



# Lightning Plans and Specifications

*(Rulings and Interpretations printed in italics)*

- I. HULL
- II. SPARS
- III. RUDDER, CENTERBOARD,  
SPINNAKER POLE
- IV. RIGGING
- V. SAILS
- VI. FLOTATION

## OTHER RULINGS

## HULL MEASUREMENTS – PROCEDURES

## QUESTIONS/INTERPRETATIONS

## GENERAL

1. The purpose of the Plans and Specifications for the Lightning is to insure to as great a degree possible that all hulls and sails are equal on the racecourse. It is impossible to write every single variation that may become apparent in the future, and also impossible to set out detailed Specifications that would preclude a challenge at sometime in the future to obtain a racing advantage. Therefore, any boat or sail having features which are not consistent with this purpose will be disapproved and will not race even though there may not be a Specification directly dealing with the item in question. If in doubt, request a ruling from the Measurement Committee before proceeding.  
  
In the case of a discrepancy between a metric measurement and its English equivalent, the English units take precedence as these are the units used in the original design. (August 2000)
2. Tolerances where published describe the limits within which a boat may be considered a Lightning.
3. Any deviation from the Plans and Specifications, and those Rules and Specifications set forth by the International Sailing Federation shall be at the builder's risk. Prior to the issuance of a Measurement Certificate the boat will be measured by an ILCA Certified Measurer, except in the case of Professional builders, whose boats will be periodically measured and certified by the Measurement Committee as to tolerances and construction techniques.
4. A Measurer may not measure a boat which he or she has built, owns, or expects to sail. This includes remeasurement after alterations.
5. If the boat does not measure, then the correction and/or modification must be made to bring the boat into conformity with the Specifications before the certificate will be issued.
6. Any Hulls, Rigging, Sails, Spars must conform strictly with the Specifications with respect to design, dimensions, and materials to be eligible to receive a hull number and/or to be certified as a Lightning Class boat.  
  
Carbon fiber construction or carbon fiber components are strictly prohibited except for cam cleats, blocks, pulleys, rudder reinforcement, and hiking sticks. (August 1998) (November 1999)(March 2001)
7. The Measurement Certificate along with membership in good standing is the only recognized proof of eligibility to participate in a race sanctioned by the ILCA. The Measurement Certificate may be revoked if the boat is altered to place the boat outside of the Specifications.
8. Nothing in these Plans and Specifications is optional unless so noted.
9. Plans are not transferable. Plans are sold subject to the terms and conditions noted thereon. Plans and Specifications are subject to revision as provided by the Constitution and By-Laws. The responsibility of keeping advised as to these revisions rests with the purchaser of these Plans. Never copy another Lightning.
10. The Measurement Committee may issue rulings interpreting points not specifically covered by these Specifications, and shall be guided by the intent of these Specifications. The Class office will maintain an official list of rulings interpreting plans and specifications. This list will also be maintained on the Class web site. (August 2002)

11. No boat may be properly sold or entered in any race as a Lightning or at any time display the Lightning emblem upon its sail or elsewhere unless the royalty on such boat, and for each sail, and for each mast has been paid to the ILCA by the builder or owner, and the boat and sails meet the requirements of these Specifications. The ILCA will take all steps necessary to protect the Lightning name and emblem from unauthorized use.
12. Checking of safety equipment (as defined by the By-Laws Article VIII Number 5) at a District Championship is required—not optional. All other measurement checks are at the discretion of the district's governing body (March 2002).
13. All Lightnings constructed and holding valid Measurement Certificates prior to the publication of this amendment dated June 8, 1997 are exempt from these Specifications as long as no modification has been made to Hull, Spars, Rigging or Sails except for the chainplate limitation—quantity two per side (Article I - 46).

## ARTICLE I – HULL

14. The Lightning shall be constructed of woods generally used in yacht construction, such as marine grade plywood, cedar, mahogany, spruce or fir, or glass reinforced plastic, or a combination of these materials.

Only professional builders whose building techniques have been certified by the Measurement Committee will be permitted to build glass reinforced plastic Lightnings.

Glass-reinforced plastic bottom construction shall have a skin thickness of 1/16" (1.587 mm) minimum; core thickness of 3/8" (9.525 mm); core density of 4 lb./cu.ft. (64.103 kg/cubic meter) minimum; inner skin thickness 1/16" (1.587 mm); and five frames minimum in the station 3-1/2 to station 7-1/2 area.

Glass-reinforced plastic side construction shall have a skin thickness of 1/16" (1.587 mm) minimum; core thickness of 1/4" (6.350 mm); core density of 4 lb./cu.ft. (64.103 kg/cubic meter) minimum; inner skin thickness 1/16" (1.587 mm) minimum.

Wood construction techniques shall be equivalent in strength to the frames, planking, timbers, etc. as shown in the original plans to insure a rigid hull structure, and shall be of a uniform thickness, in order to hold its shape and specifications while racing.

15. Frames - There shall be a minimum of twelve frames per side, located at stations 1 through 9 and stations 3-1/2, 5-1/2, and 8-1/2.

Frames shall be a minimum of 6.35 mm (1/4") thick and a maximum of 101.60 mm (4") deep, and be typical of accepted construction technique.

Frames at stations 3, 3 1/2 and 4 shall consist of or shall be reinforced at minimum dimensions of 22.225 mm (7/8") thick and 50.80 mm (2") deep along the entire hull bottom and sides.

Keel, Chine and Sheer stringers - minimum thickness 19.05 mm x 38.1 mm (3/4" x 1 1/2").

Hull skin stringers - minimum thickness 12.70 mm x 19.05 mm (1/2" x 3/4") - minimum quantity three per side.

Bottom stringers - minimum thickness 12.70 mm x 19.05 mm (1/2" x 3/4") - minimum quantity running parallel to the keel will be five per side.

Deck stringers - minimum thickness 12.70 mm x 19.05 mm (1/2" x 3/4") - minimum quantity running parallel to the centerline will be five per side.

16. Sides and Bottom shall not be thinner than:

Solid wood - 15.875 mm (5/8")

Plywood - 7.9375 mm (5/16")

17. Deck shall be well braced so that it will not flex under the weight of the crew, and shall not be thinner than:

Solid wood - 11.1125 mm (7/16")

Plywood - 6.35 mm (1/4")

Glass reinforced plastic construction of the fore and aft deck shall have a skin thickness of 1/16" (1.587 mm) minimum; core thickness of 1/2" (12.70 mm) minimum; core density of 4 lb./cu.ft (64.103 kg/cubic meter) minimum; and inner skin thickness of 1/16" (1.587 mm) minimum.

18. Wood transoms shall have a minimum thickness of 12.70 mm (1/2"). Fiberglass transoms shall have a minimum thickness of 3.175 mm (1/8").

There may be a maximum of two transom ports, and they shall not exceed 32 sq. inches area per port.

19. The centerboard trunk shall be constructed of glass reinforced plastic not less than 4.7625 mm (3/16") thick, or 12.70 mm (1/2") solid wood. The centerboard trunk shall be braced so that it will not flex. The hull number as assigned by the ILCA shall be permanently fixed by indentation, plaque or separate numbers (decals) molded under clear resin at least 50.80 mm (2") high in the starboard side of the trunk.
20. Should there be a question as to thickness or uniformity of a boat, the Measurement Committee may require that a plug or plugs be taken to determine same at no cost to the Association. The Measurement Committee may test for moment-of-inertia or center-of-gravity for equality of weight distribution for any boat and set standards should M-O-I testing be required in the opinion of the Committee.
21. It is permissible for the wood boat builder to add a layer of glass reinforced plastic cloth saturated with polyester or epoxy resins. However, the boat will comply under these Specifications as a wood boat.
22. Weight of the hull and rigging shall not be less than 317.5179 kg (700 lbs.). The boat shall be weighed with spars, standing rigging, halyards, main, jib and one set of spinnaker sheets, boom vang gear, rudder, tiller, hiking stick, centerboard, one spinnaker pole, hiking straps, attached compasses, built-in non-removable drawers or compartments of reasonable size and construction, and automatic bailers. Weight does not include sails, paddle, boom crutch, removable drawers, loose equipment, containers, life preservers, tools, anchors, anchor lines and other miscellaneous lines.

*When Heavy Pumps or other equipment are apparently for the primary purpose of adding ballast, they shall be regarded as improper and illegal. (June 66)*

*All Water inside a boat must be completely sponged out before boat can be officially weighed. (Oct. 66)*

*An Electric Bilge Pump may be used in a Lightning, but its batteries cannot be weighed with the boat. (See Electronic Equipment Ruling following Article VI in "Other Rulings.").*

23. Weight will be verified by an ILCA Certified Measurer or by a committee authorized by the ILCA Measurement Committee.

If weight is below 317.5179 kg (700 lbs.) then lead shall be added as follows: Up to 8.9047 kg (20 lbs.) of corrector weight shall be equally divided and placed on both sides of the centerboard trunk. Additional correctors of no more than 17.8094 kg (40 lbs.) shall be placed 1524.0 mm (5') from the center of gravity and shall be placed in equal amounts on the floor of the boat, clearly visible, and be placed as close to the chines as possible.

All corrector weights shall be securely attached and easily visible.

If a boat has an aluminum centerboard, additional corrector weights over the first 9.072 kg (20 lbs.) will be placed 914.4 mm (3') from the center of gravity as above.

Under no circumstances shall corrector weights be removed until the boat has been reweighed by an official Measurer or by a committee authorized by the ILCA Measurement Committee.

Corrector weights and description of correctors and/or removal thereof shall be noted on the Measurement Certificate. The boat will be weighed as dry as conditions permit, and air tanks shall be free of water.

- 24.

Hull length - Millimeters or Feet, inches, eights:

X dimension 2362.20 mm to 2343.15 mm (7-9-0+ to 7-8-2+)

Y dimension 3158 mm to 3138 mm (10-4-2+ to 10-3-4+)

W + X = 2587.625 mm to 2565.4 mm (8-5-7+ to 8-5-0+)  
 Z + Y = 3222.625 to 3200.40 mm (10-6-7+ to 10-6-0+)  
 Length overall = 5810.250 mm to 5768.975 mm (19-0-6+ to 18-11-1+)  
 Waterline Length = 4648.20 mm (15-3-0)  
 Draft Approximately = 1511.30 mm (4-11-4)  
 Beam at Deck = 1987.55 mm (6-6-2)  
 Beam at Chine = 685.925 mm (5-6-3)

X dimension is defined as from the leading edge of the centerboard pin to the intersection of the stem exactly 457.2 mm (18") from the base line

Y dimension is from the leading edge of the centerboard pin to the edge of the bottom at the transom.

W dimension is the 457.2 mm (18") intersection at the stem from the baseline to station 0 at the top the stem.

Z dimension is from the edge of the bottom at the transom to the top of the transom.

25. The weight of a Lightning centerboard concentrated at the center of the boat may affect hull offset measurements when a boat is supported upside-down at the ends for measurement. A boat may be measured with or without the board so long as the same method is used to obtain all offsets.
26. All heights shall be measured from the base line plane 276.225 mm (0-10-7) from the bottom at station 2 and 274.6375 mm (0-10-13/16") from the bottom at station 9 and equidistant from the chine at both sides of the boat. Both of these measurements will be taken from the bottom of the hull at the centerline disregarding the keel.
27. Half breadths will be measured from the centerline plane.
28. All deck measurements shall be taken exclusive of moldings.
29. Fore and aft dimensions shall be measured from a plane tangential to the forward edge of the centerboard pin and at right angles to the base line.
30. The radius of the bottom shall not be less than 2438.40 mm (8') and not more than 4572.00 mm (15').
31. Chines and Keel may be rounded to a radius not greater than 12.70 mm (1/2").
32. The stem will be 31.750 mm (1-1/4") wide at the underside of the deck, 19.050 mm (3/4") at 457.2 mm (18") from the waterline, 12.70 mm (1/2") thick at 304.80 mm (12") from the waterline, and 6.350 mm (1/4") at the waterline. For wood construction the stem shall be 76.20 mm (3") sided and molded as per original plans.  
  
The base of the stem must fair into the bottom with a minimum radius of 101.6 mm (4") over a distance of at least 101.6 mm (4") (template chord length).
33. Keel width shall be not less than 152.4 mm (6") at the widest point, not less than 114.300 mm (4-1/2") at the transom, and not less than 101.60 mm (4") where it intersects the chine. The keel shall stand not less than 9.525 mm (3/8") nor more than 12.70 mm (1/2") proud (outside) of the bottom and including its points of intersection with the transom and station 1.
34. The Skeg shall be not less than 19.050 mm (3/4") nor more than 25.40 mm (1") thick. Depth at its aft end, measured from the underside of the boat excluding the keel, shall not be less than 174.625 mm (6-7/8") nor more than 190.50 mm (7-1/2"). The length measured across the bottom of the skeg shall be not less than 952.50 mm (37-1/2") and not more than 1028.70 mm (40-1/2"). The bottom shall be straight. Its aft edge may be streamlined or chamfered but this shall not extend more than 50.80 mm (2") forward of the aft edge. The bottom edge may be rounded to a radius of not greater than 12.70 mm (1/2").
35. The dimension from the bottom of the boat directly under the mast to the top of the main halyard sheave groove shall be not more than 8516.9375 mm (27' 11-5/16") nor less than 8466.137 mm (27' 9-5/16"). This is the D1 + D2 measurement.
36. Centerboard trunk and pin: Width of Slot 12 to 19 mm (1/2" to 3/4").
  - a. All boats built after October 1, 1999 will have a minimum slot width of 1/2" (12.70mm)
  - b. Boats built earlier will have a minimum of 12mm (0.4724")

- c. For all boats the maximum will be 3/4 inch.
  - d. No boat may be altered in any way to achieve a narrower slot, unless it exceeds 3/4 inch.
  - e. Boats which were built legally, but in which the slot has inadvertently narrowed without deliberate action by the owner, will be grandfathered. (March 2000) Height of CB trunk above keel 406.40 mm (16") minimum. Height of the bottom of the CB pin above outside of keel 68.2625 to 93.6625 mm (2-11/16") to (3-11/16"). The centerboard pin will be 15.875 mm (5/8") diameter stainless steel, bronze or monel and located in the trunk per plans.
37. The distance from the front side of the CB pin to the after side of the mast shall be 468.30 mm (18-7/16") at the step with a tolerance of plus or minus 76.20 mm (3").
  38. A metal channel mast step will not stand higher than 50.80 mm (2") or have a thickness of greater than 3.175 mm (1/8") in stainless steel or bronze or 6.350 mm (1/4") in aluminum. Maximum length of the metal channel will be 304.80 mm (12") and maximum width will be 88.90 mm (3-1/2").
  39. All Lightnings must have sufficient flotation to keep the centerboard trunk cap of a fully rigged swamped Lightning at not less than 50.80 mm (2") above water level while supporting 136.0791 kg (300 lbs.) of additional weight applied above the water. A completely swamped Lightning with all buoyancy tanks and hollow areas flooded must have an excess buoyancy of at least 45.3597 kg (100 lbs.) provided by foam or Styrofoam blocks.
  40. The cockpit must be of the size and shape shown. It shall start at station 4 and extend to station 8-1/2. The deck surrounding the cockpit shall be not less than 215.90 mm (8-1/2") inside the shear. In no case shall the continuation of the deck above the seats extend further than 292.10 mm (11-1/2") inside the shear.

*The radius may be as much as 76.20 mm (3"). (June '87).*

1. *Sprayboards shall be not less than 63.50 mm (2-1/2") high above the deck at the centerline of the boat, and not less than 38.10 mm (1-1/2") high at the point midway between the centerline, and the inboard edge of the cockpit, and shall have a straight edge molded to a smooth curve.  
Holes are permitted through the deck for purposes of control lines. Each hole shall not be larger than 12.70 mm (1/2") diameter or 9.525 mm by 63.50 mm (3/8" x 2-1/2") rectangular after the installation of a block or cleat.*
2. *The deck may be curved to a radius of not less than 6096.00 mm (20') arc.*
3. *Seats must be of the general outline and position as shown on plans and must have the strength of the equivalent of 15.875 mm (5/8") solid wood. Total width of seats shall not be less than 228.60 mm (9") wide. Seats may vary plus or minus 50.80 mm (2") in height from a median distance of 314.325 mm (12-3/8") above the outer surface of the keel at station 6.*
4. *Floorboards are optional. If there are no floorboards, there shall be one or more sumps at the low point to feed suction bailing devices.*
5. *There shall be rubrails which may be a combination of fiberglass and wood or equivalent plastic with or without an aluminum extrusion equivalent to a 25.40 mm (1") half round installed along the sheer. The rubrail may not extend farther than 31.75 mm (1-1/4") in the horizontal direction from the sheer or more than 31.75 mm (1-1/4") below the sheer except between the upper shroud chainplate and the aft side of the cockpit where it may extend no more than 41.275 mm (1-5/8") below the sheer at a point measured at the bottom of the 25.40 mm (1") half round. From this point, support of the rubrail may taper into the topside, but intersect the topside no lower than 63.50 mm (2-1/2") below the sheer. The "drooped" portion of the rubrail must make a smooth transition into the regular rubrail.*
6. *The upper shrouds shall be attached to the chain plates at a point no further forward than 584.2 mm (23") from the leading edge of the centerboard pin. The lower shrouds shall be attached to the chainplates at a point 304.80 mm (12") to 355.60 mm (14") aft of the upper shroud chainplate. There shall be no more than one upper and lower shroud chainplate on each side of the boat.*

*On boats built prior to January 1, 1985, a bar may be permanently attached to the existing chainplates to extend the point of shroud attachment within the limits and restrictions specified. Such alteration shall receive Measurement Committee approval and be noted on the Measurement Certificate. (March 2005)*

7. *The point of attachment of the head stay may not be forward of the stem nor more than 50.80 mm (2") aft of it, and the tack of the jib shall be at all times fastened within these limits and be on a centerline with the boat. The point of attachment of the backstay may not be aft of the transom nor more than 50.80 mm (2") forward of it.*

## ARTICLE II – SPARS

41. Masts and Booms may be built of oval aluminum, or wood rectangular (prior published plans and specifications on wood spars remain in effect), and all spars must conform to the Plans and Specifications and the Spar Measurement Certificate. The extrusion dies used to manufacture the oval aluminum masts and booms must be certified by the Measurement Committee.
42. The minimum weight of a fully rigged mast is 15.876 kg (35 lbs.), and the mast will be subject to a rigged weight test as described on the Mast Measurement Certificate. 50. The masthead cap shall be such a design that the distance measured perpendicular to the aft edge of the mast and from the top of the main halyard sheave groove to the centerline of the backstay shall not exceed 52.3875 mm (2-1/16").
43. The masthead cap shall be such a design that the distance measured perpendicular to the aft edge of the mast and from the top of the main halyard sheave groove to the centerline of the backstay shall not exceed 52.3875 mm (2-1/16").
44. A measurement band not less than 12.70 mm (1/2") wide and clearly discernable while racing shall be painted on the mast with its upper edge not more than 7315.20 mm (24') below the top of the main halyard sheave groove. The line of the top of the boom extended, if necessary, shall not be below the upper edge of this band.
45. The mast shall be blocked at the mast partner at the deck with the use of parallel blocks which shall not permit movement more than 6.350 mm (1/4") in any direction, but those blocks may be repositioned, during the race.
46. Aluminum masts and booms shall be dimensioned as shown on I.L.C.A. Drawings M-10 and M-20 and shall have a minimum wall thickness of 1.651 mm (.065") and that wall thickness shall be uniform throughout the length. The spreader shall be a minimum of 1.5875 mm (1/16") wall thickness.
47. Aluminum masts shall be filled with foam from the spreaders to the top of the mast.
48. A measurement band not less than 12.70 mm (1/2") wide and clearly discernable while racing shall be painted on the boom with its forward edge not more than 3048.0 mm (10') from the aft side of the mast. The mainsail shall not extend aft of the forward edge of this band.
49. Upper and lower shroud tension shall not exceed 113.39925 kg (250 lbs.) with the forestay slack, backstay off and mast blocks removed.
50. Shrouds and stays shall be 3.175 mm (1/8") minimum stainless steel wire rope.
51. Adjustment of standing rigging while racing is prohibited.

*The Spinnaker Halyard in the oval mast must be rope. (Feb. 75)*

## ARTICLE III – RUDDER, CENTERBOARD, SPINNAKER POLE

52. The rudder will be built substantially of wood or glass reinforced plastic, and may be filled with foam or light wood, and will not be less than 17.465 mm (11/16") nor more than 22.00 mm (7/8") thick at the waterline and below, and will conform to dimensions on the Measurement Certificate.  
*It is the intent of the Plan that the rudder is to be a flat plate except for the authorized chamfer. (Dec. 64)*
53. The chamfer on the rudder will not exceed 50.80 mm (2") from any edge. The gap between the edge of the rudder and the skeg will not be closer than 9.525 mm (3/8"). The weight of the rudder with all hardware will weigh not less than 3.640 kg (8 lbs.)
54. The centerboard may be constructed of steel or stainless steel with a maximum thickness of 7.9375 mm (5/16") plus or minus 0.79375 mm (1/32") including coating, and shall not weigh more than 58.96760 kg (130 lbs.), and shall be a uniform thickness.

The centerboard may also be made of aluminum with a 3/8" (9.525 mm) thickness; or it may be constructed of bronze or monel with a 9/32" (7.14375 mm) thickness. The tolerance for these



centerboards is also 1/32" (0.79375 mm) including coating. No other material is permitted for centerboards.

55. The centerboard shall not vary more than 12.70 mm (1/2") in any direction from the Plans except in the area bounded by a triangle formed by the top and forward edge at their intersection and having sides 558.80 mm (22") and 203.20 mm (8") respectively. The centerboard may be streamlined or chamfered within 25.40 mm (1") of any edge.

*Shortened Centerboards – May be used in local, fleet races only when requested by the fleet officers and approved by the Measurement Committee. (Nov. 67)*

56. There will be a line, cleat stop or block arrangement, to prevent the board from being completely housed in the trunk in the event of a capsizes.
57. When fully lowered the centerboard must not extend more than 1371.60 mm (54") below the bottom of the keel measured perpendicular to the waterline. The forward position of the leading and lower edge of the centerboard shall not be less than 228.60 mm (9") aft of vertical measured from the centerline of the CB pin. See Figure 16 measuring device.
58. No contours or internal restrictions are allowed which would defeat the purpose of the angle measurement device.

*Jibing Centerboard — Not allowed (old ruling reaffirmed.) (Dec. 64)*

*Angle of the Dangle Measurement - The maximum forward position of the leading edge, lower most portion of the centerboard when in the down position shall be a maximum 229 mm (9") aft of vertical measured from the center line of the CB pin. Any change to the hull or configuration of the boat which would tend to circumvent the intent, the spirit, and the function of the angle of the dangle measurement device will be cause for disqualification.*

*The M.C. interprets the Plans and Specifications to mean:*

- a. Nothing shall be used other than a 15.8750 mm (5/8") diameter pin. No bushing or device shall be used which will make the angle of the dangle device ineffective.*
  - b. No contours shall be added to the bottom of the boat which would cause the centerboard measurement fixture to assume other than the design position of limiting to a 228.60 mm (9") dimension.*
  - c. The intent here is for the centerboard measurement fixture to do its job. Any alteration to any boat to circumvent this fixture shall be corrected immediately. (Dec. 64)*
59. The spinnaker pole:
- May be made of wood, fiberglass, foam, aluminum (alloy), or any combination (of wood, foam, fiberglass, or aluminum (alloy)).
  - May be tapered or a uniform section throughout its length. The maximum diameter pole shall not exceed 2-1/2" (63.5 mm). The minimum diameter of the pole is 1-1/2" (38.1 mm) at its center and 1" at its end prior to the end fitting.
  - When installed perpendicular to the front face of the mast in line with the centerline of the hull, and pushed lightly against the mast fitting, will not exceed 2083 mm (6'10") as measured to its extreme outer edge. (April 2003)

## ARTICLE IV – RIGGING

60. An adjustable rope or wire bridle is allowed. Also, an adjustable rope or wire traveler is allowed.
61. Hiking gear may be fastened to deck supports, seats, centerboard trunk or coaming, and no part of any hiking arrangement except hiking stick attached to the tiller shall extend or be carried outside the sheer line, except that a single, hand held line fastened inside the cockpit may be used as a hiking assist. Hiking from halyards or any part of the rigging is not permitted.
62. The aftermost mainsheet blocks or bridle must be attached on the afterdeck.
63. An adjustable main tack is allowed. (August 1997)
64. The maximum height of halyard hooks shall be 1219.20 mm (4') above the deck.

65. A Diamond or A-Frame assembly which permanently attaches chainplates at one end - the mast step at the other end and from chainplate to chainplate is permitted provided the assembly is not adjusted during racing.

*A Boom Vang Arrangement which pulls the boom down toward the deck in the vicinity of the sheet is allowed.*

*There are no standards controlling boom vang. There are many variations and as long as the boom vang is of flexible material and does not become a traveler-as long as it either pivots at the hinge line of the boom and/or is disconnected when the boom swings from side to side, there is no objection to any of the variations that have been observed. (Feb 65 and Dec. 77)*

*Vang installations which pass through or attach below the deck inside the coamings are specifically ruled to be legal. (April 67)*

*Adjustable Backstay - only simple means will be allowed, nothing more elaborate than a multiple part rope or wire tackle, fixed by a cleat or jam cleat. No special, not routinely available fittings, drums, track, or other hardware will be allowed. (July 70 and Dec. 77)*

*The Gooseneck fitting for the boom shall be fixed on the oval mast. (March 75)*

*It is the intent of the Plans and Specifications that the Main Spreader shall be fixed relative to the mast. Allowing the main spreader to move excessively, either by intent or by accident is not allowable. Whether passed through the mast or attached to each side separately, it is intended that these spreaders should fit snugly. (June 66)*

*Standing Rigging – An arrangement of the lower end of the standing rigging in which a portion of the turnbuckle is constructed below deck does not comply closely enough with the chain plate and turnbuckle arrangement shown on the official Plans to be acceptable. (May 67)*

*The use of Throw Levers on standing rigging is specifically in violation of the Specifications and is not allowed.*

*The use of a toggle to adjust the backstay for light or heavy air is in violation of Specifications.*

*Fittings – All fittings must be made of aluminum, stainless steel (alloys) or a metal weighing not less than 6.9g/3cc (0.25 pounds per cubic inch), with the following exceptions:*

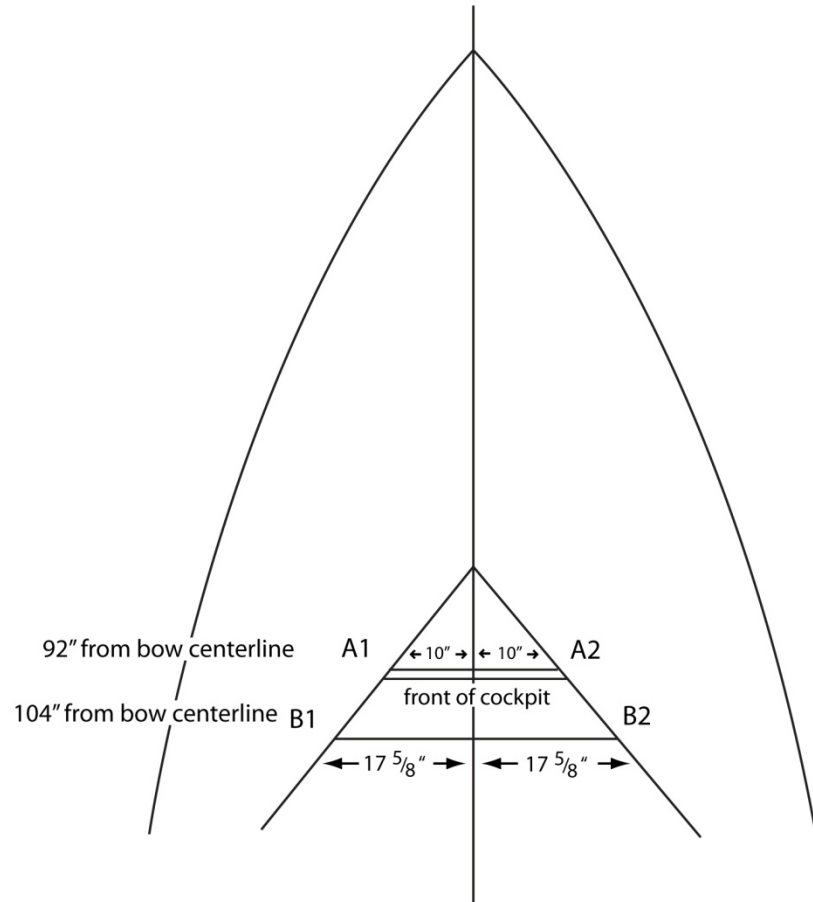
- blocks and cleats which can also be made of plastic or composite materials.*
- all standing rigging and its accompanying fittings cannot be made of aluminum.*
- all pintles and gudgeons cannot be made of aluminum. (August 2002)*

*Position and Length of Spreaders - The position of the center line of the spreaders shall be 424 1.80 mm (13' 11") below the top of the main halyard sheave groove. The tolerance on this position shall be plus or minus 25.40 mm (1") for all rectangular masts (tapered or untapered) built before June 1, 1975, and plus or minus 6.350 mm (1/4") for all oval masts whenever built, and for all masts built after June 1, 1975. The length of the spreader, from the center line of the upper side stay to the center line of the mast shall be 647.70 mm (25-1/2"). The tolerance on this dimension on all masts rigged prior to June 1, 1975 shall be plus or minus 12.70 mm (1/2"). The tolerance of this dimension on all masts rigged after June 1, 1975 shall be plus or minus 6.350 mm (1/4"). (Feb. 74 updated May 75)*

*At no time can the jib lead sheave bearing point or dead end be inboard of the A1/B1 and A2/B2 lines described in May 1995 Flashes. {This description is as follows: "The maximum inboard lead position (measured to the outboard-most sheave or bearing point) shall be as follows: Measure from the intersection of the centerline on the deck and the stem, aft to point 92 inches and 104 inches. From the point on the centerline 92 inches aft, measure perpendicular 10 inches on either side of said point; these points 10 inches off centerline shall be designated A1 and A2. From the point on the centerline 104 inches aft, measure perpendicular to the centerline 17 5/8 inches on either side of said point; such points 17 5/8 inches on either side of centerline shall be designated points B1 and B2. At no time can jib lead sheave or bearing point be inboard of the line or extension created by the points A1 and B1 and line created by points A2 and B2. By implication, the use of inhauls or the manual holding of a jib sheet to circumvent this ruling is prohibited."} The building or extending of platforms or other permanent fixtures that permit the mounting of standard fittings or tracks further inboard than these lines is illegal. Building or raising jib lead fittings substantially*



*above deck level is not permitted. Also, the use of inboard barber haulers or manual holding of a jib sheet to circumvent this ruling is prohibited (May 1995 and May 1996). Description of points as described in May 1995 Flashes, added February 2002.*



## ARTICLE V – SAILS

66. General: Mainsail, jib and spinnaker are the only sails permitted. Sails will be measured in accordance with published procedures.
  - a. Cloth – All sail cloth shall:
    - i. be made of a woven polyester, nylon or cotton.
    - ii. have a finished sailcloth weight of:
      - not less than 158.5 gm/m<sup>2</sup> (3.7 ounce for a 36" by 28.5" piece of cloth) for the main and jib
      - not less than 36.4 gm/m<sup>2</sup> (0.85 oz for a 36" by 28.5" piece of cloth) for the spinnaker
    - iii. have a supplier's specification with an average (actual) weight for the finished cloth.
      - not less than 158.5 gm/m<sup>2</sup> (3.7 ounce for a 36" by 28.5" piece of cloth) for the main and jib
      - not less than 36.4 gm/m<sup>2</sup> (0.85 oz for a 36" by 28.5" piece of cloth) for the spinnaker
    - iv. As required, the ISAF procedures will be used for validating compliance.
  - b. Compliance. The sail manufacturer is responsible for assuring that the specific cloth used to produce a sail meets class specifications. Sail makers may request approval from the measurement committee for the use of a specific cloth product prior to making sails from the cloth. The measurement committee will periodically review the cloth used to produce sails. (April 2003)

Tack of Mainsail - the mainsail shall be straight in both plan and profile and there shall be a tack grommet which is inclusive within the boundary of the sail plan, or a sail track slug which is attached to the mainsail by webbing which extend forward from the foot of the sail at the location of the tack.

*Full Footed Mainsails - No attempt will be made to limit the extent of fullness. This ruling also applies to the so-called "shelf" construction of the mainsail foot.*

*Mainsail Roach Measurements - There shall be no reverse curves anywhere in the leech of the sail. (The reverse curve provision will not be endorsed on sails made before August 1, 1967.) (Aug. 67 & Aug 78).*

*Damaged Mainsail - With reference to the "single mainsail" provision for sanctioned regattas, another main can be substituted, with the permission of the local race committee, if damage to the original sail has occurred which, in the committee's opinion, cannot be reasonably repaired in time for the next race. In such a case, the substitute sail shall be of equal or older age from the same sailmaker and legally measured prior to use. The substitute mainsail may be used until such time as the original main can be repaired. (Mar 67).*

*Clew of the Mainsail - must be held within 25.40 mm (1") of the top of the boom. The word "clew" refers to the same part of the mainsail that enters into the measurement of the maximum leech dimension in the Sail Measurement Procedures. Clew extenders or unusual outhaul fittings that raise the clew of the mainsail off the boom to any appreciable extent are illegal. (March 73) Nylon Sail Slides have been ruled illegal.*

*Tack of Jib - shall be defined as the intersection of two lines which make an angle of 90 degrees with each other when one line is held tangent and parallel to the luff of the jib, and the other line is held tangent to the foot of the jib. (March 73).*

*Clew of Jib - shall be defined as the intersection of two lines which make an angle of 130 degrees with each other when one line is held tangent and parallel to the leech and the other line is held tangent to the foot of the jib. (March 73).*

*Jibs without luff snaps have been allowed.*

*Grommet on Head of Jib is permissible as long as it falls within the normal sail plan. (June 64).*

*Jib Leech - Effective on jibs made after March 1, 1970, there shall be no reverse curves anywhere on the leech of the jib. (Feb. 70).*

*Head of Jib - Attempts to increase jib area by broadening the head of the jib using heavy cloth, stiffening material, or any other method will not be tolerated. For purposes of this ruling, when luff and leech extensions are used to find the jib head point, all cloth at the head of the jib must fall within the alternate head measurement triangle modified to have a base of 12 0.650 mm (4-3/4") long. (Feb. 70).*

*The Head of Jib - shall be defined as the intersection of two lines, one of which shall be parallel and tangent to the luff of the jib and the other shall be tangent to the leech of the jib. The angle between these two lines shall not be more than 30.7 degrees or less than 25.1 degrees. It is further required that the leech near the head of the jib shall fall within the limits set by the above Measurement Committee Ruling. When these rulings are coupled with the "reverse curve" provision for the jib leech, they require that the whole upper part of the jib fit into a triangle whose head angle is no more than 30.7 degrees. This ruling applied to all sails purchased after June 1, 1973. Sails purchased prior to that date must comply. (June 73).*

*Leading the Forestay through the cloth or tabling at the luff of the jib is not permitted. (Jan. 70).*

*Venturi Spinnakers have been classified as "perforated sails" and are therefore outlawed in the Specifications.*

67. Windows in the mainsail not exceeding .372 m<sup>2</sup> (4 square feet) and not more than 1219.20 mm (48") from the foot of the sail are permitted. Another window with a maximum dimension not exceeding 457.20 mm (18") and not less than 1219.20 mm (48") from the foot is permitted. A spreader window is also optional.

One or more windows are permitted in the jib for viewing approaching boats. The total of all windows not to exceed .35 m<sup>2</sup> (3.76737 square feet), with a maximum fore and aft dimension of 762.00 mm (30"), and maximum vertical dimension of 500 mm (20"). (August 2016)

68. Sail Identification

68.1 For mainsails and spinnakers built before 1 June 2017:

Racing numbers and the Class emblem will be on both sides of the main sail, and be located above the middle batten as per Plans, and racing numbers with an optional class emblem will be on the outside of the spinnaker or may be placed on both sides within the area designated by ISAF Racing Rules of Sailing. Numbers will be 300 mm (12") minimum height and 200 mm (8") wide except for the numeral one. Boats sailing in international events shall be identified by national sail letters as defined by the ISAF. Appendix G1.3 (d) is amended so that National Sail Letters on the spinnaker are not required. (March, 2007)

The sail number that is assigned to the boat at the time of construction is the hull number. The use of numbers is subject to the By-Laws Racing Restriction and may not be arbitrary. All sail numbers are to be of a solid color contrasting with the sail material. (March 2005)

68.2 For mainsails built after 1 June 2017:

The sail numbers and the class insignia and when required by the Notice of Race national letters and country flags, shall be positioned on both sides of the mainsail as follows:

- (a) The class insignia shall be located just below the top batten, back to back above the national sail letters, with the tip up and pointing forward, positioned as per plans.
- (b) The national letters shall be located just above the middle batten, starboard side above port side.
- (c) The sail numbers, shall be located just below the middle batten, starboard side above port side
- (d) Sail numbers and national letters shall be 300 mm (12") minimum height and 200 mm (8") wide except for the numeral one or the letter "I".
- (e) Country flags shall be located below the bottom batten. The size and orientation of country flags may be defined by the Organizing Authority and the ILCA Executive Committee for a specific event. (March 2017).

This changes RRS Appendix G.1.1, G.1.2 and G.1.3

68.3 For Spinnakers built after 1 June 2017:

Sail numbers shall be positioned on the front side of the spinnaker or may be placed on both sides within the area designated by the RRS. This changes RRS appendix G.1.3. National letters and class insignia may be displayed as per RRS G.1.3.

69. The Lightning Class emblem of gold is reserved for a World Champion. The emblem color of silver is reserved for the European, North American or South American Champion. The Ladies Champion will have the equivalent color as outlined above over a standard color class emblem with a 25.4 mm (1") border. The Junior Champion will have the equivalent candystripe as outlined above. The Masters Champion will have a purple flash with a 1/2" silver border
70. There will be no displays or signs on the mainsail and jib other than class royalty label, sailmakers identification, and a small stamp signifying Measurement Committee approval. Graphics are permitted on the spinnaker provided they are first approved in writing by the Measurement Committee who shall deny permission for any application that could be construed as advertising or obscene in nature. Graphics may not obstruct clear observation of the sail number. Application to the Measurement Committee shall include sketch of the proposed design.

71. The mainsail will have three battens with the upper and lower to be 609.60 mm (24") long, and the middle batten not over 762 mm (30") long that shall divide the leech into approximately four equal parts. There will be two jib battens, the length of the top one not exceeding 457.2 mm (18") and the lower one not exceeding 609.6 mm (24"). These battens shall divide the leech into approximately three equal parts. (August 2000)
72. Reefs are permissible in the foot of the main only, and roach reefs are not legal.
73. Measurement of sails. Sails are measured with the cloth pulled out to its normal size as set on the spars. Except at the main headboard and jib head the points of measurement at the corners of the sails shall be taken at the intersection of the extended lines of the extreme edges of the sail, including bolt ropes or tapes, but not including hoisting pendants, external cringles, etc. Sails shall be dry when measured, and when a sail has been measured and found to be outside the Specifications, it shall not be remeasured for the same regatta until proof of actual reworking has been submitted. If a spinnaker does not measure initially, it may be dried or otherwise suitably altered and remeasured once. If, upon measurement, the spinnaker is still found to be out of specification, the required alteration shall be indicted by the regatta measurement committee and upon proof of such actual reworking shall be accepted for that regatta without further remeasurement.

**Mainsails.** The leech, measured from top of headboard to clew, shall not be greater than 7467.60 mm (24' 6") nor less than 7213.60 mm (23' 8") when measured under a 2.2679 kg (five pound) tension. The mainsail headboard may be of wood, metal, thermoplastic, mylar and layers of sailcloth. It must not be more than 101.60 mm (4") across, measured perpendicular to the luff of the sail. The top of the headboard must not be more than 19.050 mm (3/4") higher than the top of the uppermost hoisting hole.

Roach and draft shall be measured with the sail on the floor and all looseness pulled out of the sail. At a point on the leech measured down from the head 2133.60 mm (7'), a measurement shall be taken to the nearest point on the luff. This measurement shall not be more than 1104.90 mm (3' 7-1/2").

A similar measurement taken 3987.80 mm (13' 1 1/2") down shall not be more than 1969 mm (6' 5 1/2").

Another similar measurement taken 5874 mm (19' 3 1/4") down shall not be more than 2629 mm (8' 7 1/2").

**Jib.** The luff shall not exceed 5435.60 mm (17' 10") nor be less than 5232.4 mm (17' 2"). The leech shall not exceed 4749.80 mm (15' 7") nor be less than 4546.60 mm (14' 11"). The foot shall not exceed 2311.40 mm (7' 7") nor be less than 2108.20 mm (6' 11"). These measurements shall be taken with the sail under a 2.2679 kg (five pound) tension. The head measurement point shall be the apex of a right angled triangle with height of 203.20 mm (8") and base of 120.650 mm (4 3/4") within which all cloth of the jib head lies.

Roach and draft shall be measured across the jib between points 3353 mm (11' 0") down leech and luff from head of jib and shall not exceed 1575 mm (5' 2") nor be less than 1372 mm (4' 6").

Spinnaker. The sides shall not exceed 6248.40 mm (20' 6") nor be less than 5943.60 mm (19' 6"). The foot may not exceed 4419.60 mm (14' 6") nor be less than 4114.8 mm (13' 6"). These 3 measurements should be taken with the sail under a 2.2679 kg (five pound) tension.

Girths shall be measured with the spinnaker folded in half putting the luff and leech and the two clews together, and then spread evenly and flat upon the floor. Two girth measurements "A"; and "B"; shall be taken across the sail.

Measurement "A" shall be taken between a point 1524.00 mm (5' 0") down luff and leech from top of sail and a point 1829 mm (6' 0") in a straight line down the opposite side of the sail as folded, not measuring around the contour. This measurement shall not be more than 1778.00 mm (5' 10") nor less than 1625.60 mm (5' 4").

Measurement "B" shall likewise be taken between points 3048.00 mm (10' 0") down the luff and leech and 3352.80 mm (11' 0") down the opposite side of the sail as folded, not measuring around the contour. This measurement shall not be more than 2565.40 mm (8' 5") nor less than 2413.0 mm (7' 11").

When measuring girths, it is important that the cloth between the head of the sail and points of measurement, and immediately below be spread out smoothly on the floor. Sail should be pulled parallel to girth measurement only enough to smooth out vertical wrinkles. When a girth measurement is taken there should be no tension on the lower corners, nor at the girth points not being measured.

There shall be no reverse curves anywhere in the leech of the mainsail or jib.

## ARTICLE VI – FLOTATION

74. All hollow bottoms, compartments, and other sealed areas shall be provided with:
- Baffles to prevent sloshing and loss of stability.
  - Drains which permit the easy removal of water from the area by gravity.
  - Inspection ports of sufficient size to permit easy inspection.

## OTHER RULINGS

*Official Measurers – may not measure a boat which he or she has built, owns or expects to sail. This includes remeasurement following major alterations. He may measure such a boat if measurement is witnessed by disinterested persons appointed by the Measurement Committee. - are appointed only if needed in a geographical area, and have proper technical background*

*Weight Penalty - Any boat found to weigh less than 308.4459 kg (680 lbs) without correctors prior to any regatta will be penalized by the addition of twice the required additional weight placed at the extremities of the boat for that regatta. In addition, the Measurement Certificate will be immediately revoked until such time as structural improvements have been made. (Jan. 70) (Measurement & Executive Committee Ruling, ratified by Governing Board)*

*Two mailsails are allowed for use in NON-sanctioned events. (November 1999)*

---

*Metric Measurements corrected May 2002*

*Updated with amendments approved through March 2007.*

*Edited for spelling, typos, and omissions May 2006*

## HULL MEASUREMENTS – PROCEDURES

For purposes of measurement, use feet-inches-eighths or millimeters. Place hull upside down on three supports with a hydraulic jack on a level floor as the third support near the front of the bow. Fixed supports may be used if enough manpower is available for leveling the bow.

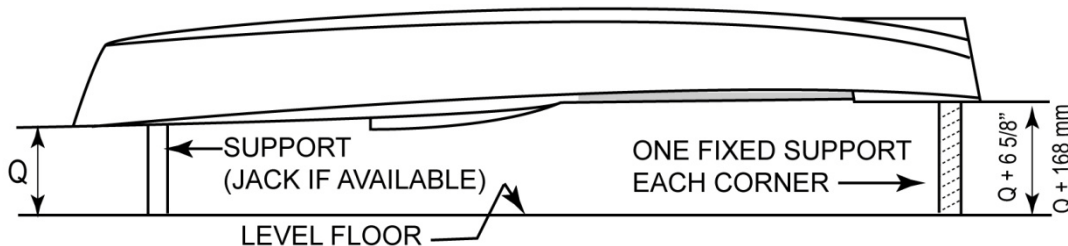
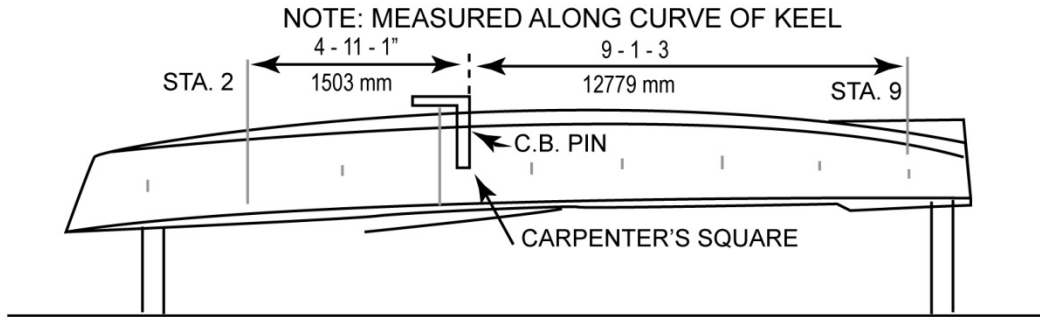


FIGURE 1

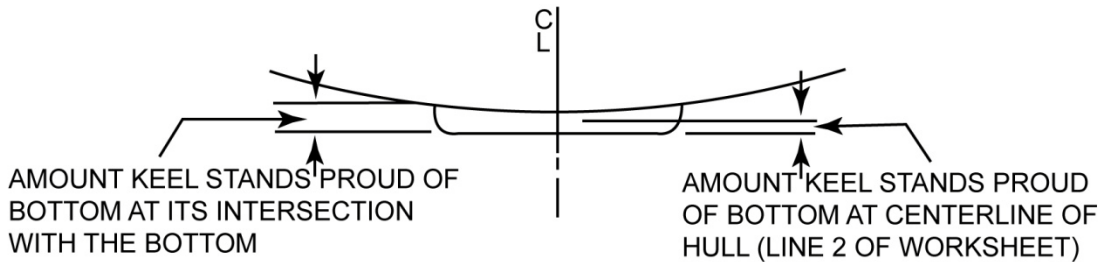


After A dimension is located measure along the curve of the keel 1501.775 mm (4-11-1) and mark approximate location of station 2. Then measure aft along the curve of the keel 2778.125 mm (9-1-3) and mark the approximate location of Station 9.



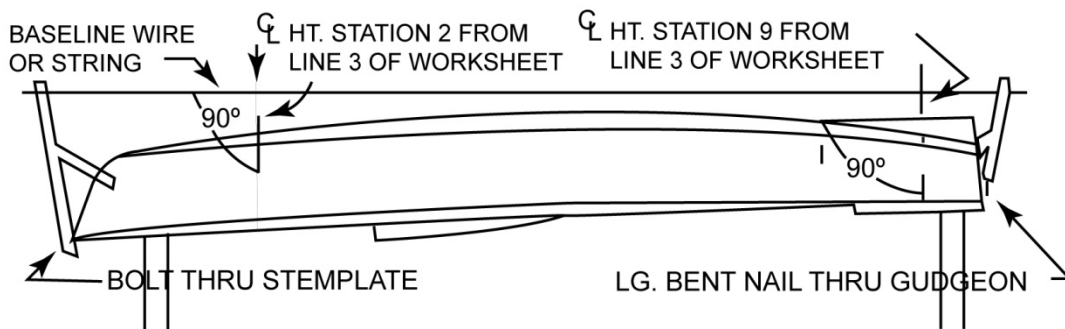
**FIGURE 2**

After A dimension is located measure along the curve of the keel 1501.775 mm (4-11-1) and mark approximate location of Station 2. Then measure aft along the curve of the keel 2778.125 mm (9-1-3) and mark the approximate location of Station 9. Before erecting the baseline the amount that the keel stands proud of the bottom must be taken into consideration per figure 3.



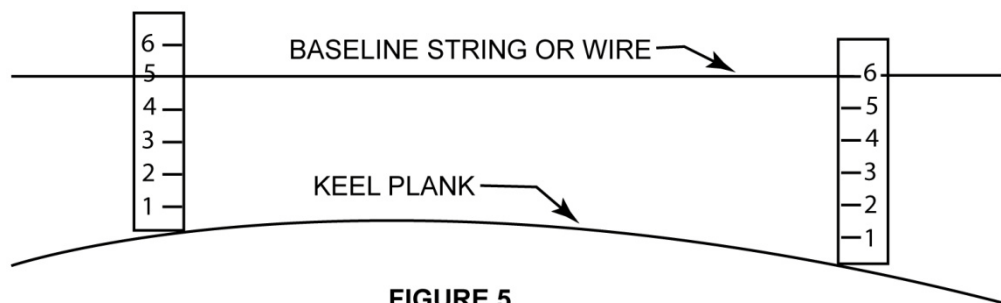
**FIGURE 3**

This amount may vary from station to station dependent on keel width and the relationship between chine height and breadth and centerline height. The important point is to measure from the base line to a point at which the outside bottom would intersect the centerline without the keel. The exact distance from baseline to keel plank for the establishment of the baseline is obtained by subtracting line 2 from line 3 on the worksheet for stations 2 and 9. This is the figure recorded on line 1 of the worksheet. For maximum speed and accuracy in establishing the baseline it is suggested the baseline be supported from the hull itself. It may however be supported from separate posts securely attached to the floor at each end of the boat.



**FIGURE 4**

For measuring heights choose a scale or steel ruler so that, by turning it end for end, you can always measure directly from keel plank to baseline.

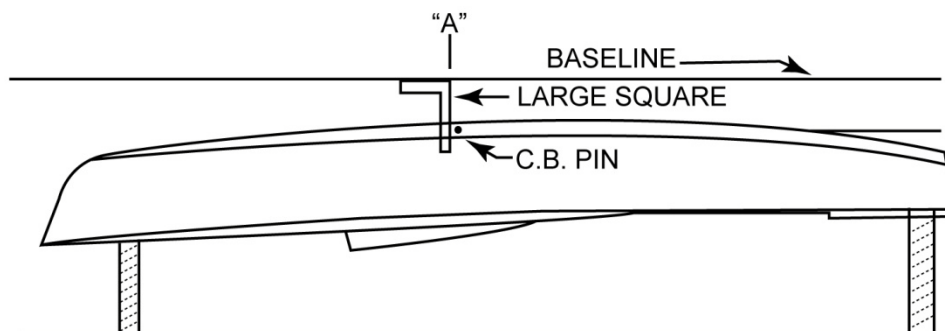


**FIGURE 5**

For accuracy always hold the scale beyond the baseline and place the eye of baseline height so that wire will pass directly in front of the measurement to be taken. If possible use 1.5875 mm (1/ 16") piano wire stretched as tight as practicable and free from kinks. Extreme caution must be used to prevent sag. Jockey baseline so that the perpendicular distance from baseline to top of keel at stations 2 and 9 agree with the figures placed on line of the worksheet for those stations.

#### EXACT LEVELING OF BOAT LOCATION OF BASELINE AND STATIONS AND CENTERLINE HEIGHTS

Recheck location of A on keel with the carpenter's square, and if necessary relocate stations 2 and 9, and recheck baseline for level. It is imperative that the baseline be level.



**FIGURE 6**

Locate and mark from A to stations:

1. forward 2117.725 mm (6-11-3)
2. forward 888.20 mm (2-11-O)
3. forward 276.225 mm (O-1O-7+)
4. aft 330.20 mm (1-1-O+)
5. aft 939.80 mm (3-1-O+)
6. aft 1552.575 mm (5-1-1)
7. aft 2159.00 mm (7-1-+)

Measure the vertical distance from baseline to keel plank at all stations (except 2 and 9) and record on line 1 of the worksheet.

#### HULL LENGTHS

Using a plumb bob, mark the following horizontal locations on the baseline per figure 7 Stem at deck  
Intersection of W and X Intersection of transom and fairbody (bottom) Intersection of transom and deck. Paper clips are useful in marking locations on the baseline. To find the intersection of W and X, hold the plumb bob on a string against a vertical scale until the point stands exactly 457.20 mm (18") below the fingers. Then hold the string against the baseline with the fingers just touching the baseline. Move the bob along the string horizontally until the point of the bob just touches the stem.

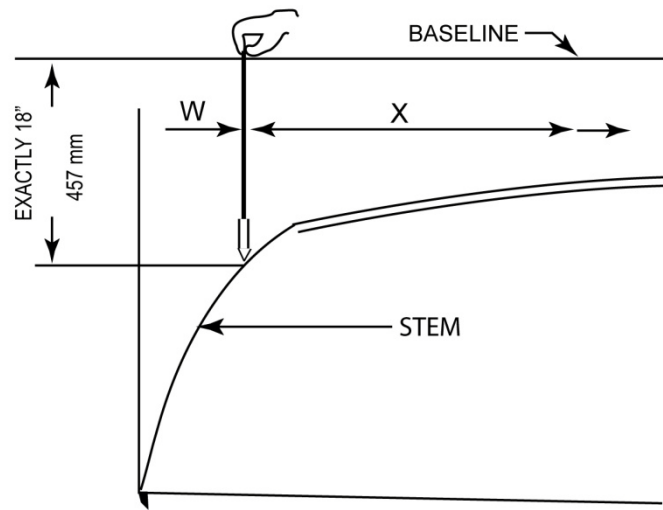
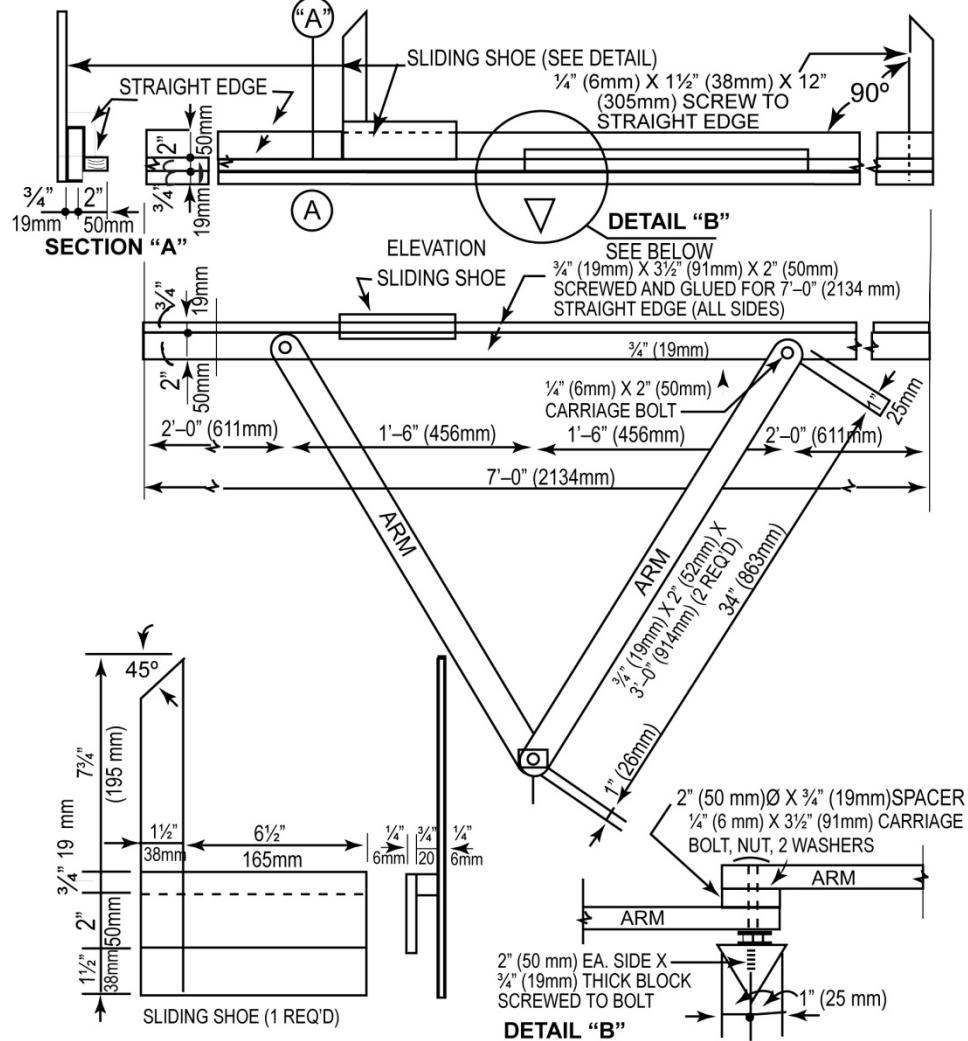


FIGURE 7

### CHINE AND SHEER HEIGHTS

The use of a combined "station finder" and "breadth taker" as illustrated below will simplify the measurement of chine and sheer heights and breadths.

FIGURE 8 — STATION FINDER AND BREADTH TAKER



INTERNATIONAL LIGHTNING CLASS ASSOCIATION  
INSTRUCTIONS TO MEASURERS  
FIGURES 1-11 DRAWN BY RALPH E PERSSON  
4/22/84

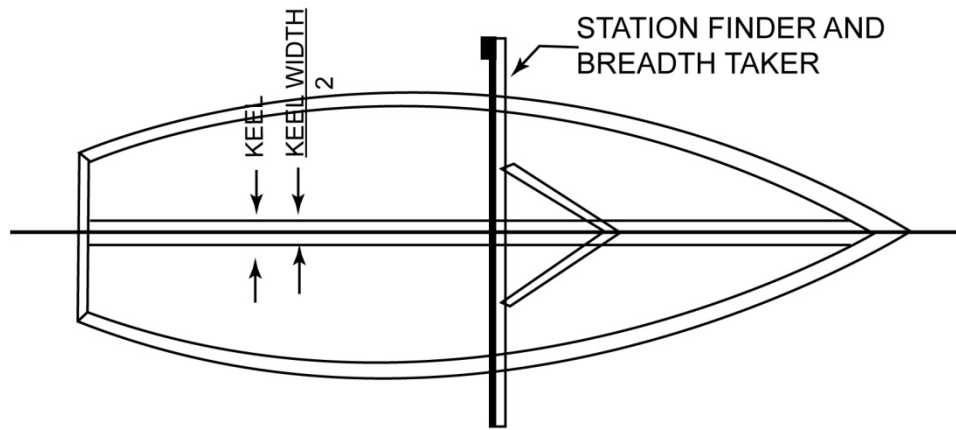


FIGURE 9

Place a "Station Finder" with its centerline progressively on the centerline of the keel at each station. At station 1 use a straight ruler by eye. At station 2 through 7 the arms of the station finder must be down hill. At station 9 the station finder should be on top of the skeg with arms forward. Place pin of station finder on centerline of keel.

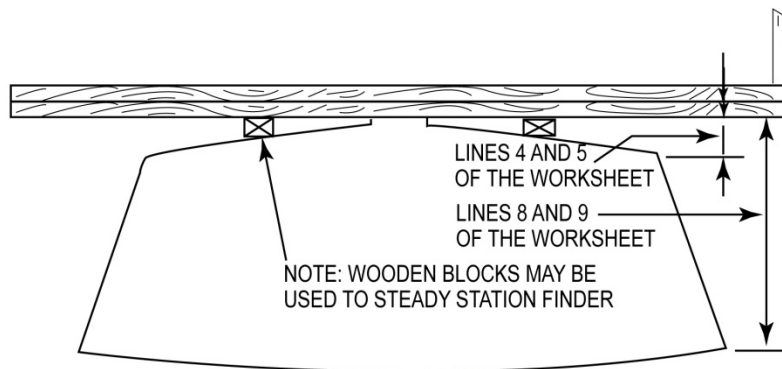


FIGURE 10

With station finder located per figure 10, use a plumb bob to mark each station on the chine and sheer, both sides of boat. With the station finder in position at the stations, measure and record on the worksheet in lines 4 and 5 the perpendicular distance from station finder to chine on each side of the boat. Repeat for sheer entering figures in lines 8 and 9. At station 9 subtract the height of station finder above height of skeg at this point. Using line drawn across transom below from chine to chine measure directly vertical distance from this line to baseline and record under T in line 7 of the worksheet.

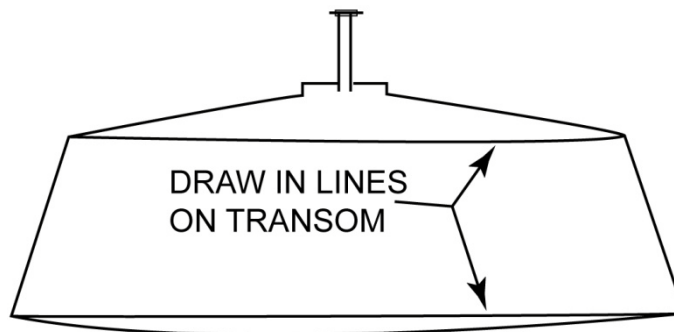


FIGURE 11

Repeat using line on transom from sheer to sheer and record on line 11 of the worksheet. Measure sheer height at 0 directly perpendicular to baseline at point marked in D1.

## CHINE AND SHEER HALF BREADTHS

Place the sliding shoe on the station finder so that it becomes a breadth taker. Place the pointers simultaneously at both chines for each station progressively. Squeeze the shoe firmly to the straight edge, then measure the distance between pointers and record on line 12 of the worksheet.

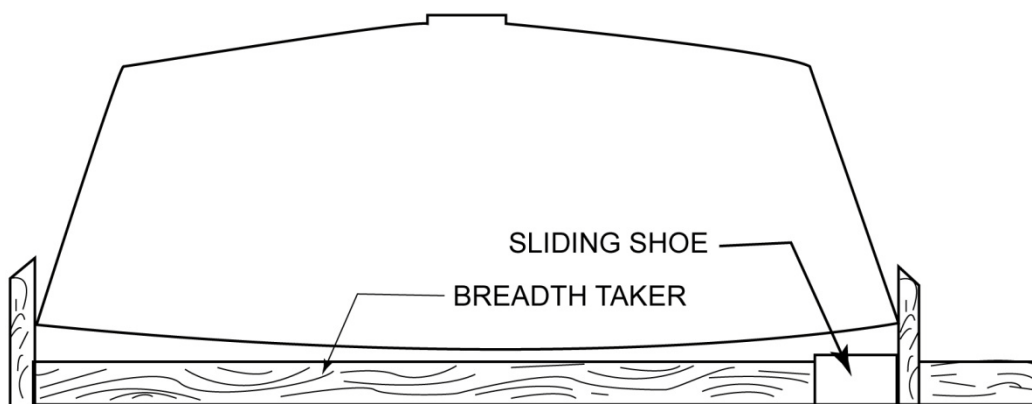


FIGURE 12

Repeat at all stations measure breadth and T directly across transom. Repeat at sheer recording in line 14 of the worksheet. If rubrails are in place be sure to subtract both. Note: If the chine is rounded special precautions must be taken in measuring. To find the exact intersection of bottom and topsides use a corner finder below.

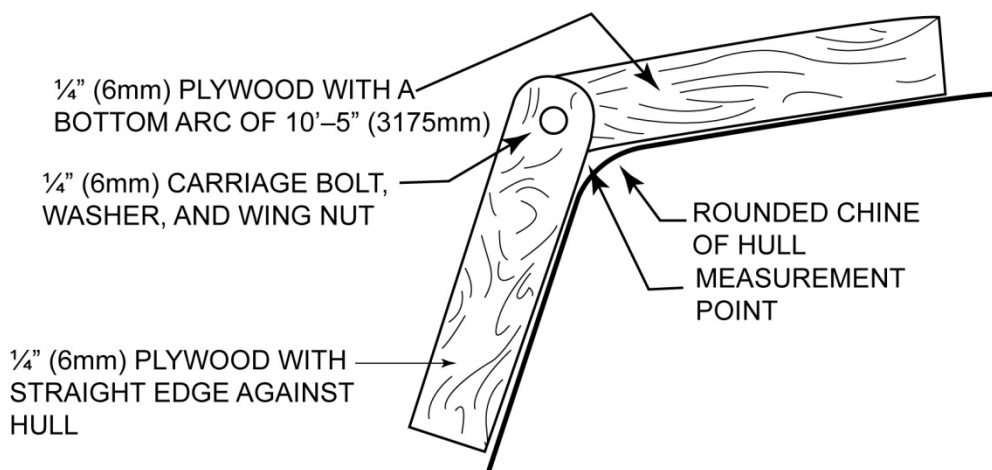


FIGURE 13

## INTERPRETING THE WORKSHEET

Centerline Height - Add line 1 plus line 2 and record on line 3. Line 3 is the centerline height and may be transferred to the Certificate.

Chine Height - Add line 4 plus line 5 and divide the sum by two and enter on line 6 to get the average port and starboard chine height above the keel. Add line 6 plus line 1 and enter the sum in line 7. Line 7 is chine height and may be transferred to the Certificate.

Sheer Height - Add line 8 plus line 9 and divide by two and enter in line 10 to get the average port and starboard sheer height above the keel. Add line 10 plus line 1 and enter the sum in line 11. Line 11 is sheer height and may be transferred to the Certificate.

Chine Half Breadth - Divide line 12 by two and enter the result in line 13. Line 13 is chine half breadth and may be transferred to the Certificate

Sheer Half Breadth - Divide line 14 by two and enter the result in line 15. Line 15 is the sheer half breadth and may be transferred to the Certificate.

Keep your worksheet until all figures have been approved.



## OTHER HULL MEASUREMENTS

Measure and record on the Certificate keel widths as required.

Measure along the bottom edge of the skag from the after end to the intersection of the skag with the keel, and record on the Certificate. Measure the thickness of the skag, checking to see that the skag has parallel sides and does not taper and record on the Certificate. Measure the height of the skag from its aftermost bottom edge along the after edge of the keel and add the amount the keel stands proud of the bottom at the centerline from line 2 of the worksheet and record on the Certificate.

Measure the bottom of the keel to the bottom of the edge of the centerboard pin and record on the Certificate. Check the diameter of the centerboard pin and check to see that no bushings are present - diameter of pin is 15.875 mm (5/8").

Measure the width of the centerboard slot through the keel and record on the Certificate. Verify that the slot and space is uniform throughout.

Check the bottom arcs.

Two templates should be used of metal, plastic, presswood, or 6.350 mm (1/4") plywood 1 meter (about three feet) long per figure 14.

The 2438.40 mm (8' arc) should be first slid over the bottom holding it perpendicular to the centerline. This arc should touch the hull at the keel and at the chine simultaneously for the entire length of the boat. If it does not touch, the arc is less than the minimum 2438.40 mm (8'). The 4572.00 mm (15') arc should likewise be slid over the bottom in the same manner. This arc should never touch the hull at the chine and keel at the same time. If it does the arc is greater than 4572.00 mm (15'). However, the Measurer should use judgment as to whether the arcs don't measure because of small areas of bumps or pockets.

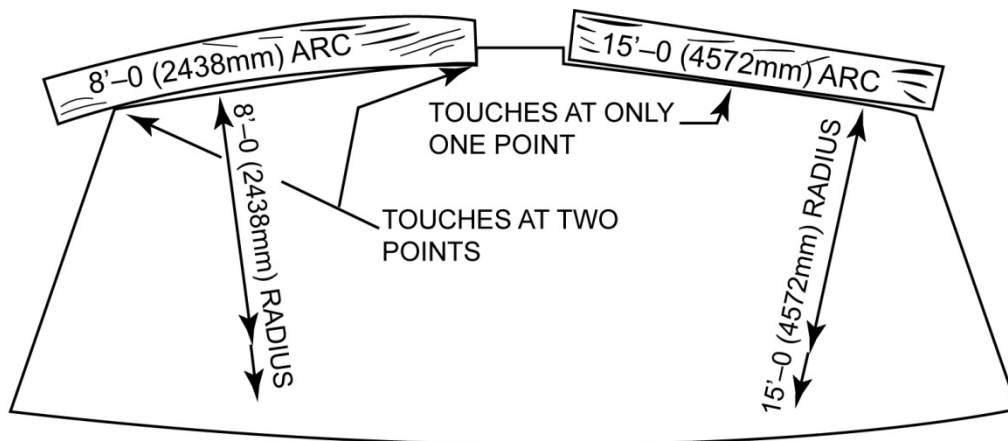


FIGURE 14

Technical drawing of a centerboard position checking gadget. The drawing shows a horizontal beam with a vertical support and a diagonal brace. Dimensions are provided in inches and millimeters.

**Horizontal Dimensions:**

- Top left section: 1'-0" (305 mm)
- Top middle section: 13-1/16" (332 mm)
- Top right section: 3'-0" (914 mm)
- Bottom left section: 4" (102 mm)
- Bottom middle section: 5 1/4" (133 mm)

**Vertical Dimensions:**

- Left end thickness: 1" (25 mm)
- Top left section height: 6" (152 mm)
- Right end height: 3" (76 mm)
- Bottom section height: 6" (152 mm)
- Bottom left section height: 4'5" (1346 mm)

**Labels:**

- PART 1: Points to the top right section of the beam.
- PART 2: Points to the bottom section of the beam.
- PART 3: Points to the right end of the beam.
- PART 4: Points to the left end of the beam.

**Text:**

CENTERBOARD POSITION CHECKING GADGET

**FIGURE 15**

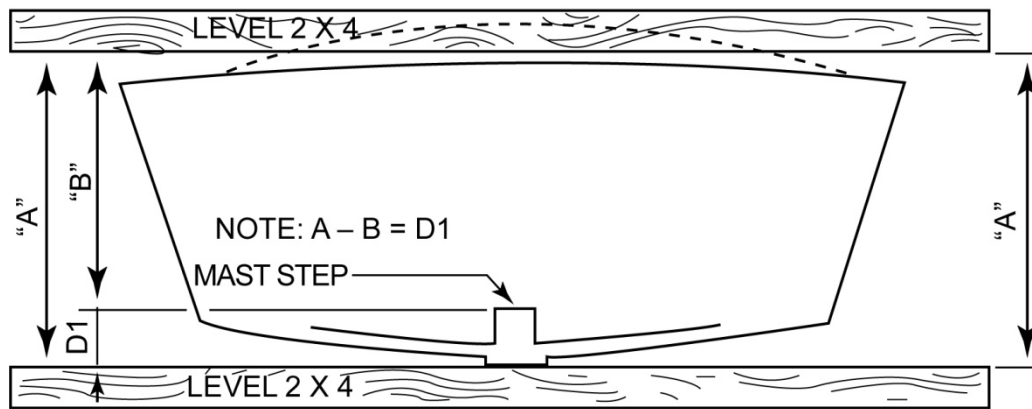


FIGURE 16

Centerboard Thickness Measuring Device:

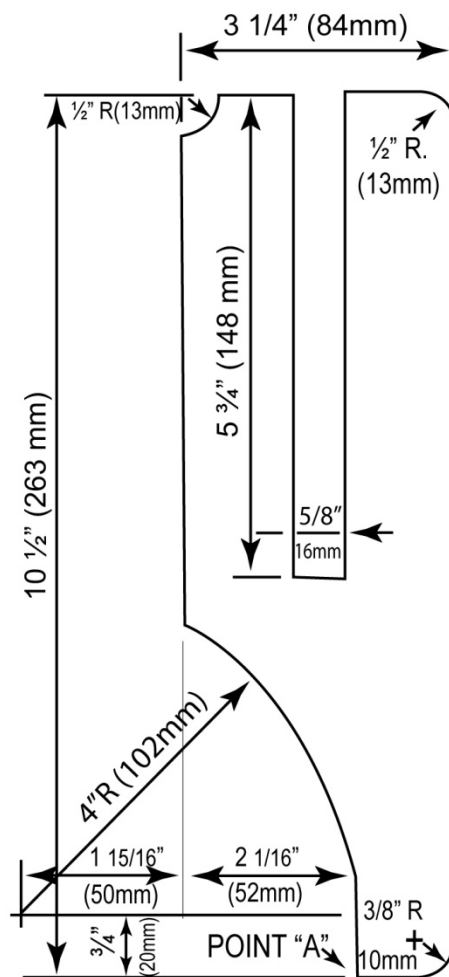


FIGURE 17

Metric Measurements corrected May 2002.  
Updated with amendments approved through March 2005.

## QUESTIONS/INTERPRETATIONS

### Question:

Is the batten bowsprit (used to prevent keel hauling spinnaker sheets) part of the boat?

### Response:

**No.** After some research and discussion with several knowledgeable people at the Worlds, the Measurement Committee ruled that they are not part of the boat: they are not required and they are not on the plans of the Lightning. *Date: 1999.*

### Clarification:

Since a batten bowsprit is not part of the boat, it is not to be considered for overlap or finishing concerns. Sailors wishing to use a batten on bowsprit may do so, but they are not required and not subject to any measurement  
*Date: 2007*

### Question:

Can any device be used to attach the chain plates and the shrouds in order to move or offset their relative position?

### Response:

**No.** The drawings indicate that the shrouds should be attached directly to the chain plates. The measurement and technical committees also believe that the intent of the original design was not to create the potential for an adjustment to the rigging at this location. *Date: May 20, 2004*

### Question:

Can I use a watch that provides GPS related information?

### Response:

**No.** Any electronic device shall not provide wind information, boat speed, GPS-related information or compute correlation between time and bearing.

### Question:

Is the batten bowsprit (used to prevent keel hauling spinnaker sheets) part of the boat?

### Response:

**No.** After some research and discussion with several knowledgeable people at the Worlds, the Measurement Committee ruled that they are not part of the boat: they are not required and they are not on the plans of the Lightning. *Date: 1999.*

### Question:

Can machined aluminum gudgeons with a stainless pintle be used?

### Response:

**No.** Former Chief Measurer Cal Schmiede made a ruling that was posted in the August 1998 Flashes. That ruling is reprinted here for your review:

"The Measurement Committee has had inquiries recently concerning the use of aluminum for pintles and gudgeons. Article IV paragraph 72 states, "The use of aluminum for essential fittings is limited to spinnaker sheet and halyard brummel hooks and to cam-action jam cleats. All other essential fittings must be of metal weighing not less than 6.9 g/cc (0.25 pounds per cubic inch)." Since pintles and gudgeons are essential fittings, they cannot be made of aluminum. Also, it should be noted that titanium has a density of 4.5g/cc, and is therefore also illegal for use in essential fittings." *Date: October 10, 2001*

### Question:

Can Nigeria Lagos Yacht Club, Fleet 510 Lagos, Nigeria, Africa utilize lifting/tilting rudders for non-sanctioned regattas (e.g. local fleet races) since the depth of the waters that they sail in warrants it (considerable shallow water that is resulting in repeated boat damage)?

Response:

**Yes**, as a fleet exception to the Lightning Rules and Specifications. The class set this precedent a number of years ago by allowing a select fleets to use short boards and lifting/tilting rudders for local fleet races since their sailing waters were very shallow. The lifting/tilting rudder used by any boat should replicate, as possible, the intent of the Lightning design and intent of the specifications. The final decision for the use lifting/tilting rudders will reside with the regatta's or fleet's organizing body. *Date: November 12, 2001*

Question:

Can a lifting/tilting rudder be used in an open multi class regattas not sanctioned by the ILCA when the depth of the waters that the event is being sail on warrants it (considerable shallow water that will likely result in repeated boat damage)?

Response:

**Yes**. The class set this precedent a number of years ago by allowing a select fleets to use short boards and lifting/tilting rudders for local fleet races since their sailing waters were very shallow. The lifting/tilting rudder used by any boat should replicate, as possible, the intent of the Lightning design and intent of the specifications.

The final decision for the use lifting/tilting rudders will reside with the regatta's organizing body.  
*Date: November 12, 2001*

Question:

Is my spinnaker pole legal?

Response:

The Measurement Committee has issued an interpretation, ratified by the Governing Board at the 2002 NAs, which makes most poles legal. This Ruling will be a Proposed Amendment to be voted on at the Governing Board Meeting in St. Pete in March 2003, but for now, it makes your pole legal

*Date: August 2002*

#### ARTICLE III - RUDDER, CENTERBOARD, SPINNAKER POLE 66. The spinnaker pole:

1. May be made of wood, fiberglass, foam, aluminum (alloy), or any combination (of wood, foam, fiberglass, or aluminum (alloy)).
2. May be tapered or a uniform section throughout its length. The maximum diameter pole shall not exceed 2-1/2" (63.5 mm). The minimum diameter of the pole is 1-1/2" (38.1 mm) at its center and 1" at its end prior to the end fitting.
3. When installed perpendicular to the front face of the mast in line with the centerline of the hull, and pushed lightly against the mast fitting, will not exceed 2083 mm (6'10"0 as measured to its extreme outer edge.

Question:

Are carbon fiber spinnaker poles legal?

Response:

**No**. *Date: 2002*

Question:

Is it legal to tape over transom ports?

Response:

**Yes**. *Date: 2000*

Question:

Can sail numbers be different colors?

Response:

**No**. They must all be the same color. Our interpretation, consistent with ISAF, is that all of the numbers must be the same color. *Date: 2000*



Question:

Can sail numbers and country designation be stenciled on the sail?

Response:

**No.** Sail numbers must be made from cloth. Stenciled on numbers are illegal. *Date: 2000*

Question:

Is Dyform rigging legal?

Response:

**No.** *Date: 2002*

Question:

Are aluminum tillers legal?

Response:

**Yes.** A few years ago, all tillers were made of wood. Today, aluminum seems to be the material of choice for this essential fitting. Therefore, the Measurement Committee rules that the use of aluminum is acceptable for tillers. *Date: 1999*

Question:

Are lever systems allowed to assist with changing the mast blocks?

Response:

**No.** The lever systems allowing adjustments to the mast is not intended by the specifications. *Date: 2000*

Question:

Do you need to have country designation on the spinnaker for the worlds?

Response:

**No.** While this is a requirement of the ISAF, the ILCA has a waiver.

Question:

How should upper shroud tension be measured?

Response:

This interpretation is based on the Lightning Plans and Specifications Article II SPARS, 56. Upper and lower shroud tension shall not exceed 113.4 kg (250lbs) with the forestay slack, backstay off and mast blocks removed. The measurement process is:

1. Applicability:

- a. For sanctioned regatta: all boats will follow this procedure and will be checked for compliance prior to the start of the regatta.
- b. For sanctioned events, it is at the discretion of the event's governing body. We assume that their intentions and the identification of the official gauge occur prior to the skipper's meeting.

2. Gauges:

- a. Type: It is preferred that the latest gauge available is used.
- b. Number of:
  - i. Preferred: A single new measurement gauge should be used to check all boats. It should be recalibrated after every 10 boats against two previously measured boats.
  - ii. Alternative: For large events, multiple gauges may be used to measure boats. These gauges must be calibrated using the first three boats measured.

- c. Damaged gauges: If for some reason a gauge is damaged during the measurement process, a new gauge may be substituted but must be first calibrated against three previously measured boats.
  - d. Definition of "calibrated:" This measurement process is followed and:
    - i. The gauge(s) can be made to or interpreted to read the same.
    - ii. The gauge(s) can be made to or interpreted to read 250 pounds.
- 3. The boat should be measured on the trailer with the top of the centerboard trunk as level as possible. All boats measured should have the same level and orientation to the wind as possible. (Boats can be spot-checked on the water as long as the condition closely approximated the condition when the boats were originally measured).
- 4. Assure that the blocks are out, backstay is off, forestay slack and base of mast is within specifications.
- 5. The upper shrouds MUST be attached. The lower shrouds can be attached or slack or unattached hanging freely.
- 6. Measure the upper and lower shrouds to make sure that they are within the specifications (250lbs). The measurement point should be approximately 4 feet from the deck. The gauge should be positioned upright such that it is pulled toward the mast.
- 7. Once the shrouds have been measured, the upper shrouds should be taped so that they cannot be adjusted. The measurer should mark the tape using a permanent pen with a distinguishing mark.
- 8. Spot checks can be performed during the regatta to check to assure that the tape on the upper shrouds has not been changed. If the tape has been altered then the boat can be remeasured using this procedure.