

IDNIYRA OFFICIAL SPECIFICATIONS

REVISED MAY 2024

A. FUSELAGE

1. Materials

1.a Fuselage shall be constructed of wood only except as provided in specifications A.1.b, A.1.d, and A.1.e.

1.b Only fiberglass may be added to wood components for reinforcement only. Other fiber reinforcement materials, such as but not limited to carbon fiber or para-aramid fibers are prohibited.

1.c Engineered or composite materials manufactured by binding particles or loose fibers of wood and/or fiberglass are not allowed in the side panels.

1.d Core materials are allowed for the internal construction of the fuselage.

1.e Adhesives and fasteners are allowed.

2. Construction Methods and Details

2.a Design of the internal structure of the fuselage including cockpit floor is optional.

2.b Fuselage sides (side panels) and the bulkhead at the front of the cockpit must be solid or laminated wood and shall not have any internal cavities. Adhesives and fiberglass reinforcement may be used between individual wood layers of laminated side panels, but the total thickness of wood laminations must satisfy Specification 4e.

2.c Where minimum dimensions are specified for wood components, fiberglass reinforcement may be added to the components only after minimum required dimensions of wood are satisfied.

2.d The decks, fuselage bottom skin and cockpit floor skin shall be wood (typically plywood). Fiberglass reinforcement may be added after minimum required dimensions of wood are satisfied.

2.e A full bulkhead must be installed at the front of the cockpit.

2.f Structural members such as longerons, stringers, knees, listings, bulkheads, etc. may be added provided the addition does not infringe or exceed the specifications and allowed materials.

2.g Knees or other means of side panel support in the cockpit shall be made of wood and must be installed as provided in specifications A.1.b, A.1.d, and A.1.e.

2.h The deck may not protrude more than 3" (76.2mm) into the cockpit from the bulkhead at the front of the cockpit. For the purposes of this specification the deck is the covering on the top of the fuselage in the areas forward and aft of the cockpit. The deck extends uninterrupted from the outside of the side panel on one side to the outside of the side panel on the other side.

2.i The seatback shall be flat, measuring 11" (279.4 mm) in length at the center line, no maximum height. The crown on top of the seat must be a minimum of 2" (50.8 mm) radius with minimum seat width 4" (101.6mm). Top edge of the seatback is determined by use of template. See 5.a.

2.j The seatback shall be raked aft at an angle of 45 degrees plus or minus 10 degrees, measured from the cockpit floor skin. The seatback may allow access to a stowage compartment.

2.k Grab-rails may be installed on the inside and/or outside vertical surface of the side panels. They may not extend beyond 8" (203.2 mm) from either end of the cockpit. Rails shall not exceed 1" (25.4 mm) in depth or width. Rails are exempted from fuselage measurements

2.l Ballast, if used, shall be permanently installed.

3. Fuselage Fittings

3.a Rigging and fittings are not part of the integral structure or reinforcement of the fuselage and may be attached by mechanical fastenings and/or adhesives. The materials allowed in the rigging and fittings attached to the fuselage are optional but must comply with the specifications in sections H and I, and interpretations in sections General, H and I. The dimension and location of the rigging and fittings must comply with the specifications in sections A, H, I, and the interpretations in sections General, H, and I.

3.b Steering

3.b.i Steering shall be accomplished by means of a tiller. Tiller may be of any length or shape but shall not be more than 8 inches (203.2 mm) wide. Material is optional and may include para-aramid fabric (Kevlar).

3.b.ii

a. The tiller post shall be located forward of the bulkhead at the front of the cockpit. The tiller shall be attached to the post at a point above the level of the deck. The sheet block that is installed on the tiller post shall be attached to the tiller post at a point higher than the point of attachment of the tiller.

b. For the purposes of Specification A.3.b.ii.a, bails, straps, lashings, shackles or strops used to attach the sheet block to the tiller post are neither part of the block nor the tiller post; they are fittings.

3.b.iii The steering post and chock may be inclined in the vertical plane of symmetry.

3.b.iv Steering rods, cables, or a single push-pull link shall be used and shall be positioned beneath the fuselage as shown on the Official Plans.

3.c National letter and sail number affixed to each side of the fuselage below the mast stepping point is optional. If a national sail letter and sail number are affixed to the fuselage, the color shall contrast with the fuselage and the recommended size of each letter and number is 5.5 inches (139.7 mm) high and 0.79 inches (20.1 mm) wide. National letters and sail numbers affixed to the fuselage shall match those on the sails, except for boats loaned or chartered for a regatta.

4. Dimensions and Weights

4.a Hull outer surface cross section must be rectangular ± 2 degrees from a point 6" (153. mm) from the bow to a point 6" (153. mm) from the stern. Exclusions: Cockpit surface, seat back, knees, rails, fittings, and hardware. A maximum 1/4" (6.4 mm) radius is allowed on the corners of the fuselage where the deck / bottom and side panels intersect. Concavities in the deck are not permitted.

	English (in)		Metric (mm)	
	Max	Min	Max	Min
b. Length Overall (not including bow tang or bobstay fittings)	147	141	3733.8	3581.4
c. Beam (measured to the inside of any external grab-rails)	21.5	17.5	546.1	444.5
d. Thickness of wood in deck, cockpit floor and bottom skins	0.25	0.118	6.4	3.0
e. Minimum thickness of wood in side panels and bulkhead at front of cockpit		0.625		15.9
f. Maximum thickness of wood and any fiberglass reinforcement in side panels and bulkhead at front of cockpit	1		25.4	
g. Total thickness of cockpit floor (cockpit floor skin plus internal structure plus bottom skin)		0.625		15.9
h. Intersection of seat back and cockpit floor skin to pivot point of steering runner. See 5.c.	110.25	98.25	2800.4	2495.6

	English (in)		Metric (mm)	
	Max	Min	Max	Min
i. Distance from bow (not including bow tang) to front of cockpit	66	54	1676.4	1371.6
j. Width of forward most point of bow	3.75	2	95.3	50.8
k. Width of aft most point of stern	4	1.25	101.6	31.8
l. Horizontal distance from the bow (not including bow tang) to the pivot point of the front runner	7	3	177.9	76.2

4.m.i The total height of side panel at each fuselage station shall not be less than heights in Table A.1 (The minimum side panel height does not include the deck and bottom).

4.m.ii The bottom surface of the fuselage (side panels including bottom skin), shall not exceed a maximum of 1" (25.4 mm) above zero line and/or a maximum of ½" (12.7 mm) below zero line. Zero line shall be established by a straight line from bow to stern on bottom surface (not including bow tang or bobstay fitting.)

4.m.iii Maximum height of the fuselage side (side panel including deck) above zero line may be 8-1/2" (215.9 mm). All heights of fuselage sides shall be proportional to height as shown in "Layout of Side Panel". The top edge of the side panel may not be concave at any point along its length. When describing the fuselage side profile: the term "proportional" will be defined as a "smooth curve" without reversing the line abruptly.

4.m.iv A side panel profile is acceptable if there are no concavities on or along its upper edge, the maximum height of fuselage sides is not exceeded, and the side panel height at each station is not less than the specified minimum.

Note: Table A.1 applies to the side panel without deck and bottom skin to assist the builder. Specifications 4.m.ii and 4.m.iii apply to the side panel plus deck and bottom skin to assist the measurer.

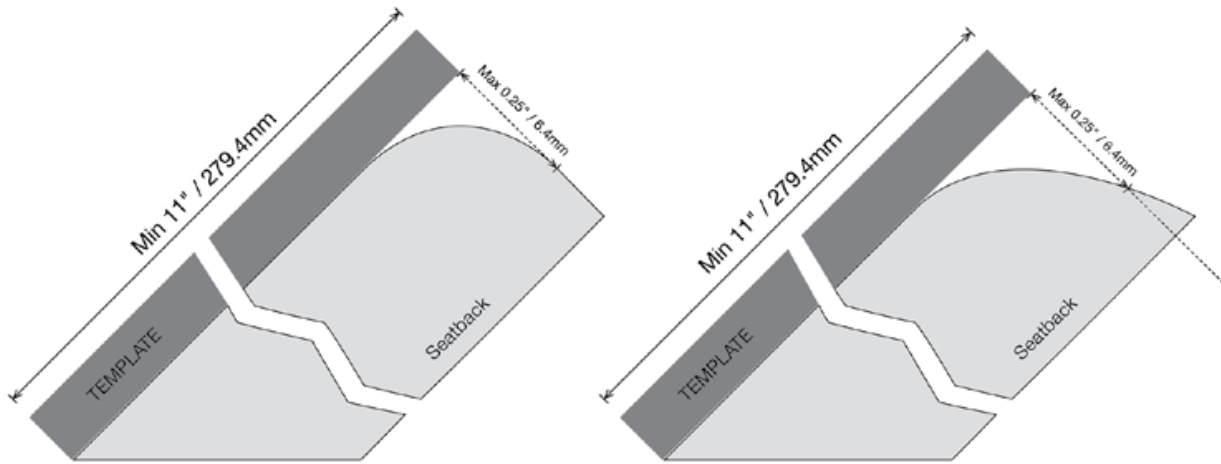
Table A.1: Layout of Side Panel/Minimum Side Heights

Position along side panel starting at bow		Minimum Side Panel Height (Excluding deck and bottom skin)	
English (in)	Metric (mm)	English (in)	Metric (mm)
2	50.8	2.563	65
12	304.8	3.875	98.4
24	609.6	5.063	128.6
36	914.4	6.063	154.0
48	1219.2	6.438	163.5
60	1524.0	6.625	168.3
72	1828.8	6.625	168.3
84	2133.6	6.500	165.1
96	2438.4	6.188	157.2
108	2743.2	5.563	141.3
120	3048.0	4.625	117.5
132	3352.8	3.375	85.7
Last station: 2 in.	(50.8mm) from stern	2.000	50.8

4.n Minimum weight of fuselage complete with all hardware, blocks, tiller, and any ballast required to achieve minimum weight is 46 lbs (20.9kg).

5. Measurement

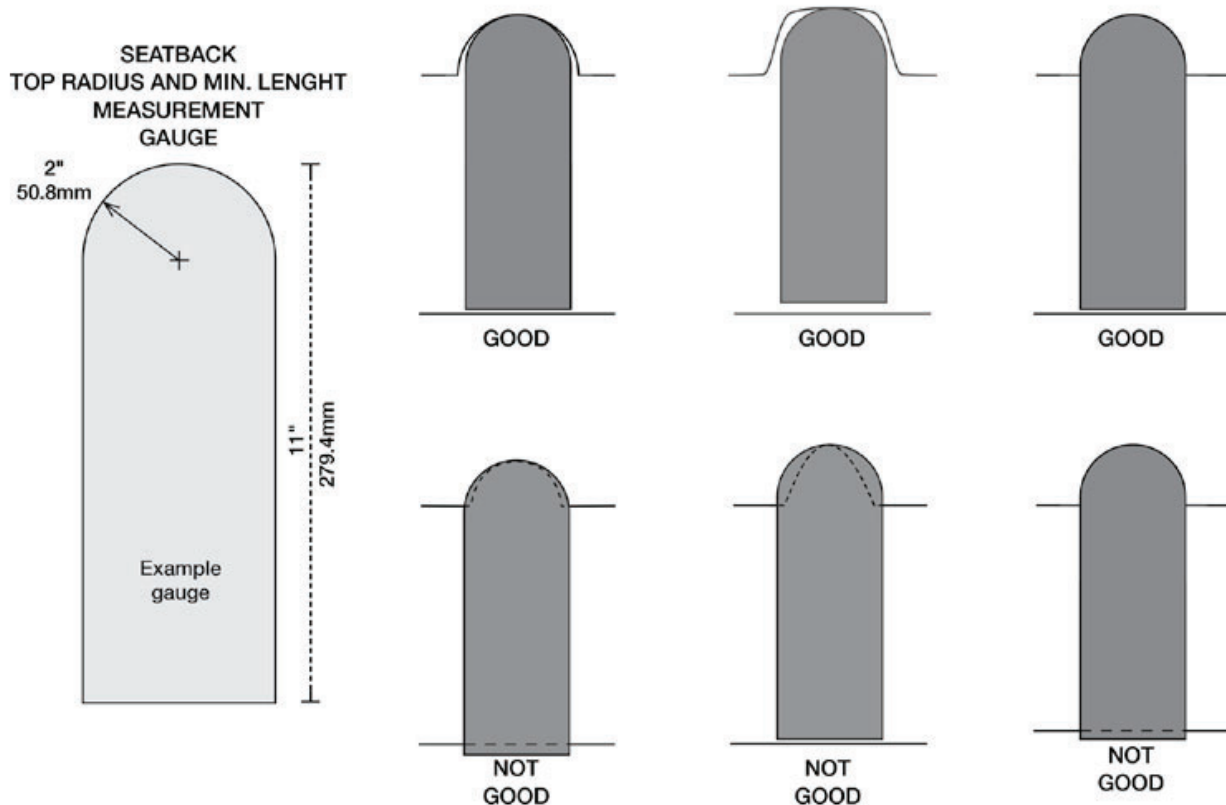
5.a Top edge of seatback is determined according to following method:



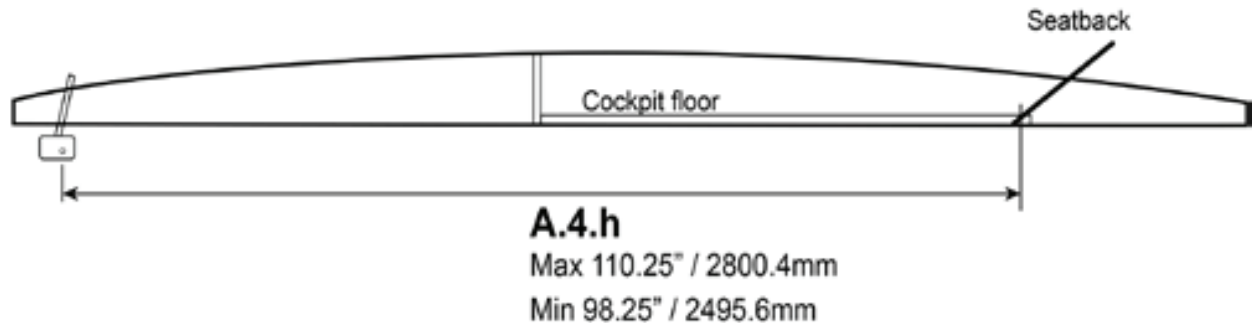
Dotted line represents top edge of the seatback

Top of seat shall not have a gap more than .25" / 6.4mm measured at 90 degrees from template / seat back to actual seat back surface.

5.b Seatback minimum length at centerline and crown measurement.



5.c Measuring intersection of seat back and cockpit floor skin to pivot point of steering runner.



B. RUNNER PLANK

1. Materials

1.a The allowed materials in runner plank construction are wood, fiberglass (as external reinforcement), adhesives (for gluing or lamination), and non structural cosmetic coatings.

2. Construction

2.a The number of wood laminations is optional.

2.b The cross Section is optional. Runner plank may be of hollow construction, but only wood or adhesives for lamination purposes may be used to comply with the minimum length, width, and thickness requirements in specifications B.3.a-f.

2.c Fiberglass and coatings may be added to the exterior of the wood plank after minimum length, widths and thicknesses are satisfied (specifications B.3.a-f). Added fiberglass and coatings shall not cause the runner plank to exceed the maximum length, width, and thickness (specifications B.3.a-f).

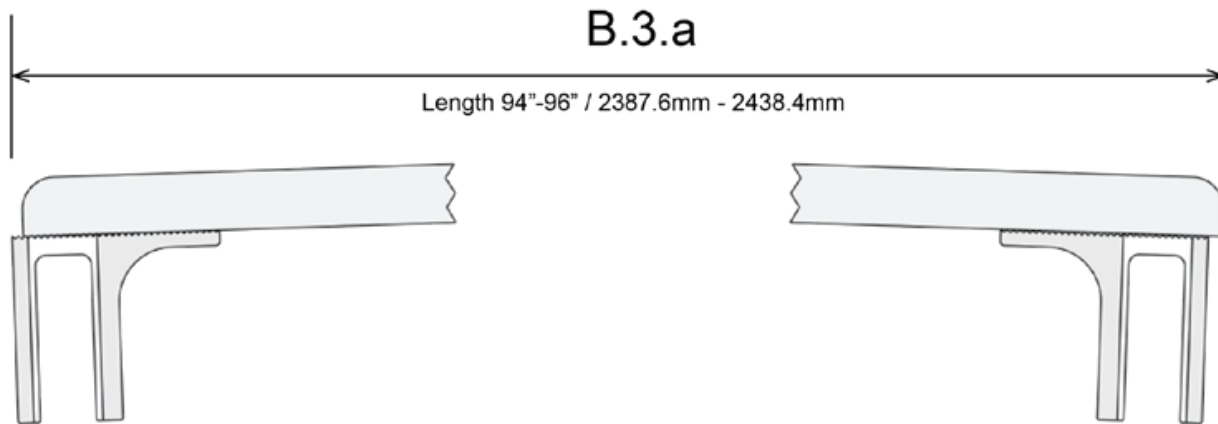
2.d The underside of the runner plank shall be higher at the centerline than the underside of the outside ends ("crown"). The profile of this crown shall form a fair continuous curve. Reversals of the curve are prohibited, and the curvature cannot be concave. Cutouts or depressions are prohibited.

3. Dimensions and Weight

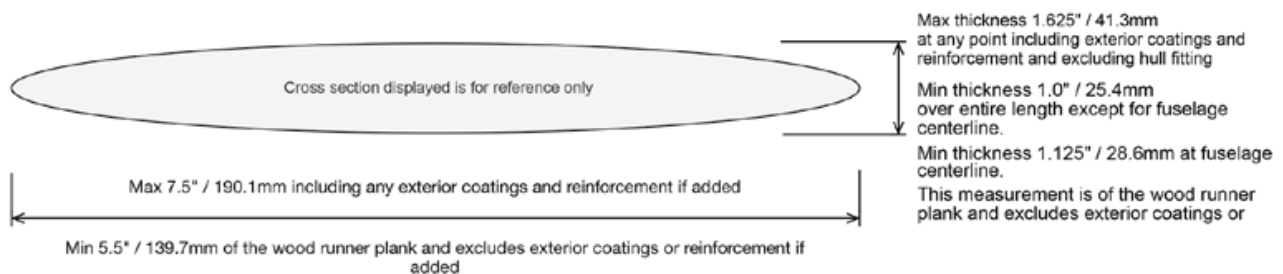
	English		Metric	
	Max	Min	Max	Min
a. Length overall including hardware except pivot bolt. Max dimension refers to finished plank, min dimension refers to wood before adding reinforcements and external coatings.	96	94	2438	2388
b. Minimum width along entire length of the plank. This measurement is of the wood runner plank and excludes exterior coatings or reinforcement if added.		5.5		139.7
c. Maximum width along entire length of the plank including any exterior coatings and reinforcement if added.	7.5		190.5	
d. Minimum thickness over entire length except for fuselage centerline. This measurement is of the wood runner plank and excludes exterior coatings or reinforcement if added.		1.0		25.4
e. Minimum thickness at fuselage centerline. This measurement is of the wood runner plank and excludes exterior coatings or reinforcement if added.		1.125		28.6
f. Maximum thickness at any point including exterior coatings and reinforcement and excluding hull fitting pads.	1.625		41.3	
g. The runner plank, including all hardware and pivot bolts, shall not weigh less than 20 lbs. (9.1 kg.)				

4. Measurement

4.a Specification B.3.a Length overall shall be measured in a straight line while not mounted on the fuselage and relaxed (under no load). The measurement shall be taken from the end of the runner plank or the chock, whichever gives the longer length; the measurement point may be different on different ends of the plank to determine the longest length. Overall length includes hardware but not pivot bolt.

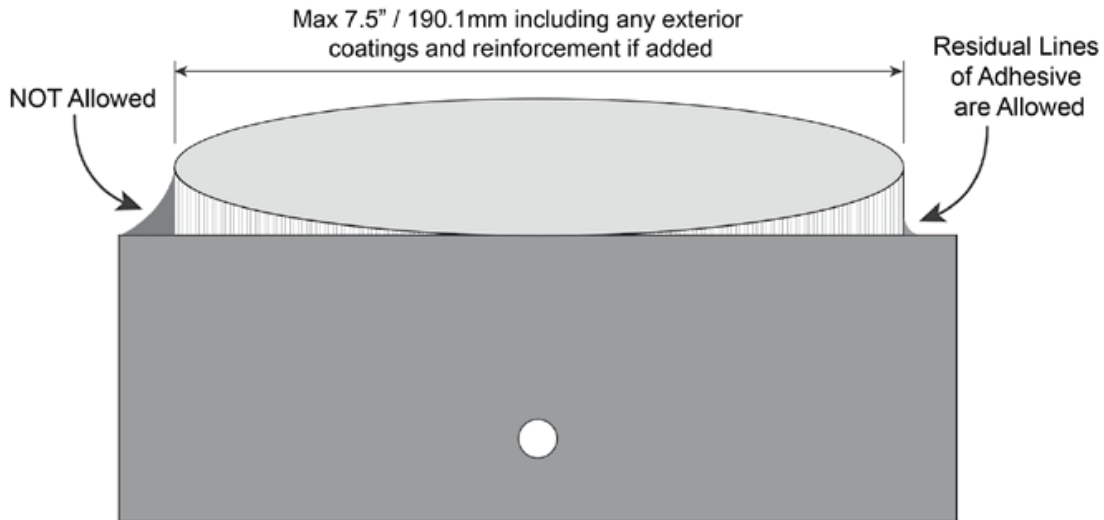


4.b Specifications B.3.b-f. Width and thickness requirements.



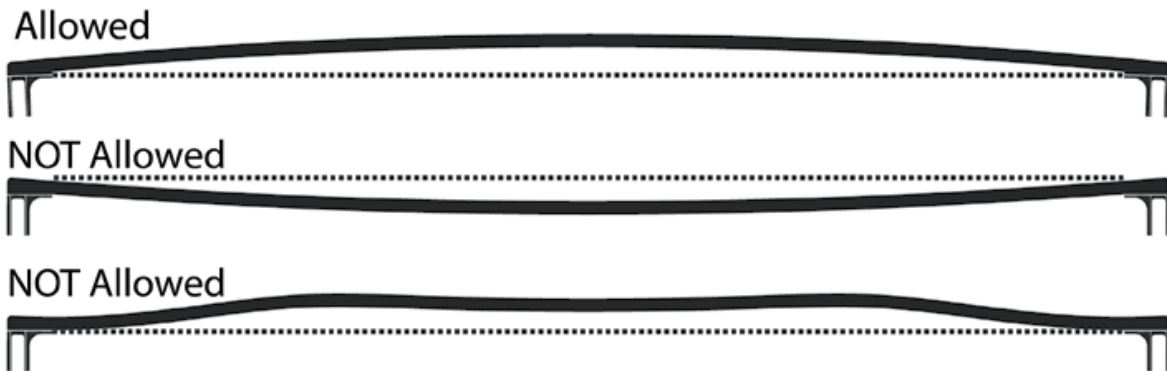
4.c Specifications B.3.a-f. Runner plank with exterior coatings and reinforcement where any exterior dimension is the minimum allowed (B.3.a-f) shall fail the minimum wood requirement

4.d Specifications B.3.c. Areas of plank over the chock: The same fore and aft dimensions apply in this location. Fairings of any type in this area are not allowed if they extend outside the maximum width of the runner plank unless they are part of the chock. Fairings may be considered part of the chock only if the height (Specifications I.5.b) and materials (Specification I.13) requirements for the chock are satisfied. Small residual lines of adhesive between the plank and chock are acceptable.



4.e Specification B.2.d, Crown: A 'fair continuous curve' may be one whose radius varies along its length. When not mounted on the fuselage and relaxed (under no load) the radius of the crown shall nowhere be concave, and no part of the curve shall be lower than the ends. The radius of curvature of the crown may vary along the length of the plank.

Examples shown below. Localized buildups for chock mounting are excluded from the measurement.



C. MAST

	English		Metric	
	Max	Min	Max	Min
1. Dimensions				
a. Length overall (including hardware)	192	186	4876.8	4724.4
b. The maximum fore and aft dimensions, excluding hardware:	4	—	101.6	
c. The minimum fore and aft dimensions, measured from full section above boom jaw area to a point located 127-1/2" (3238.5 mm) above the mast base:	—	3-1/2	—	88.9
d. The minimum fore and aft dimensions, measured above a point located 127-1/2" (3238.5mm) above the mast base:	—	2	—	50.8
e. The maximum side to side dimension, excluding hardware:	2-1/2	—	63.5	—
f. The minimum side to side dimension, below a point located 127-1/2" (3238.5mm) above the mast base:	—	2	—	50.8
g. The minimum side to side dimension, measured above a point located 127-1/2" (3238.5mm) above the mast base:	—	1-1/8	—	28.6
h. The minimum depth of the boltrope tunnel from the outside trailing edge:	—	3/8	—	9.5

2. Materials: Aluminum; wood; carbon or glass fiber; adhesives; foam; fairing and finishing materials.

3. Other Specifications:

- a. Only one boltrope tunnel is permitted. The boltrope tunnel shall be substantially straight with the mast relaxed. Track is prohibited.
- b. Cross section profiles are optional. Mast may be solid or hollow.
- c. A halyard must be installed. An internal halyard is permitted.

- d. Devices which prevent or hinder movement of the boom on the mast are prohibited.
- e. The bottom of the mast must be fitted with a socket that will pivot freely on the mast step deck ball.
- f. The mast, without stays but complete with hardware and halyard used while sailing, may weigh no less than 15 lbs. (6.80 kg). Aluminum masts produced from a die existing prior to July 1, 1996 may weigh less than 15 lbs. (6.80 kg).
- g. When supported at one point in an approximate horizontal position, the mast, without stays but complete with hardware and halyard in sailing position, must balance at a point a minimum of 84 inches (2133.6 mm) from the mast base.
- h. A removable internal reinforcement of allowable materials is allowed. This reinforcement may not be altered, turned or removed during a regatta.

INTERPRETATIONS FOR SECTION C, MAST

10/17/83: It is allowed to use a mast which is reinforced with carbon fibers from the inside as well as the outside.

10/17/83: It is allowed to reinforce an aluminum mast with a piece of wood from the inside.

7/01/96: Masts built prior to July 1, 1996, shall be considered legal if they meet prior specifications.

11/30/98: The minimum weight and balance point specifications (C.3.g and C.3.h) must be met with and without any removable internal reinforcement.

11/30/98: The mast must be one piece when used in a regatta.

02/15/2013: In specifications C.3.f. and C.3.g, the term “stays” includes all components and devices used to connect the cables to the mast hound at the height of the lower mast hound bolt, reference specification H.13., All components and devices used to connect the cables to the mast hound at the height of the lower mast hound bolt must be removed from the mast when determining the weight, C.3.f., and the balance point, C.3.g.

D. BOOM

	English		Metric	
	Max	Min	Max	Min
1. Length (from mast):	108	Opt	2743	Opt
2. Depth (from outhaul bracket to 12", 305mm from, mast):	3	2-1/2	76.2	63.6
3. Thickness (from outhaul bracket to 12",305mm from mast):	1-25/32	1-1/4	45.25	31.8

4. Only one boltrope tunnel is permitted. The boltrope tunnel shall be substantially straight with boom relaxed. An aluminum boltrope tube is allowed. It must weigh less than three ounces per foot (280 grams/meter). The internal diameter must be at least 3/8" (9.5mm). The cross section of the tube is optional.

5. Cross section profile is optional. Boom may be hollow.

6. Boom jaws are optional. Devices which prevent or hinder movement of the boom on the mast are prohibited except for check wire.

7. Boom shall be constructed of wood or aluminum. Fiberglass may be added for reinforcement only.

INTERPRETATIONS FOR SECTION D, BOOM

01/01/79: The boom jaw may not have a projection on the bearing surface that will fit into the mast slot and thereby affect the rotation of the mast.

E. RUNNERS

	English		Metric	
	Max	Min	Max	Min
1. Steel plate type (steel body with stiffening elements)				
a. Plate thickness	0.27	0.23	6.8	5.9
b. Plate length:	30.0	26.0	762	660.4
c. Plate heights of at least that part contained in chock. (Note: allow for sharpening):	5.0	3.74	127	95
d. Thickness (contained by chock):	1-1/32	31/32	26.1	24.7

e. Length and height of runner assembly (plate plus stiffening elements) shall not exceed those allowed for the steel plate. Material, location and cross section of stiffening elements are optional, provided Specifications E-3 and E-4 are not violated.

f. Method of attaching stiffening elements is optional.

g. Type of steel plate is optional.

2. Wood type (wood body with attached steel angle, "T" section or steel plate). This means commercially available section. Technical Committee will rule against any special fabrications.

	English		Metric	
	Max	Min	Max	Min
a. Thickness of body	1-1/32	7/8	26.1	22.3
b. Length:	36	30	914	763
c. Height of at least that part contained by the chock:	5	4	127	101.7
d. Thickness (contained by chock):	1-1/32	31/32	26.1	24.7

e. Body shall be made of wood. Fiberglass may be added. Plate may be attached by bolts, or epoxy or both.

f. The steel sections allowed are

American Standard 3/4" (19.1 mm) x 3/4" (19.1 mm) x 1/8" (3.3 mm) "angle" and 1" (25.4 mm) x 1" (25.4 mm) x 3/16" (4.8 mm) or 1/4" (6.4 mm) "T". Equivalent metric measure (DIN) sections may be used provided the dimensions are within 20% of those listed.

g. The 'T' section must not be reduced to less than 75% of its original height by sharpening.

h. Wood type with steel insert.	English		Metric	
	Max	Min	Max	Min
Insert plate dimensions:				
Height :	3	2	76.2	50.8
Thickness	0.270	0.1870	6.86	4.75
Max width exposed below wood runner body:	1-1/2	—	38.1	—

i. The body of a wood runner may be tapered below the minimum 7/8" (22.3 mm) thickness at a point 6" (152 mm) from the front end of the runner body. The body shall not be less than 1/4" thick at the front end.

3. Profile of runner is optional with the exception that front ends of all runners shall have a 5/8" (16 mm) radius or larger.
4. Runner stiffening elements shall not project laterally more than 3" (76.2 mm) from runner edge. If runner stiffening elements are used as a weight-bearing component (in contact with ice or snow), they must be totally located within the runner cut specifications (F2).
5. Steering runner shall be equipped with a strong and effective parking brake at all times.
6. Weight of any individual runner shall not exceed 17 lbs. (7.7 kg).
7. Method of attaching runner to chock and chock to plank shall be accomplished as shown in plans.
8. Methods of providing relative movement of runner with respect to chock shall be as shown in plans.

9. The leading edge of the runner steel is that portion of the edge forward of the sharpened ice contact edge and higher than $\frac{3}{4}$ " (19 mm) above the ice, measured with the runner in normal sailing position. The sharpened ice contact edge of the runner steel is along the entire bottom edge and extends forward and upward along the edge of the steel to a point not exceeding $\frac{3}{4}$ " (19 mm) above the ice, measured with the runner in normal sailing position. The leading edge must be rounded to an edge radius of not less than $\frac{1}{16}$ " (1.6 mm) and shall be faired to the sides of the steel as allowed in E.12. The sharpened ice contact edge may be rounded or sharpened to an included angle of not less than 75 degrees. The camber (crown) and shape of the sharpened ice contact edge is optional. Along the sharpened ice contact edge, the rounded edge or the sharpened angle is allowed to be faired to the sides of the steel providing the thickness of the steel of plate, insert style or T runners is not reduced below the allowed minimum. (ref. E.1.a., E.2.f., E.2.h).
10. Each yacht shall be restricted to the use of nine runners during a regatta.
11. A maximum of four holes, which are not structurally required, may be drilled in each runner. Holes shall not exceed $\frac{1}{2}$ " (12.7mm) diameter.
12. Along the leading edge of the steel (ref. E.9.), the minimum allowed steel thickness of plate, insert style, and T runners must be reached within $.394$ " (10 mm) measured from the normal tangents of the leading edge (does not apply to 'angle' type runners).

INTERPRETATIONS FOR SECTION E, RUNNERS

1974: A slot may be machined on the top of allowed "T" sections to facilitate mounting to wood body.

10/17/83: It is permissible to reinforce wood runner bodies (of regulated thickness) with materials like carbons, aluminum, tin, and similar materials. No kevlar.

11/23/87: Specifications for the thickness of "T" sections and for insert steel are not the same.

11/23/87: Internal reinforcement of the wooden runner body: The use of threaded rod or bolts to attach "T" iron to the wooden body with the rod extending up to the top of the wood body is a well accepted method of constructing these runners. The wood body of insert runners must meet all the requirements of Section E of the Specifications.

3/18/89: Specification E.2.h. establishes the maximum thickness of the steel plate in insert runners at .270 inches. Therefore, the absolute maximum thickness is .270" and plate in the thickness range .271" through .279" is not allowed.

11/14/89: Wood or metal stiffeners may be added to insert runners (as in E.1.e. for plate runners) as long as the minimum wood body meets the dimensions in E.2.a. and the stiffener is outside the wood body. No wood or metal stiffener may come between the insert plate and the slot on the wood body. No metal stiffening is allowed inside the main wood body.

7/1/92: The specifications do not prohibit the changing of the runner stiffening elements during a regatta. However, when the stiffening element is changed, the runner is then counted as a new runner in total count of the nine runners allowed.

7/1/92: Commercially available T, angle, or plate is manufactured in a quantity to be sold to people who want to purchase it. If the T, angle or plate is made only in small quantities for a few people, it is a special fabrication and not allowed to be used. A modification of a commercially available T, angle, or plate by procedures such as surface grinding, milling, bending or flattening is allowed.

11/30/98: The body of a wood body runner must be constructed of wood and adhesive only. No internal reinforcement is allowed except for threaded rod, or bolts, or screws used to attach the steel to the body. The wood body must meet all specifications before the application of external reinforcement. Reinforcement between the blade and body (inside the slot) on insert runners is considered to be outside the wood body and is allowed.

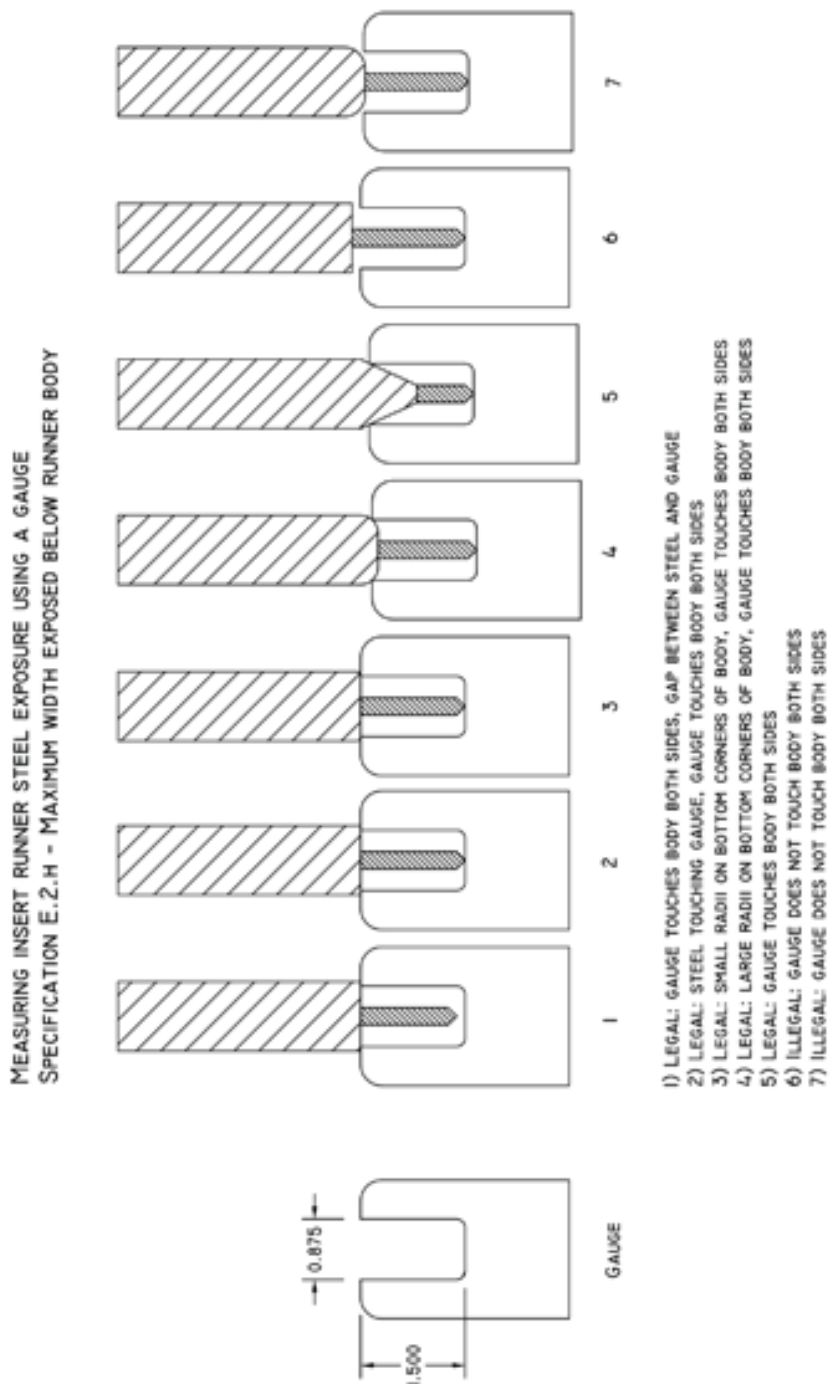
2/10/07: Measuring spec. E.2.h: A simple measuring gauge may be used to measure the amount of exposed steel on insert runners. The gauge should have a slot width at the minimum wood body thickness (7/8" or 22.3 mm) and depth at the maximum allowed exposure (1-1/2" or 38.12 mm).

This gauge is used as shown on the next page to measure exposed steel. The top of the gauge should touch the bottom of the runner body. The edge of the steel may touch the bottom of the slot, or there may be a gap between the edge of the steel and the gauge. If the edge of the steel is touching the bottom of the slot and both top edges do not touch the bottom of the runner body, then the exposed steel is greater than the maximum allowed.

Notes:

1. Because it is impossible to determine the thickness of any reinforcement on the bottom of the runner body, the gauge should be used to measure to the outside of the reinforcement.
2. This gauge should not be used on the front 6" (152 mm) of the runner (This gauge should not be used on the front 6" (152 mm) of the runner (where Spec. E.2.i. allows the body thickness to be reduced below 7/8")
3. Allowance should be made for small imperfections (porosity, damage, etc.) on the bottom surface of the runner body.

MEASURE INSERT RUNNER STEEL EXPOSURE USING A GAUGE



1/15/2010: The reinforcement bar or stiffening element that is associated with the “Kent” style chock is part of the runner and must meet all requirements of a runner stiffener, Reference Specifications E.1.e; E.1.f; E.4; Interpretations B. Runner Plank, 1/15/2010; E. Runners, 11/14/89, 7/1/92, 1/15/2010, and I. Fittings, 1/15/2010

1/15/2010: All runner stiffening elements are considered part of the runner and are included in the runner weight. Reference Specification E.6.

1/15/2010: The specification making optional the method of attachment or stiffening elements to plate runners, Specification E.1.f. also applies to the method of attachment of stiffening elements in wood body runners. Attachment is defined as a physical connection that firmly adheres the stiffening element to the runner such that when the chock pivot bolt is removed, the stiffening element remains physically connected to the runner. Reference Interpretation 7/1/1992.

1/15/2010: At all times while in use the bar or stiffening element that is associated with the “Kent” style chock must be attached to the runner. Any movement of the bar or stiffening element shall be independent of and not controlled by the movement of the chock pivot bolt.

4/14/2010: In a previous 1974 interpretation the second sentence referring to hard weld on the ice contact edge of allowed “T” sections is deleted. This interpretation now reads: A slot may be machined on the top of allowed “T” sections to facilitate mounting to wood body.

4/14/2010: Hard weld may be applied to the ice contact edge of all runners.

4/14/2010: A previous 1974 interpretation that disallowed the welding of a bead in the corner of “T” runners is deleted and replaced with a new interpretations: Runner “T” sections may not be formed by welding and may not be altered by welding a bead in the corners.

4/14/2010: The steel angle section allowed in E.2.f need not be mounted symmetrically on the wood body but must be mounted to the wood body in a manner that the ice contact edge corresponds to the apex of the included angle of the steel section.

10/1/2010: In Specification E.9., the $\frac{3}{4}$ " (19 mm) dimension above the ice which establishes the upper limit of the sharpened ice contact edge shall be determined according to the diagram "19 mm Dimension". Line A represents the official measurement line.

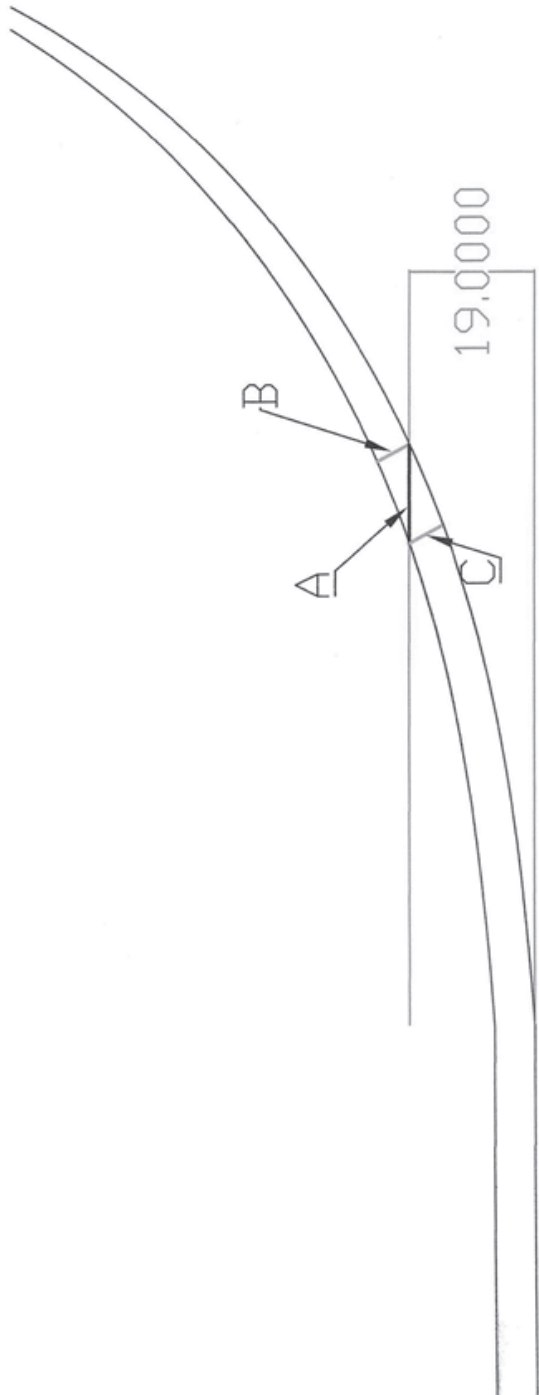


Diagram 19 mm Dimension

In Specification E.9., the $\frac{3}{4}$ " (19 mm) dimension above the ice which establishes the upper limit of the sharpened ice contact edge shall be determined according to diagram "19 mm Dimension".

Line A represents the official measurement line.

12/01/2012: The interpretation dated 11/14/89 is amended to read as follows: Wood, metal, or carbon stiffeners may be added to wood body runners (as in E.1.e. for plate runners) as long as the minimum wood body meets the dimensions in E.2.a. and the stiffener is outside the wood body. No wood, metal or carbon stiffener may come between the insert plate and the slot in the wood body. No metal or carbon stiffening is allowed inside the main wood body.

12/01/2012: It is allowed to apply a coating to cover the surface of the steel plate, angle, or T used in a runner. The steel, without the coating, shall comply with the dimensions specified in E.1.a.,b.,c.; E.2.f. and E.2.h.

01/15/2013: In runner specifications and interpretations runner stiffening elements, i.e. "stiffeners", and runner reinforcement have differing allowed uses, allowed materials, and dimensions.

On plate style runners, stiffening elements are controlled by specifications E.1.; E.1.d., e.,f.; E.4; E.6. and interpretations E. Runners dated 11/14/89, 7/1/92; four interpretations dated 1/15/2010; and I. Fittings dated 1/15/2010

Stiffening elements and reinforcement of the body of wood body runners are controlled by specifications E.2.a., d., e.; E. 4.; E. 6. and interpretations E. Runners dated 10/17/83; 11/23/87; 7/1/92; 11/30/98; four interpretations dated 1/15/2010; 12/01/2012; and I. Fittings dated 1/15/2010

On wood body runners, allowed material added to the body which is outside the allowed maximum body thickness of 1 1/32 inch (26.1 mm) is considered a runner stiffener or stiffening element. Allowed material added to the outside of the wood body, or in the slot of insert style runners, that does not exceed the allowed maximum body thickness of 1 1/32 inch (26.1 mm) is considered external reinforcement.

05/23/2013: It is not permitted to reduce the thickness of the runner steel below the allowed minimum by rounding, fairing, or tapering except as specified for the leading edge in Specifications E.9 and E.12. Refer to the interpretation E. Runners dated 10/01/2010 and the diagram "19 mm dimension". The 3/4" (19 mm) dimension does not establish a line extending along the runner parallel to the sharpened ice contact edge below which the thickness of the runner steel is allowed to be less than the specified minimum.

02/17/2014 Runners are not considered ballast and runners of different weights may be used during a regatta, provided each runner complies with the specifications and interpretations under E. Runners.

02/17/2014 The interpretation dated 1977, which reads: "It is legal to change runners from a light set (6lbs) each to a heavy set (17 lbs) each during a regatta and not be in conflict with the change of ballast", is deleted.

F. RUNNER BASE AND CUT (TRACK)

	English		Metric	
	Max	Min	Max	Min
1. Longitudinal distance from pivot axis of steering runner to pivot axis of aft runner:	103	97	2616	2464
2. Lateral distance between aft runner edges below pivot axis: (To be measured with skipper in cockpit in sailing trim.)	95	Opt.	2413	Opt.

INTERPRETATIONS FOR SECTION F, RUNNER BASE AND CUT (TRACK)

3/12/2007: Measuring F.2: In order to make repeatable measurements of runner cut as intended by this Specification the following methods should be used:

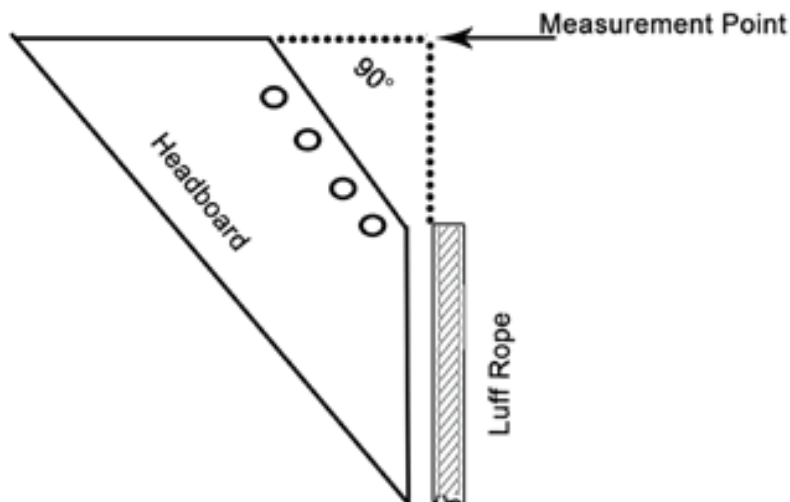
1. Rigging should not be tight during measurement. The skipper must be allowed to loosen the rigging as required to relieve static tension.
2. Sailor should be wearing normal racing attire, including helmet, goggles, etc.
3. Mainsheet must be loose.
4. The runners must be allowed to move. If on the ice, the boat may be pushed to allow the runners to seek a neutral position. If using a measurement fixture, the device must allow free sideways movement of the runners.
5. The skipper should be in the cockpit in normal sailing position (lying in the cockpit with his shoulders against the seatback).

G. SAIL

1. The cloth must be made with high tenacity polyester (dacron) yarns. Sail cloth must be made with either of the following cloth constructions: 6.5 oz. cloth with 220 denier warp and 440 denier fill yarns or 280 grams/square meter cloth with 250 denier warp and 410 denier fill yarns.
2. Luff shall be 14' (4267 mm) or less. A bolt rope is required.
3. The foot shall be 8'10" or less (2692 mm) or less. A bolt rope is required.
4. Leech shall be 14'3" (4343 mm) or less.
5. There shall be three girth measurements taken by folding the sail in quarters according to the procedure specified in G.18
 - Top girth measurement 3'3" (990.6 mm) or less.
 - Middle girth measurement 5'8" (1727 mm) or less.
 - Bottom girth measurement 7'6" (2286 mm) or less.
6. Head of sail.
 - a. The width of the headboard shall be 4" (101.6mm) or less.
 - b. The overall dimension of the head of the sail, including bolt rope, shall be 5.5" (139.78 mm) or less.
 - c. The location of the measurement point at the forward upper corner of the headboard is determined by projecting a straight line parallel to the luff, excluding the luff bolt rope, to the point where it intersects with a line projected from the uppermost point of the headboard and perpendicular to the luff. Refer to diagram G.6.c. below.

G.6.c.

FORWARD UPPER CORNER OF HEADBOARD



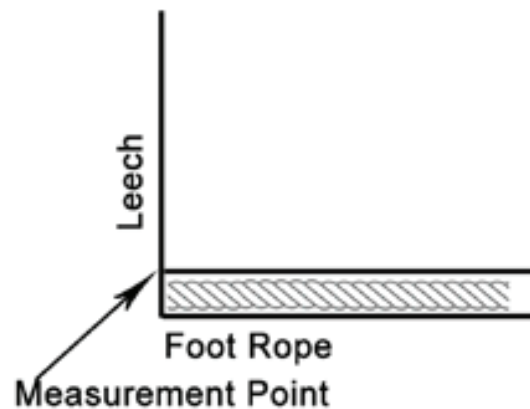
7. The sail shall be constructed with four batten pockets. The top edge of the top batten pocket must be a minimum of 27" (686 mm) below the top of the headboard. Spacing between battens shall not exceed 36" (914 mm) nor be less than 32" (813 mm). The top three battens shall be full length, extending from the leech of the sail to within 2" (50.8 mm) of the bolt rope. The bottom batten shall not exceed 36" (914 mm) in length.
8. Batten pockets shall lie at 90 degrees plus or minus 5 degrees to the leech as defined in G. 17 (Ref G.25a,5, Procedure for measuring a DN sail.)
9. Batten material and structural characteristics are optional. Batten width shall be 2" (50.8 mm) maximum.
10. Sail may have one row of reef points which cannot be located less than 18" (458mm) from the foot of the sail.
11. A yacht is restricted to the use of two sails in a regatta.
12. Altering the sail characteristics, such as area and camber, during a regatta by means other than the natural flexing of the structural members and positioning the clew grommet on the outhaul bracket are prohibited. This includes reefing. Batten adjustment is excluded.
13. National letter(s), yacht number and the letters "DN" shall be affixed to each side of the sail. Color of the letters and number shall contrast with the sail and be a minimum of 10" (255 mm) high. The letters and numbers shall be one piece, one color, block style letters on all sails made after July 1989.
14. A window in the sail is required. The window may be any shape and placed in several sections

Area (sq. in. and sq. cm.)	English		Metric	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>
	1250	100	8064.5	645

15. A steel cable, at least 3/64" (1.2 mm) in diameter may be attached to the headboard, running inside the luff to a point outside the sail at the tack. Lower end of the cable shall form a loop which must be secured to the tack pin on boom when under sail. Distance from top of headboard to center of 1/4" (6.3 mm) bolt inserted in the loop shall not exceed 14' (4267 mm) with cable straight and under 10 lbs. (4.6 kg) of tension.
16. Sail shall not extend aft of the forward edge of the 1/2" (12 mm) boom stripe which is located 8'10" (2692 mm) from the forward edge of mast slot.

17. The leech, defined as the straight line between the forward upper corner of the headboard and the point where the leech intersects the foot at the clew, excluding the foot bolt rope, shall be measured with the sail free of battens and with 5 lbs. (2.3 kg) of tension. (Ref. G.6.c. and diagrams *Upper Forward Corner of Headboard, G.6.c. and Clew, G.17*)

G. 17 CLEW

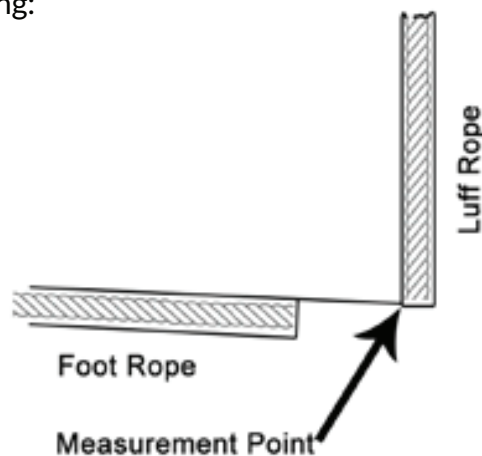


18. The three girth measurements shall be measured with battens removed and such tension as is required to remove wrinkles.
- The middle girth is measured between the mid points of the luff, excluding the bolt rope, and leech at the trailing edge. The mid point of the luff is found by folding the sail so the forward upper corner of the headboard lines up with the intersection of the luff and foot at the tack, excluding the bolt rope(s). The mid point of the leech at the trailing edge is found by folding the sail so the forward upper corner of the headboard lines up with the intersection of the leech and foot at the clew, excluding the bolt rope(s). (Ref. G 5 and diagrams *Upper Forward Corner of Headboard, G.6.c; Clew, G17; and Tack, G.24*)
 - The top girth is measured between the quarter points of the luff, excluding the bolt rope, and leech at the trailing edge. The top quarter girth point on the luff is found by folding the sail so the forward upper corner of the headboard lines up with the mid point on the luff, excluding the bolt rope. The top quarter girth point on the leech is found by folding the sail so the forward upper corner of the headboard lines up with the mid point on the leech at the trailing edge. (Ref G.5 and diagrams *Upper Forward Corner of Headboard, G.6.c.*)

c. The bottom girth is measured between the quarter points of the luff, excluding the bolt rope, and leech at the trailing edge. The bottom quarter girth point on the luff is found by folding the sail so the tack at the intersection of the luff and foot, excluding the bolt rope(s), lines up with the luff mid point. The bottom quarter girth point on the leech is found by folding the sail so the clew at the intersection of leech and foot, excluding the bolt rope, lines up with the mid point on the leech at the trailing edge. (Ref. G. 5, and diagrams *Upper Forward Corner of Headboard, G.6.c.; Tack, G.24; and Clew, G.17.*)

- 19. Sails shall not be colored red or orange.
- 20. The profile of the sail along the leech at the trailing edge shall be such that the maximum inward curve of the edge of the leech shall not exceed $\frac{3}{4}$ " from a line drawn from the back of the headboard to the outer end of the second batten pocket from the top; and from a line drawn from the outer end of the top batten pocket to the outer end of the third batten pocket from the top.
- 21. The profile of the leech at the trailing edge above the top batten pocket shall be such that no part of the sail extends outward more than $\frac{1}{4}$ " from a line drawn from the back of the headboard to the outer end of the top batten pocket.
- 22. The luff and the foot of the sail must have a boltrope that is inside the boltrope tunnel of the mast and boom while sailing, except in the area within 12 inches of the tack.
- 23. The tack of the sail must be fixed to a fitting at the forward end of the boom.
- 24. The luff, defined as a line between the forward upper corner of the headboard and the intersection of the foot and luff at the tack, excluding boltropes, shall be measured with the sail free of battens and under 5 lbs. (2.3 kg) of tension. (Ref. diagram *Upper Forward Corner of Headboard, G.6.c. and Tack, G.24.*)
- 25. Procedure for measuring a DN sail.
 - a. Preparing the sail for measuring:

G. 24 TACK



1. The sail shall be free of the mast and boom.
 2. Battens should be removed.
 3. Lay the sail on a hard surface (table, floor, or ice sailing surface).
 4. Measure each specified dimension one-at-a-time with tension applied only across the line of measurement as is sufficient to remove wrinkles except as specified in G.17, G.24, and G.25c.1.
 5. Use the following points of measurement when measuring location of battens and batten pockets and pocket angles.
 - aa. Locate the straight line leech by stretching a string or small diameter rope from the forward upper corner of the headboard to the clew, excluding the bolt rope. (ref. G.6.c. and G.17)
 - bb. The top edge of a batten pocket is located along the top of the inside width of the pocket. The centerline of the batten pocket is located in the center of the inside width of the pocket.
 6. Use the location of the Forward Upper Corner of the Headboard (ref. G.6.c.) as the measurement point when folding to measure the girths (ref. G.18)
- b. To determine the location of the top batten pocket and spacing between battens (ref. G. 7):
1. In G.7 the measuring point on the top of the headboard is located at the forward upper corner of the headboard (ref. G.6.c.). All points along the top edge of the pocket must comply with the 27" (686 mm) minimum dimension from the head (ref. 25.a.5.bb.)
 2. The spacing between the battens is measured between the centerline of the batten pockets where the centerline intersects with the straight line leech (ref G.25.a.5.aa)
- c. To determine the angle of the battens pockets (ref. G.8.):
1. Pin the head, tack and clew in place on the hard surface while applying tension along the luff, foot, and straight line leech to remove wrinkles. The leech at the trailing edge should not lift away from the hard surface.
 2. Measure the angle between the straight line leech and the top edge of the batten pocket. (ref. G.25.a.5.aa and bb).
 3. Measure one-pocket-at-a-time.
 4. Place the base of a protractor along the straight line leech, centered at the top edge of the batten pocket (ref. G25.a.5.bb) and facing the luff.
 5. Read the angle at the top edge of the pocket. (ref. G.25.a.5.bb).

INTERPRETATIONS FOR SECTION G, SAILS

1977: It is not legal to use two ply Dacron 6.5 oz cloth for the top panel and bottom panels for reinforcement.

9/1/99: It is legal to use Contender 6.5 oz. Polycote cloth in the construction of the sail.

5/6/04: The specification of weight is a nominal cloth weight. This specification of 6.5 oz/sq.yd. refers to a “sail maker’s yard”, which is 36” X 28.5”. Sails built prior to July 1, 2003, which complied with the specifications at the time of manufacture will be allowed in all IDNIYRA regattas.

11/29/2010: In specification G.9. the batten width is measured at 90 degrees to the length. Batten thickness is the smallest of the three dimensions, i.e. length, width, thickness. There are no restrictions on batten thickness.

11/29/2010: Specification G.12. excludes batten adjustment from the factors that alter sail characteristics. Battens may be fitted only in the pockets allowed in G.7. and may protrude from the pocket at the leach end for the purposes of providing a means to secure the batten in the sail and adjusting the tension. There is no restriction on the tensioning of battens in the pockets and at any time battens may be interchanged in the allowed pockets.

11/20/2011: The batten pockets in all sails made prior to 1/1/2012 shall lie at 90 degrees plus or minus 8 degrees to the leech. These sails may be used in all DN races, including all championships. All other sails must comply with Specification G.8.

H. RIGGING

1. Framing stays are prohibited. Any cable not shown in the plans is prohibited.
2. All stays shall be steel cable and shall be 0.118” (3 mm) or greater in diameter.
3. Halyard shall be either steel cable with a minimum diameter of 3/32” (2.4 mm) or rope of optional material with a minimum diameter of 3/32” (2.4 mm)
4. Bobstay shall be installed and fitted to the bow tang forward and anchored at its after end on the stern block or immediately in front of the runner plank.
5. Tubes and other means of rigid adjustment of stay lengths are permissible.
6. Devices which adjust stay lengths while yacht is underway are prohibited.
7. Means for rigid adjustment of mast step location are permissible.
8. Means for adjustment of mast step location while yacht is underway are prohibited.
9. Mast step shall be rigidly mounted on the deck of the fuselage.
10. Mast step shall permit free orientation of mast.

	English		Metric	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>
11. Horizontal distance from mast step pivoting point (center of ball) to pivot axis of steering runner:	41	35	1041	890
12. Horizontal distance from pivot axis of steering runner to pivot axis of steering post:	50	44	1270	1118
13. Distance from lower mast hound bolt (pivot bolt located in front of mast) to base of mast: a. All stays shall connect to a common component (which may consist of one or more sub-components) which attaches to the mast hound at a single point.	139-1/2	127-1/2	3543	3239

14. Six sheet blocks shall be installed.

15. Four sheet blocks shall be installed aft of the rear limit of the cockpit floor: two on the boom and two on the deck. None of these blocks may incorporate a one-way feature. The blocks on the fuselage must be fastened in a manner such that anything penetrating the deck may only be performing the function of fastening, and no other function.

16. One sheet block shall be located forward on the boom within 1' (304 mm) of the mast. This block may incorporate a one-way feature.

17. One sheet block shall be installed on the tiller post. This block may incorporate a one-way feature.

18. The sheet must be attached to the boom and pass through all blocks as shown in plans.

19. Blocks must be individual and have fixed positions on fuselage and boom.

20. Sheet may run inside the boom between the forward block and the 2nd block.

21. The distance from the center of the runner plank to the base/foot of the side stay on the end of the plank must be:	English		Metric	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>
	–	43.07	–	1094

22. The components of the mast hound may affect the free orientation of the mast by either forcing mast rotation or limiting mast rotation.

INTERPRETATIONS FOR SECTION H, RIGGING

01/01/78: Boom pulleys may not be attached inside the boom by slotting the bottom of a boom and inserting the pulley into the slot and then picking up the sheave with a bolt or rod.

01/01/82: A track may be mounted on the boom for sliders to which the pulleys may be attached.

09/23/82: Mounting Pulleys on deck or boom by any means is acceptable as long as the rope and sheave are outside the boom or deck. No recessed block will be allowed in which part of the sheave or rope is below the back deck. (see also 11/1/84 interpretation)

10/17/83: It is not allowed to use a shock absorber (spring) between side stay and the fitting on the end of the runner plank.

11/1/84: It is not permissible for any part of the sheet block, or any hardware integral with the mounting of the sheet block, to be below the projected top surface of the deck, with the exception of the screws or bolts used to fasten the hardware to the deck.

11/10/73 & 11/14/88: Cable may not be used in place of mast hound. Hound may be made from strap or plate material. No leaders or bridles allowed.

I. FITTINGS

1. Diameter of the sheaves of the sheet blocks shall not exceed 4" (101.6 mm).
2. Two of the six required blocks may incorporate a one-way feature.
3. Steering chock may incorporate a shock-absorbing feature.
4. Hardware need not conform to plans as long as specifications are not violated and hardware performs the same function that the plan item performs.

5. Side Chock	English		Metric	
	Max	Min	Max	Min
a. Width of runner slot at the smallest dimension where the chocks come in contact with the runner's side or stiffening element:	1-3/32	31/32	27.7	24.7
b. Depth of chock:	3-1/2	2-7/8	88.9	73.1
c. Length of chock:	9	6-3/4	228	172
d. Width of chock:	4-3/4	—	121	—
6. Mast Step - Height of pivoting point (center of ball) above deck:	1-5/8	1-1/8	41	28.6

7. Location of Halyard catch on mast is optional.
8. Halyard must be capable of lowering and raising the sail with yacht in upright position.
9. Additional fittings to secure halyard to mast are permissible.
10. Only one mast, boom, fuselage, and runner plank may be used for an entire regatta, unless broken beyond reasonable repair (as interpreted by the Race Committee).
11. An adjustable footrest may be used.
12. A device may be placed in the back of the chock to prevent the front of the runner from tipping downwards. The device may not contact the runner when all three runners are on the ice.
13. The side chock and the steering chock shall be made of steel, stainless steel or aluminum.

14. Bow Tang	English		Metric	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>
a. Width	3-3/4	—	95.3	—
b. Horizontal distance from the pivot axis of the steering runner to the aftermost end of the bow tang:	8	—	203.2	—
c. Height above a horizontal line extending forward from the deck at a point 2" (50.8 mm) behind the bow:	3	—	76.2	—

15. Runner Plank Mounting Hardware

- The runner plank mounting system shall not extend more than 4" (101.6 mm) outside of the side panel of the fuselage.
- The runner plank mounting system shall be located in an area that does not exceed 30" in the fore and aft dimension.

16. Bobstay Strut, including Mounting Hardware	English		Metric	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>
a. Height (from bottom of skin of fuselage):	—	3	—	76.2
b. Length:	6	—	152.4	—
c. Width:	4	—	101.6	—

17. Mast Step Mounting Hardware

a. Length:	9	—	228.6	—
b. Width:	3	—	76.2	—

INTERPRETATIONS FOR SECTION I, FITTINGS

9/23/57: An adjustable footrest may be used.

9/23/57: Shock absorbing steering chock must be according to plan, but springs or rubber grommet may be added as shock absorber.

11/10/73 & 11/14/88: There is no limit to the number of holes in the tack fitting. Tack pin location may not be changed during a regatta.

11/10/73: It is not allowed to have two holes in the chock.

11/10/73: The number of straps on the mast hound is optional.

11/23/87: It is not allowed to use a long fitting to connect the mast hound with the head stay so that the position of the mast hound can be moved (within the allowed dimensions) without having to make a new stay.

4/15/90: The degree to which the side runner pivots vertically in the chock may be restricted only by way of the friction on the sides of the chock which is controlled only by the tightening of the pivot bolt. Any other device to restrict the vertical movement of the runner is not allowed, with the exception of devices as allowed in Specification I.12.

11/12/03: It is allowed to use a fixture providing additional height to mount the rear sheet blocks to the deck. This fixture must be mounted on the surface of the deck and may not be integral with the deck structure. This fixture must provide a fixed position for the block attachment (the blocks may not be moved while underway)

12/12/07: “Kent” style chock – Either the inside or outside flange of the side chock may be reduced in size to allow clearance for runner stiffening elements. When viewed from the side, the profile of the chock must meet all dimensions specified.

1/15/2010: The reinforcement bar or stiffening element that is associated with the “Kent” style chock is allowed to be attached only to the runner and must meet all requirements of a runner stiffener. Reference Specifications E. 1.e; E. 1.f.; E. 4; and Interpretations E. Runners, 11/14/89; E. Runners 7/1/92; E. Runners 1/15/2010.

12/01/2012: It is allowed for there to be more than one position for the mast hound or an adjustable fitting with multiple positions, providing the location of the lower mast hound bolt (pivot bolt) is within the range specified in H.13. The position may not be adjusted while the yacht is underway.

9/20/2013: The bow tang, reference specification I.14 must be mounted at the forward most (bow) end of the fuselage and all parts of the tang, with the exception of the fastenings attaching it to the fuselage, must be outside the fuselage.