Vee Ess 15' Skiff

MEASUREMENT HANDBOOK

Foreword

This handbook contains all of the necessary information required for ensuring that a Vee Ess meets the requirements of the Vee Ess class. This issue of the handbook is composed of the following sections and respective issues.

- 1. Vee Ess Sailing Association Inc. Instructions (Issue 2).
- 2. Vee Ess Sail Plan (Issue 5).
- 3. Vee Ess Specifications and Class Restrictions (Issue 4).
- 4. Official Vee Ess Measurement Certificate (Issue 4).
- 5. Vee Ess Murray Design Plans (Selected parts only Issue 1).

A copy of this handbook should be held by the Association Class Measurer and the selected Club Measurers. It is the responsibility of the Association Measurer to maintain this handbook and ensure that all Class Measurers are kept up-to-date.

Instructions

1. REGISTRATION OF BOATS

- (a) A boat shall not participate in any race unless it holds a valid certificate of registration.
- (b) A change in ownership of any registered boat renders the registration certificate invalid.
- (c) The new owner will be issued with a new registration upon sending a completed transfer form together with the required fee to the Registrar.
- (d) The name and/or colour patch of any registered boat shall not be altered, except for the change of ownership or by the consent of the Registrar and payment of required fee.
- (e) Registration may be refused if, in the opinion of the Registrar, the boat name and/or colour patch applied resembles any previously approved name or colour patch carried by any other boat.
- (f) A boat shall not carry a colour patch which, in the opinion of the Registrar, in any way resembles the blue five-pointed star awarded to the champion.
- (g) A Vee Ess yacht shall display the letters **VS** over her registered number as near to the head as practicable on both sides of the mainsail, staggered to avoid confusion and with the characters on the starboard side being the higher. The letters and figures shall be approximately 300 mm high with a stroke thickness of approximately 40 mm; the width occupied by each letter and figure, except the figure "1" being approximately 230 mm. The colour of the figures and letters shall be contrasting to that of the sails. The display of an additional colour patch will be optional at the discretion of the owner.
- (h) The registered name shall be displayed on the transom in letters at least 40 mm high.
- (i) A method of measuring boats shall be provided with every set of plans.
- (j) An owner applying for re-registration of a boat after a lapse of two years shall apply to an appointed Measurer for checking in accordance with the original measurement for his endorsement. A re-registration certificate and the current year's registration plate will be issued upon receipt of the endorsed copy of the measurement form and their requisite fees.
- (k) An owner disposing of a registered boat may retain the right to the name or colour patch for a period of two years.

2. FEES

The annual subscription fee, capitation fee, entrance fee or any other fee decided from time-to-time by the Annual General Meeting shall be fixed at each Annual General Meeting. All annual subscriptions will be deemed to be due at the expiration of one calendar month from the date of the Annual General Meeting. All other fees will be deemed to be due upon the expiration of one calendar month from the date of notification of such fee to the member.

Fees as at August 2015, until altered in accordance with the above, are:

Annual Capitation No Fee Annual Membership \$30

Day Membership \$10 (to be considered annual membership if paid for 3 days)

Boat Registration
Issue of New Number
Plans Price
Change of Boat Name
Transfer of Ownership
\$40
\$0.00
\$0.00

3. SAILING REGULATIONS

- (a) The name of the helmsman must be stated at the time of entry of each yacht in any race, and no substitution of helmsman shall be permitted, except with the express permission of the Sailing Committee and then only in the case of genuine sickness or for other valid reason. All helmsmen must be members of an affiliated V.S. Club or at the invitation of the Vee Ess Sailing Association Inc. Committee.
- (b) The Sailing Committee may, at their discretion, amend the handicap of the yacht sailed by a substitute helmsman.
- (c) Unless Sailing Instructions specify otherwise if the helmsman of a yacht, which has sailed in the heat of a championship series is unable to sail in a subsequent heat his place shall be taken by a member of the crew.
- (d) A yacht shall not be steered by any member of her crew other than her helmsman during the progress of a race, except only if a crew member should fall overboard, when the yacht may be steered by any member of her crew until the lost crew member is recovered; or in the event of an injury to the helmsman which disables him from safely steering a yacht a crew member may steer the yacht to the finish line.
- (e) The crew of a Vee Ess Yacht shall comprise of not less than three persons, including the helmsman.
- (f) Unless Sailing Instructions specify otherwise the Protest Flag, signifying an intention to protest, shall be a red flag not less than 150 mm on the hoist and 230 mm on the fly.
- (g) A Vee Ess Yacht shall not have on board more than one jib, one mainsail and one spinnaker whilst competing in a race.
- (h) Cameras or other media recording devices may be attached and used during a race provided they remain within the length and width of the rigged boat.

4. CHAMPIONSHIP REGULATIONS

- (a) A Championship Series shall comprise not less than two heats.
- (b) The Association shall not be responsible for any claim for damage or loss to boats or gear whilst they are being transported to and from any Championship Series or whilst in the care of Association Officials.
- (c) Owners entering boats shall lodge their entries on the prescribed form with the Secretary at least fourteen days before the date set for the first heat of the series, or as per Notice of Race or at the Race Committee's discretion.

- (d) Commonwealth Champions, provided they enter the boat in which they won their championship, shall be allowed to defend their titles irrespective of any limitations otherwise placed upon the number of entries.
- (e) Prizes will be awarded to the first, second and third place boats or as per Notice of Race.
- (f) Not more than two long heats or three short heats shall be conducted on any one day, except in the event of a heat being postponed to a later date, in accordance with the Sailing Instructions.
- (g) All inter-club or championship events shall be sailed under the Safety Rules of the appropriate Yachting Association and authorities.
- (h) Perpetual trophies shall remain the property of the Association and will be inscribed with the name of the winning boat and helmsman and crew each year and may be held by the winning boat with the approval of the Association until the next season's winner is declared.
- (i) Any boats entered in a Championship Race may be measured to see that they comply with the appropriate design.
- (j) A boat may register only one set of new sails per season for use in that season's Commonwealth championship. Any number of sails first registered in previous seasons may be used

5. ALTERATIONS TO INSTRUCTIONS

These instructions may be added to or amended by a resolution at a general meeting by a 70% majority of those present and entitled to vote.

Official Sail Plan

PRINCIPLES OF SAIL MEASUREMENT

All sails shall be measured in a dry state laid on a flat surface with just sufficient tension to remove wrinkles across the line of measurement being taken.

The tension necessary to remove the wrinkles across the line of measurement will vary considerably with different sail materials. Similarly, the ability to lie portions of the sail flat will be greatly affected. The shape and construction of a sail may make it virtually impossible, by tension alone, to remove the wrinkles and it may be necessary to fold the sail in order to remove the effect of the flow of the sail and to get the area of measurement reasonably flat.

1. MAINSAIL

DEFINITIONS:

- **HEAD** The head shall be taken as the highest point of the mainsail where it intersects at the luff.
- LUFF The leading edge of the mainsail.
- FOOT The lowest edge of the sail.
- **LEECH –** The aft edge of the sail between the *head* and the *clew*.
- CLEW The clew shall be taken as the projected intersection between the foot and the leech
- TACK The tack shall be taken as the projected intersection of the *luff* and the *foot*.
- LUFF LENGTH The length of the *luff* shall be taken as the straight distance between the head and the tack.
- **FOOT LENGTH** The length of the *foot* shall be taken as the straight distance between the *tack* and the *clew*.
- **LEECH LENGTH** The length of the *leech* shall be taken as the straight distance between the *head* and the *clew*.
- **HEAD ANGLE.** The angle measured at the head between the straight line used for the luff measurement and the highest point on the *leech*. See diagram
- **HEAD LENGTH** The measurement from the *head* along the *head angle*.
- **CROSS WIDTHS** Cross widths shall be taken at ½, and ¾ heights of the sail. The cross measurements shall be the distances from the leech measurement points defined below, to the nearest points on the fore edge of the mainsail, including the boltrope.
- **LEECH MEASUREMENT POINTS** 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.

MEASUREMENT METHOD:

- All battens shall be removed.
- Luff, foot & leech measurements shall be made using a stringline method.
- The foot round is measured from the stringline between the tack and the clew and is to be symmetrical (ie max in middle of foot)
- The method for measuring the ½ height cross width half measurement is to fold the head

to the clew and mark the leech where it folds (1/2 measurement). The head is then folded to this ½ cross width mark and the leech marked where it folds (3/4 measurement). The cross width measurements are made to the luff, including the bolt rope.

- To prevent hollows, no part of the sail is to lay outside of straight lines drawn between the clew, ½, ¾ & the maximum head length points.
- Head angle is measured from stringline of luff to the outer measurement of leech at the head. (as per Diagram). No part of the sail is to be outside this line projected to the maximum head length.

MEASUREMENT VALUES:

(refer to above definitions)

The LUFF LENGTH shall be between 6.070 & 6.120 metres.

The FOOT LENGTH shall be between 2.300 & 2.350 metres.

The LEECH LENGTH shall be between 6.280 & 6.330 metres.

The ½ height cross measurement shall not exceed **2.050 metres**.

The ¾ height cross measurement shall not exceed **1.610 metres**.

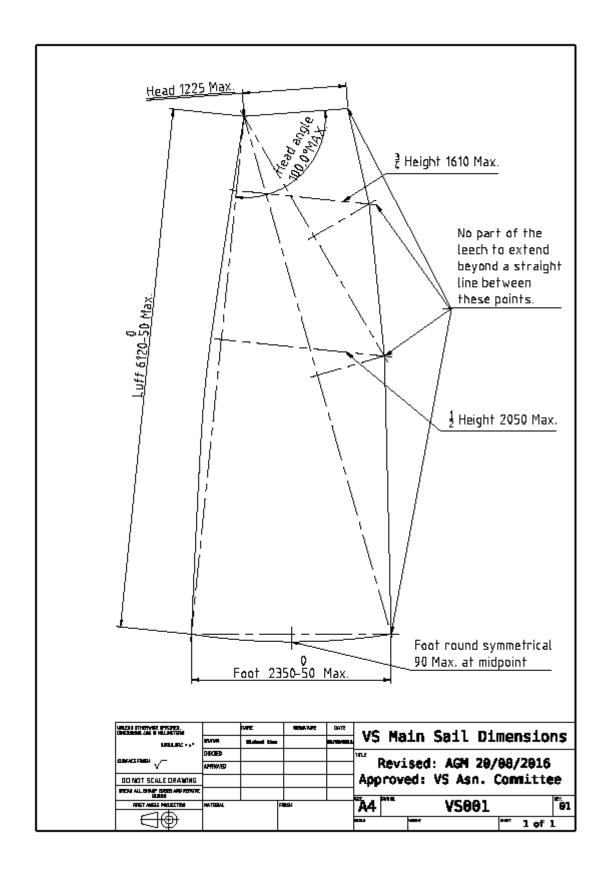
The HEAD ANGLE shall not exceed 100 degrees.

The HEAD LENGTH shall not exceed 1225mm.

The FOOT ROUND be symmetrical & not exceed 90mm.

The sail satisfies leech and head hollow checks.

Pocket luff mainsails are NOT permitted.



HEADSAIL

MEASUREMENT VALUES:

The perimeter measurement shall be literally measured around the perimeter of the sail, with no projections. The maximum perimeter measurement shall **NOT** exceed **12.34** metres.

The leech **CAN** be convex.

Foil, or similar, forestays or attachments are NOT permitted.

3. ASYMMETRICAL SPINNAKER

DEFINITIONS:

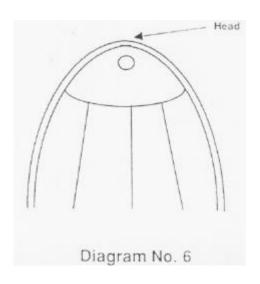
- **HEAD** The head of a spinnaker shall be taken as the highest point of cloth or reinforcement material above the head cringle. (See Diagram No 6.)
- TACK The tack of a spinnaker shall be taken at two points. When measuring the luff the
 tack is the lowest part of the sail directly below the centre of the tack cringle. When
 measuring the foot the tack is the outer edge of the sail directly forward of the centre of the
 clew cringle. (See Diagram No 7.)
- **CLEW** The same principle applied to the tack shall apply to the clew except that it pertains to the leech not the luff. (See Diagram No 7.)
- **LUFF** The luff of a spinnaker shall be taken as the straight distance between the head and the tack under 3 kg tension with all control lines made loose.
- **LEECH** The leech of a spinnaker shall be taken as the straight distance between the head and the clew under 3 kg tension with all control lines made loose.
- MITRE This shall be taken as the straight line distance between the head and the foot mid-point under 1 kg tension.
- **FOOT** This shall be taken as the straight line distance between the tack and the clew under 3 kg tension.
- **SMG** This distance shall be the distance from the luff half-height and the leech half-height, defined below. Care has to be taken to ensure the sail has been extended as far as possible. Enough tension must be applied to remove all wrinkles across the line of measurement, which is a straight line distance. The luff half-height shall be determined by folding the head over the tack, and the leech half-height by folding the head over the clew.

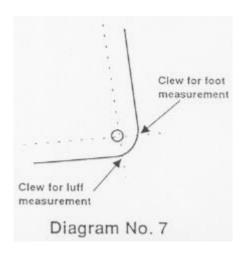
Measurements of the luff, leech, foot and SMG shall be made in metres to the nearest 5mm. The sum of the luff, leech, foot and SMg measurements shall not exceed 23.5m.

Remember!

All measures to projected corners.

Pull wrinkles out across measurements at required tension.





Specifications and Restrictions

A VEE ESS Class Yacht is any boat built in accordance with the following specification, measurement restrictions and official plan and for which a Certificate of Registration has been issued by the V.S. Sailing Association Inc. Committee.

The crew for a VEE ESS Class Yacht shall consist of a minimum of three, of which only two shall use the outward leaning devices at any one time.

The object of the following specifications and restrictions is to allow the individual builder room for error and accidental building mistakes. All necessary measurements, definitions and methods of measuring are clearly shown.

The following supersedes all previous measurement plans and certificates.

WARNING: IT IS IMPOSSIBLE TO FORSEE EVERY CONCEIVABLE INNOVATION WHICH MAY BE THOUGHT OF IN THE FUTURE, OR TO MENTION EVERY SUGGESTION THAT WAS RULED ILLEGAL IN THE PAST. YOU MUST ASSUME THAT ANYTHING IN CONNECTION WITH THE BOAT, ITS SAILS OR EQUIPMENT WHICH IS NOT CLEARLY GOVERNED IN THESE SPECIFICATIONS AND MEASUREMENTS CERTIFICATE IS ILLEGAL, AND THEREFORE, YOU ARE SINCERELY ADVISED TO OBTAIN A RULING FROM THE VEE ESS SAILING ASSOCIATION INCORPORATED REGISTRATION COMMITTEE BEFORE COMMENCING TO BUILD IT INTO YOUR BOAT.

CLASS SPECIFICATIONS AND RESTRICTIONS

HULL:

A hard chine appearance, constructed of any material, excluding exotic core materials, such as nomex, and/or pre-impregnated laminates (pre-pregs). Hulls MUST be inspected by the Measurer during construction to confirm materials.

CHINE:

The chine must be fair and apparent from the transom to within 1000 mm of the stem measured along centreline.

STEM:

The stem may be plumb, round or raked. The stem length measurement L3 shall commence at the keel line.

TRANSOM:

May rake forward from its lower edge to its upper edge with boat set horizontal. Reverse rake is not allowed.

INTERNAL CONSTRUCTION:

Except for minimum measurement C1, C2 & L2 the internal construction of the hull is unrestricted regarding rear and side decking and frame work.

FLOTATION:

Flotation must be built into the hull in the form of buoyancy tanks or flotation material (eg. polystyrene, etc.) with a minimum capacity of such flotation of 0.35 cubic metres.

CENTREBOARD AND RUDDER:

May be made of any material and to any profile. Swinging, pivoting or retractable centreboards and rudders are optional over the more common dagger types. Appendages, such as winglets, hydrofoils, etc, are NOT permitted. Only one centreboard and one rudder may be used throughout a championship series.

MAST:

May be made of any material and stepped on either the keel or deck at a position approximately 1800 mm from the stem.

THE MAST IS NOT ALLOWED TO REVOLVE

The length of the mast is unrestricted. However the mainsail must be set no higher than the underside edge of a 'band' which shall be marked no more than 7620mm measured from the underside skin of the hull beneath the mast step.

The band is to be permanently marked, in a contrasting colour to the mast and to be a minimum of 25 mm / maximum 40 mm wide.

Masts constructed of non-buoyant material must be sealed watertight or be provided with adequate drain holes at the lower end.

BOOM:

May be of any material.

SPINNAKER POLE:

The length must not exceed 1650 mm measured from the forward edge of stem. The spinnaker pole support stump must not exceed 400 mm measured from the stem. The Jib shall be attached no more than 250mm forward of the stem.

TRAPEZE:

Only two trapezes (or any other outward swinging devices) may be fitted and used on each side of the boat.

SAILS:

Only one genoa (or jib), one mainsail and one spinnaker may be carried during a race. The main sail must display the letters "**VS**" over the registration number as near to the head as practicable on both sides of the mainsail, staggered to avoid confusion and with the characters on the starboard side being the higher. The letters and figures shall be approximately 300 mm high with a stroke thickness of approximately 40 mm, the width occupied by each letter and figure except the figure "1" being approximately 230 mm. The colour of the figures and letters shall be contrasting to that of the sails. The display of an additional colour patch will be optional at the discretion of the owner.

A boat shall not carry a colour patch which, in the opinion of the Registrar, in any way resembles the blue five-pointed star awarded to the champion of the class. A quick release device (not lashing) must be attached to the top of the main sail to enable it to be lowered in the event of a capsize.

REGISTERED NAME:

The registered name shall be displayed on the transom in letters at least 40 mm high.

TOWING POINT:

Each boat shall be fitted with a ring, closed fairlead or similar device capable of accommodating a 25 mm diameter rope, at or near the stem head so that a tow line can be led through it to the mast or other strong point aft.

SECURING EQUIPMENT:

Rudders and centreboards must be secured so that, even when capsized, they cannot become unshipped. Tillers must be securely attached to the head of the rudder by means of a pin or other device so that it cannot become unshipped from the rudder.

<u>OFFICIAL VEE ESS MEASUREMENT CERTIFICATE</u>

This is to be used in conjunction with the Class Specifications by the official Club Measurer.

INSTRUCTIONS TO MEASURERS:

The object of measuring boats of the VEE ESS class is to ensure that all hulls are closely similar. Tolerances in measurements are intended to take care of unintentional errors only. Should a measurer have reason to think that a deliberate attempt has been made to produce a hull that does not conform to class restrictions and to the Measurement Certificate, he shall report same and the circumstances when returning the Measurement Form to the VEE ESS Association Registrar.

The prime duty of the Club Measurer is to report the actual measurements of the particular VEE ESS as set out on this form. It is not the Measurer's duty to decide whether a particular VEE ESS should be granted registration or not. All cases will be considered on their actual merits by the Registration Committee.

EQUIPMENT:

The minimum equipment necessary to measure a VEE ESS correctly is a flat floor, steel tape, accurate rule, large callipers (or trammel), string line, spirit level or plumb bob. As Measurer you are directly responsible to the Association, the Boat Owner and your Club for accuracy of the measurement.

TO SET UP A BOAT:

To set up a boat horizontal when upside down, the deck at the stem should be 110 mm BELOW the deck at the side of the transom, measured from a horizontal floor or horizontal plane. When right side up, the deck at the stem should be 110 mm ABOVE the deck at the side of the transom, measured from a horizontal floor or plane.

MEASUREMENTS:

All measured dimensions are shown on the attached diagrams and are between horizontals and verticals, excepting D4, G1, P1 and P2. Measurements L1, T1, T2, T3, D1, B1, B2, B3, V1, V2, V3, D2, O1, H2 are to be measured from a plumb line dropped from the extreme point of the hull at bow and transom.

BASE LINE:

To measure spring and stem height, a base line must be established. Base line is set between a point 120 mm below the lowest point of the transom and a point 5 mm below keel at a point 3060 mm from transom.

No portion of the hull shall project underside of keel with the exception of the rubbing strip (which is optional). The rubbing strip shall not exceed 5 mm in thickness or 25 mm in width at any point along the entire hull length.

INTERESTED PARTY:

The Club Measurer shall NOT measure any VEE ESS which he has built, owns, sails regularly or in which he has any interest whatsoever.

NOTE TO MEASURER:

Answer all questions on the Measurement Form in ink and clearly.

GUIDE TO ALL MEASURERS AND BOAT OWNERS WHEN MEASURING MAST

Whether the mast is raked or vertical is irrelevant as the measurement is to be made along the surface of the mast from the inside edge of the top band of the mast to the underside skin of hull. The mast is to be relieved of any tension when this measurement is taken. The depth of the hull from the underside skin to the mast step must be calculated correctly. This depth cannot be taken by measuring the depth of the fin case.

Measurement Form

Boat Name:			Registration Number:						
Owner's Name:			Telephone Number:						
Add	dress:								
Mei	mber of			Sailing Club.					
Not	e: All measurements are in millimetres,	, unle	ss specified	l.					
СО	LL: (With hull set right side up as per class NSTRUCTION: Was the hull produced from the builders name:	•	,	ion mould?	(Yes or No)				
Wa	s the hull inspected during construction?				(Yes or No)				
L1	Length overall including stem capping and planing board	=>	Min: 4540	Max: 4580	Actual:				
L2	Length overall of deck including pole surrand rudder support	ound =>		Max: 5050	Actual:				
L3	Length of stem for overall length L1	=>		Min: 100	Actual:				
** Beam at deck (to outermost point including gunwales):									
T1	3060 from rear extreme of hull	=>	Min: 1345	Max: 1465	Actual:				
T2	2040 from rear extreme of hull	=>	Min: 1560	Max: 1680	Actual:				
Т3	1020 from rear extreme of hull	=>	Min: 1480	Max: 1680	Actual:				
T4	At rear of extreme of hull	=>	Min: 1210	Max: 1680	Actual:				
C1	Top of deck at gunwales from lower gunwale hull skin.	=>		Max: 40	Actual:				
C2	Height of deck at centreline above top	=>		Max: 100	Actual:				

** E	seam at chine (hull turned upside down):						
B1	3060 from rear extreme of hull	=>	Min:	970	Max:	990	Actual:
B2	2040 from rear extreme of hull	=>	Min:	1215	Max:	1235	Actual:
ВЗ	1020 from rear extreme of hull	=>	Min:	1150	Max:	1170	Actual:
В4	At rear extreme of hull	=>	Min:	905	Max:	925	Actual:
** C	Depth of Vee in bottom of hull:						
V1	3060 from rear extreme of hull	=>	Min:	195	Max:	215	Actual:
V2	2040 from rear extreme of hull	=>	Min:	155	Max:	175	Actual:
V3	1020 from rear extreme of hull	=>	Min:	105	Max:	125	Actual:
V4	At rear extreme of hull	=>	Min:	65	Max:	85	Actual:
D4	Height of side at rear extreme of hull along outside skin	=>	Min:	350			Actual:
D2	Depth of hull from edge of deck to underside of keel 2040 from rear extreme of hull	=>	Min:	545	Max:	565	Actual:
** Curvature in bottom (curve shall not be concave across any two points on the curve):							
	3060 from rear extreme of hull	=>		,	Max:		Actual:
O4	At rear extreme of hull	=>			Max:	25	Actual:
** C	Curvature in side:						
chin	At rear extreme of hull no part of the side see and a point 840mm from the centre line n						
trie (extreme rear of the hull.						OK ?
H2	Curvature in side at 3060 from rear extreme of hull	=>			Max:	15	Actual:
P1	Length of planing board	=>			Max:	50	Actual:
P1a	No part of the deck overhanging the rear e the extension of the keel line	xtren	ne of t	he hull	may c	ome w	ithin 40mm of OK?
P2	Rake of transom	=>					OK?

S1	Spring in keel from baseline to skin						
	3560 from rear extreme of hull	=>	Min:	20	Max:	30	Actual:
	4060 from rear extreme of hull	=>	Min:	50	Max:	60	Actual:
	4310 from rear extreme of hull	=>	Min:	70	Max:	80	Actual:
S2	Height of stem at deck top from baseline	=>	Min:	610	Max:	650	Actual:
C2	Is chine apparent 1000 mm from stem?						(Yes or No)
F1	Rear extreme of hull to aft end of centreboard with board located in case and fully lowered	=>	Min:	1950			Actual:
>>	Material from which hull is constructed?						
>>	Was hull inspected during construction?						(Yes or No)
>>	Weight of hull without removable fittings &	rope	s =	> Min :	68kg		Actual:
>>	Weight of hull in kilos (dry, clean and empty with fittings and con trapeze lines, spinnaker pole, tack line, mastays & rigging, spinnaker up haul/ retrieve tiller extensions.)	trol li ainsh	nes e eet, b	oom, m	ast,		Actual:
>>	Length of mast from inside edge of band to underside skin of hull	=>			Max:	7620	Actual:
>>	Can mast revolve?						(Yes or No)
>>	Material from which mast is constructed?						
>>	Is mast fully sealed or provided with draina	age?					(Yes or No)
>>	Length of boom		=>		Max:	2870	Actual:
>>	Dimension of boom (any direction)		=>		Max:	150	Actual:
>>	Length of spinnaker pole from forward edge of stem		=>		Max:	1650	Actual:
>>	Is the spinnaker pole capped?						(Yes or No)
>>	How many leaning devices are fitted to each side		=>		Max:	2	Actual:
>>	Is tow ring fitted to bow?						(Yes or No)

>>	Does main sail have a quick release system?		(Yes or No)					
>>	Are centre board and rudder secured?		(Yes or No)					
>>	Do either the centreboard or rudder have any ap	(Yes or No)						
***	** VARIATIONS - Please list all variations found	during measuring:						
*								
*								
SI	GNOFFS:							
1.	 MEASURER - I have measured this boat as per guidelines set down in the VS Class Specifications and Restrictions. 							
	Name:	Signature:						
	Measurer for:	Date:						
2. OWNER - On signing this form the owner certifies that he/she has read all the rules regarding ownership of a VS and is fully aware of all the responsibilities relating to ownership. The owner also agrees to notify the VS Sailing Association Inc. of any changes made to the boat which may make this measurement form incorrect.								
	Name:	Signature:						
	Date:							
3.	TREASURER - All monies required for initial regis	tration have been received.						
	Name:	Signature:						
	Date:							
4.	REGISTRAR - Registration has been accepted by	the VS Committee.						
	Name:	Signature:						
	Date:							