

IPCD A CURRENT SPECIFICATIONS

The following is the current specifications for the international Penguin Class Dinghy Association, that has been compiled from the latest text in the handbook and from the various Patterns over the years, and from discussions at the Annual Meetings. There will be an Agenda at this years Annual Meeting to discuss a revision of the specifications to bring them in line with current construction techniques and changes that have occurred to the boats. If you have any ideas or concerns it will be imperative to put them in writing so the Executive Committee can make the appropriate changes. The International Championships will be adhering to these specifications except where permission has been granted by the Executive Committee.

Sincerely

Bud Dailey Jr.

Executive V.P. JULY 7, 1993

ARTICLE X - Specifications

1 General - These specifications describe several construction methods for the Penguin Class Dinghy and must be adhered to. The official plans show an approved method of construction in wood as to details and sizes; however, these specifications give the minimum sizes which are allowed. The materials of construction and the sizes of members are optional except as specified. WHERE ANY POINT OF DIFFERENCE EXISTS, THE SPECIFICATIONS AS WRITTEN IN THE HANDBOOK SHALL BE FINAL, AND NOT THE PICTURED DESCRIPTION AS SHOWN IN THE PLANS. Any construction differing from the plans, such as hulls of fibre-glass or hulls with built-in self rescue flotation compartments, must be approved by the Executive Committee.

(See 7)

2.1 Hull Shape - The outer hull shape shall be in accordance with the official plans with building tolerances as listed below.

2.2 Table of Limitations - Hull Inches (mm)

Dimension location on measured form

Lengths LWL, LOA, C.B. Pivot	+/- 1"	26 mm
Stem Height	+/- 1"	26mm
C.B. Pivot Height	+/- 5/16"	8mm
M Keel & Chine Height	+/- 5/16"	8mm
L Side Height	+/- 1/2"	13mm
N Bottom Width	+/- 1/2"	13mm
Q Deck Width	+/- 1"	26mm

Chine height, side height, and bottom width are to be taken to points defined at the intersections of fair extensions of the limiting surfaces when the chine is rounded.

2.3 Nominal Measurement Form Dimensions Inches (mm)

Length Water Line-- 135 (3429)
 C'Board Pivot from Transom-- 88 5/8 . (2251)
 Stem----- 20 (508)
 Keel to Base Line

D	C	B	A
Stem			
6 (153)	1 9/16 (40)	1 1/8 (29)	2 25/32 (71)
Length Overall--- 137 (3480)			
Section	L	M	N
A	20 (508)	1 5/16 (33)	23 3/4 (603)
B	18 3/16 (462)	2 5/16 (59)	40 1/2 (1029)
C	16 1/16 (408)	3 1/2 (79)	43 5/8 (1108)
D	11 13/16 (300)	4 1/32 (102)	33 (838)

2.4 Re-measurement (Reference also Article XIII of By-Laws Measurement Regulation Para. 3).

Upon Re-Measurement, the Hull Shape Must either

1. Conform completely to the measurements shown on its approved measurement form or
2. Conform completely to the tolerances listed above.

2. HULL SHAPE - The outer hull shape be in accordance with the official plans with building as established by the executive committee and administered by the Measurer.

3. HULL SHAPE - The hull shell may be made of wood, G. R.P. (glass reinforced thermosetting or thermoplastic resin), or combinations of these materials and shall be of approximately even thickness and density longitudinally.

4. HULL WEIGHT - The completely finished hull including centerboard and all permanently attached equipment (not including mast, boom, rudder, sheet, sail or loose gear) shall weigh at least 140 pounds (63.5 kg.). Any corrector weights shall be added ahead of station 2 and/or behind station 5. Boats weighing more than 140 pounds may deduct the excess weight from any extra ballast required to meet the minimum crew weight.

5. SELF RESCUE - Additional flotation to permit self rescue in the event of a capsize is recommended in the form of attached air bags, closed cell foam plastic, or built-in air compartments. Each compartment shall have at least one inspection port or hand hole and one drain plug, both watertight. At least eight cu. ft. (0.227 cu. m.) of flotation distributed equally on either side of the keel is recommended. In no case shall the self rescue flotation act as decking.

6. FLOOR - At least 16 sq. ft. (1.49 sq. m.) of the bottom must be reinforced to support the crew weight. (see 8.16 for conventional construction.)

7. CONSTRUCTION - Hull of g.r.p., wood, or combinations of these materials that do not meet the scantlings as described in the plans and in Paragraph 8 of this article may be built only by fabricators, approved by the Executive Committee. Builders may apply for approval by writing to the Chairman of Technical Committee and including a drawing and description illustrating the variations desired. Approved plans for a self rescue wood hull may be purchased from the class.

8.1 Wood Boats. Keel - Keel may be made of one piece or two pieces, which shall have a total molded dimension of not less than 7/8" and a total sided dimension of not less than 5 3/4" in way of the centerboard trunk and tapered at the ends. The tapering shall be in such a manner that at each station the half breadths of the keel on the inside of the boat shall be not less than those distances shown by the table of offsets for the half breadths of the rabbet line plus 7/8". (Example: Width of the keel on the inside of the boat at station 6 equals $2(11/16 + 7/8) = 5\ 1/8$).

However, the keel may be 5/8" thick if it is completely covered by the plywood. The width of the keel at the bow shall be not less than shown for the width of the stem piece.

8.2 Stem - Stem may be in one piece or two pieces. The size inside the rabbet shall be not less than that shown on the full sized plan. The stem cap may be molded to not less than 1/4" radius.

8.3 Transom - The transom may be made of plywood or solid lumber. If made of plywood it shall have a thickness of not less than 1/4" and shall have framing not less than 5/8" x 2" completely around the edges. Plywood transoms in addition to

this framing shall have a center stiffener of not less than 5/8" x 4". If the transom is made of solid lumber, the thickness shall be not less than 5/8".

8.4 Knees - The stem and transom shall adequately secured to the keel by means of knees. The knees shall be sided not less than 3/4" and shall be of the outline shown on the full size plans.

8.5 Chines - The boat shall be fitted with two chines. The chines may be in one piece of rabbetted construction, two pieces as indicated on the plans, or a single piece entirely inside the planking. The chines shall be not less than 3/4" x 1 1/2" inside the planking. The exterior radius of the chine shall not exceed 1/2". Chines may be beveled only to the extent necessary to allow draining when the boat is on an even keel provided they are not less than 2" in width.

8.6 Frames - Frames shall be fitted in number and location as indicated in the official plans. All frames shall be sided not less than 5/8" their full length exclusive of gussets. Side frames Nos. 1 and 2 shall be a full 2" their full length; other frames shall be not less than 2" at the chine with a straight taper to not less than 1 1/2" at the head. The inwale may be omitted, if so the top of the frames on the inboard side may be rounded to not more than 1" radius. Bottom frames shall be moved not less than 2" over the top of the keel, tapered to not less than 1 1/2" at the chines. Side frames and bottom chines shall be connected by plywood gussets not less than 4" on each leg and material not less than 1/4" thick. If a lap joint is used to connect the frames there shall be one gusset placed between the side frames and the bottom frames, if a butt joint is used there shall be two gussets, one placed on each side of the pint. The inboard edge of the gussets may be rounded from end to end to smooth curve. Distance from inside top corner of chine to nearest point on radius of gusset shall be not less than 1 1/2". Side frames no. 1 may be curved along the outer edge of maximum of 3/8"; point of maximum curvature to be midway between chine and gunwale.

8.7 Gunwale - A gunwale shall be fitted and shall be not less than 5/8" x 1". When a gunwale is fitted as a rail cap, or a rail cap is fitted, its width inboard of the inside of the planking shall not exceed 1 1/2" measured perpendicular to the planking. Reinforcing or track rail between frames 1 and 3 is not considered part of the gunwale.

8.8 Fender - A fender of not less than 1/2" x 1" shall be fitted. The maximum width dimension shall be determined by the allowing rule; the maximum total width of the fender, plus the thickness of the plywood skin, plus the gunwale, shall not exceed 4" forward of frame number 2; from this point aft, the width shall be reduced to a maximum of 3" at the transom.

8.9 Thwart - A thwart of not less than 3/4" x 5 3/4" Or equivalent cross-sectional area) shall be fitted. The thwart shall be located between stations 3 and 5, and attached to the centerboard trunk at least 10" from the top of the keel. 8.10

Mast Partner - A mast partner not less than 3/4" x 5 3/4" Or cross sectional area) shall be fitted.

This cross-sectional limitation shall be adhered to in way of the opening for the mast. The mast partner shall be located as illustrated in the plans and shall be at least 14" above the top of the keel. The mast must pass through the mast partner, which may be open either forward or aft such that the mast is enclosed on three sides.

8.11 Breasthook and Knees - The gunwale shall be attached to the stem by means of a breasthook and to the transom by means of knees ail being not less than 3/4" thick and not less than 6" on each leg.

8.12 Planking - Side and bottom planking shall be phenolic resin bonded hot pressed waterproof plywood.

8.13 Centerboard Logs - Centerboard logs shall be sided not less than 3/4" and shall be molded not less than shown on the full size plan.

8.14 Centerboard Trunk - Centerboard trunk sides shall be not less than 1/4" plywood and shall extend vertically a sufficient height to completely house the centerboard.

8.15 Skeg - The skeg shall be fitted as shown on the plans; sided dimensions not less than 3/4", 4" deep at the end of the keel, 1" deep at station 7, terminating 3 1/2' forward of station 7. The skeg shall not project beyond the finished after face of the transom. Maximum sided dimension shall be no greater than 7/8". The skeg may be tapered aft from a point 3" forward of the after end.

8.16 Floorboards - having a total area of 16 sq. ft. (excluding slots between boards), capable of supporting a 150 lb. person standing midway between frames, shall be fitted. Solid 1/4" plywood floorboards having an area equal to 16 sq. ft. may be used if desired.

8.17 Decks - No decking, washboards or coamings are permitted. A fabric spray hood forward of frame 2 may be fitted. No more than two 1" x 1/4" battens may be used for the spray hood. The spray hood shall be raised no higher than 6" above the sheer line at the mast.

9. Centerboard - The centerboard may be made of wood and/or glass reinforced plastic. Loading may be added to overcome flotation, in which case the negative buoyancy may not exceed two pounds. The outline shall be that shown on the official plans. Maximum width of centerboard is 12 inches. The length and width shown on the construction plan are maximum permitted, the tolerance is plus 0" and minus 1/4". The thickness shall not be less than 3/4" nor more than 1". Streamlining is permitted except for that portion of the centerboard and handle which remains above the bottom of the keel when the board is down 90 degrees. The centerboard may be controlled by an external actuating mechanism or a handle integral with the board, as long as the axis about which it pivots is fixed at the points shown on the plans. When a handle is used it may be straight (as shown on the plans) or curved. The size and shape of the handle shall be optional. However, no portion of the handle extending along the trailing edge shall not exceed 6" measured perpendicular to the trailing edge. No method of filling or covering the bottom of the centerboard trunk is allowed. The top of the centerboard trunk may be enclosed when a centerboard actuating mechanism is used.

10. Rudder - The rudder may be made of wood and/or glass reinforced plastic. The outline shall be in accordance with that shown on the official plans. The dimensions shown are the maximums, the tolerance is plus 0" and minus 1/4". Arrangements may be made to raise the rudder blade to facilitate beaching. However, during a race the adjustable rudder blade shall be carried in the position shown on the plan. The thickness of the rudder must be as specified along "A-A" of the plan and above the line shown for the lower edge of the cheek pieces. The specification for thickness is as follows: the rudder may be 3/4" thick if fitted with adequate cheek pieces made of wood, other wise it shall be not less than 7/8" thick nor more than 1" thick. The wood cheek pieces shown on the plan are the minimum in thickness and extent that shall be deemed adequate. If the rudder head is mortised for the tiller, the cheek pieces shall be not less than 3/8" thick. Metal cheek pieces not less than 1/16" in thickness may be substituted for wood. The rudder may be streamlined below the

lower edge of the cheek pieces but must have a minimum radius of 1/8" along the leading edge and a minimum radius of 3/32" along the trailing edge. The rudder with tiller attached shall float.

11. Spars - General:

11.1 Spars shall be solid wood (for exceptions see 11.3 and 11.5.) in their normal state, they must be straight, no steam bending of either the mast or boom is allowed. The mast may be joined or in one piece.

11.2 Mast Dimensions:

11.2.1 The top of the mast, including halyard attachment, shall not extend beyond a height of 19' above the keel (19'-0 7/8" from the bottom of the hull where the mast is stepped).

11.2.2 The maximum fore and aft dimension of the mast, including the luff rope tunnel, shall not exceed 3 1/2".

11.2.3 The minimum thickness from a point 8' below the top of the mast (lower limit on attaching stays) shall not be less than 1 3/4" except that it may be tapered, starting 17" above the butt end, to a minimum of 1" in diameter at the butt end.

11.2.4 A luff rope tunnel of not more than 1/2" diameter for the luff of the sail may be incorporated in the mast.

11.2.5 The mast shall be plainly marked with contrasting bands 1/2" wide and the sail, when fully hoisted, shall not extend beyond the inner edges of these bands. The distance between the inner edges shall be not more than 16'.

11.3 The mast may be constructed of aluminum alloy extrusion. It must conform to the mast dimensions in 11.2 with the exception of the luff rope tunnel which is unspecified in aluminum. An internal halyard may be used providing the lock is placed within 4' of the mast butt.

11.4 The mast may be rotated about its longitudinal axis while sailing but devices for otherwise moving or bending it while not be permitted. Only a single thickness of shock cord (not more than 1/4" in diameter) may be used to remove the slack in the headstay when running before the wind. Once attached, the shock cord must be left in place throughout the balance of the race.

11.5 The boom may be constructed of solid wood or of an aluminum alloy extrusion, in which case no internal rigging or controls are allowed. The boom shall be so constructed that without rigging, jaws or hardware, it can pass through a 2" square hole. The boom shall be plainly marked with a contrasting band 1/2" wide. The inner edge of the band shall be not more than 8'8" from either the center of the mast tunnel or the face of the sail track. The sail, when set, shall not extend beyond the inner edge of the band.

11.6 When supported at the butt and horizontal, the head of the mast shall weigh not less than 6 pounds. All rigging to be pulled tight along the axis of the mast and included in the weight. Other permanently mounted fittings such as mast rotators to be included in the weight.

12. Rigging - Standing rigging shall consist of two shrouds and a headstay which shall not be less than 3/32" in diameter. The point of attachment of these stays and their tangs shall not be lower than 8' from the top of the mast. A boom vang to hold the boom down is permitted provided a stop is placed on the mast so that the tack of the sail cannot be pulled past the limit band. Avang must be rigged so

that It does not prevent a gybe without re-rigging. Halyard shall not be led so as to support the mast. No jumper stays, spreaders or rod rigging are allowed.

13. to 22. For future additions.

23. Sails

23.1 Effective Dates - This specification is effective for all sails made after June 1, 1963. Sails made prior to this date may be measured to this specification or the one existing when they were made, except that all sails must conform to this specification after March 1, 1964.

23.2 Honor Awards - The Executive Committee reserves the right to use the sail as the area upon which honor awards shall be displayed and has designated certain areas of the sail, shown on the plates published herewith, to be used for this purpose.

23.3 General - The penguin dinghy shall carry a loose-footed sail which, when set, must not encroach upon the limit marks on the spars (section 11) and which conforms with the limiting dimensions of this specification. All dimensions given in this specification are maximum dimensions. The headboard is to be included in all appropriate dimensions.

23.4 Dimensions The maximum dimensions of the sail are:

Luff 16'0", foot 8'8", leech 16'6", roach on foot 6", upper quarter girth 36", midgirth 64", and lower quarter girth 86.5". Girth measurements are to include the boltrope or other device used to run in the mast tunnel.

23.5 Measuring the Sail

23.5.1 Midgirth - Fold head to clew and mark the leech midpoint; measure midgirth from leech mid point to the nearest luff point , boltrope included.

23.5.2 Upper Quarter Girth - Fold head to leech midpoint, and mark the upper quarter point of the leech; measure the upper quarter girth from leech upper quarter point to the nearest luff point, boltrope included.

23.5.3 Lower Quarter Girth - Fold clew to leech midpoint and mark the lower quarter point on the leech; measure the lower quarter girth from leech lower quarter point to the nearest luff point, boltrope included.

23.5.4 Rounded Clews - Where a sailmaker has rounded the cow so as to make it difficult to establish leech midpoint and lower quarter point by normal means the owner of the sail may be directed by the measurer to provide a template, attached to the sail for the measurers convenience, which continues the curve of the leech and that of the foot to their point of intersection on the template.

23.5.5 Conditions of Measurement - The foot measurement and leech measurement shall be measured hand taught, which in cases of doubt means 2 1/2 lbs. of tension. Puckering strings, if any shall be fully eased during measurement. Girth measurements are to be made with the sail laid out flat and the sail, between the two reference points, shall be smoothed out against the floor to eliminate the wrinkles. Sails shall not be preheated or cooled before measurement.

23.6 Battens - The sail shall be provided with 3 battens spaced evenly along the leech, and one batten in the foot. Maximum length of the battens shall be as follows: upper 18", center 24", lower 21", and foot 12". Maximum width of battens

shall be 1 1/2". No part of the outboard end of any leech batten shall lie more than 2 3/4" above its reference point on the leech; or 2 3/4" below; these reference points are the leech upper quarter point, leech midpoint, and leech lower quarter point described in 23.5 above. The foot batten shall be within 6" of the midpoint of the foot.

23.7 Stiffening Material

23.7.1 The Class hogs that stiffening material should contribute to the life of the sail, contribute to the set of the sail or reduce the gradual development of stress wrinkles at tack and clew or at batten tips. Stiffening material may be so used, and should not be employed in such a way that unmeasured or unmeasurable sail area is added to the sail.

23.7.2 An abrupt change or artificial "jump" in the line of the leech near clew or headboard or in the line of the foot near tack or clew will be considered illegal.

23.7.3 Cringles, rings or grommets in tack or clew shall not exceed 1 3/4" outside diameter.

23.8.1 Headboard - The sail may be fitted with a triangular headboard not over 4 1/2" wide measured perpendicular to the luff and not over 5 1/2" in height measured parallel to the luff.

Any or all of its corners may be rounded. The measurement from the after edge of the luff rope to the aftermost point of the headboard shall not exceed 5 1/2".

23.8.2 The headboard shall not be gaff-headed, i.e., its upper edge shall not be at an angle higher than at right angles to the luff. The upper edge is defined as that edge of the headboard which lies aft of the point of attachment of the halyard.

23.9 Boltrope or Tape - The luff may be taped, roped or held in its tunnel by rod-like slides. The luff of the sail shall, however, be attached to the boltrope (or tape) or encase it for its entire length. Devices substituting for boltrope are to be measured when a measurement is to include the boltrope.

23.10 Foot Tension - Adjustment for foot tension shall be made from the clew only.

23.11 Windows - Mylar or other plastic windows are permitted provided that the area of such windows shall not exceed 216 square inches (1.5 sq. ft.). The windows shall not be closer than 4" to any edge of the sail.

23.12 Venturi Tubes, Etc. - Venturi tubes, vents or other openings in the sail are not permitted.

23.13 Sail Material - Sails shall be made of white material with black insignia and numbers of any color; these shall be as indicated on the sail plan. Sail material shall be limited to cotton, nylon, orlon (acrylic fiber), dacron (polyester fiber) with the latter two recommended.

23.14 Date of Purchase - The sailmakers are required to mark indelibly the date of purchase on each sail, preferably at the tack. Any sail not dated shall be in violation of this article and subject to protest.

23.15 Sailmakers Patch - The sailmakers label shall be placed in accordance with the I.Y.R.U.

Sail Measurement Instructions.

24. The Official Plans shall form a part of these specifications. Alterations of these plans may be made by the Executive Committee, as provided in Article XII of these By-Laws.

25. All boats, the framing of which was begun on or after 1 January 1956, must comply with all specifications as published herein. Boats, the framing of which was begun before 1 January 1956 may comply with these specifications or the specifications of record on 1 January 1956, provided they also comply by 1 January

Specification Changes approved by the Executive Committee

The Executive Committee approved the following changes to the Penguin Specifications to simplify sail measurement and to make our measurement procedures consistent with how girth measurement are made in other classes and the IMS. This procedure would solve the problem of measuring a sail with a tight shock cord luff rope and significantly speed up the measurement process. The new girth measurements should not change the size of the Penguin Sail, and all existing sails should measure in except possibly a sail with a very short luff length. The new measurements have been calculated so the size of the Penguin sail will not change. The new measurements were tested at the 2001 Internationals .

23.4 Dimensions The maximum dimensions of the sail are:

Luff 16'0", foot 8'8", leech 16'6", roach on foot 6", upper quarter girth 36", midgirth 64", and lower quarter girth 86.5". Girth measurements are to include the boltrope or other device used to run in the mast tunnel.

23.5 Measuring the Sail

23.5.1 Midgirth - Fold head to clew and mark the leech midpoint; measure midgirth from leech mid point to the nearest luff point , boltrope included.

23.5.2 Upper Quarter Girth - Fold head to leech midpoint, and mark the upper quarter point of the leech; measure the upper quarter girth from leech upper quarter point to the nearest luff point, boltrope included.

23.5.3 Lower Quarter Girth - Fold clew to leech midpoint and mark the lower quarter point on the leech; measure the lower quarter girth from leech lower quarter point to the nearest luff point, boltrope included.