

By-Law 3

Specifications and Measurements

Amended 1997

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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. The Class Measurer shall have final authority to interpret the contents of this By-Law and any decisions made by the Measurement Committee, with regard to any specific individual case.
- 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 which may arise. If a point is not herein covered, a ruling should be obtained from the Class Measurer and the Measurement Committee. The Measurement Committee shall consider the intent of this By-Law, over the technical construction that might be derived from the wording, bearing in mind the Specifications are intended to maintain the DS as a one-design yacht.
- 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. The Measurement Certificate or statements in writing by the Measurement Committee are the recognized proofs of eligibility of a boat in the Day Sailer Association. The Measurement Committee shall have the power to revoke or suspend any Measurement Certificate issued as a result of fraud or mistake, or the Certificate of any boat which has been altered so as to no longer conform to the Specifications. Any boat with a current valid Certificate and registered in the DSA can be challenged by means of a protest in writing, submitted to the Class Secretary, who shall refer it to the Class Measurer for a decision.
- 4.2. All boats being measured shall be inspected by a person of authority in the Association who shall state in writing that the boat conforms to the Specifications and Measurements of this By-Law, which shall be considered the official standard with respect to the hull, deck, weight, sails, spars, and rigging.

5. Hull - Deck – Ballast

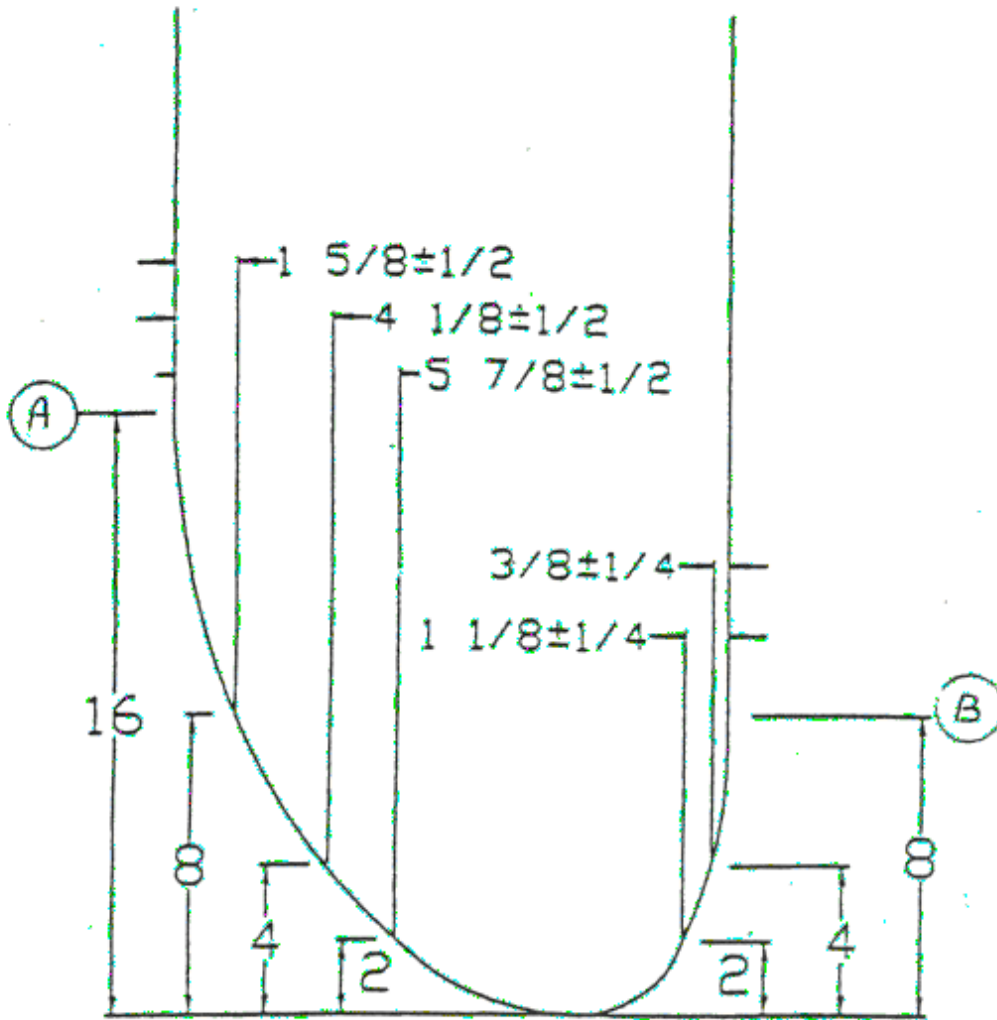
- 5.1. The hull shall conform to the design and Specifications of the Day Sailer Association. The hull and deck shall be made of fiberglass and resin molded by the hand-layup process, using molds which have been supplied or approved in advance by the Day Sailer Association. No changes are permitted that modify the exterior lines of the hull, deck, or cuddy.
- 5.2. 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.
- 5.3. 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.
- 5.4. 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.
- 5.5. A cloth tube for the purpose of spinnaker launching is allowed on top of the deck, but not through the deck.
- 5.6. 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.
- 5.7. 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.
- 5.8. Manual or through-the-hull suction-type bailing devices are allowed.
- 5.9. 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.

- 5.10. 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.
- 5.11. 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.
- 5.12. 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.
- 5.13. Hiking straps may be used.
- 5.14. Electronic instruments, except compasses, shall not be used during sanctioned racing events.
- 5.15. **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.
- 5.16. **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.

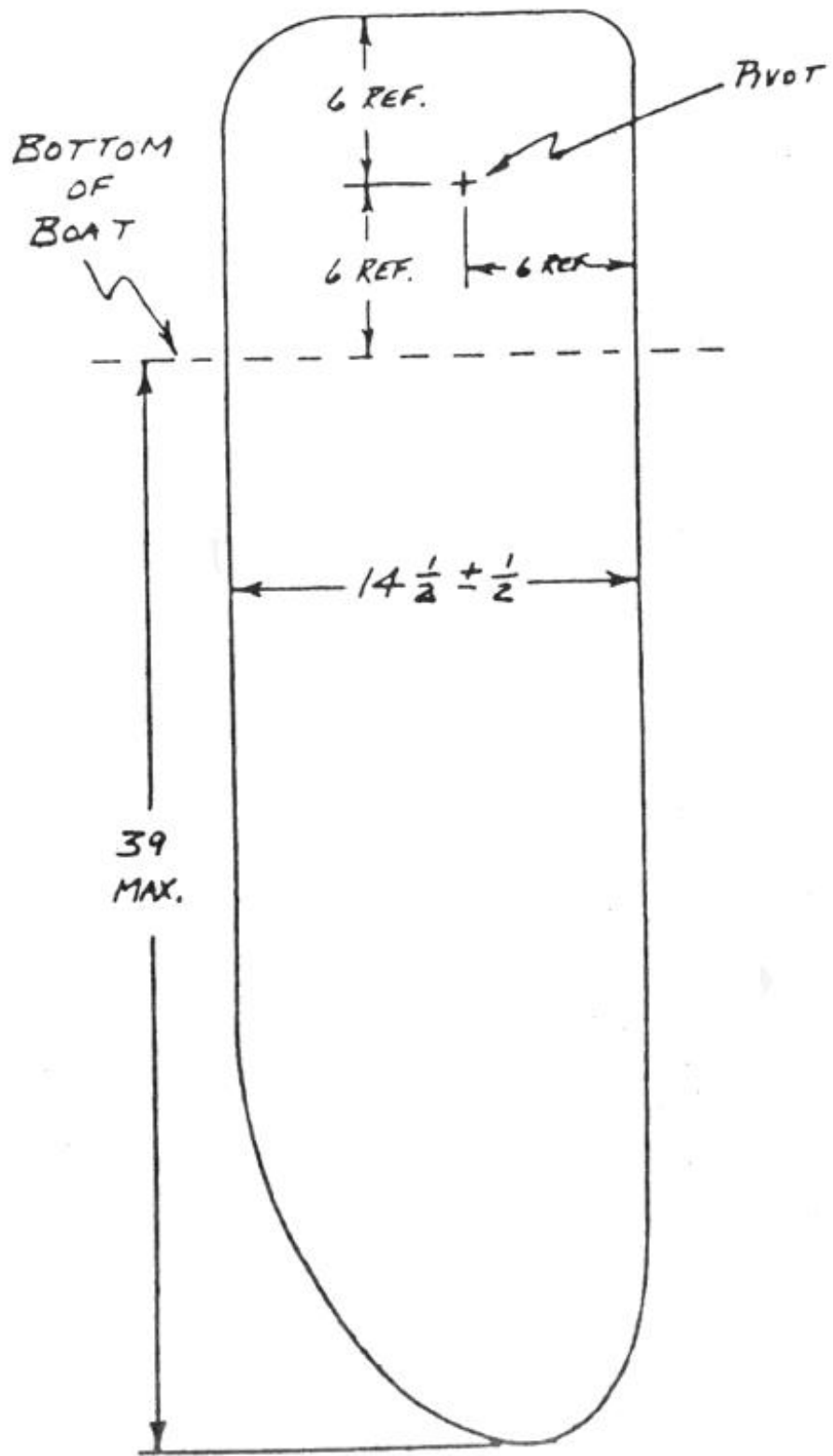
6. Centerboard - Rudder

- 6.1. The thickness of blades is not controlled. Tolerances of blade profiles are plus and minus 1/4 inch unless otherwise specified. 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.
- 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.

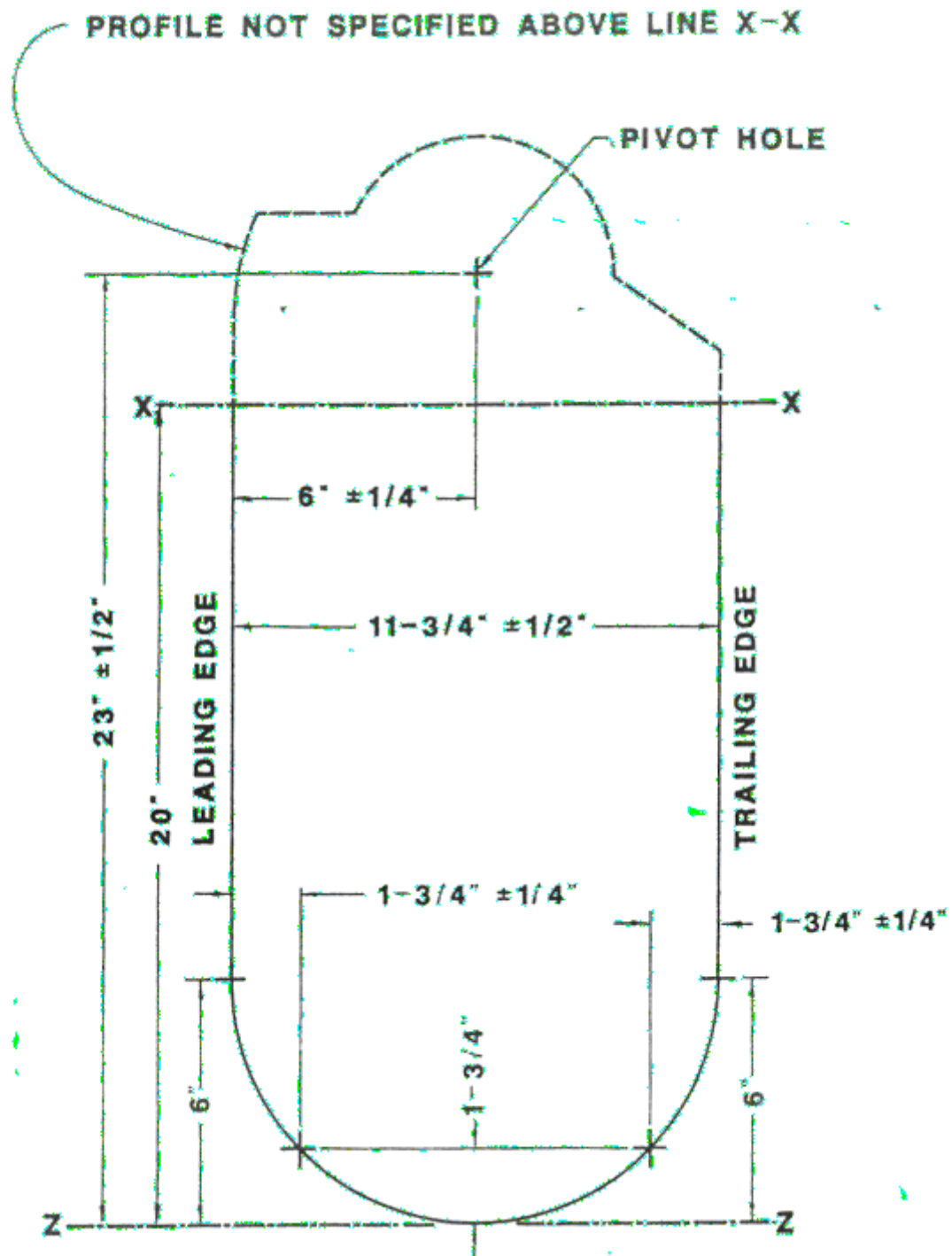
6.7. Any convenience for the handling of the rudder may be used. Any type of tiller, tiller extension, or rudder head may be used.



Drawing 6.1: Centerboard Tip Detail

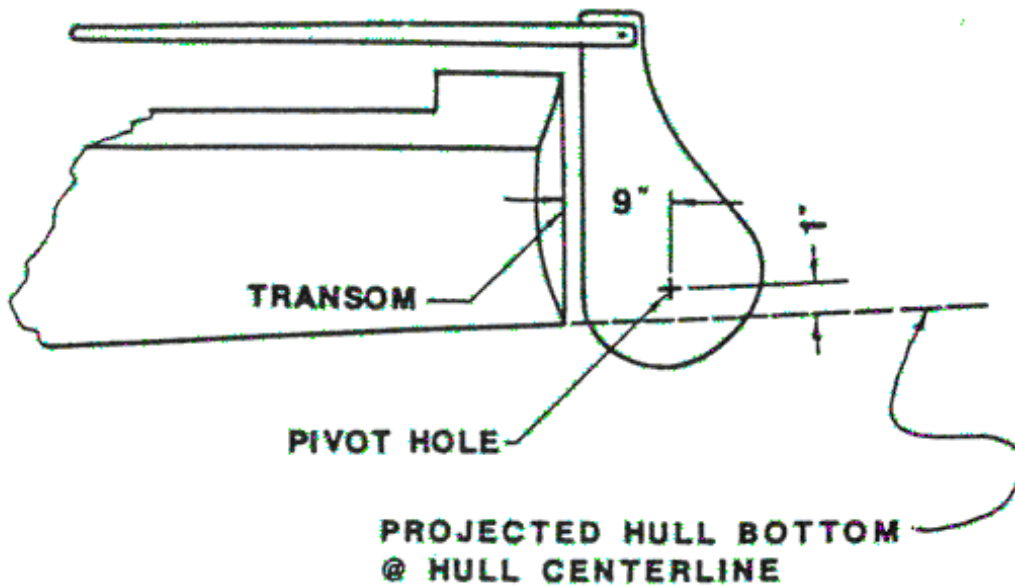


Drawing 6.2: Centerboard



- 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



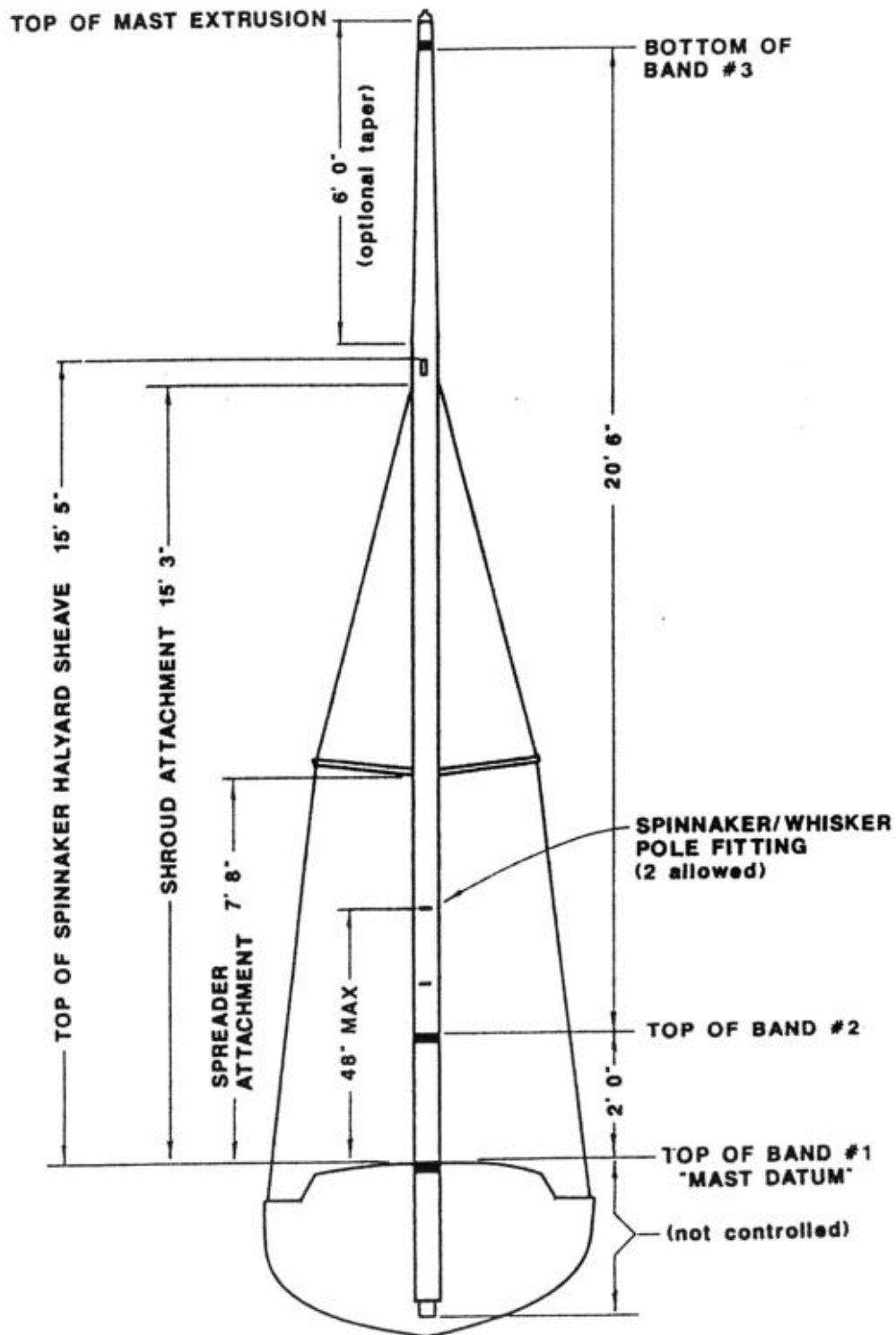
All dimensions are maximums unless otherwise specified.

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.

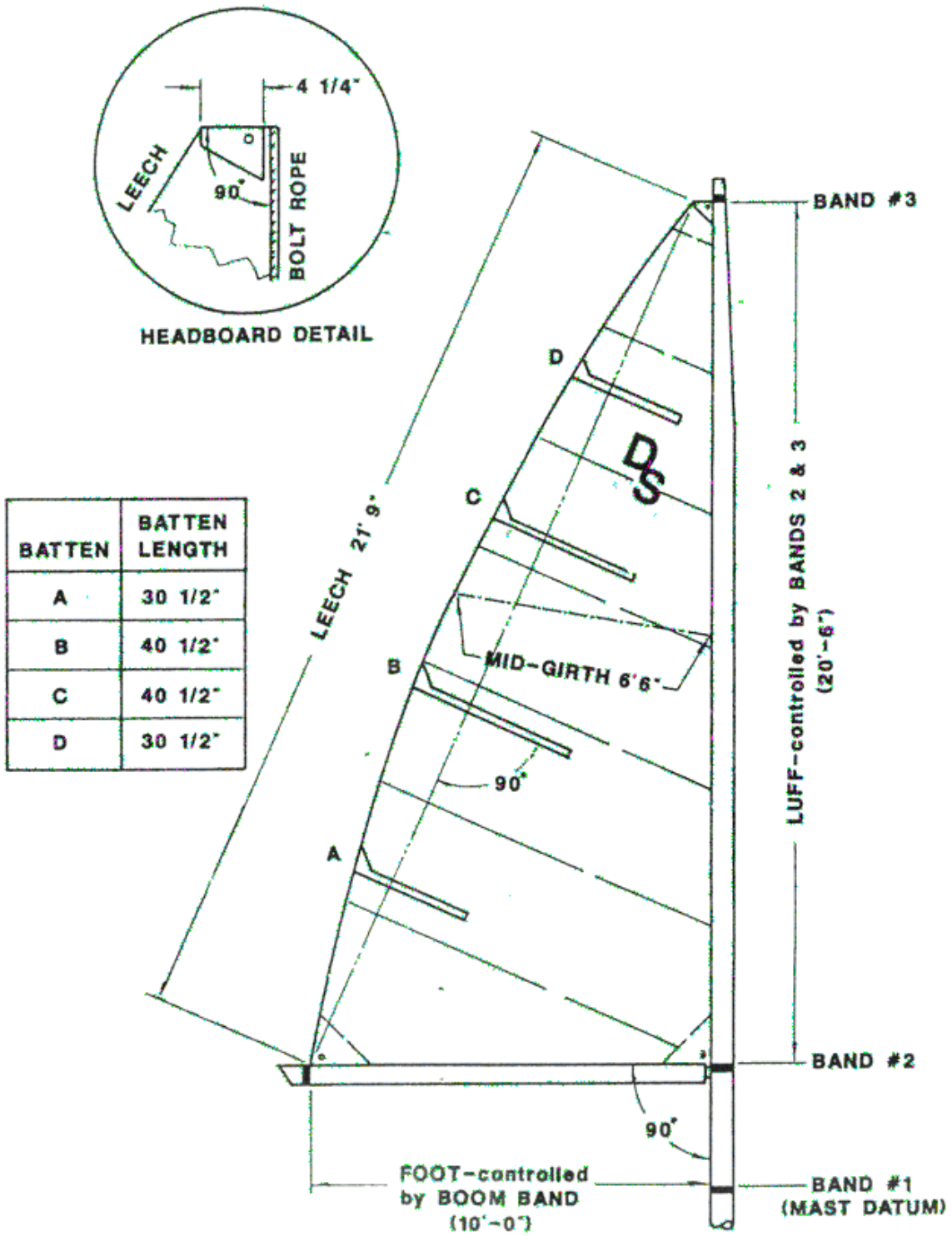
Drawing 7.1: Mast Bands and Fittings

- 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). One end shall be made fast to the mast. A maximum of two poles may be on board.

8. Sails

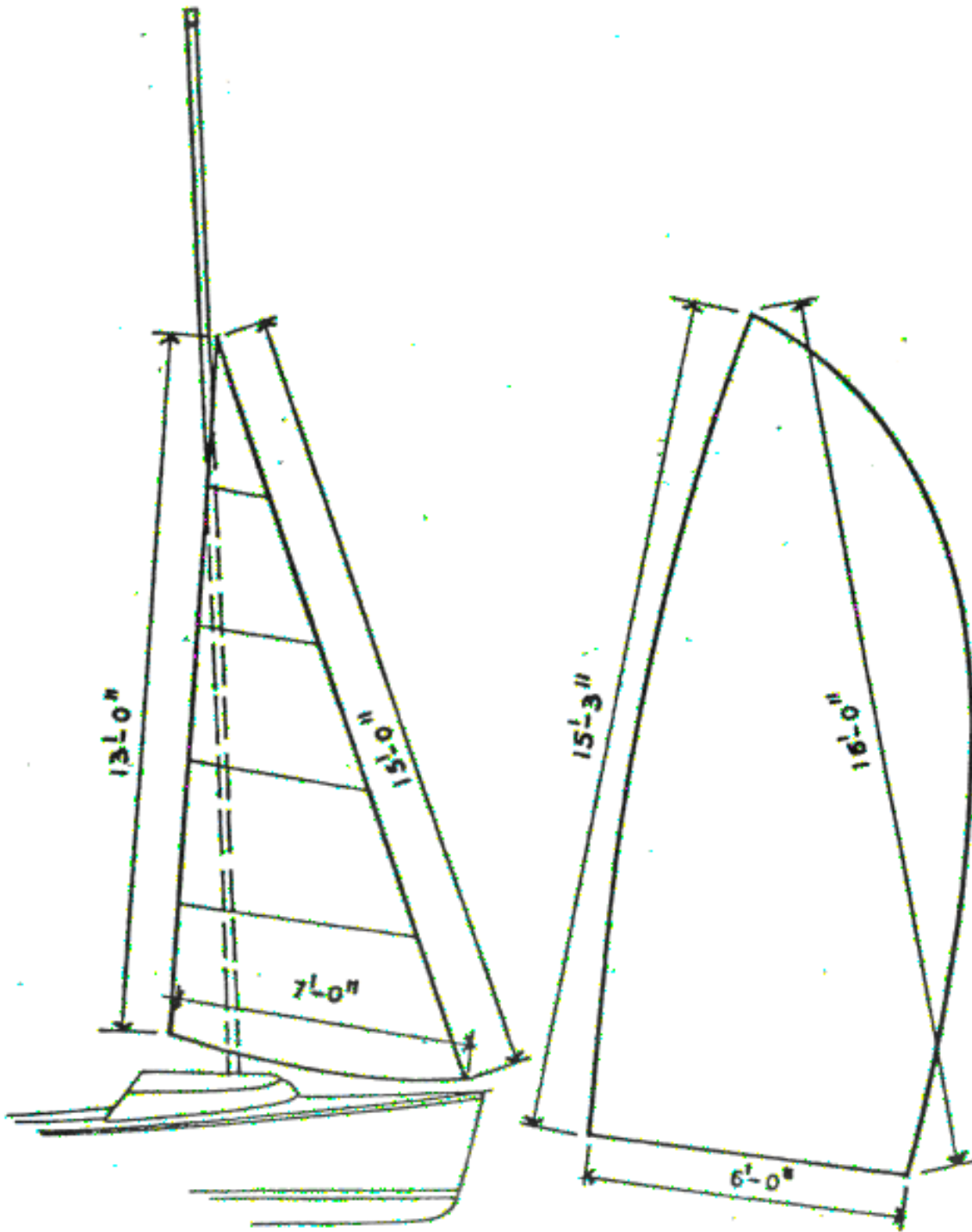
- 8.1. Sails on board while racing shall be limited to mainsail, jib, and spinnaker, and shall meet the following specifications and the measurements of Drawings 8.1 and 8.2.
- 8.2. Mainsail and jib material shall be of entirely woven cloth not lighter than 3.5 ounce per running yard based on a cloth 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 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. 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 registered sail number and DS emblem must be displayed on both sides of the mainsail. The size and location shall conform to the IYRR 94/96 Rule Appendix B-3, Par. 1.2 and 1.3, 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. A 10 inch racing number only 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.