Current E-Scow Scantling Rules

~~Last changed in April 2019~~ 2/28/2020

I. GENERAL RULES

A. Requirements. A yacht, its sails, spars and all equipment, must conform strictly throughout with respect to design, dimensions, construction and material to the official plans and specifications of the NCESA as well as all other Rules and Regulations governing participation in NCESA and other recognized associations' sanctioned events

B. Interpretations. In interpreting any point not adequately covered, or wording of obscure meaning, the Rules Committee of the NCESA, as the final authority, shall consider the intended meaning, rather than any technical misconstruction that might be derived from the wording, and shall bear in mind at all times the basic principle of the specifications, which is to maintain the class, within reasonable limitations, as standard, equalized, one-design yachts. A request for an interpretation shall be addressed to the Chair~~man~~ of the Rules Committee. An adverse decision may be appealed to the Judicial Committee in writing. Options - Nothing is optional in these specifications unless the word "optional" or "unlimited" appears in the Article and then only within the limitations described. IT IS THE INTENTION OF THESE RULES TO PERMIT ONLY THE MATERIALS, METHODS OF CONSTRUCTION AND HARDWARE SPECIFIED AND NO OTHERS. It is not the intention of these Rules to permit everything not specifically prohibited. Where the number of certain items is specified:

1. "Number permitted" means that the yacht may have not more than the number of items specified.
2. "Number required" means that the yacht shall have at least the number of items specified, and
3. "Number" means that the yacht shall have exactly the number of items specified.

C. Experimentation. The Board of Directors may permit experimentation in such matters under conditions prescribed in Article X of the By-Laws~~, including participation in sanctioned events by those engaging in such experimentation~~.

D. No component of the boat shall contain carbon fiber, except for bowsprit, tiller extension(s), or blocks.

E. Yachts manufactured prior to Jan 1, 2019 shall comply with all scantlings in effect at that date. Note: The intention of this rule is to grandfather yachts~~boats~~ with "plate" type rudders, backstays, symmetric spinnakers, or carbon fiber

~~E.~~F. Modifications, retrofits, and upgrades may be performed to bring yachts closer to the most current scantling. Changes that move yachts away from the most current scantlings are not allowed.

~~F.~~G. No boat shall be entitled to race as a bona-fide E-Scow unless:

1. The annual dues have been paid to the NCESA.
2. A current annual NCESA Active Owner Membership Sticker is affixed on the starboard side of the transom.

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H. Yacht racing numbers and club designator letters

1. Each Yacht shall carry her assigned racing number and club designator letters
   a. On both sides of her mainsail.
   b. On both sides of her after-deck.
2. Club designator letters shall be limited to a maximum of two (2) letters of the English alphabet and racing numbers shall be limited to a maximum of three (3) Arabic numerals. No number less than zero (0) or greater than nine hundred and ninety-nine (999) may be used. No fractions or decimals may be used.

~~2.~~ It is the intent of this rules to provide for quick, easy, and unmistakable identification of each racing yacht both by competitors and the race committee personnel. Should the race committee or the official measurer determine that a yacht is not clearly identifiable or not in accordance with these stipulated requirements, the yacht shall be ordered to correct any deficiency prior to becoming eligible for competition, or, failing to do so is subject to disqualification.

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II. HULL

A. General

1. Shall be made from ~~a~~ molds in accordance with digitized hull and deck shape files owned by Melges Boat Works. Plugs used to manufacture new molds shall have a tolerance of ±1/8in from the digitized shape files. Any changes to the digital file shall be approved by the Rules Committee.~~which complies with the NCESA table of offsets and tolerances. See By-Laws for procedure for obtaining license for mold.~~
2. Materials permitted for new construction or modifications - fiberglass - polyester - vinyl ester resin – ~~epoxy resin - Divinycell - Klegecell or~~ closed cell structural ~~PVC~~ foam core. Epoxy resin is allowed for modifications and repairs only. Wood or aluminum are ~~is~~ also permitted as ~~a~~ core materials for local reinforcement purposes. The specific intent of this rule is to ban those materials commonly referred to as "exotic". Examples of such material include but are not limited to Kevlar - Carbon Fiber – honeycomb core.
3. Yachts shall be constructed so that, on a cross-section athwart ships taken at any point, no part of the hull shall be sensibly below the center part of the hull.
4. The transom shall be perpendicular (both fore and aft and athwart ships) to the centerline of the yacht.
5. Bracing of the hull shall consist of at least three longitudinal members. There shall be two bilge longitudinal structures whose length shall be at least two-thirds of the boat. There shall be a center longitudinal structure extending from within 6 in. of the bow to within 12 in. of the stern.
6. All hulls shall ~~be stamped or identified in a permanent manner as to year built, builder and hull number. Any yacht completed and/or delivered prior to October 1st must be stamped with the date of that calendar year. (The purpose of this rule is to identify any hull from all other hulls.)~~carry an official 12 digit HIN (hull ID number), molded or securely fixed to the starboard corner of the transom, complying with USGC regulations.
7. All yachts must be equipped with hoist points to permit weighing and launching by crane.
8. Deck numbers and club designator letters
   a. Numbers and letters shall be securely affixed to both sides of her after-deck, placed approximately parallel to the deck edge, facing outward, and in-line.
   b. Numbers and letters shall be of widely contrasting color from the deck color.
   ~~a.~~c. Numbers and letters shall be 10in. min. tall and of a sans serif, non-italic font

B. Hull Dimensions

1. Measurement Definitions
   a. ~~Any rub rail shall not be considered part of the hull dimensions.~~ All measurements are to be taken to the outside surface of the hull material.

b. Molded depth is defined as the vertical distance at the deepest section taken from the bottom of the outside hull surface of the boat to the top of the outside surface of the deck at the gunwale, at the highest point of the sheer.

c. Crown of deck shall be measured at the mast line in the center of the deck

d. One or more cockpits shall be permitted, but no cockpit shall extend forward of one inch aft of the mast line, or outboard of the bilge board boxes.

2. Dimensions

a. The shape of the hull of yachts built after Jan 1, 2012 shall be in accordance with the MBW digitized E scow shape file with tolerances of ±3/8in.

~~a. Length - 28 ft. max., 27 ft. 9 in. min.~~

~~b. Beam - 6 ft. 9 in. max., 6 ft. 6 in. min.~~

~~c. Molded depth - 19 in. max., 16 in. min.~~

~~d. Crown of deck - 6 in. max., 4 in. min.~~

~~e.~~b. Hull thickness - ½ in. core material min. except for areas of high curvature, adjacent to the hull and deck join, the transom and adjacent to through hull fittings where core is omitted for structural integrity.

~~f.~~c. Deck thickness ~~-~~ 1/2~~3/8~~ in. core material min.

~~g. Rub rail: rail (if used): Maximum ½ in radius. Located on the bow and cannot extend aft of the forestay intersect.~~

d. Yachts ~~configured for asymmetric spinnakers~~ shall carry a sprit bulkhead located forward from the mast line on the starboard side such that the loads from the sprit are reacted by the through deck fitting and the bulkhead. The bulkhead is positioned square to the sprit.

~~h.~~e. Yachts shall carry a splash board.

C. Bilge Boards and Rudders

~~Method of measuring location - all measurements of slot or hole location shall be taken along, and following the curve of, the planking outer hull surface. Measurements taken "from transom" should be taken from the aft face of the transom.~~

1. Bilge board boxes

a. Number – 2

~~a.~~b. Slot locations shall comply with MBW digital hull shape file.

~~b. No part of the slot shall exceed any dimension given.~~

c. Width of slot - ~~5/8~~ ½ in. ±1/16~~8~~ in. The interior of the board boxes may not be built up to a smaller slot.

~~d. Slot distance at outer surface from center line - 29 ½ in. max., 27 in. min.~~

~~e. Back of slot shall be ½ in., ±1/4 in., father from center line than the front of the slot.~~

~~f. Front of slot distance at outer surface from transom - 14 ft. 2 in. max.~~

~~g. Back of slot distance at outer surface from transom 8 ft. 4 in. min.~~

h.d. Devices (such as blocks of wood) to alter the angle of attack of boards are prohibited.

i.e. Bilge boards boxes shall be so constructed that the bilge boards can be wholly housed without leaving any projection below the hull and bilge, boards shall be so hung that in the event of the yacht capsizing, the boards cannot fall from the boxes.

2. Bilge Boards
   a. Number – 2
   b. Extension beyond hull - 46 in. max.
   c. Material - Aluminum alloy plates with properties equal to or better than #6061-T6 Aluminum or approved equivalent.
   d. Thickness - 5/16 in.±.010 in.
   e. Sectional shapeEdge Profiling - Flat to within 4 in. of the edge with all edges rounded to no less than 1/32 in. radius. The intent of this rule is to prevent the edges of the boards from being sharpened to a degree that they are a safety hazard.
   e.f. Sectional shape – must conform to board drawing in IX. Measurement Diagrams.
   f.g. May be painted, anodized or plated; built up boards prohibited. Coating may be a maximum of 0.005 in. per surface.
   g. The maximum chord of the board measured perpendicular to the leading edge shall not exceed 21.5 in

3. Rudder PostsTubes
   a. Rudder tube locations shall be in accordance with MBW digital hull file with ±0.25 in tolerance. No part of the post hole shall exceed any dimension given.

   .

   a. Post distance at outer surface from center line - 20 ½ in. max., 19 in. min.
   b. Post distance at outer surface from transom - 41 in. max., 36 in. min.

5.4. Rudders
   a. Number – 2
   b. Rudder shafts shall be of solid aluminum with properties equal to or better than #6061-T6 alloy. Shaft diameter shall be 1 in. ± 1/16 in.
   c.b. Foil Blade Material - Aluminum alloy of minimum tensile strength equivalent to #6061-T6 alloy for the center plate inside rudder. Fiberglass, polyester, vinyl ester, epoxy resin, gelcoat, or LP paint is allowed to fabricate the foil shape of the blade. The Ceoring material is optional. Carbon fiber is not allowed for body or core.
   c. Weight per rudder - Minimum weight per rudder is 3.5 lbs min for blade and shaft.
   d. Rudder foil shape shall comply to rudder template digital file with ±1/8in tolerance.
   d.e. Extension beyond hull, and overall rudder span when in fore and aft position shall be 16.0 in. maximum.
   f. The leading edge, trailing edge, and line of maximum thickness shall be fair curves. Sectional shape shall be a fair foil shape with no hollow more than 0.063 in. The

leading edge shall be rounded to no less than R0.10 in~~radius~~. The trailing edge may be of squared, circular, or 30 deg. angle cut with cross section of 0.10 ± .05 in minimum thickness or diameter.

g. Rudder shafts and center plate inside foil shall be of solid 2024-T4 Aluminum or approved equivalent. Shaft diameter shall be 15/16 in. ± 1/16 in.

h. The rudder shaft shall be perpendicular to the ~~inboard closure plane~~top face of the foil adjacent the hull, centered within the foil, ~~with its centerline on center laterally~~ and 1.1 ± 0.06 in. forward of the baseline.

~~e. The following dimensions (in.) at the indicated spanwise offsets shall be met. Semicords are referenced to a spanwise baseline 3.5 in aft of the leading edge at zero span and running perpendicular to the inboard closure plane:~~

D. Flotation

1. Nineteen cubic feet of flotation shall be added to each new hull. (Note: the intent of this rule is to allow boat when fully filled with water to neutrally float with deck at water level)
2. Flotation shall be ~~Styro~~closed-cell foam, cubitainers, air bags, or other material of equivalent buoyancy.

E. Weight of Yachts

1. Hull weight is measured.
   a. Including - mast, boom~~, spinnaker poles~~, bilge boards ~~and their line~~, rudders and tillers, standing and running rigging, hull fittings, flotation, splash boards ~~(if attached)~~, compass, attached bags for handling spinnakers ~~and poles~~ while racing.
   b. Excluding - sails, sail flotation panels, life jackets, ~~pump~~, paddle, cockpit cover, ~~drawer~~, battens, spare parts, or tools.
   c. The boat shall be in dry condition. Dry condition shall mean new (never in the outside elements – rain or other precipitation) or completely bailed, opened for maximum airflow and ventilation, then in a controlled environment for seven (7) days prior to weighing to facilitate drying.
   NOTE: the intent of this rule is to keep the weighing process equal for new as well as used boats. This means boats are as dry as when they left the factory. ~~bailed completely dry and all storage spaces shall be empty~~.
   d. Weighing procedure shall be completed by Class measurer or approved proxy
   1). Weighing shall take place indoors.
   2). Weighing shall take place during pre-arranged appointment. This shall not coincide with class sanctioned regattas.

   3). Corrector weights shall not be adjusted more than once in a 12-month period.

4). Corrector weight adjustments shall be approved and documented by the class measurer. This shall include weight amount, photo documentation, and reason for change.

NOTE: reasons may include but not be limited to equipment or rigging changes, repairs, retrofits, etc.

2. The weight of the yacht in this condition shall be ~~a minimum of~~ 965 lbs. min with a 50lb max corrector weight. ~~However, a 50 lb. allowance is permitted. This allowance shall be made up by the addition of ballast weight, preferably sheet or block lead, which~~Corrector weight shall be permanently affixed over the keel line located not more than 10 in. below deck or 10 in. either side of the centerline. Starting at the mast line, add lead as required forward but not to exceed 14 in. ahead of the mast. ~~Weight shall be placed so that any rigging led through this area is not obstructed. All yachts constructed in 1972 and thereafter shall have a ¼ in. diameter drilled to facilitate placement of lead weights.~~

a. A corrector weight sticker shall be mounted on the forward cockpit combing, clearly and legibly documenting the corrector weight amount.

~~c.~~b. Corrector weight tamper seals shall be present and not show signs of damage or tampering.

~~2.~~3. All equipment weighed in shall be retained on board throughout an event except as provided in rules governing replacement of damaged equipment.

F. ~~Required~~ Mandatory Safety Equipment

1. All safety equipment shall be kept on board throughout an event except when in use.
2. ~~The following items of safety equipment are required:~~Required:
   a. ~~Life jackets – one for each crew member including the helmsman.~~Personal floatation device for each crew member certified to USCG Type III, EN 393, or ISO 12402-5 (Level 50) or equivalent.
   ~~b. Pump or bailers.~~
   b. Paddle. ~~or removable floor board~~.
   c. Type IV flotation device
   d. Mainsail flotation panel set
      1). Floatation panels shall be installed as required by sailing instructions.

~~3. The following items of safety equipment may be required by the sailing instructions:~~
   ~~a. Anchor and line.~~
   ~~b. Other items as required by local conditions or regulations.~~

III. SPARS

A. General

The original heat treatment and wall thickness of the extruded section shall not be changed nor shall the section be cut or notched in any way to facilitate bending. It shall accommodate a 5/16 in~~3/8"~~ bolt rope.

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B. Mast

1. Number – 1
2. Sectional material:

~~a. Shall be constructed from an alloy extrusion with 85% min. aluminum content.~~

~~b.~~a. Permitted alloys - ~~Properties of the spar material shall not be less than those of ALCOA alloy #6061-T651~~6061-T6 aluminum or approved equivalent

~~c.~~b. Weight - 1.45 lbs. per ft. min. ~~if tapered.~~, ~~and 1.25 lbs. per ft. min. if untapered, sealed section.~~

3. Sectional shape:

a. Shall be constructed with a continuous fixed groove integral with the spar section to hold the main sail luff rope.

~~b. Dimension:~~

~~1). Athwart ships: 70 mm (2 3/4 in.) min., 90 mm (3 9/16 in.) max.~~

~~2). Fore and Aft (including luff rope groove): 110 mm (4 5/16 in.) min., 130 mm (5 1/8 in.) max.~~

~~c.~~b. Tapering

1). Permitted above 22 ft. 6 in. from deck line.

2). Tapering fore and aft or athwart ships or both shall be permitted.

3). Dimensions at peak - athwart ships - 40 mm (1 9/16 in.) min. Fore and aft - 55 mm (2 3/16 in.) min.

~~d.~~c. The mast line shall be straight both fore and aft and athwart ships when under zero applied pressure. Tolerance - 1 in. aft bend due to permanent set.

~~e.~~d. Weight. Including all fittings but excluding standing and running-rigging: 48 lbs. min.

~~f.~~e. Center of gravity (balance point). When rigged as in d~~5~~. above - 12 ft. 4 in. min. above deck line

4. Sections permitted~~The Rules Committee has determined that the following mast sections comply with the above rules:~~

~~0). Allspar~~

~~1). Holt Allen~~

~~2). Proctor K~~

~~3). Proctor minimum Soling~~

~~4). Erickson~~

~~5). Johnson "Jay"~~

~~6). Melges "E"~~

~~7). Melges 1981 and 1991~~

~~8). Johnson 1981 and 1991~~

a. New construction or purchase of spars shall be limited to the Melges ~~1991~~ 2018 tapered spar. NOTE: extrusion profile is referenced in IX. Measurement Diagrams.

b. Prior approval in writing shall be obtained from the Rules Committee before any mast section may be used. Exact specifications and a one-foot sample of any extended extrusion should be submitted to the Chairman at least 60 days prior to the date on which approval is required.

~~.~~

~~a.~~

~~6.~~5. Mast standing rigging.

a. General

1). Stays and shrouds shall be 1 x 19 wire cable of diameter specified.

2). Main halyards shall be 7 x 19 flexible cable between the shackle and locking device.

3). Spinnaker halyard - unlimited as to material.

4). All stays, shrouds, and halyards may be internally or externally attached to the mast.

5). Mast intersect shall be measured from the deck line.

b. Forestay

1). Number - 1

2). Diameter - 1/8 in. minimum. ~~except for the tail which penetrates the deck, which shall be 5/32 in. diameter 7x19 wire cable or other material of equivalent or better strength and flexibility.~~

3). Mast intersect –21 ft 7 in. ± 1 in~~-~~.

c. Upper~~Main~~ shrouds.

1). Number - 2

2). Diameter – 5/32 in. minimum.

3). Mast intersect - 22 ft. ± 1 in

d. Lower shrouds.

1). Number – 2

2). Diameter - 1/8 in. min.

3). Mast Intersect – 12 ft. 3 in. ± 1 in.

e. Diamond shrouds.

1). Number – 2

2). Diameter 1/8 in min.

3). mast intersects

a) At tip - 29 ft, ± 1 in

b) At base – 2 in., ± 1 inches from the base of the extrusion

~~e.~~f. Spreaders.

1). Number - 2~~1~~ sets of two – 1 set for upper shrouds, 1 set for diamond shrouds~~.~~

2). Material – ~~Aluminum alloy with properties equal to or better than #~~6061-T6 aluminum or approved equivalent

3). Length ~~- measured~~ tangent to ~~from~~ mast wall ~~attachment point~~ to ~~the hole or slot for upper~~ inner edge of shroud ~~-~~-

a) Upper shroud ~~-~~256 in. ~~±plus or minus~~ 1 in

~~a)~~b) Diamond shroud – 14in ± 1 in (needs to be confirmed)

4). Mast intersect

a) Upper shroud ~~-~~ 12 ft. 3 in. ± 1 in

b) diamond shroud – 22ft 2in ±1 in.

~~3).~~5). Spreader sweep angle shall be ~~-~~ fixed~~restricted, not free swinging.~~

~~4).~~6). In use, main shrouds shall be led through and attached to the spreader so that the spreader will be carried approximately perpendicular to the mast line.

~~5). One additional pair of spreaders is permitted on yachts rigged for asymmetric spinnakers with diamond stays.~~

~~a) Length – 15 ± 1 in~~

~~b) Mast intersect – 22 ft 2 in. ±1 in.~~

~~f.~~g. Halyards - See Rule VII. (Methods of Setting, Sheeting and Adjusting Sails).

~~g. Diamond stays – Number – 1 set of two required for asymmetric spinnaker configuration.~~

~~1). Diameter – 1/8 in. 1x19 wire min.~~

~~2). Mast intersects~~

~~a) At tip – 29 ft, ± 1 in~~

~~b) At base – 2 in., ± 1 inches from the base of the extrusion~~

~~3). An additional set of spreaders are permitted. [See 5.e.7).]~~

~~7.~~6. Devices permitted for adjusting mast rigging while racing.

a. General - pulleys, sheaves and attachments for halyards and topping lift - unlimited.
   1). No strut shall be permitted with any spinnaker halyard.
   2). The pulley or sheave for a spinnaker halyard shall be attached directly to or through the mast.
b. General - stays and shrouds shall be adjustable only at end attached to deck except for diamond stays which shall be adjustable only at the end attached at the base of the mast.
c. Forestay – unlimited
d. Main shrouds, lower shrouds, and diamond stays - turn buckles or adjustable tubes.
e. Spreaders - none.
f. Halyards - See Rule VII.

~~8.~~7. Mast fittings.

a. General - pulleys, locking devices for halyards, etc. unlimited.

b. Gooseneck - shall be ~~designed with a permanent stop on~~ fixed to the mast to prevent the upper edge of the boom (boom line) from extending below the upper edge of the lower black band.

c. Fitting for attaching boom vang and other permitted devices - unlimited but see Rule VII.

d. Mast step and cup - unlimited but see Rule IV-B.

~~9.~~8. Running and standing rigging intersection with deck - See Rule IV.

~~10.~~9. All masts shall be rigged non-swiveling.

C. Boom

1. Number – 1
2. Sectional material - shall be ~~an aluminum alloy with properties equal to or better than #6061-T6.~~6061-T6 Aluminum or approved equivalent.
3. Sectional shape
   a. Shall have a continuous fixed groove integral with the spar section to hold the main-sail foot rope.
   ~~b. Width - 3 1/4 in. max., 2 in. min.~~
   ~~c. Depth - 4 in. max., 3 in. min.~~
   b. Tapering - prohibited.
   c. Aft, lower, end of boom may be cutaway – maximum of 16in length of boom, and 1 1/2" in up from bottom.
4. All booms shall be the following section profiles:
   a. Melges E boom/X mast
   b. Melges C/M24 Boom
   c. Melges 2020 Boom
   NOTE: extrusion profiles are referenced in IX. Measurement Diagrams.

~~4.~~5. Boom line shall be straight both vertical and athwart ships when under zero applied pressure. Tolerance - 1 in.

~~5.~~6. Gooseneck fitting, outhaul device, sheet blocks and vang attachment unlimited, but see Rule VII.

D. Asymmetrical spinnaker bow sprit

1. Number permitted – 1
2. Material – may be constructed of aluminum alloy or carbon fiber.
3. Diameter – 2.25 in~~ch~~ outer diameter minimum.
4. Sectional shape - round with no taper.
5. End devices – optional, but tack line cannot be run internally in sprit tube
6. Sprit and devices for flying tack line shall not exceed 4 ft beyond bow, measured from the center of the bow, ½ in~~ch~~ below the extension of the deck line, directly to the end of the

sprit. This distance shall include the end cap and the extension of the eye fitting on the cap. The measurement does not include the rub rail if one is installed.

7. Sprit shall not articulate. When sprit is fully extended, forward end shall be on centerline, ±2 in~~ches~~ athwartships. When retracted, the outboard end of the sprit and its fittings shall be aft of the forward edge of the hull

IV. DECK INTERSECTION OF SPARS AND RIGGING

A. General

Except where otherwise stated, any rigging may be led to or through fittings:

1. On the deck.
2. Under the deck.
3. Inside the cockpit.
4. Through any spar.

B. Mast

1. Athwart ships - centerline.
2. Fore and aft - See Rule V-C.
3. Shall meet the deck at a fixed point - no device for altering this point shall be permitted.
4. Shall be stepped "on deck" only, with no part of the mast or extension therefrom extending below the deckline.
5. All halyards ~~and topping lift~~ may be led through deck if desired.
6. The mast step and cup shall not be cantilevered to facilitate the bending of masts, either fore and aft or athwart ships. The step and cup may be designed to prevent the mast from coming unstepped in the event of capsize.

C. Standing Rigging

1. Forestay
   a. Athwart ships - centerline ±1 in.
   b. Fore and aft - 8 ft. 8 in. ± 1 in. ahead of mastline.
   c. Shrouds
      1). Athwart ships - 2 in., ± 1 in. from outer face of hull.
      2). Fore and aft
         a) Lower shroud – 14in ± 1 in aft of mast line.
         b) Upper shroud – 16in ± 1 in aft of mast line.
         c) Upper and lower shrouds shall meet the deck no more than 2 in. apart.
      3). Upper and lower shrouds shall meet the deck at fixed points. No track or other device for altering this point shall be permitted.
      4). Upper and lower shrouds shall be "on deck" only and shall not be led through the deck.

D. Running Rigging

1. Jib sheets, mainsheet, board tackle, boom vang, cunningham, jib tack downhaul and rigging used to adjust position of same - unlimited.
2. Spinnaker sheets - See Rule VII-D.

V. YACHT DIMENSIONS RELATING TO SAILS

A. Measurement Bands or Scribe Marks

1. Size
   a. On spar - 1 in. wide band of contrasting color to spar (example: black stripe on silver spar, white or silver stripe on black spar~~in center of white background 3 in. wide where necessary for visibility~~). Shall completely encircle spar.
   b. On deck, the bands shall be 1 in. wide where possible; and 12 in. in length or 6 in. beyond obscuring equipment where possible. Scribe marks molded into the deck shall be of a size or contrast to be easily distinguished.
2. Material may be either paint, permanent decal/tape, or scribe marks molded into the deck. These markings shall be permanently affixed and not removable or adjustable. ~~On metal spars, tape may be used if it is of sufficient quality to make the band permanent and not adjustable.~~
3. Bands marks are required to mark the main hoist, the boom line, the aft end of the boom. Bands or scribe marks are to be used to mark the mastline and the base of the jib triangle. All markings must be in place prior to issuance of a measurement certificate.
4. Bands or scribe marks shall be easily visible and distinguished.

B. Dimensions defined (See IX. Measurement Diagram).

1. MAST LINE - The aft side of the mast or its extensions or the aft side of the sail tunnel or its extension, whichever is farther aft. This is interpreted to be a fair profile of the spar or the extension of such profile.
2. PEAK - The distance measured perpendicularly from the deck at the aft side of the mast to the bottom of the black band at the top of the mast.
3. MAIN HOIST - The distance measured between the lower edge of the upper measurement band and upper edge of the lower measurement band on the mast (boom line).
4. BOOM - The distance measured from the mast line where cut by the boom to the forward edge of the measurement band at the end of the boom.
5. JIB HOIST - The distance measured perpendicularly from the deck at the foreside of the mast to a point where the luff of the jib, or its extension, intersects the foreside of the mast.
6. BASE - The distance measured from the mast line where it cuts the deck to the point where a vertical line through the center of the jib wire attachment hole cuts the deck.
7. SPINNAKER SHEAVE WHEEL - The top part of the sheave wheel or the point upon which the spinnaker halyard pivots, whichever is higher.

C. Dimensions

1. Mastline - 16 ft. 2½ in. ± 1 in. from the aft face of the transom.

2. Peak - 30 ft. max.
3. Main Hoist - 28 ft. 6 in. max.
4. Boom - 16 ft. max.
5. Jib Hoist - 21 ft. 5 in. ± 1 in.
6. Base - 8 ft. 6 in. ±1/4 in.
7. Asymmetrical Spinnaker Sheave Wheel – 29’ 7” max

VI. SAILS

A. General

1. All sails shall be triangular. No device to alter the shape of a sail is permitted except a leech cord or pucker string shall be permitted in the leech and foot of the main, leech and foot of the jib, leech, foot, and luff of the spinnaker.
2. Cringles outside diameter ~~-~~ 1 3/4 ~~½~~ in. max.
3. Rings outside diameter - 2 in. max. (rings permitted in lieu of cringles in spinnakers only).
4. The official measurer may use official patterns or templates prepared by him or under his direction, for the purpose of measuring mains. Any sail which does not exceed the dimensions of the template or pattern may be considered to have satisfied the measurement requirements unless a protest is lodged against the sail prior to four hours before the scheduled start of the first race. In the event of any such protest, the sail shall be measured according to these rules, loser to pay the costs thereof. No mainsail shall be disallowed merely because it exceeds the dimensions on the pattern or template; actual measurement according to these rules shall be required before a sail is disallowed.

B. Mainsail

1. Construction and Materials
   a. Materials
      1). Sailcloth material: woven ply polyester
      2). Sailcloth Weight minimum: 3.8 SM (Sailmaker’s) oz./ 163 g/m^2
   b. Construction
      1). The body of the Mainsail shall be single-ply sail of panel construction.
      2). Mainsail may have primary and secondary reinforcements or patches of additional layers of ply. Such reinforcements/patches shall be capable of being folded or rolled in any direction without damaging fibers.
2. Method of measuring dimensions:
   a. General - all tensioning devices (Cunningham holes, leech cords, etc.) shall be relaxed.
   b. Measurement points:
      1). Head - intersection of inside edge of bolt rope or extension and line perpendicular thereto passing thru highest point of headboard.
      2). Clew - end of sail at inside edge of bolt rope.
      3). Tack - where luff and foot or their extensions meet, at inside edges of bolt ropes.

c. Luff and foot measurements taken from a fair lay of the cloth (no tension).
d. Leech - tension, 5 lbs.
e. Girth; fair lay of cloth (no tension) between two points found as follows:
   1). First point is midpoint of luff found by bringing tack and head together, the mid fold being the first point.
   2). Second point is the midpoint of the leech, found by bringing head and clew and head together, the mid fold being the second point.
   3). Additional girths are found by bringing the tack and head and the clew and head to the midpoints creating quarter fold points.
   4). Vertical girth measurement is taken from the head to the midpoint of the foot found by bringing the tack and the clew together.
   5). The girth measurement is taken from the inside edge of the bolt rope to the outside edge of the cloth at the leech.

3. Dimensions:
   a. Luff - 28 ft. 6 in. max.
   b. Foot - 16 ft. max.
   c. Leech - 31 ft. 6 in. max.
   d. Girths - Top 5 ft. 10 in. max.; Middle 10 ft. 3 in. max.; Bottom 13 ft. 9 in. max.; Vertical 29 ft. 4 1/4 in. max.
4. Battens
   a. Batten material: fiberglass
   b. Main battens - shall divide the after leech in approximately equal parts.
      1). Number permitted - 4.
      2). Length~~: Length~~: top, luff to leech; second, 66 in. maximum; third, 72 in. maximum; bottom, 54 in. maximum
      3). Width: 2 in. max.
   c. Auxiliary battens - shall be placed approximately midway between main battens.
      1). Number permitted - 3.
      2). Length - 14 in. max.
      3). Width - 1 ½ in. max.
5. Headboard.
   a. Shall be measured both vertically and horizontally in accordance with the manner in which it is carried. The headboard may not be farther than one inch from the inside edge of the bolt rope.
   b. Size - 6 in. max.
   c. Flotation - In order to facilitate race operations and prevent damage to equipment, the use of flotation panels may be required. All sails delivered after January 1, 1987, shall

have zipper attachments in a manner so that the panels will be located as near to the head of the sail as practical.

d. Number of holes permitted for attaching main halyard - 3 max.

6. Flotation panel set for mainsail.

a. Number –one port and one starboard per set

b. Volume – 0.5 ft^3 per panel, +0.1ft^3, -0.05ft^3

c. Material – closed cell foam, density 2.2lb/ft^3 or less

d. Shape – must conform to flotation panel drawing in IX. Measurement Diagrams

~~6.~~7. Fair Curve - The outside of the leech of the mainsail shall be cut to a fair curve. Lacking a precise definition of a fair curve, the Rules Committee will consider it to be a curve of constant curvature. Abrupt changes in the curvature in an attempt to carry additional sail area in the roach and still maintain the midpoint girth measurement will be considered a breach of the rules and the sail will be disallowed.

~~7.~~8. Tack - All mainsails must have a single tack. There shall be either a tack grommet inclusive of the sail plan boundary, or a bolt rope slug aligned with the luff bolt rope. The intent of this rule is to allow the tack to float up the mast due to shrinking luff bolt rope, but allow outhaul loading.~~and in use it shall be pinned within one inch of the mast line, and one inch of the boom line.~~

9. One cunningham hole for the luff near the tack is permitted.

~~8.~~10. Luff and foot bolt ropes shall be 5/16” min. diameter.

~~9.~~11. Windows - Unlimited as to number, size or placement.

~~10.~~12. Corner patches

a. Head patch: No part of the head patch shall extend below a line parallel with the top batten.

b. Clew patch: 70 in. max.

c. Tack 20 in. max.

~~11.~~13. Clew hole - number permitted - 1.

~~12.~~14. Clewboard - permitted - 4 in maximum with maximum 90-degree angle between foot and leech (see IX. Measurement Diagram).

15. Flutter patch - One patch (multiple layers of material) within a 7” square on the sail leech or 3” wide leech tape extending from top batten to top of sail.

16. Sail numbers and club letter designators

a. Size

1). Height – 18in mix, 20in max

2). Stroke – 2.5in min, 3.5in max

b. Placement

1). Vertical centerline 20” of leading edge of batten #2

2). Vertical spacing 12” between all letters and/or numbers

3). Letters and numbers shall be carried on both sides of her mainsail and shall not be back to back, except where letters and/or numbers show identically on both sides of the sail. Letters and numbers when not back to back shall be higher on the starboard side of the sail. Two letter club designators shall be placed in a side by side manner, regardless of back to back symmetry.
NOTE – EXAMPLE: TO or WA shall be placed side by side, not vertically and back to back. This is to provide clarity and consistency. Confusion between T-0 and TO-##

c. Color shall contrast the sail material – blue, red, green, pink, or black

d. Font type shall be sans serif, non-italic

e. Letters and numbers may be either marked directly on the main material, or be of a separate, securely attached material.

17. Class emblem

a. The E class emblem is a white block letter "E" of 1 ½in stroke, inscribed over a 12" colored square, with upper half blue, and lower half red. See emblem drawing in IX. Measurement Diagram

b. When placed on a yacht's mainsail, the class emblem shall be carried back to back on both sides of the sail, with the "E" facing forward on the starboard side of the sail. The emblem shall be placed on the same vertical centerline as letters and numbers, above the top batten.

C. Jib

1. Construction and Materials

a. Materials

1). Sailcloth material: woven ply ~~polyester~~ or ~~Mylar~~ laminate of polyester ply fibers
NOTE: the intent of this rule is to allow only Polyester/Dacron based materials, and not allow exotics such as, but not limited to Kevlar/Aramid, Dyneema/HMPE, Carbon, or Cuben Fibers that may add significant cost.

2). Sailcloth Weight minimum:

a) Woven Ply ~~Polyester~~: 3.8 SM oz./ 163 g/m^2

b) ~~Mylar~~ Laminate Ply: 2.1 SM oz./ 90 g/m^2

b. Construction

1). The body of the Jib shall be single-ply sail of panel construction.

2). Jib may have primary and secondary reinforcements or patches of additional layers of ply. Such reinforcements/patches shall be capable of being folded or rolled in any direction without damaging fibers.

2. Method of measuring dimensions:

a. Measurement points - must be in material, not a point in space.

1). Head - end of sail at forward edge.

2). Clew - intersection of leech and foot.

3). Tack - intersection of luff and foot.

b. Luff, foot and leech shall be measured with 5 lbs. tension.

c. Cloth - the head of the jib shall be placed at the head of the Official Jib Measurement Pattern (see measurement and the luff of the jib shall be stretched along the luff of the pattern. The luff shall be held in place, if necessary, while the leech is measured.

3. Dimensions - The cloth and headstay attachment shall lie wholly within the profile of the Official Jib Measurement Pattern (including the 90 degree and 140-degree angles at the tack and clew measurement points).
4. Battens:
   a. Material: Fiberglass
   b. Number permitted – 4
   c. Shall be so placed as to divide the leech in approximately equal parts.
   d. Length: Top, luff to leech; all others, 30 in. max.
   e. Width - 2 in. max.
5. Headboard - measured both horizontally - 4 in. max., - vertically, 6 in. max.
6. Windows - unlimited as to number, size or placement.
7. Corner patches
   a. Head patch: No part of head patch shall extend below a line parallel with the top batten.
   b. Clew patch: No part of the clew patch shall extend above a line parallel with the bottom batten.
   c. Tack 16” max.
8. Multiple holes in head~~, in any luff wire~~ and tack - prohibited.
9. Number of holes permitted in clew or clew board - unlimited.
10. Clew board - if used shall be at the intersection of the foot and leech. Shall contain corner or break in curvature of 140 degree maximum. Size – 2 inch by 10 inch maximum.
11. Flutter patch - 3 flutter patches permitted; one each between the jib battens. The patch (multiple layers of material) must be within a 7” square on the sail leech.
12. Jib leech tape - a leech tape of up to 3” in width will be permitted to reinforce the leech area.
13. Jib batten pocket - one 6” wide patch, 3” either side of the centerline of the battens will be allowed for the purpose of reducing chafe.
14. The jib shall be fastened to the head stay.

D. Asymmetrical Spinnaker
   1. Construction and Materials
      a. Materials
         1). Sailcloth material: woven ply nylon

2). Sailcloth Weight minimum: 0.7 SM oz./ 30 g/m^2

b. Construction

1). The body of the ~~Jib~~ spinnaker shall be single-ply sail of panel construction.

2). Spinnakers may have primary and secondary reinforcements or patches of additional layers of ply. Such reinforcements or patches shall be capable of being folded or rolled in any direction without damaging fibers.

2. Method of measuring dimensions:

a. General – adjustable luff or leech cord could be detached or, if not detached, set at maximum length.

b. All measurements are taken from the center of the ring or cringle at the respective corner.

c. Tension – Luff and Leech, 10 lbs.; Foot 3 lbs.

d. Miter seam – Measurement from the head to midpoint or foot found by bringing tack and clew together. Cloth should be pulled taut to form a straight line.

3. Dimensions – Spinnakers measured for a regatta shall be two asymmetrical spinnakers.

a. Luff – 35 ft. 1 in.; +0, -6 in.

b. Leech – 27 ft. 6 in.; +0, -6 in.

c. Foot – 20 ft. 6 in.; +0, -6 in. These measurements are measured from the extended vertices of the edge tapes with leech and luff cords relaxed

d. Foot Roach – Bottom edge of sail within 2ft ± 2 in. of a straight line from tack to clew.

e. Mid girth 17 ft. 4 in. ± 3 in.

f. Windows in symmetrical spinnaker, number and placement unlimited. Minimum material weight 0.7 SM oz./ 30 g/m^2

4. Headboard.

a. Shall be measured both vertically and horizontally in accordance with the manner in which it is carried.

b. Size – 6 in. max.

5. Corner patches.

a. Head – 32 in. max.

b. Tack and clew – unlimited.

VII. METHODS OF SETTING, SHEETING AND ADJUSTING SAILS

A. General

1. Sails permitted to be set at one time: One mainsail, one jib and one spinnaker.

~~2. While changing spinnakers, a replacing sail may be fully set and trimmed before the sail it replaces is taken in.~~

~~3.~~2. Damage to sails or equipment - Repairs or substitute equipment may be used in violation of Part VII only to the extent necessary to overcome the emergency.

B. Mainsail

Current E-Scow Scantling Rules

~~Last changed in April 2019~~ 2/28/2020

1. Equipment permitted for setting, sheeting and adjusting.
   a. Halyard
      1). Number permitted – 1
      2). Unlimited as to material, shackle, locking devices, etc., but see Rule III.B. & III.C.
   b. Outhaul – unlimited, but shall permit adjustment in horizontal direction only.
   ~~c. Downhaul – unlimited, but see Rule VI.B.7.~~
   ~~d.~~c. Cunningham devices.
      1). Number permitted – 1 for luff~~.~~.
      2). Unlimited as to material, camming or cleating devices, etc.
   ~~e.~~d. Vang
      1). Controlled by block and tackle only.
      2). Mechanical advantage - unlimited.
      3). May be attached at fixed points only. The Intent of this rule is to prohibit the use of any tack or other sliding devices.
   ~~f.~~e. Mainsheet - unlimited.
   ~~g.~~f. Pucker string or leech cord - unlimited.
2. ~~No mainsail shall be hoisted higher than the edge of the upper black band on the mast.~~ The sail shall be flown completely between the lower edge of the upper measurement band and the upper edge of the lower measurement band.
3. No part of the mainsail shall be carried aft of the forward edge of the black measurement band on the outer end of the boom.
4. The top of the boom at the mast or its extension or the top of the tunnel tube or its extension (boom line) may not be carried lower than the upper edge of the lower measurement band on the mast.
5. Tack - shall be pinned within 1 in. aft of the mast line ~~and 1 in. above the boom line~~. See Rule VI.B.7.
6. Bolt rope for luff and foot shall be led thru tunnel or groove in mast and boom provided for that purpose. Loose footed sail is not allowed.
7. Mainsheet ~~, Cunningham devices~~ and pucker string - no restriction.

C. Jib

1. Equipment permitted for setting, sheeting and adjusting.
   a. Halyard.
      1). Number permitted - 1.
      2). Unlimited as to material, shackle, locking devic~~s~~es.
   b. Jib boom - none - loose footed jib only.
   c. Tack downhaul - unlimited.
   d. Jib sheets - unlimited.

~~e. Luff wire – devices for attaching or adjusting the luff wire are unlimited provided that any adjustable device must have a permanent stop.~~

2. Shall be flown within the fore triangle. Jib overlap as a result of jib tackle trimming or adjustable jib luff is permissible.

~~3. The jib luff wire must be attached to the hull above the deck line at a point not more than 2 in. above deck.~~

D. Asymmetric Spinnaker

1. Equipment permitted for setting, sheeting, and adjusting
   a. Halyards.
      1). Number permitted – 1
      2). Unlimited to material, camming or cleating devices and snap.
   b. Spinnaker sheet and tack line– unlimited to material, snap or cleat or jamming device. Unlimited as to number, but see below as to number permitted in use at one time.
2. The permissible guys for controlling the spinnaker are:
   a. 2 Clew Sheets or spliced to be continuous with tail to attach to clew. Only one sheet may be actively used to control the sail
   b. 1 Tack line – method of attaching, cleating and adjusting unlimited.
3. Bowsprit Use - The bowsprit may be extended on any leg of the course where the asymmetrical spinnaker can be carried solely for that purpose. When rounding the weather mark with the spinnaker not deployed, the bowsprit may not be extended until after the bow of the yacht is abreast of the mark on the rounding tack. The bowsprit must be retracted as part of a continuous process of retrieving the spinnaker. The bowsprit may be extended momentarily, when well clear of other yachts, to assist in clearing a fouled tack line.

VIII. BALLAST

A. General

1. Live ballast only may be used.
2. The Sections of Rule VIII are designed for safety as well as to permit various methods of hiking. Any equipment deemed unsafe by the Measurer or the Race Committee will be disallowed whether or not it complies with these rules.
3. The Sections of Rule VIII apply to hiking to leeward as well as to windward and to all members of the crew, including the helmsman.

B. Equipment permitted for carrying ballast outboard.

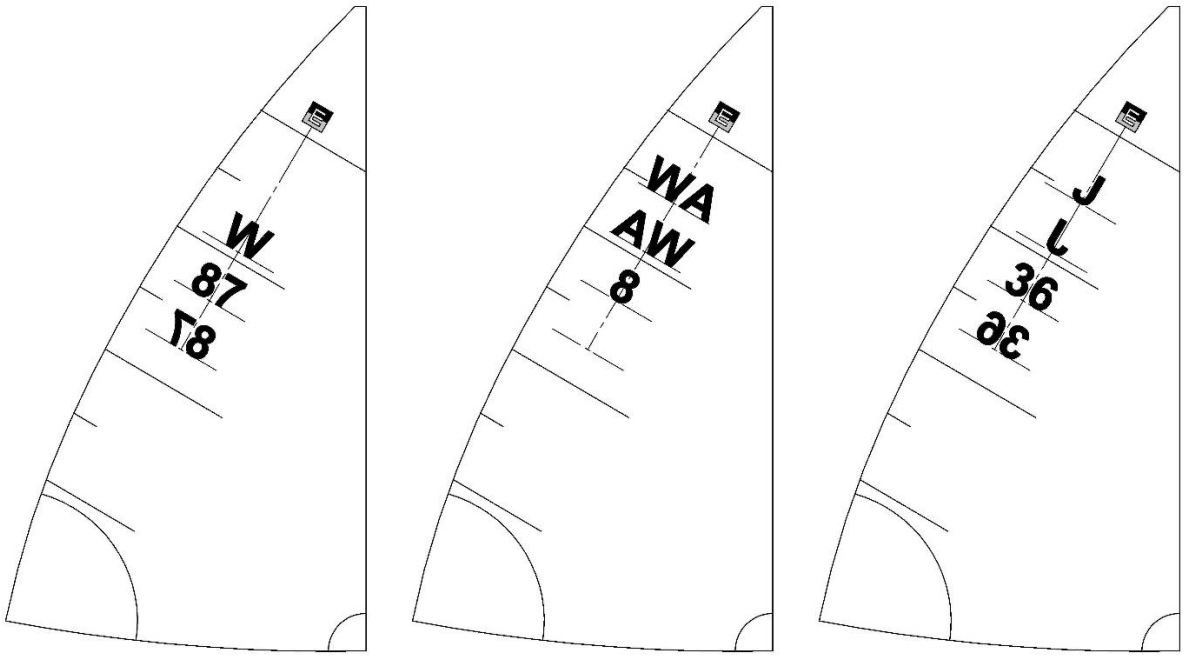
1. Hiking straps
   a. Number permitted - unlimited.
   b. Material - unlimited.
   c. Attachment points - must be fastened below the deck line at two points only, one of which is on the center~~line~~ longitudinal structure.

d. Hiking straps are allowed for the sole purpose of applying hiking resistance to the legs (ankles) of the crew and skipper. They are not to be used to apply resistance to the back, buttocks, arms, or hands, or in any way simulate a trapeze. Hiking straps may be made to be adjustable subject to these limitations on their use.

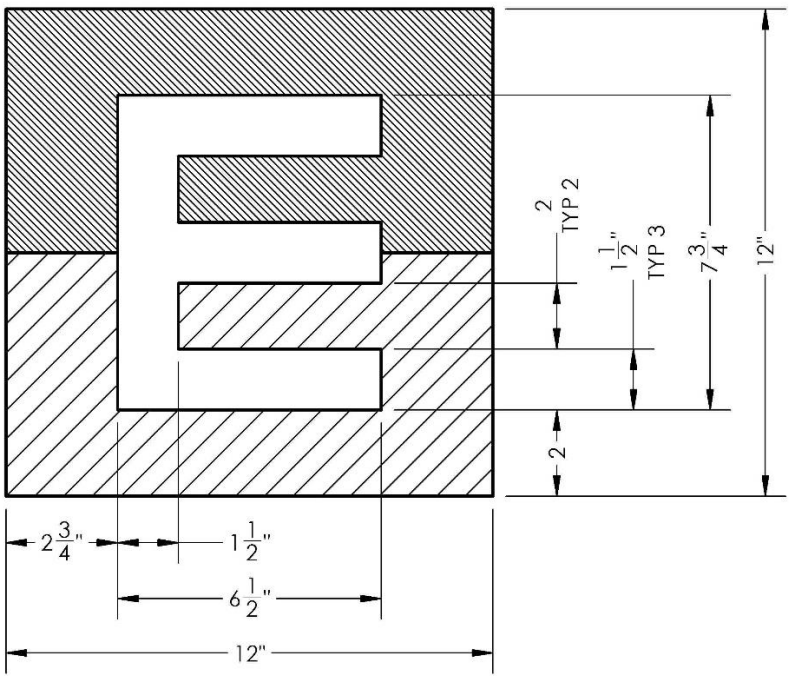
2. ~~Handrails~~Handholds
   a. Unlimited as to number and material.
   b. Placement - On or sunk into deck only; location - optional.
   c. Shall be designed for hand grip only.
3. Rope or line specifically for hiking.
   a. Number and material - unlimited.
   b. Attachment point - one end shall be attached inside or thru edge of cockpit. The other end shall be free. Line shall not pass under or thru any fitting or rigging on deck.
   c. Loops - prohibited. Knot(s) in end or wooden handle attached without loop - permitted.
4. Hull, deck hull running rigging, bilge boards and their wells and tackle and other deck fittings not designed solely for hiking.
5. Shrouds (but not other mast rigging) may be used for hiking, from a seated position.

IX. MEASUREMENT DIAGRAMS

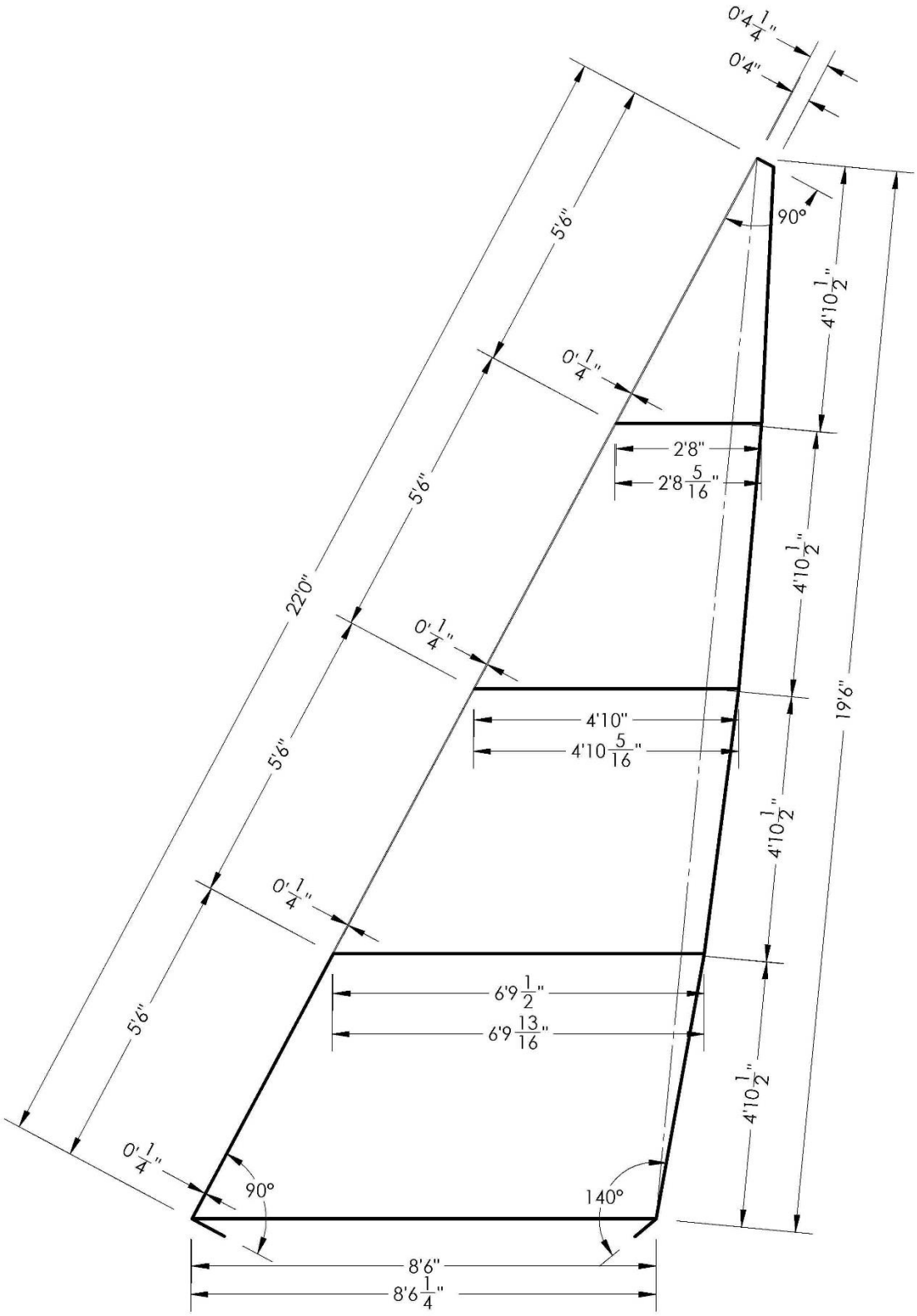
Sail Number & Fleet Identifier Layout



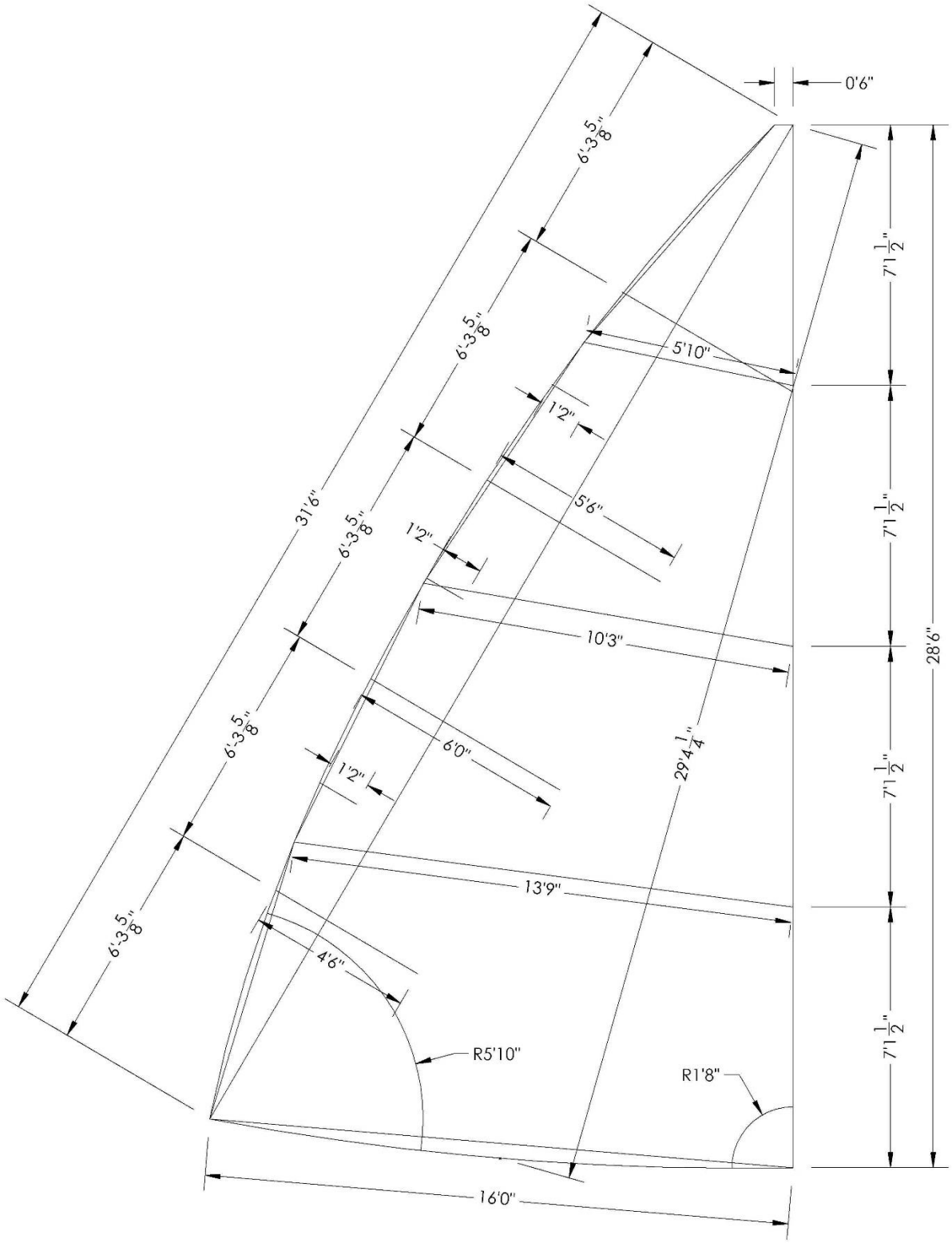
Class Emblem



Jib Measurement Template



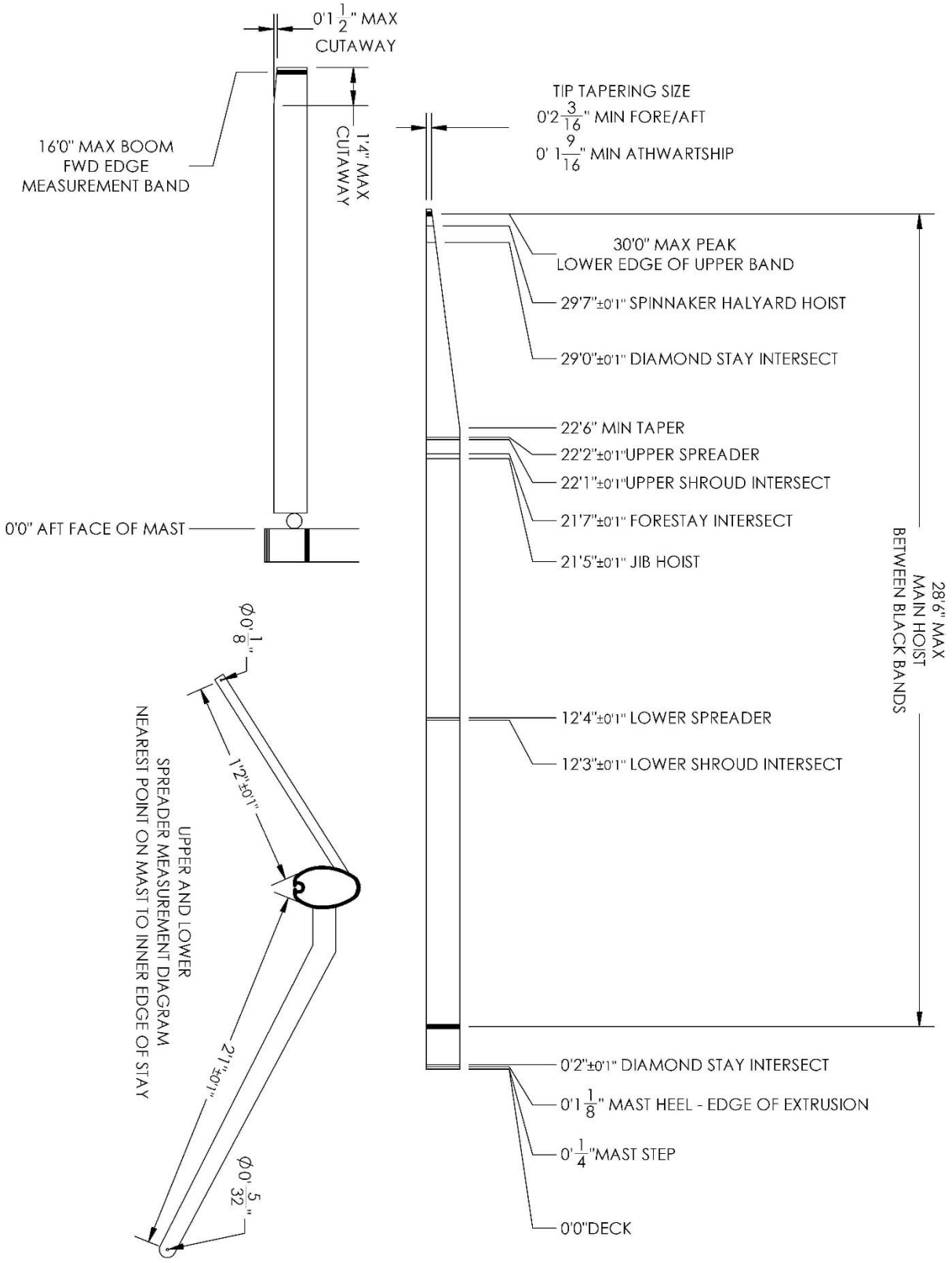
Main Measurement Template



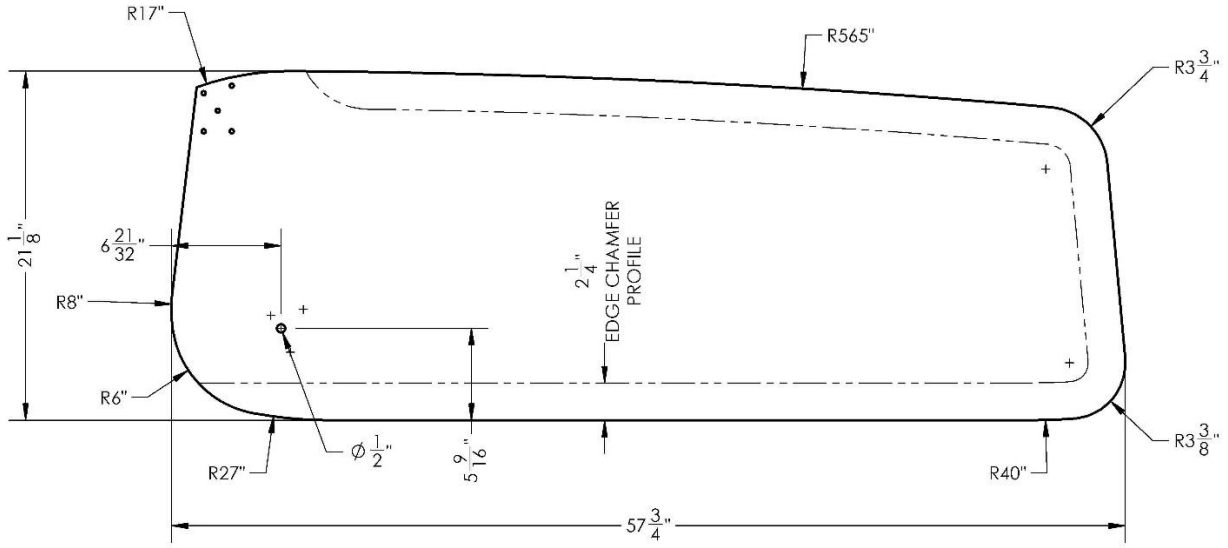
Current E-Scow Scantling Rules

~~Last changed in April 2019~~ 2/28/2020

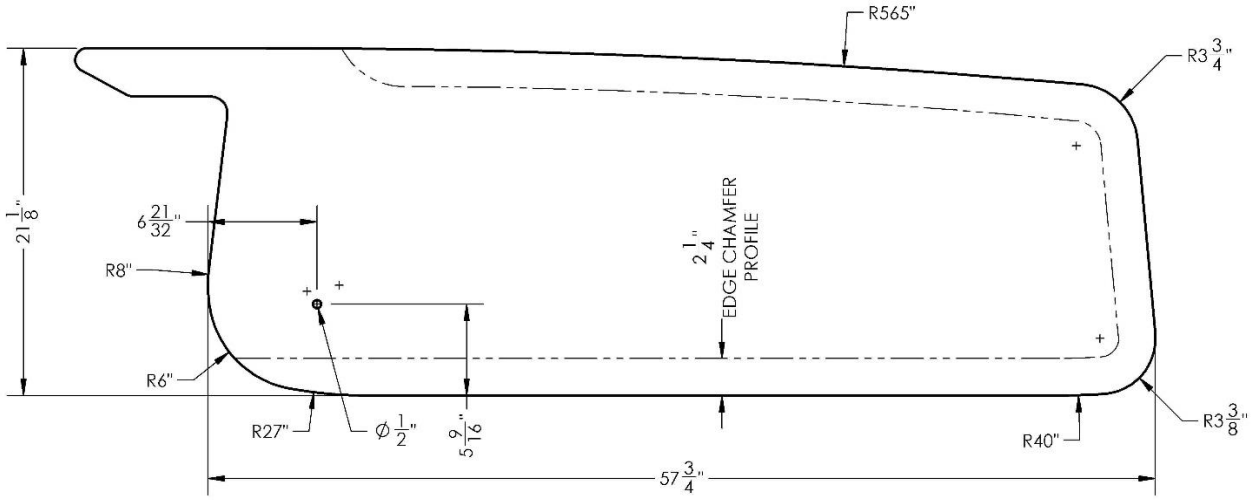
Rig Measurement Diagram



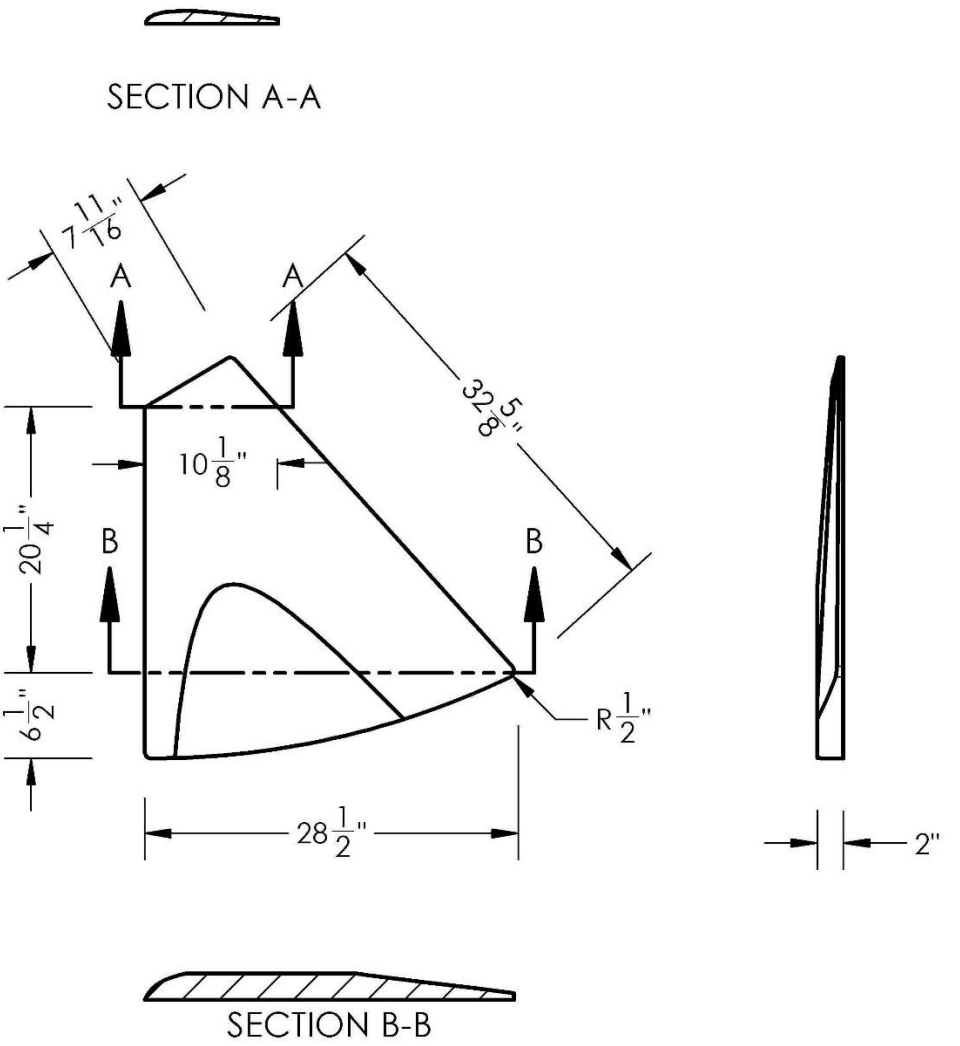
Bilge Board Template – enclosed boards



Bilge Board Template – exposed/above deck boards



Flotation Panel Template

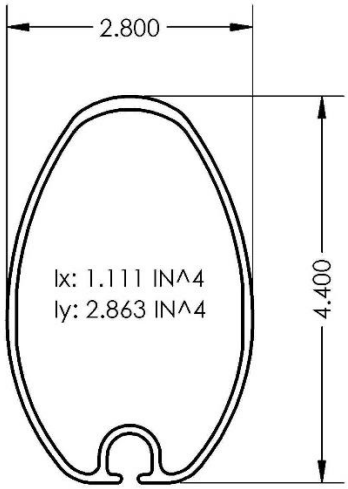


Current E-Scow Scantling Rules

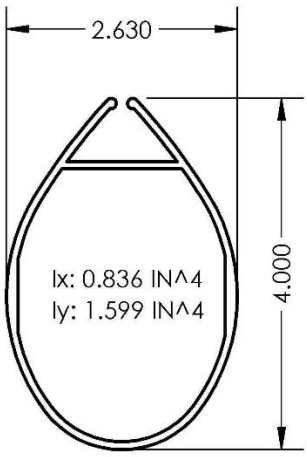
~~Last changed in April 2019~~ 2/28/2020

Spar Extrusion Profiles

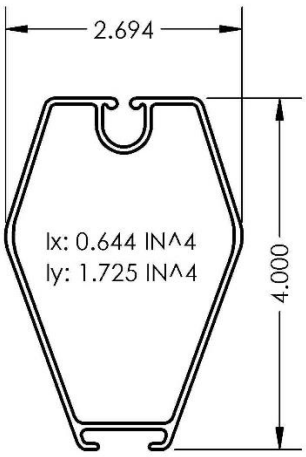
Note: all extrusion details below are for reference and easy identification purposes only. These are not fully defined, production documents.



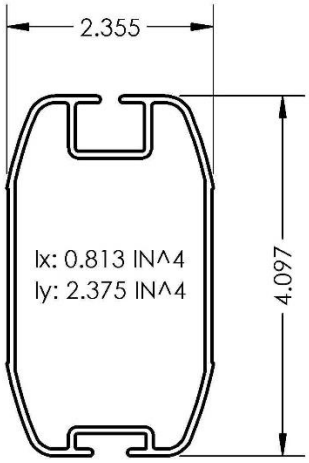
E MAST PROFILE
MELGES 2018



E BOOM/X MAST
TEARDROP PROFILE



C BOOM/M24 PROFILE
MELGES 2019



E BOOM PROFILE
MELGES 2020