainsail above the sail numbers.

20.8 Sail Numbers

20.8.1 Every boat shall carry on each side of the mainsail :

- a) The class insignia - the size and position as described in IFCR 20.7.
- b) The national letters (see RRS Appendix H for appropriate national letters).
- c) The sail number - issued by FI - as referred to in IFCR 4 and IFCR 5.2.

20.8.2 The national letters and the sail numbers shall be positioned on the mainsail above an imaginary line projecting at right angles to the luff from a point one-third of the distance, measured from the tack to the head of the sail. The national letters and the sail numbers shall be placed at different heights on the two sides of the sail. The starboard side numbers shall be uppermost.

20.8.3 The sail numbers shall be carried on the leeward (forward) side of the spinnaker and may be placed on both sides.

20.8.4 The national letters and sail numbers shall be in capital letters and Arabic numerals and shall be clearly legible.

20.8.5 The letters and numbers shall be of the following minimum dimensions :

Height..... 300mm min.

Width..... 200mm min. (excl. no 1 and letter "I")

Thickness..... 40mm min - 50mm max.

Space between adjoining letters and numerals 60mm min.

21 CREW