

SNIPER CLASS INTERNATIONAL RACING ASSOCIATION MEASUREMENT DATA SHEET

Use Standard Marking Procedure on this Form:

- (a) When NOT within the tolerance limits allowed, mark an "X" in the margin and state actual measurements.
- (b) Otherwise, do not write in the measurements of this boat except where specifically called for.
- (c) Draw a neat circle around number of each paragraph when you have verified or carried out all its details.
- (d) Thus, when your examination is completed, every paragraph number will be "circled" (indicating conformity); or will bear an "X" in the margin (something to be re-built or to be submitted to the International Measurement Committee for decision).

- 1. Measurers must fill in every blank space provided on this sheet. Each dimension shown must be verified by the measurer and if the dimension is not either the maximum or minimum or between the two, the measurer may recommend certificate good for local races only on home built boats, if discrepancy is MINOR and clearly shown. No discrepancies permitted on professionally built boats.
- 2. This boat must have been assigned a racing number by the Association which must be carved, burned, or molded into the centerboard trunk in an unobscured position. Minimum height of these numbers must be 1/2" (13mm). Unless this is done, the boat cannot receive a Certificate of Measurement. In order to be eligible to race, every boat must have an official decal for the current year, permanently attached to the starboard side just forward of the transom. Decals will be issued by the appropriate secretary for each year that dues are paid.

3. Official Racing Number of boat on trunk. 27240

4. Boat's Name _____

5. Full name(s) and address(es) of owner(s) (please print)

Mike Otter
7878 S. 25th St.
Kalamazoo, MI 49001

6. Name and charter number of the fleet in which this boat is expected to compete.

GENERAL RESTRICTIONS

- 7. Boats to be eligible to race in this class must be built to conform in every way to this data sheet. A boat that does not meet all these requirements shall be ineligible to receive a Certificate of Measurement but it must retain its identifying number. Such boats cannot take part in any open or closed regattas whatsoever. Owners of such boats shall be ineligible to join SCIRA. The measurer must notify the Executive Secretary of any boats that cannot pass these requirements, giving the boat number, and name and address of both the builder and owner.
- 8. Options. Nothing is optional in these plans, specifications or restrictions unless definitely stated as such.
The purpose of the restrictions under which Snipe hulls and sails are approved is to insure that, to as great a degree as possible, all hulls and sails have identical racing capability. It is impossible to list every single variation that might turn up in the future, and it is impossible to make any set of restrictions in which, at future some date, someone cannot find what appears to be a legal means of obtaining some racing advantage. Any boat or sail having features which are not consistent with this purpose will not be approved and cannot race even though there is no specific restriction preventing the item in question. Improvements and changes will be made only when these changes do not obsolete older boats from the standpoint of racing capability or when they can be accomplished by anyone at reasonable expense.

Approved Options not covered elsewhere:

- 1. Self-bailing cockpit: No restriction on method of construction.
 - 2. Hiking Straps: No restriction on number or location.
 - 3. Tiller Extension: No restriction on cross section or length.
 - 4. Boom Vang: No restriction on type. May be used at any time.
 - 5. Cleats for Jib Sheets or Mainsail Sheets: No restriction on number, type or location.
 - 6. Jib Fairleads: Any type or location permitted.
 - 7. Mainsheet Bridle: Any type or location permitted. May be adjusted while racing.
 - 8. Attachment of Jib Tack: The jib luff wire at the deck must be attached so it cannot be moved while racing. Tension on the cloth in the jib luff may be adjusted while racing. This restriction shall apply to all boats without regard to date of manufacturer.
 - 9. Mainsail Clew Outhaul: Any type permitted. May be adjusted while racing.
 - 10. Sliding Goosenecks: May be on track or in slot in mast. May be swiveling and may incorporate roller reefing gear. Must have some means to prevent downward movement beyond position giving maximum legal length of luff. The position of the gooseneck may be changed while racing. The tack of the sail shall be so located that the bolt ropes do not deviate appreciably from a straight line.
 - 11. All metric measurements are taken to the nearest one-tenth of one millimeter. Questions must be resolved by using the customary system which is also shown, and which was used in designing the boat.
 - 12. Movement of the mast, fore and aft or lateral, may be restrained by blocks at the deck level. Fore and aft guys may be used, with the fore guy attached to the mast no higher than the top band of the lower set of bands. Mast shall not be moved at the maststep while racing.
 - 13. Floorboard are optional.
 - 14. The maximum overall length of the whiskerpole is 104" (2641.6 mm) and it may not extend in front of the bow of the boat or aft of the boom when not deployed.
 - 15. Aramid fiber lines may be used in the running rigging, but aramid fibers or micro-grooved film are not be used elsewhere on the boat.
 - 16. No electronic devices other than timers shall be used on the boat.
9. Boats must be measured by officially appointed or elected Fleet Measurers or by Class Measurers approved by SCIRA. No certificate shall be acceptable unless recommended and signed by such a Measurer. Boats must be weighed at the start of each season. Sails are subject to remeasurement and to cancellation of approval at any time. They must be measured at the start of each season and so marked. On any measured item (mast, boom, rudder, or centerboard), only one can be measured and these items can be changed only on irreparable damage or loss.

HULL

- 10. Thickness of sides, transom, sides of centerboard trunk and bottom:
 Fiberglass: 1/8" (3mm) min.
 Fiberglass & Foam Sandwich or Fiberglass and Honeycomb Sandwich: 1/8" (3mm) Outerskin and 1/16" (1.5mm) Inner skin min.
 Wood: Density of .0185 lbs per cubic inch (512 Kg per cu. m) or greater - 1/2" (12.7mm) min. Density of less than .0185 lbs per cubic inch (512 Kg per cubic m) - 3/4" (19.1mm) min.
 Plywood: 3/8" (9.5mm) min.
 Plywood and fiberglass: 3/8" (9.5mm) minimum plywood, plus fiberglass.
 Thickness of plywood deck: 1/4" (6.4mm) minimum. Exterior grade may be used.
- 11. Keel width 4" (101.6mm) + or - 1/8" (3.2mm) on flat under surface from stern to station 2 and minimum 2" (50.8mm) wide at station 1.
- 12. Stem must be a smooth curve and it must follow the table of stem offsets as shown on drawing.
- 13. Maximum chine radius is 3/4" (19.1mm) at station 1, tapering to 1/8" (3.2mm) at station 2, and is 1/8" (3.2mm) from there aft.
- 14. Maximum lack of flatness in any cross section is 1/8" (3.2mm) per foot (304.8mm) of distance over which the lack of flatness is being checked.
- 15. - 18.

WEIGHT LIMIT

51. THE BOAT COMPLETE MUST BE WEIGHED. THIS WEIGHT DOES NOT INCLUDE ANCHOR, PADDLE, WHISKERPOLE, LIFE PRESERVERS, BAILING EQUIPMENT (unless permanently attached), SAILS, OR ANY OTHER LOOSE GEAR. IT DOES INCLUDE MAST, BOOM, RIGGING, MAINSHEET, CENTERBOARD, RUDDER, AND TILLER. BOATS THAT DO NOT MEET THE WEIGHT LIMIT MUST HAVE WEIGHT PERMANENTLY ADDED BEFORE THEY CAN BE GIVEN MEASUREMENT CERTIFICATES.
52. The weight of this boat as outlined above is 381 lbs.
Amount of ballast 31 lbs.
53. All boats must be weighed before issuing a measurement certificate and must be re-weighed at the start of each season.
54. The Measurer shall either witness the weighing of the boat or require the owner to furnish a weight certificate signed by at least two witnesses and the owner as well as the owner of the scales, that the minimum weight of the boat complete complies with this paragraph. The minimum weight shall be 381 lbs (172.8 Kg). The bare hull including deck, centerboard trunk, floorboards, flotation, hull fittings, and sailaway equipment shall weigh 276 lbs (125.2 Kg) minimum. In addition ballast up to 33 lbs (15Kg) may be permanently added in any location, subject to the requirements for Moment of Inertia. All ballast must be installed where it may be seen and it shall be attached with peened over bolts or glass cloth. The bare hull including ballast as defined above shall be subjected to the moment of inertia test as contained in the Supplement to the Measurement Data Sheet for Moment of Inertia Test.
55. Weight certificates from builders will not be accepted.
56. All boats shall comply with the following flotation requirement: When the boat has been capsized and has remained in any position long enough to take in as much water as possible in high wave conditions, it shall, upon being righted, float so that the lowest point around the cockpit edge where water might enter the boat is at least 6" (152.4 mm) above the water when the boat is supporting 300 lbs (136.1 kg). This may be accomplished by means of tanks, flotation bags, self-bailing cockpits, increased low density flotation material, or other suitable means. Holes with maximum total area 100 square inches (645.2 sq.cm) may be made in the transom to facilitate drainage. Where transom drains are used to comply with this rule they should have a minimum of 45 square inches (290.3 sq.cm) total. In boats meeting the requirements of this rule, the centerboard trunk may have a minimum height of 9" (228.6 mm) above the outside of the keel if the boat, after capsizing and being righted, floats high enough so that water will flow out of the trunk; otherwise, the trunk shall be 2" (50.8 mm) above the water level in the boat after capsizing and being righted.

MISCELLANEOUS

58. Measurer must notify the owner of the following essential requirements: Boat must carry wearable life preservers for all occupants at all times, and race committees may require wearing them when racing when they consider it necessary. Suitable paddle or oar must be carried. Anchor with a minimum weight of 4 lbs. (1.8 kg) must be carried with 50' (15.2 m) of suitable line.
59. There shall be no advertising matter whatever on the outside of any boat or sails. Any boat infringing this ruling shall be subject to loss of measurement certificate. Measurers shall not issue a certificate to any such boat.
60. Give name and address of builder of boat Mohaupt
61. Sliding seats, hiking boards, trapeze rigs, and other artificial methods of supporting the skipper's or crew's weight to balance the boat are prohibited. This does not prevent the use of hiking straps or any kind of line or cord attached to the boat within 8" (203.2 mm) of the top of the deck. It is permissible for the crew to hold on to the side stays.

CONSTRUCTION OF FIBERGLASS HULLS

76. Only professional boat builders can make fiberglass Snipe hulls. Effective January 1, 1965, the construction of fiberglass hulls has been allowed under the same tolerances as approved by IYRU and now in effect for wood hulls. The loft lines do not show any sheer molding. Part or all of a sheer molding may be molded with the hull.
MATERIALS: Fiberglass cloth, woven roving or mat may be used, with either polyester or epoxy resins. Glass content must be at least 30% by weight.
FLOTATION: 6-1/2 cubic feet (.184 cu.m) of Styrofoam, Urethane foam, or equivalent, having a density of 2-1/2 kg per cubic foot (40 kg cu.m) maximum must be built into the hull. Balsa wood enclosed in resin-impregnated fiberglass cloth is considered equivalent. Supposedly airtight compartments are not considered adequate.

TOLERANCE: All fiberglass boats are to be measured to standard tolerances. The thickness of the hull must be uniform except where reinforced locally such as at the keel, the chine, the stem, the mast step, and where the stay anchorages and rudder gudgeons are attached. Increased thickness due to incorporation of flotation material in either the sides or bottom of the hull is not a violation of this requirement. If desired, floorboards may be bonded directly to the bottom of the boat, omitting supports. A fiberglass and foam sandwich floor structure may be used. Wood and plywood are acceptable local reinforcements.
DECKS: the deck may be plywood as specified in the measurement data sheet, or it may be fiberglass. In general, a fiberglass deck will require some type of double surface and core construction to secure adequate stiffness. Each builder's method of construction must be approved by the Rules Committee.

CONSTRUCTION OF PLYWOOD HULLS

77. **BOTTOM AND SIDES:** The weight of the plywood used must be at least one pound, two and one-half ounces per square foot (5.65 kg. Per square meter). If 3/8 inch (9.5 mm) material is used throughout, fiberglass or other covering material may be used to bring the hull up to a minimum weight.
FLOTATION: Three cubic feet (.085 cu.m) of Styrofoam must be installed in the hull.

MOMENT OF INERTIA TEST

78. All bare hulls, as defined in paragraph 54 must be subjected to the moment of inertia test. (For a full description of the method, see SUPPLEMENT TO THE MEASUREMENT DATA SHEET FOR MOMENT OF INERTIA TEST.)
The moment of inertia of the hull is calculated from the following formula:

$$I = \frac{C D^2 T^2}{4 \pi^2}$$

Where: I = Moment of Inertia
C = Spring constant, lb. Per ft. (Kg. Per M.)
D = Distance to axis, Ft. (M.)
T = Time of one complete oscillation, seconds
p = 3.1416

For our purpose, $D = 104" - 1" + 9/32" = 103.281 = 8.6067 \text{ ft. (2.6233 M.)}$ The spring constant will be furnished with springs from SCIRA. We can now simply the formula to:

$$\text{(English) } I = \frac{8.6067 \text{ ft}^2 C T^2}{4 \times 3.1416^2} = 1.8763 (C T^2) \text{ slug ft.}^2$$

$$\text{(Metric) } I = \frac{2.6233 \text{ m}^2 C T^2}{4 \times 3.1416^2} = .1743 C T^2$$

The minimum moment of inertia of the hull as determined from the formula above shall be:

English - 200 (slug foot squared)
Metric - 27.6 (metric slug meters squared)

If the hull moment of inertia does not meet this minimum, weight shall be moved to or added to the ends to bring it up to the minimum.

The Moment of Inertia for this boat is 2200.00
Amount of weight and location 31 #3 Under Side Decks

EXCEPTION TO APPLICABILITY OF PRIOR RULES

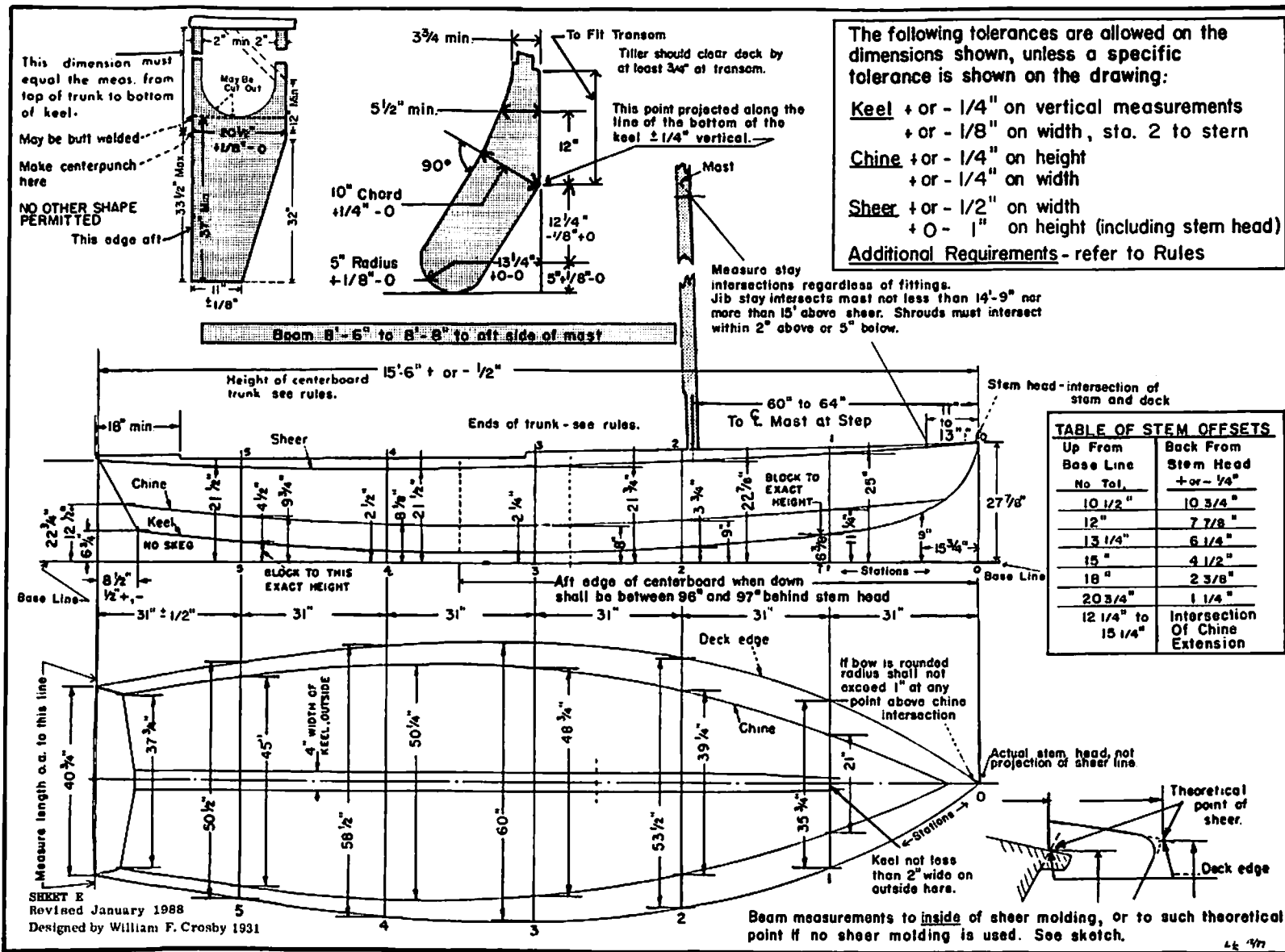
The changes made to the measurement rules are effective with boats built after January 1, 1976. The new centerboard shape and thickness must be used after January 1, 1976 on all boats in the World Championship, Western Hemisphere Championship and European Championship. Those existing boats which cannot use a 3/8" (10mm) thick board because of trunk slot width shall use a 5/16" (8mm) thick board of the new shape. The length of the trunk slot shall be 21-1/2 inches (546.1mm) maximum.

MEASURERS ARE CAUTIONED TO FILL OUT THIS DATA SHEET IN FULL AND AS ACCURATELY AS POSSIBLE:

Those measurements found correct should be "circled" carefully on the drawing below, preferably with colored pencil. If certain measurements are *not* within the limits shown, cover same on the drawing with an "X" and use a reference letter or line across to your marginal note, giving the actual measurement.

Briefly note exceptions here (If additional explanatory sheet is attached, check. . .)

Trunk Ht 11 1/16"
Step Ht to Bottom of Trunk 11 13/16"



The following tolerances are allowed on the dimensions shown, unless a specific tolerance is shown on the drawing:

Keel + or - 1/4" on vertical measurements
 + or - 1/8" on width, sta. 2 to stern

Chine + or - 1/4" on height
 + or - 1/4" on width

Sheer + or - 1/2" on width
 + 0 - 1" on height (including stem head)

Additional Requirements - refer to Rules

PLEASE USE INK

I hereby certify that I am the official measurer of the _____
 I certify and affirm that I have carefully measured this boat No. 27240 to the best of my ability and that all the measurements written herein or checked by me were found to be exactly as indicated. I am ready and willing to swear to this before any accredited notary public.
 (Date) 6/24/88 (Measurer's Signature) _____
 Recommended for Certificate _____ (Initial) Not Recommended _____

Divisional Fleet, Charter No. _____

Note: The Fleet Measurer must under no circumstances give the Certificate of Measurement to the owner unless he is positive that the boat fully complies with these restrictions. If positive, the Measurer gives the Certificate to the owner and sends this Data Sheet to the Secretary.