

By-Law 3

Specifications and Measurements

Amended 2008
Reprinted March 2001

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1. Objectives

- 1.1. The Objectives of By-Law 3, Specifications and Measurements, are:
 - i. to define a DS class yacht which is eligible to participate in all Association-sanctioned events.
 - ii. to regulate the one-design character of the DS class yacht.
 - iii. to guide DS owners, Association members, and other sailors who wish to participate in Association-sanctioned events.
 - iv. to provide a uniform set of guidelines, to maintain fairness and high quality events for DS one-design class racing, in which race results are mainly determined by sailing skill, teamwork, and seamanship of the crew.

2. Jurisdiction

- 2.1. This By-Law regulates all sanctioned DS one-design racing events. All DS class yachts competing in such events shall conform to the contents of this By-Law. Authority to modify this By-Law is as specified in the Association Constitution.
- 2.2. Interpretations of the By-Laws by any measurer may be applied as follows: (i) give informal advice to any class Member, (ii) to complete a Measurement Certificate, or (iii) to advise a Protest Committee. The Class Measurer shall have the greatest authority to interpret the contents of the By-Laws, and shall always have the authority to modify a previous action by any measurer. Only the Class Measurer may issue Waivers per Paragraph 3.3 below. Except for the provisions of Paragraph 11 below, only the class Measurer may add or remove an Attachment to a Measurement Certificate. Only the Class Measurer may specify that an Attachment cannot be retired (see new Paragraph 11 below), except that such an Attachment may always subsequently be removed by the Class Measurer..
- 2.3. The Class Measurer shall normally delegate authority to Fleet Measurers, who shall act in place of the Class Measurer at local events.

3. Basic Rules

- 3.1. The hull, blades, sails, standing rigging and weight of the DS class yacht shall be in accordance with these Specifications and Measurements.
- 3.2. Specifications, however complete, cannot anticipate every situation that may arise. If an issue is not clearly resolved in this By-Law, then an interpretation should be sought from a disinterested Member of authority in the Association such as those in Paragraph 4.2 below. Such an interpretation shall consider the intent of this By-Law over the technical construction that might be derived from the wording, and shall consider that the Specification and Measurements are intended to maintain the DS as a one-design boat.
- 3.3. The Class Measurer is authorized to waive compliance with specific portions of this By-Law, for specific boats, subject to review by the Governing Board, under the following conditions:

- 3.4. when an Amendment to this By-Law causes a boat to become non-conforming with this By-Law, or
- 3.5. when a boat has a specific problem which is not easily remedied and which does not give a competitive advantage.
- 3.6. To issue this Waiver, the Class Measurer shall be satisfied that no significant advantage would accrue from the Waiver, and that modification to comply with the By-Law would result in an undue burden on the owner. Such a Waiver shall be in writing, describing the nature and details of the deviation and the boat to which it applies, and stating that the Waiver is valid only for the part affected when used on that specified boat. The Class Measurer may grant a Temporary Waiver of a specific duration if corrective measures would not impose an undue burden, stating the expiration date of the Waiver.

4. Measurement Certificate

- 4.1. A valid Measurement Certificate (Certificate) is primary evidence that a DS class boat meets these Specifications and Measurements and is thus eligible for competition in a DSA-Sanctioned event. The Certificate is associated primarily with a DS hull (for example, if masts were swapped between boats, Certificates would normally remain with the respective hulls and would not follow the masts; nor in the case of charters would Certificates normally follow the sails).
- 4.2. The Certificate shall be completed and signed by a disinterested Member of authority in the Association who has personally inspected the boat and, by completing and signing the Certificate, represents in good faith that the boat meets these Specifications and Measurements. A Member of authority may include, in increasing order of authority, a knowledgeable class Member, a Fleet Measurer, or Class Measurer. A Certificate completed by a higher authority should be granted greater credibility in case of a dispute. A new Certificate may be created at any time, except for restrictions associated with measurement protests discussed in Paragraph 11 below.
- 4.3. A certificate is valid if it was completed and signed per Paragraph 4.2 above or 11.2 below, if any Attachments per Paragraphs 2.2 above and 11.2 below and any Waivers per Paragraph 3.3 above are attached, and if the boat and equipment have not been altered in any way that would affect compliance with the requirements of the By-Laws. Any Certificate created as a result of fraud or error is not valid.
- 4.4. At any Association-sanctioned event, any Skipper or a boat entered in the event shall make its valid Certificate, with any Waivers and Attachments, reasonably available to any Skipper of any other boat entered in the same event, and to the event organizers.

5. Hull - Deck – Ballast

- 5.1. Basic Rule: The essential specification of a new Day Sailer hull is any hull properly built, numbered, and delivered by a licensed Day Sailer builder in accordance with the terms of the license in effect when the boat was delivered. In addition, the hull must meet any other requirement contained in these Specifications and Measurements.
- 5.2. The hull shall conform to the design and Specifications of the Day Sailer Association. The hull and deck shall be made of fiberglass and resin molded by the hand-layup process, using molds which have been supplied or approved in advance by the Day Sailer Association. No changes are permitted that modify the exterior lines of the hull, deck, or cuddy.

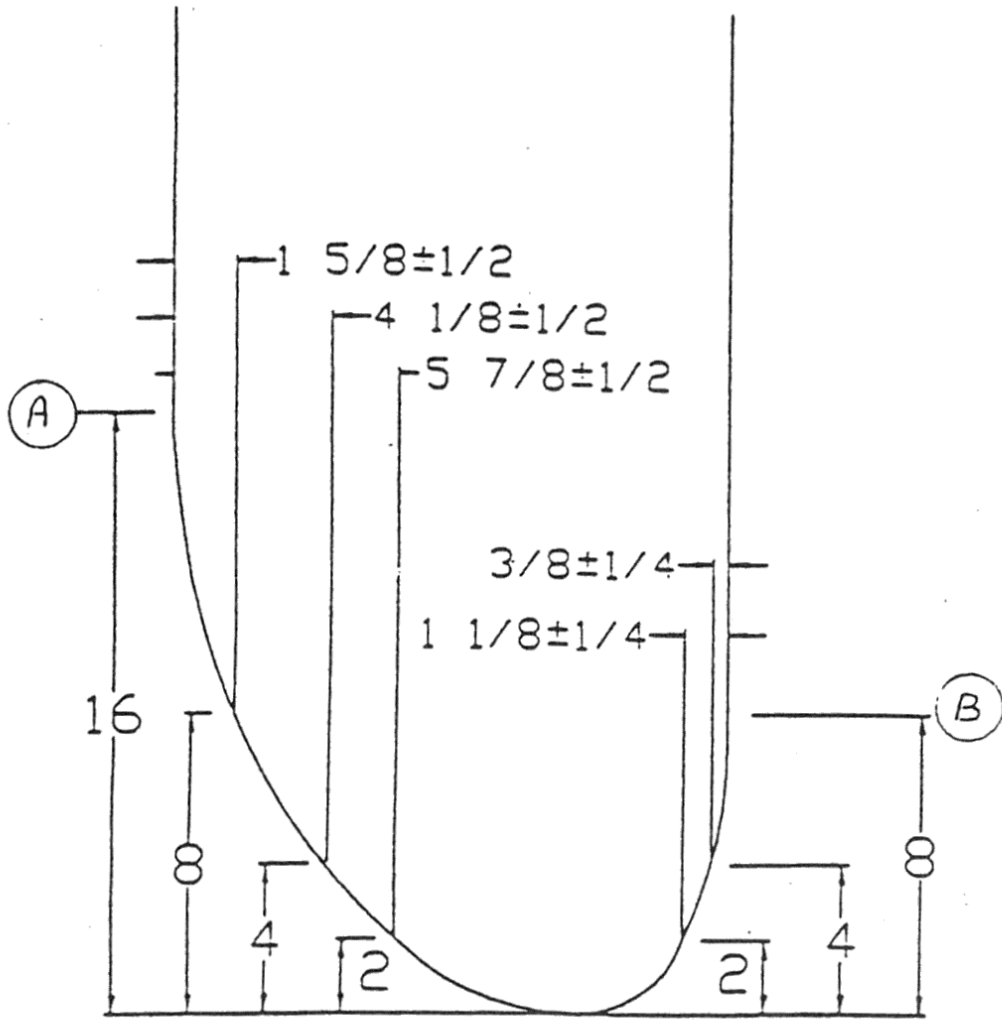
- 5.3. A yacht shall not have a specially textured hull surface, the intention or result of which is to reduce drag in the water. The underwater surfaces of the hull may be sanded, filled and faired, and/or painted.
- 5.4. The hull and/or deck may be reinforced or stiffened on the inside. The interior of the hull and deck may be altered in the location and type of running rigging, additional ballast installation, conveniences for sail or equipment storage, and wooden seat replacement, to the extent that the changes are not specifically prohibited elsewhere in these Specifications.
- 5.5. For DS class yachts manufactured with wooden seats, the original seats may be replaced with wood or fiberglass provided the original seating areas and dimensions are maintained.
- 5.6. A cloth tube for the purpose of spinnaker launching is allowed on top of the deck, but not through the deck.
- 5.7. The forward bulkhead may not be removed, unless it is replaced by an equivalent deck-supporting device to take its place; however, the two closures may be removed from the bulkhead.
- 5.8. Wooden cockpit coamings may be cut down. Coamings may not be removed if they are intended to be used as structural support to side decking. Owners of double-hull Rebel, Spindrift and Precision models may remove the coamings.
- 5.9. Manual or through-the-hull suction-type bailing devices are allowed.
- 5.10. A maximum of 2 openings are allowed in the transom. Transom openings shall not exceed 5 inches in height and 10 inches in width, and may not be closer than 1/2 inch to the inside bottom of the hull nor closer than 4 inches to the centerline of the transom. Transom openings shall be fitted with covers.
- 5.11. Any configuration of centerboard trunk or centerboard which results in a jibing board is prohibited. Any form of gasket in the trunk opening is prohibited.
- 5.12. The centerboard trunk may be built up inside, providing that the width of the resulting trunk opening in the bottom of the boat is not less than 1-3/8 inches wide and the internal length is not less than 52 inches. The build-up may be accomplished by filling up to a height of no more than 4 inches above the bottom edge of the trunk opening. The centerboard trunk shall not be filled above 4 inches from the bottom of the trunk opening. The centerboard trunk opening shall be rectangular in shape.
- 5.13. The flotation tanks as delivered by the builder shall not be altered, except that access plates with water-tight covers may be installed. Foam materials subject to water absorption or disintegration may be removed, provided they are replaced with an equal amount of flotation. Additional flotation capacity may be installed. Flotation tanks may have flotation material added.
- 5.14. Hiking straps may be used.
- 5.15. Electronic instruments are prohibited except for devices that display time and/or magnetic compass heading. Such devices may not transmit or receive information through external connections or radio signals. Timing devices shall be limited to time, countdown, and stopwatch functions. Compass displays shall be limited to the current magnetic heading of the boat, which optionally may be expressed with reference to a user-input heading (lint/header). No member functions are permitted beyond simple damping or averaging. Devices that have prohibited capabilities may be used only if the display of prohibited information is verifiably suppressed.
- 5.16. **BOAT WEIGHT:** The hull and centerboard complete with all permanent fittings, fixed ballast, mast, boom, spinnaker pole, all standing and running rigging, rudder and tiller assembly; but less sails and all loose gear, such as but not limited to anchor, paddle,

and all lines that are not running rigging, shall weigh a minimum of 575 pounds. Boats not rigged for spinnaker are not required to weigh a spinnaker pole. Whisker poles are optional.

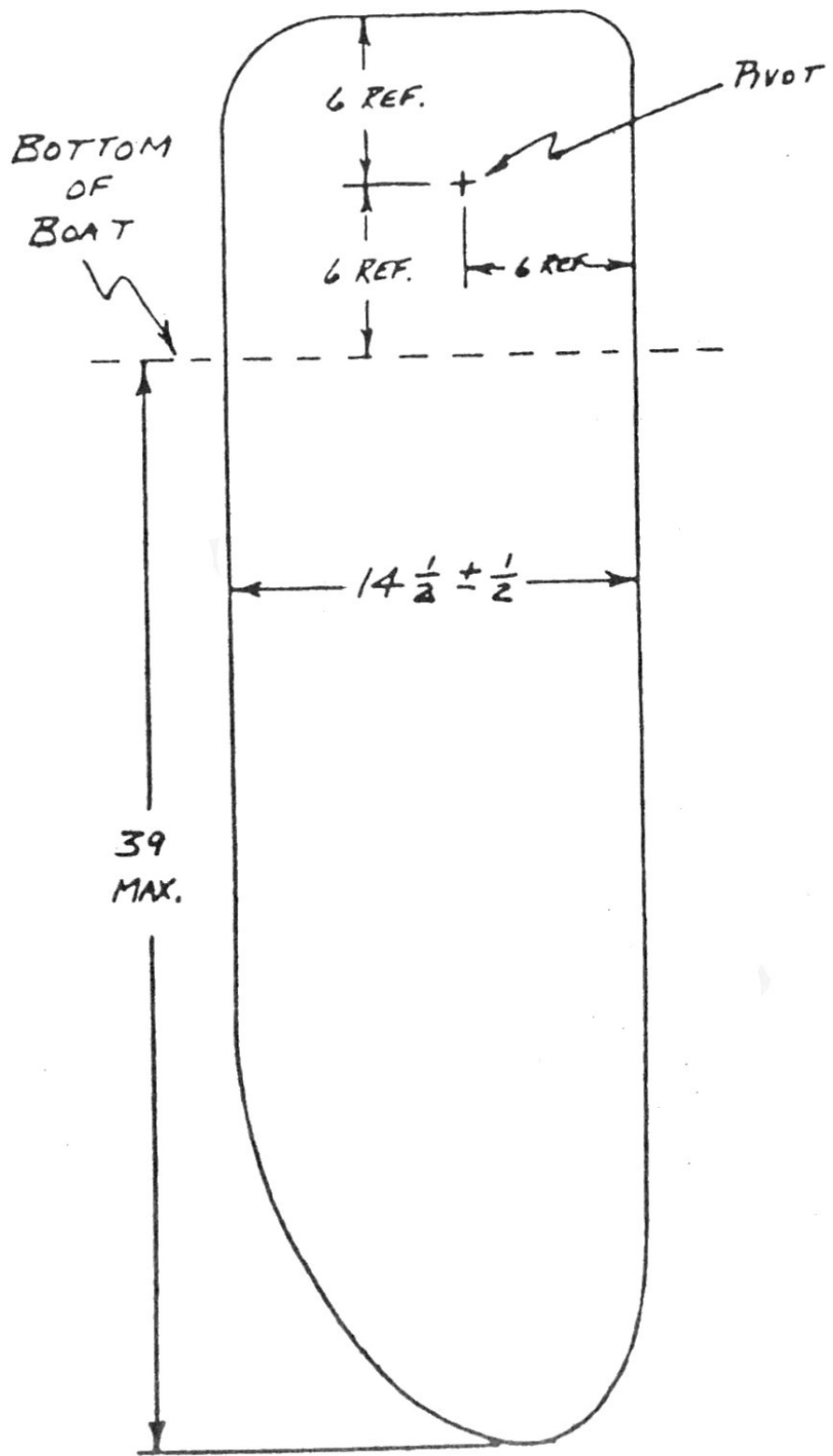
- 5.17. BALLAST: When ballast is needed to bring boat weight up to the required minimum 575 pounds, it shall be installed in the boat so it cannot move, be moved or loosened when underway, in heavy weather or when capsized. Ballast shall be affixed with permanent fasteners.
- 5.18. The motor well (the cavity in the top surface of the aft deck, just forward of the transom) as designed by the licensed builder shall not be removed. If the well has been removed, it must be replaced so as not to lighten the immediate area of the deck; except that boats which have had a motor well removed prior to 31 January, 2002 may alternatively, permanently install a fixed weight of eight (8) pounds on the inside surface of the transom entirely within 6 inches (vertically) of the top surface of the deck and centered laterally on the center of the motor well.
- 5.19. Thwarts,(the structural member, usually wooden, that laterally tie the upper centerboard trunk to the seats) may not be removed, unless replaced by equivalent centerboard trunk and athwart ship support.

6. Centerboard - Rudder

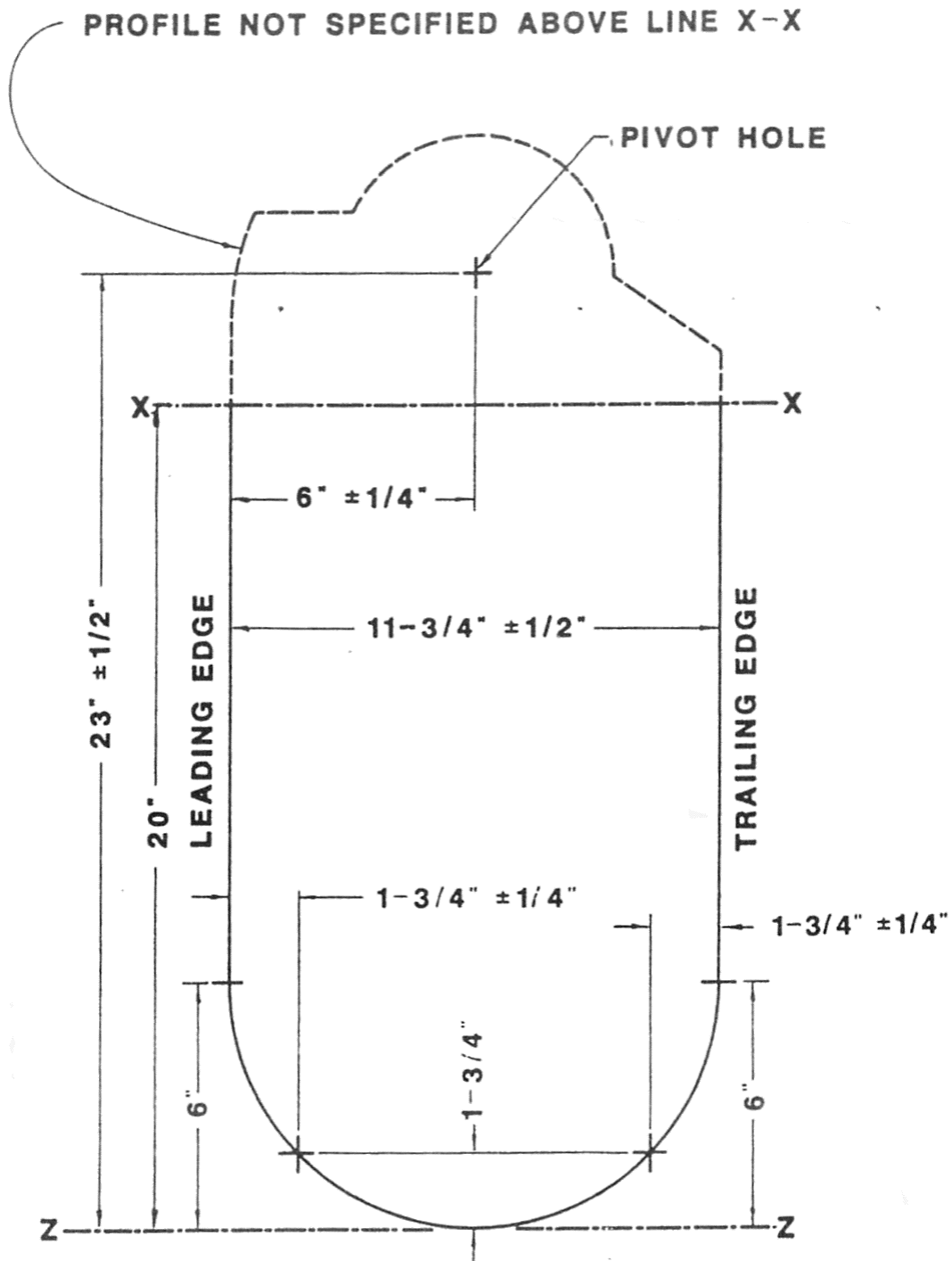
- 6.1. The thickness of blades is not controlled. Tolerances of blade profiles are plus and minus ¼ inch unless otherwise specified. No tolerances shall be applied to dimensions given to locate measurement stations, such as in Drawings 6.1 and 6.3; such locations are intended to be exact. . Leading and trailing edges shall be parallel plus or minus 1/4 inch.
- 6.2. CENTERBOARD: The centerboard shall be of built-up or molded fiber-glass and resin material or of wood covered with fiber-glass and resin. The profile of the centerboard shall conform to Drawing 6.1 and Drawing 6.2. The centerboard profile shall be a fair curve between reference points A and B.
- 6.3. The weight of the centerboard, including any fittings permanently attached, shall not exceed 25 pounds. Ballast may not be incorporated during construction or added thereafter.
- 6.4. RUDDER: The rudder shall be of built-up or molded fiber-glass and resin material or of wood covered with fiber-glass and resin. The profile of the rudder shall conform to Drawing 6.3. The rudder profile plan shall be a fair curve, approximately circular, between the reference points 6 inches above line z-z.
- 6.5. The rudder blade shall be of the pivoting type. The center of the rudder blade pivot hole shall be no more than 9 inches back from the transom and no more than 1 inch above a projected line extending the bottom centerline of the hull as shown in Drawing 6.4.
- 6.6. The angle of the rudder blade shall be optional. The blade shall be free to pivot up upon striking an obstruction, except that a releasable line or a soft wooden pin no larger than 1/4 inch may be used to hold the blade down.
- 6.7. Any convenience for the handling of the rudder may be used. Any type of tiller, tiller extension, or rudder head may be used.



Drawing 6.1: Centerboard Tip Detail

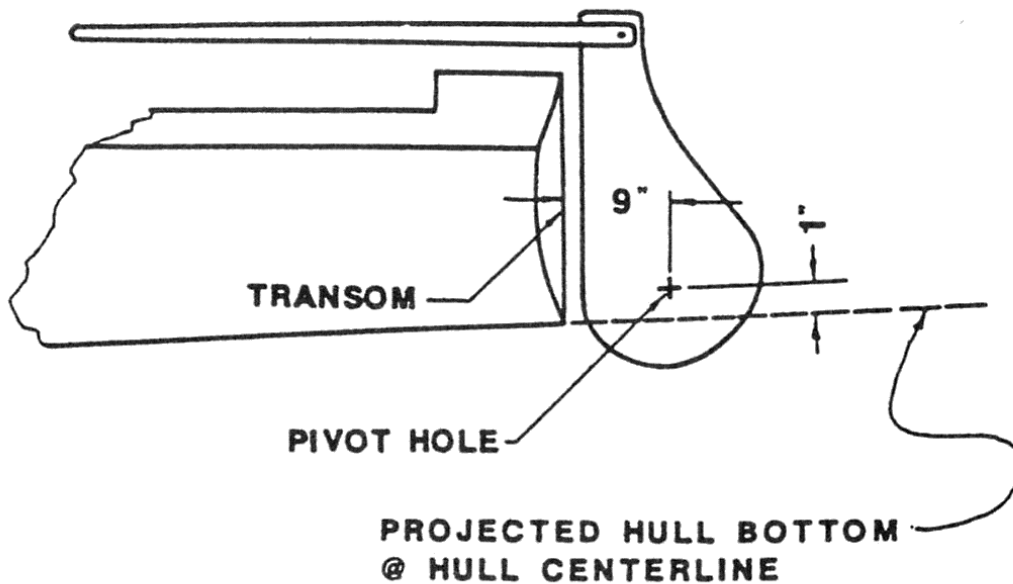


Drawing 6.2: Centerboard



- All dimensions are maximums unless otherwise specified
- Leading and trailing edges shall be parallel to within plus or minus 1/4 inch.
- Thickness and foil shape not specified.

Drawing 6.3: Rudder Blade plan



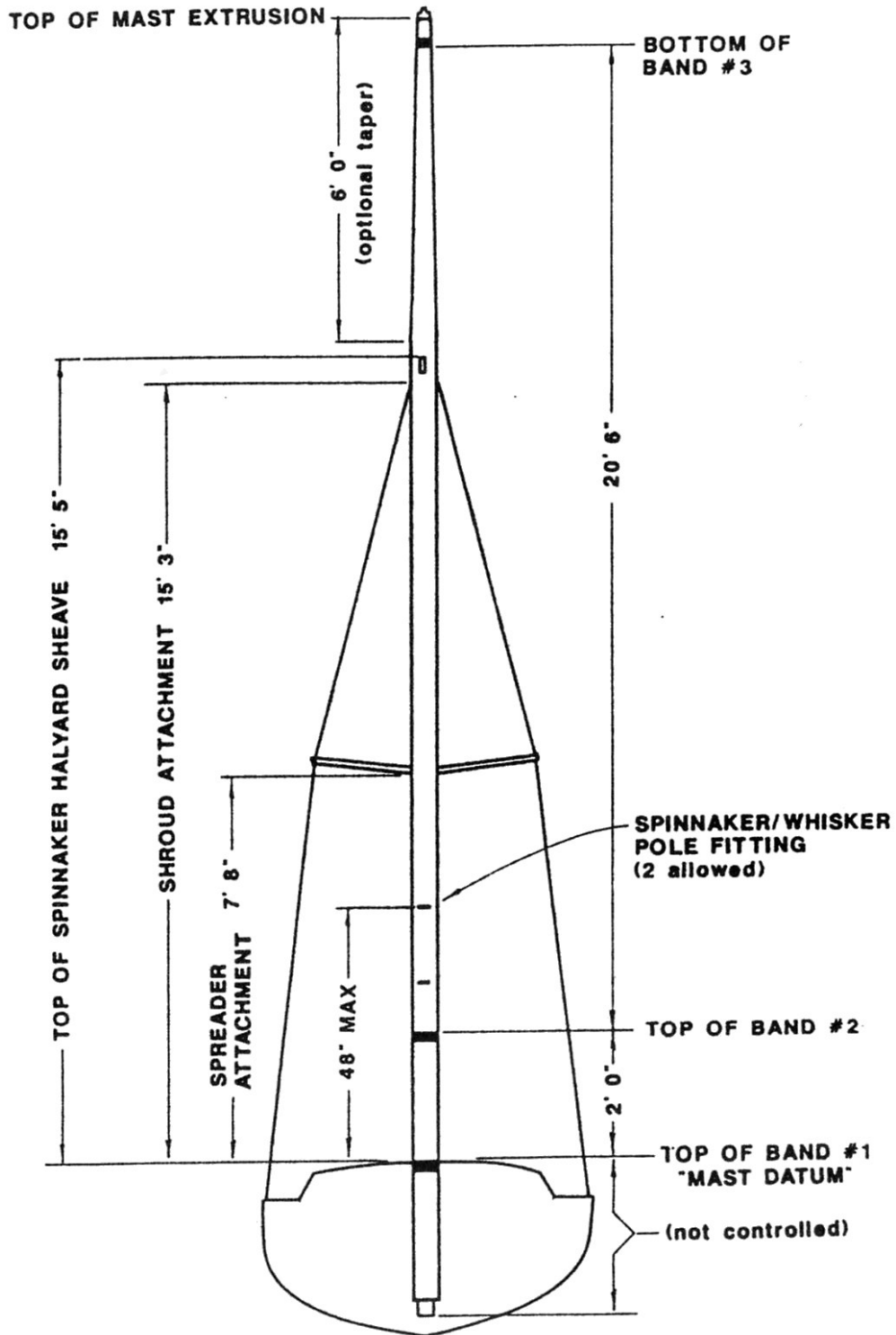
All dimensions are maximums unless otherwise specified.

Drawing 6.4: Rudder Head Assembly and Pivot hole Location

7. Spars

- 7.1. Spars, including replacement spars, shall be of aluminum alloy with an internal sail slot. The mast may be tapered in its upper portion; such taper shall not extend below 6 feet 0 inches from the end of the mast tube. The untapered portion of the mast shall be no smaller than 2.50 inches fore-and-aft and 2.00 inches athwartships, except for the Zephyr mast originally supplied with boats numbered below 1000, which may be no smaller than 1.70 inches athwartships. The untapered mast extrusion shall be no lighter than 0.675 lb./ft.
- 7.2. The mast shall be stepped on the mast jack or other type of mast step through the standard mast partner opening in the cuddy top. The heel of the mast may be moved fore-and-aft as an aid in tuning, but no adjustment in position or height of the mast heel shall be made during a race. A system to remotely or readily adjust the mast heel position is not allowed.
- 7.3. A deck stepped mast with proper support is optional. The mast butt of the deck stepped mast shall be in the same position as the opening for the standard mast partner opening in the cuddy top.
- 7.4. **MAST BANDS:** Mast bands shall be indicated by bands of contrasting color painted around the mast. Band widths shall be a minimum of 3/4 inch. All band specifications shall be measured along the front of the mast. Additional sets of Band 2 and Band 3 are optional. Each additional set shall be distinguished by a different color from other band sets.
- 7.5. **BAND 1:** A band shall be located such that its upper edge is no higher than the upper surface of the cuddy top (excluding any bead or collar around the partner opening) when the mast is stepped in any racing position. For the purpose of consistency, the location of the band shall be checked at the front face of the mast. The upper edge of Band 1 is referred to hereinafter as "Mast Datum".

- 7.6. BAND 2: A second band shall be located such that its upper edge is no more than 24.0 inches above Mast Datum.
- 7.7. BANDS: A third band shall be located such that its lower edge is no more than 20 feet 6 inches above Band 2. When the mainsail is set, the cloth of the sail shall be wholly between Band 2 and Band 3.
- 7.8. BOOM BAND: A band of contrasting color not less than 0.75 inch wide shall be painted around the boom, located such that its forward edge is no more than 10 feet 0 inches from the after surface of the mast when the boom is positioned perpendicular to the mast. The clew of the mainsail, when set, shall not extend aft of the forward edge of the band.
- 7.9. The boom, including replacements, shall be of aluminum alloy with an internal sail slot.



All dimensions are maximums allowed.

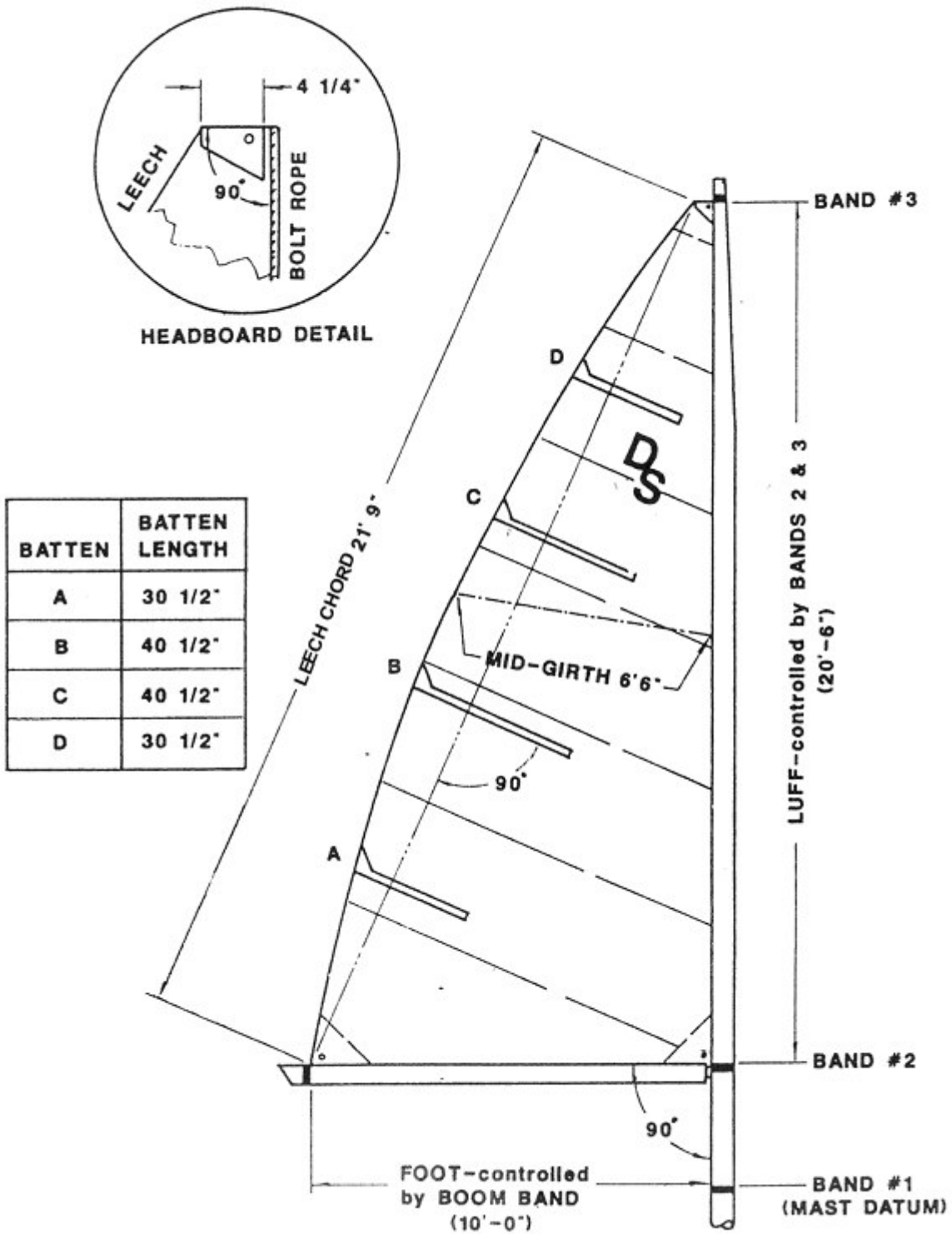
Drawing 7.1: Mast Bands and Fittings

- 7.10. The shrouds shall pass over spreaders, which may be of fixed, full swing, or limited swing type. The spreaders shall be attached to the mast such that the distance from Mast Datum to the lower surface of the spreader within one inch of the mast does not exceed 7 feet 8 inches. The length of the spreader is optional.

- 7.11. The top of the spinnaker halyard sheave shall be no higher than 15 feet 5 inches above Mast Datum.
- 7.12. A maximum of two fittings may be attached to the mast for securing a spinnaker pole and/or whisker pole. The fittings shall be fixed in position no more than 48 inches and no less than 24 inches above Mast Datum. No portion of such fitting shall protrude more than 2 inches from the front of the mast.
- 7.13. A whisker pole or spinnaker pole shall not be more than 74 inches in length overall (fittings included). When in use, one end shall be made fast to the mast. A maximum of two poles may be on board.

8. Sails

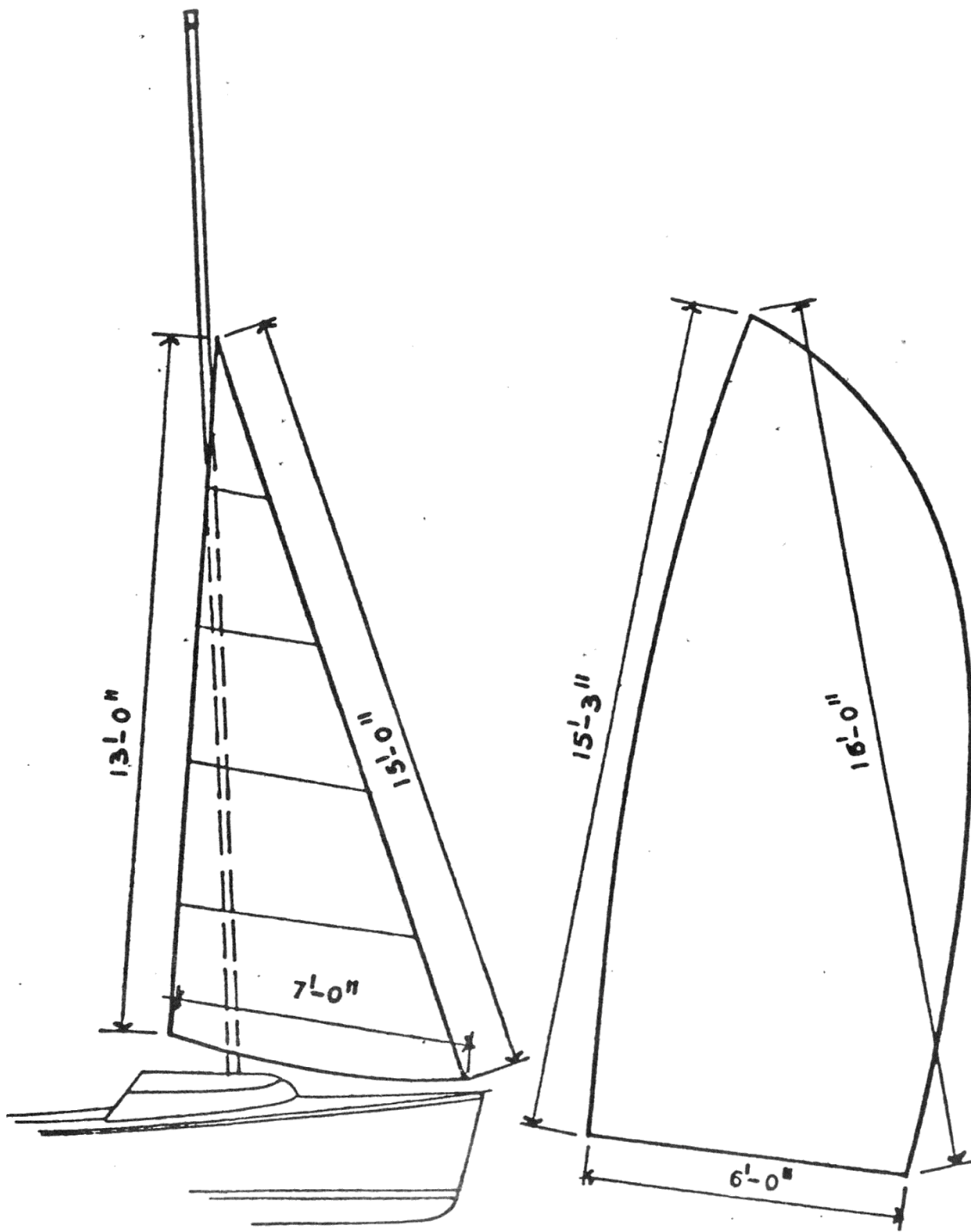
- 8.1. Sails on board while racing shall be limited to mainsail, jib, and spinnaker, and shall meet the following specifications and the measurements of Drawings 8.1 and 8.2.
- 8.2. Mainsail and jib material shall be of entirely woven cloth not lighter than 3.5 ounce per running yard based on a cloth width of 28-1/2 inches or its equivalent.
- 8.3. All sail measurements shall be "cloth". This does not include the bolt rope or eyes extending beyond the sail cloth. All measurements shall be made point-to-point in a straight line with the sail spread smoothly, but not under tension. The luff tape shall be pulled only until the wrinkles in the sail cloth are removed. The sail shall then be measured with the sail cloth laying flat. Two windows each in the mainsail and in the jib are permitted.
- 8.4. MAINSAIL: Mainsails, when set, shall be attached to the spars using bolt ropes in the slots provided in the spars. Loose footed mainsails and zipper footed mainsails are prohibited. Slugs are permitted on the luff of the mainsail in addition to the bolt rope.
- 8.5. The mainsail leech chord shall not exceed 21 feet 9 inches as measured from the leech corner of the headboard to the extreme cloth of the clew.
- 8.6. The mainsail mid-girth shall not exceed 6 feet 6 inches as measured from the mid-point of the luff to the mid-point of the leech. The mid-point of the luff shall be located by folding the luff corner of the headboard to the tack, and the mid-point of the leech by bringing the peak to the clew.
- 8.7. The mainsail luff dimension shall be controlled by mast bands.
- 8.8. The mainsail foot dimension shall be controlled by the boom band.



All dimensions are maximums allowed unless otherwise noted.

Drawing 8.1: Mainsail and Boom Band

- 8.9. BATTENS: Each mainsail shall be equipped with four battens. The battens shall, divide the leech into five equal segments, plus or minus 2 inches, and shall be perpendicular, plus or minus 10 degrees, to the leech.. The top and bottom battens shall be a maximum of 30.5 inches in length, the two center battens shall have a maximum length of 40.5 inches. The batten pockets shall be constructed so that they cannot accept longer battens than here stated.
- 8.10. The headboard dimension shown in Drawing 8.1 shall not exceed 4-1/4 inches maximum, as measured at right angles to the bolt rope.
- 8.11. The DS emblem and the Sail Number of the entered boat, except for the provision of Paragraph 2.3 of By-Law 2 (charters), shall be permanently displayed on both sides of the mainsail.. The size and location shall conform to the current US Sailing RRS specifications for display of sail numbers and class emblem, except that number dimensions shall be 12 inches high x 8 inches wide x 2 inches thick.
- 8.12. JIB: All jibs shall be fitted with jib hanks that, when the jib is set, shall be attached to the forestay. The jib shall not use battens. Jib furlers may be installed on the boat, but shall not be used while racing.
- 8.13. The maximum jib dimensions are as follows:
Luff: 15 feet 0 inches,
Foot: 7 feet 0 inches,
Leech: 13 feet 0 inches.
- 8.14. SPINNAKER: The spinnaker may be of any woven material of weight no less than 1/2 oz. per yard. Only one spinnaker may be aboard while racing. No headboards or oversize grommets are permitted.
- 8.15. The size of the spinnaker shall not exceed any of the following dimensions:
Head to clews: 15 feet 3 inches,
Head to mid-foot: 16 feet 0 inches,
Mid-foot to clews: 6 feet 0 inches.
To measure head to mid-foot and mid-foot to clews, fold the sail vertically by bringing the clews together. All measurements shall be made in a straight line, with wrinkles removed and no tension on the cloth past removing wrinkles.
- 8.16. *Only a 10 inch Sail Number of the entered boat, except for the provision of Paragraph 2.3 of By-Law 2 (charters), shall be affixed to at least one side of the spinnaker..*



Drawing 8.2: Jib and Spinnaker

9. Standing Rigging

- 9.1. Standing rigging shall consist of one forestay and two side stays and shall conform to the original points of attachment. Jumper stays are optional. No rigging shall be used as a backstay.

- 9.2. Stays shall be 3/32 inch diameter minimum, stainless steel wire. Rod rigging is prohibited. Side stays shall pass over or through the ends of the spreaders. Turnbuckles, mast jack, or shroud adjusters may be used for adjustment but shall not be adjusted while racing.
- 9.3. Connection of stays to the mast may be internal or external. For internally connected stays, the point of penetration of the mast or, for externally connected stays, the point of attachment shall be no higher than 15 feet 3 inches above Mast Datum.
- 9.4. Chainplates attached to the deck as originally supplied by the O'Day Company and by Spindrift One Designs may be replaced by chainplates attached to the hull at the same fore-and-aft location.

10. Running Rigging

- 10.1. Halyards may be of any material, and the sheave or tube shall bear the weight of the sail. No halyard hooks or latches shall be used above Band 2. A winch or multiple purchase on any halyard is optional.
- 10.2. Material for the sheets is optional, except that they shall not be made of steel.
- 10.3. The mainsheet may be led to a fitting attached to the centerboard trunk. The use of any form or location of traveler is optional. All sheet attachments shall be inboard of the rail, except that mainsheet cleats on the boom are permissible. Neither the jib nor the spinnaker shall be sheeted to the boom.
- 10.4. The arrangement of sheets for the mainsail, jib, and spinnaker shall be optional. Adjustable boom vang, adjustable main and jib cunninghams, and adjustable mainsail foot outhauls are optional.
- 10.5. A boom vang may be rigged from any point on the boom to any point on the mast or aft of the mast on the centerline of the yacht no further than 6 inches from the after edge of the mast.
- 10.6. Masthead tell tales, shroud tell tales, and sail tell tales are permitted.

11. Measurement Protests

- 11.1. Resolution of a measurement dispute between competitors shall be via a protest at an Association-sanctioned event. The Protest Committee (PC) shall weigh the evidence of a valid Measurement Certificate in accordance with Section 4 above. The PC may refer questions to a DS Class authority, preferably an individual disinterested in the protest results, such as those of Paragraph 4.2 above.
- 11.2. If the PC decides that a boat does not meet the requirement of By-Law 3, then the PC shall prepare a summary (called hereinafter an Attachment) of decision for the Skipper of that boat, which the Skipper shall attach to the Measurement Certificate (Certificate) to ensure it is available for consideration at any subsequent competition or at completion of a new Certificate. The Attachment shall include the regatta date and location, names of the PC members, hull and sail numbers, facts found, interpretations, and decisions. If the PC received assistance from a DS Class authority, the PC shall include a summary of that correspondence in the attachment, including the identity of the authority. If the boat has no completed Certificate, the Skipper shall create such a Certificate (entering only owner and hull information not subject to measurement) with any required Attachments, and shall also send a copy of the Certificate with Attachments to the Class Measurer.
- 11.3. Attachments per paragraphs 2.2 and 11.2 shall be maintained with the Certificate until a new Certificate is completed. Unless any Attachment is retired, it

shall be transferred to the new Certificate. An Attachment may only be retired if the new Certificate is completed and signed by a person of equal or greater authority than the person who completed the previous Certificate, and if all deficiencies noted in the Attachment have been cured, and if the Class Measurer has not stated that the Attachment cannot be retired (see PP 2.2 above). If an Attachment is retired, the Member in charge of the boat shall so notify, and shall send a copy of new Certificate to the Class Measurer.

- 11.4. The Class Measurer may state that an Attachment may not be retired if, for example, the Attachment describes some continuing unusual condition (such as the placement of corrector weights or some other compensation) that the boat must meet in order to conform to the requirements of this By-Law. Then the Attachment can be used to make sure that all subsequent measurements of that boat verify that the continuing unusual condition is still met.
- 11.5. If the most recent valid Certificate of a boat entered in an Association-sanctioned event received an Attachment per Paragraph 2.2, 11.2 or 11.3, the Skipper of that boat shall, at the earliest reasonable opportunity and normally before the Skipper's Meeting, post prominently on the official notice board of that event a summary of the Attachment including Sail Number, Skipper name, and list of issues mentioned in the Attachment. The Race Committee shall make available and shall regulate space so used on the official notice board.
- 11.6. A competitor anticipating a difficult measurement issue and wishing to resolve it prior to a sanctioned event is encouraged to seek a measurement Waiver per Paragraph 3.3 above.