

International Lightning Class Association

PLANS AND SPECIFICATIONS

Version 1
June 1, 2004

Insert picture of lightning

The purpose of the Plans and Specifications for the Lightning is to insure to as great a degree possible that all boats are equal on the race course. It is impossible to write every single variation that may become apparent in the future, and also impossible to set out detailed plans and specifications that would preclude a challenge at sometime in the future to obtain a racing advantage. Therefore, any boat 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.

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The following Plans and Specifications are CLOSED where anything not specifically permitted shall be prohibited.

Section A – General

1) LANGUAGE

- a) The official language of the Lightning class are English
- b) In case of dispute over translation English text and units of measure shall prevail.
- c) The word “shall” is mandatory and the word “may” is permissive.

2) ABBREVIATIONS

- a) ILCA: International Lightning Class Association
- b) ISAF: International Sailing Federation
- c) ERS: Equipment Rules of Sailing
- d) RRS: Racing Rules of Sailing
- e) Boat: Includes hull, sails and items required to sail a lightning

3) AUTHORITIES AND RESPONSIBILITIES

- a) No claim arising from these class PLANS AND SPECIFICATIONS shall be entertained.
- b) No legal responsibility with respect to these class plans and specifications, or accuracy of measurement, rests with the:
 - iv) ILCA and its governing bodies and individuals,
 - v) ISAF and its governing bodies and individuals,
- c) Notwithstanding anything contained herein, the ILCA has the authority to withdraw a certificate.
- d) The Class web site is the official version of the class PLANS AND SPECIFICATIONS and INTERPRETATIONS. The Class office will maintain an official version of the drawings.
- e) PLANS AND SPECIFICATIONS and drawings are subject to revision as provided by the Constitution and By-Laws. The responsibility of keeping advised as to these revisions rests with the ILCA member
- f) No boat may be sold, entered in any race as a Lightning or at any time display the Lightning emblem unless all ILCA royalties related to such boat has been paid to the ILCA, and such boat meets the requirements of the class.
- g) Any deviation from the PLANS AND SPECIFICATIONS, set forth by the ILCA or ISAF shall be at the builder's risk. The builder shall be solely responsible for rectifying any problems
- h) The role of the measurement and technical committees are defined by the constitution and by-laws

4) PLANS AND SPECIFICATION AMENDMENTS

- a) Amendments will be made in accordance with the ILCA by-laws and constitution
- b) Amendments to these class PLANS AND SPECIFICATIONS shall be proposed by the ILCA and require to be approved by the ISAF in accordance with the ISAF Regulations
- c) The PLANS AND SPECIFICATIONS take precedence over the measurement forms and drawings. The measurement forms take precedence over the drawings. Newer drawings take precedence over older drawings.
- d) The official drawings are:
 - i) Sparkman and Stephens, Inc Design no. 265 Lightning Sloop
 - (1) 11-9-38
 - (a) Drawing no. 265-6t alt 6 Lightning class sloop
 - (2) 12-29-38
 - (a) Drawing no. 265-2t alt 2: Construction drawing
 - (b) Drawing no. 265-5 alt 4: Spars
 - (c) Drawing no. 265-6 alt 4: Spar fittings
 - (d) Drawing no. 265-8 alt 1: Detail of transom
 - (e) Drawing no. 265-10 alt 1: Detail of stem
 - ii) Sparkman and Stephens, inc
 - (1) 7/8/86 Summary of original to incorporate new specification; Redrawn by REP; 3 sheets no drawing number
 - iii) Hamlin & Smith Design no. 265 Lightning Sloop
 - (1) 8/19/96
 - (a) Drawing no. 9638-1: Construction drawing
 - (2) 8/27/96
 - (a) Drawing no. 9638-2: stem detail
 - (3) 3/3/97
 - (a) Drawing no. 9638: mast partner
 - iv) ILCA
 - (1) 4/1/75 last revised
 - (a) ILCA – M – 10: Mast cross section
 - (2) 12/6/79 last revised
 - (a) ILCA – M – 20: Mast rigging and machining

5) INTERPRETATIONS

- a) The Measurement Committee may issue INTERPRETATIONS to address points not specifically covered by the ILCA PLANS AND SPECIFICATIONS and drawings.
- b) AT AN EVENT
 - i) Any INTERPRETATION of class PLANS AND SPECIFICATIONS required at an event shall only be valid during the event.
 - ii) The INTERPRETATION of the class PLANS AND SPECIFICATIONS at the event shall be made by:
 - (1) A quorum of the ILCA executive committee
 - (2) A quorum of the ILCA measurement committee

- (3) An executive committee member
- (4) A jury constituted in accordance with the RRS
- iii) The event's organizing authority shall, as soon as practical, inform the ILCA class office and chief measurer of the INTERPRETATION

6) INTERNATIONAL CLASS FEE(S) AND ISAF BUILDING PLAQUE

- a) The licensed boat builder shall pay the International Lightning Class royalty to the ILCA when the measurement form is issued.
- b) ISAF shall, after having received the International Class Fee for the hull from the ILCA, send the ISAF Building Plaque to the ILCA
- c) Manufacturers of masts and sails shall pay the International Lightning class royalty fee to the ILCA when the royalty patch or sticker is issued.

7) BOAT AND SAIL NUMBERS

- a) The hull number is assigned by the ILCA for only boats that have been certified (move to by-laws?)
- b) The hull number 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.
- c) If a boat is significantly damaged or altered, the measurement committee may choose to retire the boat number and issue a new boat number. (move to by-laws?)
- d) No number will be exclusively reserved for anyone. The ILCA class office will accept requests for a number within 25 numbers of the most recently completed boat. When the number is to be assigned to a boat, the ILCA class office will assign the number: (move to by-laws?)
 - i) To a manufacturer to assign to an individual boat
 - ii) To an individual class member in good standing. If more than one individual class member has requested the number, the ILCA will randomly select the individual based on any method it chooses.
- e) Sail number assigned to the boat shall be the hull number at the time of construction. (move to by-laws?)
- f) The national letters and sail numbers shall made of the same color and cloth
- g) The national letters and sail numbers shall made of contrasting color from the sail material so that they can be easily distinguished from the sail.
- h) National letters, sail numbers and the class emblem will be on both sides of the main sail, and be located above the middle batten as per drawings. National letters and sail numbers with an optional class emblem will be on both sides of the spinnaker. (Where?)
- i) National letters and sail numbers will be 304.80 mm (12") minimum height and 203.20 mm (8") wide except for the numeral one.
- j) Specific Lightning Class emblem colors shall be reserved:
 - i) Gold for past World Champions.
 - ii) Silver for past European, North American or South American Champions.

- iii) Equivalent colors as above over a standard class emblem with a 25.4mm (1") border for past Women's Champions
- iv) Candystripe for past Junior Champion will have the equivalent as outlined above.
- v) Purple for past Masters Champion

8) CERTIFICATION

- a) Boat Certification is defined as a boat complying with all PLANS AND SPECIFICATIONS and drawings.
- b) The ILCA class office shall retain the original measurement form(s) and a copy of the certificate,
- c) All measurements for certification will be performed by an ILCA Certified Measurer or individual appointed by the Measurement committee or Chief Measurer.
- d) Official Measurers or appointees may not measure for certification an item which he or she has built, owns or expects to sail.
- e) For a boat requiring certification not from a certified builder,
 - i) All items required by shall be measured in accordance with the current measurement procedures
 - ii) The current measurement form(s) shall be sent to the ILCA class office after completion of measurement.
 - iii) Upon receipt of a satisfactorily completed measurement form(s), the ILCA class office shall issue a certificate.
- f) For certified boat builders:
 - i) shall be periodically certified by the ILCA Measurement Committee.
 - ii) Boats shall be assumed to comply with the PLANS AND SPECIFICATIONS and drawings and shall not require measurement.
 - iii) The certified builder shall complete the measurement certificate and send a copy to the ILCA class office. Upon receipt of a satisfactorily completed measurement form(s), the ILCA class office shall issue a certificate.
- g) Manufactures of boat components are responsible for compliance to the class PLANS AND SPECIFICATIONS and drawings
- h) A boat may be re-certified using the current measurement procedure. Certification forms should be updated and copies of the forms submitted to the ILCA.
- i) Changes of ownership should be noted on the certificate. A copy submitted to the ILCA

9) VALIDITY OF CERTIFICATES

- a) Certification of a boat or any of its components may be revoked by the Chief Measurer or a simple majority of the executive committee or governing board if it appears to have been altered causing to it to be noncompliant with the definition of certification.
- b) Certification of a builder may be revoked by the ILCA if:

- i) Does not meet the periodic certification process
- ii) The builder does not consistently comply with the PLANS AND SPECIFICATIONS and drawings.
- c) A boat ceases to comply with the class planes and specifications upon:
 - i) the use of equipment that does not comply, or that causes the boat not to comply, with limitations recorded on the certificate,
 - ii) alteration or repair to items required by the measurement form(s) to be measured, other than permitted routine maintenance,
 - iii) a change of class PLANS AND SPECIFICATIONS that causes equipment in use to cease to be permitted, except where the equipment may comply with the class PLANS AND SPECIFICATIONS in force at the time of its initial fundamental measurement.
- d) Routine maintenance such as painting, polishing and repairing of minor damage is permitted without requiring re-certification.
- e) If the any part of the boat is repaired or modified in any other way than routine maintenance a measurer may be appointed by the ILCA Chief measurer to verify on the certificate that the item(s) adheres to class specifications and that no substantial stiffness, or other, advantage has been gained as a result of the repair.

10) SAILING INSTRUCTIONS

- a) The class PLANS AND SPECIFICATIONS shall not be varied by sailing instructions
- b) The rules governing the World, Area or District Championships may vary the class PLANS AND SPECIFICATIONS.

Section B – Conditions for Racing

1) GENERAL

- a) The boat shall have a valid certificate
- b) Skipper and crew shall be ILCA members in good standing
- c) Mast and sails shall display royalty marks
- d) A valid class association sticker shall be affixed to the hull in on the starboard side of the hull as at the stern of the boat

2) CREW

- a) LIMITATIONS
 - i) The crew shall consist of 3 persons.
 - ii) No crew member shall be substituted during an event except as indicated in the rules governing or by-laws

3) PERSONAL EQUIPMENT

- a) The boat shall be equipped with personal buoyancy for each crew member to the minimum standard EN 393: USCG Type III

4) ADVERTISING

a) LIMITATIONS

- i) Advertising shall only be displayed in accordance with Category C of the ISAF Advertising Code.

5) PORTABLE EQUIPMENT

a) Mandatory

- i) ground tackle shall be a fluke-type anchor weighing not less than 1.8 kg (4lbs) with 15.24m (50 feet) of line attached
- ii) a compass
- iii) bucket with a minimum capacity of one gallon ,
- iv) throw-able life preserver or cushion with an attached whistle
- v) paddle

b) Restricted

- i) Electronic Equipment - the following electronic devices are allowed aboard a Lightning:
 - (1) Battery-powered wrist watches.
 - (2) An electronic digital compass with chronograph (timer and/or clock). The compass must be entirely self-contained with either an internal battery and/or solar power. The compass shall have no external connection.
 - (3) An electric device shall not provide wind information, boat speed, navigational features, GPS information or compute correlations between time and heading.
 - (4) Cell phones, pagers, and handheld VHF radios with the following restrictions:
 - (a) for a sanctioned regatta, use of these devices is allowed only for emergencies and such use shall require withdrawal from the race;
 - (b) for a non-sanctioned regatta, use of these devices is allowed when not racing. In addition, organizing authorities can choose to restrict use to that of a sanctioned regatta.

6) BOAT

a) WEIGHT

- i) The weight of the boat in dry condition shall be no less than 317.5179 kg (700 lbs.).
- ii) Dry condition means all water impacting the weight of the boat shall be removed using diligent and reasonable effort.
- iii) The weight of the boat shall be taken:
 - (1) with spars, standing rigging and 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
 - (2) excluding sails, paddle, boom crutch, removable drawers, loose equipment, containers, life preservers, tools, anchors, anchor lines and

- other miscellaneous lines.
- iv) If the weight of the boat is less than the required weight then corrector weights shall be added to bring the boat up to the minimum weight.
- v) Dead weight shall not be carried as shifting ballasts
- b) CORRECTOR WEIGHTS
 - i) Corrector weights shall be:
 - (1) securely fastened to the boat weight
 - (2) easily visible
 - (3) made of lead.
 - ii) The corrector weights shall be added in the order below so that the weight of the boat is equal to or greater the required weight:
 - (1) Up to 8.9047 kg (20 lbs.) of corrector weight shall be equally divided and placed on both sides of the centerboard trunk.
 - (2) Up to 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. If the boat has an aluminum centerboard, these corrector weights will be placed 914.4 mm (3') from the center of gravity as above.
- c) FLOTATION
 - i) A fully rigged swamped Lightning should float with the centerboard trunk cap 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.
 - ii) A fully rigged 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.
- d) FITTINGS
 - i) LIMITATIONS
 - (1) All fittings shall 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:
 - (a) Blocks, hiking stick and cleats which can also be made of plastic or composite materials (including carbon fiber)
 - (b) all standing rigging and its accompanying fittings cannot be made of aluminum.
 - (c) all pintles and gidgeons cannot be made of aluminum.
- e) HULL APPENDAGES – Centerboard, rudder and tiller
 - i) LIMITATIONS
 - (1) Only one centerboard and one rudder blade shall be used during an event, except when a hull appendage has been lost or damaged beyond repair.
- f) RIG
 - i) LIMITATIONS
 - (1) Only one set of spars and standing rigging shall be used during an event except when a item has been lost or damaged beyond repair.
- g) SAILS
 - i) LIMITATIONS
 - (1) Mainsail and spinnaker must carry the number of a valid Lightning hull

- number and no two boats shall have the same number for the regatta.
- (2) No more than one mainsails, 2 jibs, and two spinnakers shall be carried aboard
 - (3) Two mail sails may be used in NON-sanctioned events.
 - (4) The national letters and sail numbers shall comply with the RRS except where prescribed otherwise in these class BY-LAWS.

Section D – Hull, deck, bulkheads, seats and floor

1) GENERAL

- a) 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.
 - i) A wood boat builder may add a layer of glass reinforced plastic cloth saturated with polyester or epoxy resins. The boat shall comply with wood boat PLANS AND SPECIFICATIONS and drawings.
 - ii) Hull, bulkheads, centerboard trunk, cockpit, rubrails, gunwale, rubbing strakes and deck measurements shall adhere to Lightning Hull Manufacturers Certification Form

2) HULL

- a) RULES
 - i) Transom ports may be taped over
 - ii) All hollow bottoms, compartments, and other sealed areas shall be provided with:
 - a) Baffles to prevent sloshing and loss of stability.
 - b) Drains which permit the easy removal of water from the area by gravity.
 - c) Inspection ports of sufficient size to permit easy inspection.
- b) DIMENSIONS:
 - i) A boat shall be measured without the center board.
 - ii) 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.
 - iii) Fiberglass construction shall have: **these are inconsistent with the measurement form and do not seem to make sense**
 - (1) Bottom
 - (2) minimum thickness of 1/16" (1.587 mm);
 - (3) core thickness of 3/8" (9.525 mm);
 - (4) minimum core density of 4 lb./cu.ft. (64.103 kg/cubic meter) ;
 - (5) inner skin thickness 1/16" (1.587 mm);
 - (6) side
 - (7) skin thickness of 1/16" (1.587 mm) minimum;
 - (8) core thickness of 1/4" (6.350 mm);

- (9) minimum core density of 4 lb./cu.ft. (64.103 kg/cubic meter);
- (10) inner skin thickness 1/16" (1.587 mm)
- iv) Wood construction shall:
 - (1) Be equivalent in strength to the frames, planking, timbers, etc. as shown in the original drawings to insure a rigid hull structure, and shall be of a uniform thickness, in order to hold its shape and specifications while racing.
 - (2) Frames
 - (3) 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.
 - (4) Frames shall be a minimum of 6.35 mm (1/4") thick and a maximum of 101.60 mm (4") deep,
 - (5) Frames at stations 3, 3 1/2 and 4 shall be reinforced a minimum dimensions of 22.225 mm (7/8") thick and 50.80 mm (2") deep along the entire hull bottom and sides.
 - (6) Keel, Chine and Sheer stringers - minimum thickness 19.05 mm x 38.1 mm (3/4" x 1 1/2").
 - (7) Hull skin stringers –minimum thickness 12.70 mm x 19.05 mm (1/2" x 3/4") - minimum quantity three per side.
 - (8) 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.
 - (9) 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.
 - (10) **Sides and Bottom shall not be thinner than Plywood - 7.9375 (not consistent with measurement form)**
 - (11) Transoms shall have a minimum thickness of 1³ (convert)
- v) 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.
- vi) Half breadths shall be measured from the centerline plane.
- vii) 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.
- viii) Length overall = 5810.250 mm to 5768.975 mm (19-0-6+ to 18-11-1+)
- ix) Waterline Length = 4648.20 mm (15-3-0)
- x) Draft Approximately = 1511.30 mm (4-11-4)
- xi) Beam at Deck = 1987.55 mm (6-6-2)
- xii) Beam at Chine = 1685.925 mm (5-6-3)
- xiii) Stem:
 - (1) shall 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
 - (2) base of the stem must fair into the bottom with a minimum radius of

102mm (4")

- xiv) Chines and Keel may be rounded to a radius not greater than 12.70 mm (1/2").
- xv) Keel width shall be measured 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.
- xvi) Skeg not depth at its aft end shall be, measured from the underside of the boat excluding the keel. 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 skeg 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.
- xvii) X,Y, W and Z dimensions:
 - (a) 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.
 - (b) Z dimension is from the edge of the bottom at the transom to the top of the transom.
 - (c) W dimension is the 457.2 mm (18") intersection at the stem from the baseline to station 0 at the top of the stem.
 - (d) Y dimension is from the leading edge of the centerboard pin to the edge of the bottom at the transom.

3) CENTERBOARD TRUNK

- a) DIMENSIONS:
 - i) Centerboard slot:
 - (1) All boats built after October 1, 1999 shall have a consistent minimum center board slot width of 1/2" (12.70mm). Boats built earlier than October 1, 1999 shall have a consistent minimum of 12mm (0.4724")
 - (2) For all boats, the center board slot consistent maximum width shall be 3/4 inch.
 - (3) Boats which were built legally, but in which the slot has inadvertently narrowed without deliberate action by the owner, will be grandfathered.
 - ii) The centerboard pin shall be stainless steel, bronze or monel.
 - iii) The centerboard pin shall have a diameter of 15.8750 mm (5/8").
 - iv) The centerboard pin shall not utilize a bushing or device which will make the angle of the dangle device ineffective.
 - v) 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").
 - vi) 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.
 - vii) The centerboard trunk shall be braced

2)1) COCKPIT

- a) DIMENSIONS:
 - i) Shall start at station 4 and extend to station 8-1/2.
 - ii) The deck surrounding the cockpit shall be not less than 215.90 mm (8-1/2") inside the shear.
 - iii) The deck shall not continue above the seats extend further than 292.10 mm (11-1/2") inside the shear. **(not consistent with the measurement forms)**
 - iv) The radius **(of what?)** may be as much as 76.20 mm (3")
 - v) Seats
 - (1) Shall have the strength of the equivalent of 15.875 mm (5/8") solid wood.
 - (2) Total width of seats shall not be less than 228.60 mm (9") wide.
 - (3) 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.
 - vi) Floorboards are optional. If there are no floorboards, there shall be one or more sumps at the low point to feed suction bailing devices.

3)2) RUBRAILS

- a) RULES
 - i) There shall be rubrails which may be a combination of fiberglass and wood or equivalent plastic
- b) DIMENSIONS:
 - i) There shall be rubrails shall be equivalent to a 25.40 mm (1") half round installed along the sheer.
 - ii) 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.
 - iii) The "drooped" portion of the rubrail must make a smooth transition into the regular rubrail.

4)3) DECK

- a) DIMENSIONS:
 - i) Deck shall be well braced so that it will not significantly flex under the weight of the crew, and shall not be thinner than:
 - ii) 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
 - iii) 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 by 9.525 mm by 63.50 mm (3/8" x 2-1/2") rectangular after the installation of a block or cleat

- iv) The deck may be curved to a radius of not less than 6096.00 mm (20') arc.
- v) All deck measurements shall be taken exclusive of moldings.

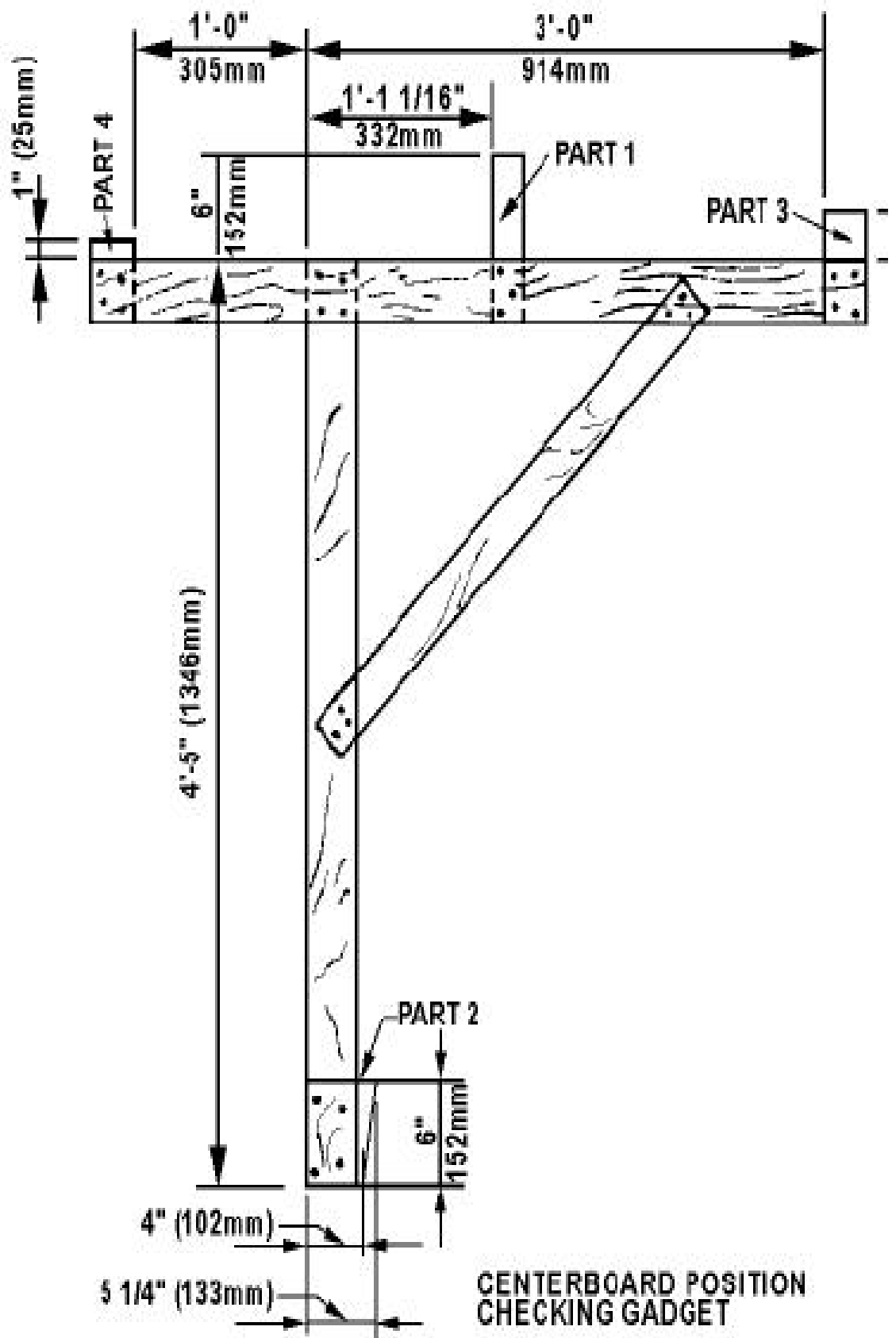
5)4) GUNWALE AND RUBBING STRAKES

- a) RULES:
 - i) The rubbing strakes shall be of timber, plastic, aluminum alloy or any resilient material.

Section E – Hull Appendages

1) CENTERBOARD

- a) RULES
 - i) Centerboards shall adhere to Lightning Centerboard Manufacturer's Certification Form (**insert form**)
 - ii) Fleets may use short boards for local fleet races if their sailing waters dictate and approval is granted by the measurement committee
- b) MATERIALS AND CONSTRUCTION
 - i) The centerboard may be constructed of steel, aluminum or stainless steel.
 - ii) The centerboard may be painted
 - iii) The edges of the centerboard shall not be unduly sharp so as to cause a cut with moderate pressure.
 - iv) Jibing Centerboard shall not be allowed
 - v) Contours or internal restrictions shall not be allowed that would defeat the purpose of the angle measurement device.
- c) FITTINGS
 - i) The Centerboard shall be fitted with a centerboard preventer (line, cleat stop or block arrangement, to prevent the board from being completely housed in the trunk in the event of a capsize).
- d) DIMENSIONS
 - i) Centerboard dimensions shall not vary more than 12.70 mm (1/2") in any direction from the PLANS AND SPECIFICATIONS, measurement forms and drawings 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. (**Inconsistent with the form**)
 - ii) 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 maximum forward position of the center boards leading at its down position shall not be less than 228.60 mm (9") aft of vertical measured from the centerline of the center board pin. Angle of the Dangle Measurement device below is used to measure these dimensions.



- iii) Thickness
 - (1) All centerboards shall be of uniform thickness.
 - (2) Stainless and steel centerboards shall have a maximum thickness of 7.9375 mm (5/16") plus or minus 0.79375 mm (1/32") including any coatings
 - (3) Aluminum centerboards shall have a maximum thickness of 3/8" (9.53 mm) thickness; or it may be constructed of bronze or monel with a 9/32" (7.14 mm) thickness.
- iv) Centerboard shall not weigh more than 58.96760 kg (130 lbs.)

2) ***RUDDER AND TILLER***

- a) RULES
 - i) Rudders shall adhere to and Lightning Rudder Builder's Certification Form **(insert form)**
 - ii) Fleets may use lifting/tilting rudders for local fleet races if their sailing waters dictate and approval is granted by the measurement committee. The use of lifting/tilting rudder by any boat shall replicate, as possible, the intent of the Lightning design and intent of the specifications.
- b) MATERIALS AND CONSTRUCTION
 - i) The rudder will be built substantially of wood or glass reinforced plastic, and may be filled with foam or light wood. Rudders may be reinforced with carbon fiber.
- c) DIMENSIONS
 - i) Thickness shall not be less than 17.465 mm (11/16") nor more than 22.00 mm (7/8") at the waterline
 - ii) The rudder shall be a flat plate except for the specified chamfers.
 - iii) The chamfer shall not exceed 50.80 mm (2") from any edge.
 - iv) The gap between the edge of the rudder and the skeg shall not be smaller than 9.525 mm (3/8").
- d) WEIGHTS
 - v) The weight with all hardware shall not weigh less than 3.640 kg (8 lbs.)

Section F – Rig

1) ***MAST***

- a) RULES
 - i) Mast shall conform to the ILCA Drawings M-10 and M-20 and the Lightning oval aluminum spar manufacturer's certification. **(insert form)**
 - ii) The extrusion dies used to manufacture the oval aluminum masts and booms shall be certified by the Measurement Committee.
- b) MATERIALS AND CONSTRUCTION
 - i) Masts shall be built of aluminum alloy (6061-T6) or wood
 - ii) Mast may be anodized.
- c) DIMENSIONS
 - i) The mast extrusion and shall include a fixed sail groove or track which may or

may not be integral with the mast but shall be of the same material. (does anyone know why we allow external grooves when the specification show internal)

- ii) 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").
- iii) 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.
- iv) 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. Blocks may be repositioned, during the race.
- v) The spreader shall be a minimum of 1.5875 mm (1/16") wall thickness.
- vi) Aluminum masts shall be filled with foam from the spreaders to the top of the mast.
- vii) The position of the center line of the spreaders shall be 4241.80 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.
- viii) 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").
- ix) A metal channel mast step shall 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").
- x) 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. (is there really relevant – it is a calculation of other specs and we do not measure it)
- xi) Minimum weight of a fully rigged mast shall be 15.876 kg (35 lbs)

2) BOOM

- a) RULES
 - i) Boom shall conform to the (need a measurement form)
- b) MATERIALS AND CONSTRUCTION
 - i) Booms shall be built of aluminum alloy (6061-T6), or wood
 - ii) The boom may be anodised.

- iii) The extrusion dies used to manufacture the oval aluminum booms must be certified by the Measurement Committee.
 - iv) The boom extrusion shall include a fixed sail groove or track which may or may not be integral with the boom but shall be of the same material.
 - v) The extrusion dies used to manufacture the oval aluminum masts and booms must be certified by the Measurement Committee.
- c) DIMENSIONS
- i) 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.
 - ii) Aluminum booms shall have a minimum wall thickness of 1.651 mm (.065") and that wall thickness shall be uniform throughout the length.

3) ***SPINNAKER POLE***

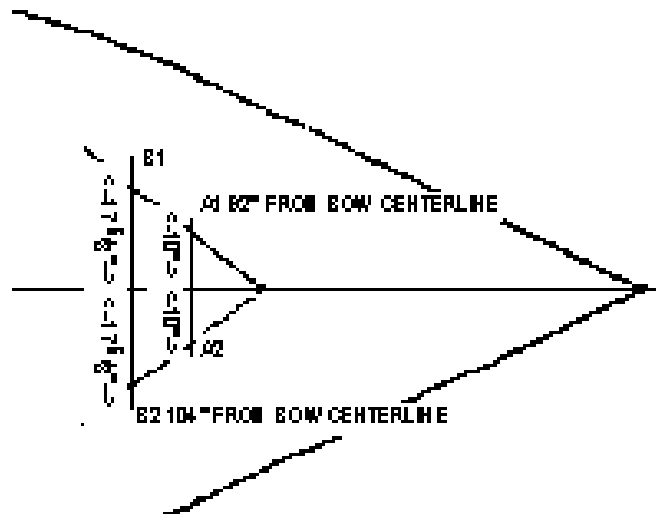
- a) RULES
- i) Spinnaker pole shall conform to the (need a new measurement form the current on is no longer valid) (insert form)
- b) MATERIALS AND CONSTRUCTION
- i) May be made of wood, fiberglass, foam, aluminum (alloy), or any combination (of wood, foam, fiberglass, or aluminum (alloy)).
- c) DIMENSIONS
- i) 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.
 - ii) 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.
 - iii) Weight will not exceed 3.22056kg. (7.1lbs).

4) ***STANDING AND RUNNING RIGGING***

- a) MATERIALS AND CONSTRUCTION
- i) The standing rigging shall be of stainless steel.
- b) DIMENSIONS
- i) Upper and lower shroud tension shall not exceed 113.39925 kg (250 lbs.) with the forestay slack, backstay off and mast blocks removed. See measurement process
 - ii) Shrouds and stays shall be 3.175 mm (1/8") minimum stainless steel wire rope.
 - iii) Dyform shrouds and stays shall not be used
 - iv) Adjustment of standing rigging while racing is prohibited.
 - v) The spinnaker halyard shall be a rope.
 - vi) An adjustable rope or wire bridle is allowed.
 - vii) An adjustable rope or wire traveller is allowed.

- viii) The aftermost mainsheet blocks or bridle must be attached on the afterdeck.
- ix) The point of attachment of the head stay shall 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.
- x) Adjustable Backstay shall 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 shall be allowed.
- xi) The point of attachment of the backstay shall not be aft of the transom nor more than 50.80 mm (2") forward of it.
- xii) 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.
- xiii) An adjustable main tack is allowed .
- xiv) The maximum height of halyard hooks shall be 1219.20 mm (4') above the deck.
- xv) 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.
- xvi) A Boom Vang Arrangement which pulls the boom down toward the deck in the vicinity of the sheet is allowed.
- xvii) The boom vang shall not be of rigid construction 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.
- xviii) Vang installations which pass through or attach below the deck inside the coamings are specifically ruled shall be legal.
- xix) The Gooseneck Fitting for the boom shall be fixed on the oval mast.
- xx) Main Spreader shall be fixed relative to the mast.
- xxi) The use of Throw Levers on standing rigging shall not be allowed.
- xxii) The use of a toggle to adjust the backstay shall not be allowed
- xxiii) 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.
- xxiv) At no time can the jib lead sheave bearing point or dead end be inboard of the A1/B1 and A2/B2 lines . 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



Section G – Sails

5) GENERAL

a) RULES

- i) Sails shall comply with the class PLANS AND SPECIFICATIONS in force at the time of certification.
- ii) There shall be no displays or signs on the sails except described above other than class royalty label, sail makers identification, and a small stamp signifying Measurement Committee approval Measurement of sails.
- iii) Sails shall be 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.
- iv) Sails shall be dry when measured.
- v) 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 in 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.

b) **MATERIALS AND CONSTRUCTION**

c) Cloth: All sail cloth shall:

vi) Be made of a woven polyester, nylon or cotton

vii) Have a finished sailcloth weight of:

(1) not less than 158.5 gm/m² (3.7 ounce for a 36" by 28.5" piece of cloth) for the main and jib

(2) not less than 36.4 gm/m² (0.85 oz for a 36" by 28.5" piece of cloth) for the spinnaker.

(a) have a supplier's specification with an average (actual) weight for the finished cloth:

(i) not less than 158.5 gm/m² (3.7 ounce for a 36" by 28.5" piece of cloth) for the main and jib

(ii) not less than 36.4 gm/m² (0.85 oz for a 36" by 28.5" piece of cloth) for the spinnaker.

viii) As required, the ISAF procedures shall be used for validating compliance.

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

6) ***MAINSAIL***

a) **RULES**

i) 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.

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

iii) Nylon Sail Slides shall be illegal.

iv) Clew extenders or unusual outhaul fittings that raise the clew of the mainsail off the boom to any appreciable extent shall be illegal.

v) Reefs are permissible in the foot of the main only, and roach reefs are not legal.

vi) The measurement points at head, clew and tack shall be defined in the ISAF

Equipment rules of sailing.

vii) Girths shall be located by measuring in a straight line from the head measurement point to the leech.

a) MATERIALS AND CONSTRUCTION

- i) The ply fibers shall be of polyester.
- ii) The construction shall be: soft sail, single ply sail.
- iii) The sail shall have 3 batten pockets in the leech.
- iv) The leech shall not extend aft of straight lines between:
 - (1) the aft head point and the intersection of the leech and the upper edge of the nearest batten pocket,
 - (2) the intersection of the leech and the lower edge of a batten pocket and the intersection of the leech and the upper edge of an adjacent batten pocket below,
 - (3) the clew point and the intersection of the leech and the lower edge of the nearest batten pocket.
- v) The following shall be permitted: Stitching, glues, tapes, bolt ropes, corner eyes, headboard with fixings, Cunningham eye or pulley, batten pocket patches, reinforcements, batten pocket elastic, batten pocket end caps, mast and boom slides, leech line with cleat, windows, tell tales, sail shape indicator stripes, sail identification, sailmaker labels, ILCA royalty label

b) DIMENSIONS

| | Maximum |
|------------------------------------------------------------------------------------|--------------------------------------------|
| i) Leech Length | 7467.60 mm (24' 6") |
| ii) _ width 2133.6 (7') from head measurement point | 1104.9mm (3' 7 _") |
| iii) _ width 3987.80 (13' 1") from head measurement point | 1968.49mm (6' 5 _") |
| iv) _ width 5873.74 (19' 3 _") from head measurement point | 2628.9mm (8' 7 _") |
| v) Weight of the Ply of the body of the sail | 158.5 gm/m ² |
| vi) Primary reinforcement | 450 (unit of measure) |
| vii) Secondary reinforcement | |
| (1) from sail corner measurement points | <i>no limit</i> |
| (2) for flutter patches | 250 (unit of measure) |
| (3) for chafing patches | 300 (unit of measure) |
| viii) Tabling Width | 45 (unit of measure) |
| ix) Distance from clew point to foot bolt rope | 200mm |
| x) Distance from tack point to foot bolt rope | 400mm |
| xi) Window area m (conflicts with spec below) | 400m ² (4.305 ft ²) |
| xii) Window to sail edge | .02 (unit of measure) |
| xiii) Extension of headboard from head point | 135mm |
| xiv) Batten pocket length: | |
| (1) uppermost and lowermost pockets: inside and outside | 650mm |
| (2) intermediate pockets: inside and outside | 800mm |
| (3) Batten pocket width: inside and outside | 75 mm |
| xv) Head point to intersection of leech and centerline of upper most batten pocket | 1866mm |

- xvi) Clew point to intersection of leech and centerline of lower most batten pocket 1866mm
- xvii) 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.
- xviii) Windows in the mainsail not exceeding .372 m² (4 square feet) and not more than 1219.20 mm (48") from the foot of the sail are permitted (does this mean all windows?). 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.
- xix) 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.
- xx) 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.
- xxi) 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 then 1104.90 mm (3' 7-1/2"). A similar measurement taken 3987.80 Another similar measurement taken 587

7) HEADSAIL

a) RULES

- i) 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.
- ii) 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.
- iii) Jibs without luff snaps have been allowed. Leading the Forestay through the cloth or tabling at the luff of the jib is not permitted. (reword to allow detachment and make sewn loops illegal)
- iv) Grommet on Head of Jib is permissible as long as it falls within the normal sail plan.
- v) There shall be no reverse curves anywhere on the leech of the jib. (Feb. 70)

- vi) Head of Jib - Attempts to increase jib area by broadening the head of the jib using heavy cloth, stiffening material, or any other method shall be illegal. 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 120.650 mm (4-3/4") long.
 - vii) 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)
 - viii) Leading the Forestay through the cloth or tabling at the luff of the jib is not permitted.
 - ix) Corner measurement points according to the ERS
- b) MATERIALS AND CONSTRUCTION
- i) The ply fibers shall be of polyester.
 - ii) The construction shall be: soft sail, single ply sail.
 - iii) The headsail shall have 2 batten pockets in the leech.
 - iv) The leech shall not extend aft of straight lines between:
 - (1) the aft head point and the intersection of the leech and the upper edge of the nearest batten pocket,
 - (2) the intersection of the leech and the lower edge of the upper batten pocket and the intersection of the leech and the upper edge the lower batten pocket,
 - (3) the clew point and the intersection of the leech and the lower edge of the lower batten pocket.
 - v) The following are permitted: Stitching, glues, tapes, corner eyes, hanks, tabs, luff wire, batten pocket elastic, batten pocket patches, batten pocket end caps, leech line with cleat, one window, tell tales, sail shape indicator stripes, sailmaker labels, and button,
- c) DIMENSIONS
- | | Maximum |
|-------------------------------------------------------|----------------|
| i) Luff length | 5375mm |
| ii) Leech length | 4695mm |
| iii) Foot length | 2312mm |
| iv) Foot median | 5240mm |
| v) Head girth point: | |
| (1) The point on the leech 160 mm from the head point | |
| (2) Head width measured to closest point on luff | 105mm |
| vi) Three quarter width point: | |

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| (1) The point on the leech 1650mm from the Head point | |
| (2) Three quarter width measured to closest point on luff | 890mm |
| vii) Half Width Point: | |
| (1) The point on the leech 3305mm from the Head point | |
| (2) Half width measured to closest point on luff | 1575mm |
| viii) Top width | .40 |
| mm | |
| ix) Foot irregularity | .50mm |
| x) Weight of ply of the body of the sail | 158.5gr/m ² |
| xi) Primary reinforcement from sail corner measurement points | 310mm |
| xii) for flutter patches | .250mm |
| xiii) for chafing patches | 300mm |
| xiv) for batten pocket patches | 300 mm |
| xv) Tabling width | 45 mm |
| xvi) Seam width | 35mm |
| xvii) Window area | .232m ² (2.5 square feet) |
| xviii) A single window with a maximum fore and aft dimension of 762.00 mm (30"), and maximum vertical dimension of 304.80 mm (12"). | |
| xix) Window to sail edge (is this consistent with the spec above) | 150mm |
| xx) Lower Batten pocket length: outside | 635mm (25") |
| xxi) Upper Batten pocket length: outside | 482.6mm (19") |
| xxii) Batten pocket width: inside | 50 mm |
| xxiii) Head point to intersection of leech and centerline of uppermost batten pocket | 1500mm |
| xxiv) Clew point to intersection of leech and centerline of lowermost batten pocket | 1350mm |
| xxv) 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 | |
| xxvi) Roach and draft shall be measured across the jib between points 335 | |

8) SPINNAKER

a) RULES

- i) Venturi Spinnakers shall be classified as "perforated sails" and are illegal
- ii) Foot, side and girth measurements should be taken with the sail under

approximately 2.2679 kg (five pound) tension.

b) MATERIALS AND CONSTRUCTION

- i) The ply fibers shall be of polyamide.
- ii) The construction shall be: soft sail, single ply sail.
- iii) The body of the sail shall consist of the same woven ply throughout.
- iv) The following are permitted: Stitching, glues, tapes, corner eyes, recovery line eyes, tell tales, sailmaker label, royalty labels, sail button, sail identification, certification mark.

c) DIMENSIONS

- | | Minimum | Maximum |
|------------------|---------------------|---------------------|
| i) Leech lengths | 5943.60 mm (19' 6") | 6248.40 mm (20' 6") |
| ii) Foot length | 4114.8 mm (13' 6"). | 4419.60 mm (14' 6") |
- iii) Girth Measurements
- (1) 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.
 - (2) 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").
 - (3) 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").
 - (4) 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.
- | | |
|-------------------------------------------|------------------------|
| iv) Weight of ply of the body of the sail | 36.4 gm/m ² |
| v) Tabling width | 30mm |
| vi) Seam width | 30mm |
- vii) The sides shall not exceed 6248.40 mm (20' 6") nor be less than 5943.60 mm (19' 6").
 - viii) The foot may not exceed 4419.60 mm (14' 6") nor be less than 4114.8 mm (13' 6").

Added in the by-laws or rules covering

- ix) 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)