

INTERNATIONAL Y-FLYER YACHT RACING UNION

An affiliation of the
American Y-Flyer Yacht Racing Association
and the
Canadian Y-Flyer Yacht Racing Association

Y-FLYER SPECIFICATIONS AND RESTRICTIONS

August 4, 2004

Forward:

A. These specifications and restrictions are intended to restrict the Y-Flyer to a one-design class and are intended for use with the Plans and Drawings supplied by the National Associations, which shall be copies of the master Drawings, held by the International Y-Flyer Yacht Racing Union (IYFYRU).

B. Suggested improvements will be considered by the National Associations in accordance with the Articles of Incorporation, Constitution and By-Laws of these Associations, and if deemed advisable, will be submitted to the IYFYRU for consideration.

C. If a point is not covered in the Drawings or Specifications, the Restrictions Committee of the IYFYRU will clarify such difficulties through the National Associations. In interpreting any point not covered or wording of obscure meaning, the Restrictions Committee will consider the intended meaning rather than any technical misconstruction that might be derived from the wording and shall bear in mind the basic principle of the specifications, which is to maintain the Y-Flyer as a one-design class.

D. A yacht, its spars, rigging, sails, and equipment, must conform strictly throughout to the Specifications and Restrictions and the official Plans of the IYFYRU. Yachts are subject to measurement at any time and a countersigned measurement certificate must be produced or a certification plaque mounted on the centerboard trunk to prove eligibility to enter sanctioned Y-Flyer races. The local measurer must accurately fill out the Measurement Report. The Measurement Report shall then be submitted to the Restrictions Committee and the yacht shall be accepted or comments made indicating the changes required to meet the one-design class. Yachts must be built to the dimensions given in the official Plans. The allowances shown for unavoidable fractional inexactness, etc., are not sufficient to permit any intentional deviations. When in the opinion of the Fleet Measurer or Restrictions Committee, the tolerances have been abused for the obvious intention of taking advantage of such tolerance, the offending yacht's registration shall be refused.

Article I - General:

A. Options: Nothing is optional in these specifications unless the word "optional" appears in the article or on the official Drawings and then only within the limitations described in the Drawings.

B. Hull:

1. The hull is to be entirely of wood and/or fiberglass reinforced plastic resin except for fastenings and fittings. Species of wood are optional except that neither balsa nor any freak, excessively light, artificially lightened, or insecure woods may be used either as lumber or plywood.

2. The hull may be constructed entirely from fiberglass reinforced plastic resin in accordance with best commercial practice. The external dimensions of fiberglass hulls shall conform in all respects with the external dimensions of the standard wooden hull specified on the Drawings and in these Specifications. The center of gravity and righting moment of the fiberglass Y-Flyer shall coincide with that of a standard wooden hull. In addition, the weight of the fiberglass Y-Flyer shall conform to the restrictions, detailed in Article II herein.

3. The structural design and construction details of the fiberglass hull are subject to the approval of the IYFYRU.

4. The use of mixed fiberglass and wood construction in the hull is subject to prior approval of the IYFYRU.

5. Measurement of the hull shall be executed using the measurement procedure provided by the National Associations. Approval of the hull will be entirely at the discretion of the IYFYRU. For measurement purposes, the reference point on the boat shall be the center of the centerboard pin. Frame 5 and the reference line shall be located accordingly.

C. Tolerances: Plus or minus 3/8" unless otherwise specified in these specifications or in the Plans.

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D. Plywood: Throughout these Specifications, 9mm and 6mm thick plywood may be substituted for 3/8" and 1/4" thick plywood respectively. Marine plywood is recommended. Other waterproof plywoods are accepted.

Article II - Hull General:

A. Dimensions:

	Maximum	Minimum
1. Length overall including all rub rails, chine strips, etc., except rub rail on transom.	18'-2"	17'-11 1/2"
2. Greatest beam at theoretical upper chine (shear) exclusive of rub rail.	5'-9"	5'-8"
3. Width of side rub rail.	1"	0"
4. Greatest draft with centerboard down.	4'-0"	N/A
5. Molded depth exclusive of keel strip:		
Station 4 (outside)	1'-9"	1'-8 1/2"
Station 5 (below reference line - outside)	1'-2 3/4"	1'-2 1/4"
6. Remaining detail dimensions:	See Official Plans	

B. Weight: The weight of the boat fully rigged (less anchor, ground tackle, cushions, life jackets, and paddles) shall not be less than 500 lbs. including adequately secured flotation. Additional weight may be added near the intersection of Frame 4 and the bedlog if needed to bring the weight up to the 500 lb. minimum.

Article III - Hull Detailed:

A. Keelson: Made of 3/8" plywood laid out to molded dimensions with lightening holes and reinforcing strips as shown on the Plans.

B. Frames: Numbers 1, 2, 3, 4, and 9 may be of 1/4" or 3/8" plywood. Numbers 5, 6, 7, and 8 shall be of 3/8" plywood. Frames shall be laid out to molded dimensions with lightening holes and glue strips as shown in official Plans.

C. Sides: 3/8" plywood. 5/8" thick lumber is optional.

D. Bottom: 3/8" plywood. One piece sheets may be used.

E. Keel Strip and Skeg: The dimensions, materials, and use of the keel strip are optional. Skeg is optional.

F. Deck: 3/8" plywood. Option: 1/4" plywood with 7 to 10 oz. fiberglass covering or equivalent and a longitudinal reinforcing strip 3/4" x 1 -1/4" under the deck as shown on the Plans.

G. Cockpit: Of the size and shape shown in the Drawings. The coaming may be smaller or may be omitted. The coaming height above the deck shall not exceed 2".

H. Splashboard: Splashboards must remain on the boat while racing. Considerable leeway is allowed as regards to shape, location, and angle; however, the length, thickness, and area must not be less than shown on the Plans. Option: 3/32" minimum thick fiberglass reinforced plastic resin. Top edge must be rolled as shown on Plans or provided with a protective molding. See Article I, Item B.3. herein.

I. Floorboards: As per Plans. 3/8" minimum thickness, 94" minimum length, and 12" minimum width of material used on each side, either plywood, lumber, or reinforced plastic resin. Floorboards may be slatted. Permanent openings (e.g. for bailing) may be incorporated if equal additional area is added. May be hinged, sectionalized, or made removable for bailing, but must remain in the boat between Stations 4 and 9 when racing.

J. Accessories:

1. An adequate anchor with sufficient length of line for local conditions attached thereto and preferably to the boat shall be carried. The anchor shall be a 4 lb. Danforth or one with equivalent holding power. A 2' length of 3/16" chain shall be attached between the anchor and the warp. The warp shall have a minimum length of 60' with a minimum breaking strength of 1,000 lbs.

2. One wearable vest type life jacket to support the wearer upright in the water with head clear must be carried for each member of the crew. If the jackets do not carry government approval, additional approved lifesaving devices must be carried for each member.

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3. Locker, shelves, etc., may be employed as desired.

4. At least one paddle must be aboard.

5. Bailing equipment consisting of a metal or plastic container of at least one quart capacity with a mouth equal in size to the largest diameter of the container, must be aboard.

K. Flotation:

1. Flotation material (Styrofoam or equivalent having a density no greater than 2 lbs. per cubic foot) or flotation tanks must be securely fastened or permanently installed in the hull with at least 12 cubic feet for fiberglass hulls and 4 cubic feet for wooden hulls.

2. The use of air bags is not recommended because of their perishable nature and susceptibility to puncture, but may be substituted in wooden hulls only if they are made of reinforced plastic or rubber material at least 10 mil thick and adequately secured and protected. At least four bags must be used, of approximately equal capacity and with a total capacity of twice the amount specified in 1. above.

3. The provision of water-tight bulkheads at Frames 3 and 9 will be considered as meeting the flotation requirements at all times.

4. In case of doubt or challenge as to the adequacy of the flotation material or bags, the boat must prove that it is capable of supporting, while filled with water to the top of the centerboard trunk, 450 lbs. on the deck completely out of the water for a minimum period of 30 minutes.

L. Transom Drain Holes: Drain holes in the transom, one on each side of the centerline or keelson, are permitted but must not exceed 25 square inches each.

M. Epoxy Materials: Epoxy fillets may be substituted for wooden chine and glue strips. Recommendation: Fillets to be 9/16" minimum radius. Y-Flyers constructed using epoxy fillets in lieu of wooden chine and glue strips shall meet all other related dimensions and specifications.

Article IV - Centerboard and Rudder:

A. Centerboard:

1. To be 3/16" to 1/4" thick and shall comply with the dimensions and shape shown on Plate 3 of the Plans within a 1/2" tolerance. To be of steel or 42,000 psi minimum tensile strength aluminum alloy, 65 ST-6, 6061-T6, or equivalent. Steel boards may be galvanized, painted, or cadmium plated to eliminate corrosion. Aluminum alloy boards may be chromated, anodized, or painted. May be streamlined but chamfer may not be more than 1" from any edge. Centerboard pin must be positioned as shown on the Plans. Some portion of centerboard must be visible above the centerboard trunk at all times.

2. The new shape centerboard is the only legal centerboard for boats built after January 1, 1983.

B. Rudder:

1. That portion of the rudder blade below the transom shall comply with the dimensions shown on Plate 3 of the Plans within the specified 3/8" tolerance.

2. The rudder blade may be so constructed as to pivot when striking an obstruction.

3. Rudder cheeks may be made of wood or metal.

4. Blade may be constructed of either wood and/or fiberglass reinforced plastic resin. To be 1" thick plus or minus 1/4". Cross section optional. See Plans for suggested streamlined section

5. Metal blade and Youngquist rudder shape are disallowed as of June 1, 1982.

C. Tiller: May be of any desired length and may be equipped with hiking stick of any convenient length.

Article V - Spars:

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A. Mast:

1. General - The mast may have a fixed step or may be made to rotate with the sail. Mast jacks are prohibited. The fore and aft location of the mast step may be altered but not to exceed plus or minus 4" from the location on the Plans if necessary to balance the boat; any such alteration to be of a permanent nature. Mast steps which are adjustable under sail are prohibited. Equipment specifically designed to alter the shape of the mast by bending while racing is prohibited.

2. Wooden Mast - Construction optional, but spar stock must be selected with care and the dimensions must not be less than those indicated in the Drawings.

3. Aluminum Mast - An extruded aluminum alloy mast meeting the specifications below may be used. The DP-1 mast section does not meet the following specifications and has been specifically approved as the only exception to these specifications. No continuous stiffening members may be used. Localized stiffeners as pipe spacers or short blocks are permitted under mast tang bolts. Dimensions are in inches except for weight which is in lbs. per foot of section length. Width equals side to side width. Depth equals fore and aft depth, including sail slot. Mast section specifications are as follows:

	Side to Side Width	Depth of Mast (including sail slot)	Width + Depth	Weight	Wall Thickness
Minimum	2.00	2.75	5.00	0.74	0.060
Maximum	2.50	3.62	6.12	None	None

Note: The smaller, lighter sections, for example the Alspar C-1, Helms H-2, Proctor D, YE 2722, W-2, and DP- 1 are only recommended for use with a non-rotating 5-stay rig.

B. Boom:

1. General - Foot of sail must fasten in a straight line in both plane and elevation. No arched or curved tracks are allowed. Transverse adjustment of the foot of the sail is prohibited. The full foot of the sail must be attached to the boom.

2. Wooden Boom - As shown in the Plans. Stiffening strips to reduce lateral bending forming a "T" boom may be used. Depth of wooden boom must be between 3-1/2" and 4-1/2" measured from the bottom of the sail bolt rope to the lower edge of the boom.

3. Aluminum Boom - An aluminum alloy boom meeting the following specifications may be used, however, a boom may be made from any approved mast section. Dimensions are in inches except for weight which is in lbs. per foot of section length. Width equals side to side width. Depth equals depth of boom including sail slot. Boom section specifications are as follows:

	Side to Side Width	Depth of Boom (including sail slot)	Width + Depth	Weight	Wall Thickness
Minimum	0.87	2.50	4.25	0.60	0.060
Maximum	2.50	4.00	5.75	None	None

4. Tunneled or thicker hollow boom as illustrated on the Plans is optional.

C. Boom Vangs: Boom vangs or boom downhauls may be used if led only to the centerline of the boat or to the mast so that the swing of the boom is not limited.

D. Spinnaker and Whisker Poles: There is no restriction on the length of the whisker pole. The overall length of the spinnaker pole, including fittings, shall not exceed 8'. They can be used only for the jib or spinnaker and must be seated home against the mast only. They cannot be hand held except when tacking or jibing and must be set on the opposite side to the boom.

E. Bands of Contrasting Color on Spars: See Article VI , Item G.

Article VI - Sails:

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A. General: No other sails than the standard size mainsail, jib, and spinnaker are allowed. Loose-footed mainsails, jib booms or part length clubs, double luff mainsails, and perforated sails are barred. The use of any type of reefing is barred during racing. Leeches must be straight or convex at all points.

B. Sail Window: Transparent sail windows may be incorporated into the mainsail and jib. The total area of the windows in the main shall not exceed 3 square feet and the total area of the windows in the jib shall not exceed 4 square feet.

C. Battens: Wood, plastic, or metal - 4 in mainsail to be as nearly as possible equally spaced and no longer than as follows:

Top Batten -----	20"	Third Batten -----	36"
-			
Second Batten -----	34"	Bottom Batten ---	22"

Two battens (allowed but not required) in the jib to be as nearly as possible equally spaced and no longer than 9".

D. Sail Cloth: Jib and mainsails shall be of woven synthetic material not lighter than 3.0 oz. Spinnaker to be of woven material not lighter than 0.75 oz. Weights are based on a lineal yard 28 - 1/2 " wide.

E. Dimensions: The following dimensions are final stretched length and shall be as per official sail plan.

	Mainsail		Jibsail			Spinnaker	
	Maximum	Minimum	Maximum	Minimum		Maximum	Minimum
Luff	20' - 8"	None	17'-1"	None	Leeches	19'-0"	18'-6"
Leech	21'-6"	None	14'-9"	None	Foot (half)	7'-0"	6'-8"
Foot	10'-8"	None	7'-1"	None	Girth A (at 5')	4'-11"	4'-7"
1/4 Point Girth	3'-8.5"	None	N/A	None	Girth B (at 10')	7'-4"	7'-0"
1/2 Point Girth	6'-7"	None	3'-11"	None	Girth C (at 15')	7'-6"	7'-2"
Roach in Foot (Center Foot)	N/A	None	0'-9"	None	Diagonal (Head to Center Foot)	None	None

1. Mainsail Headboard - Shall not exceed 4" measured at right angles to the mast. Limiting dimension is from the forward edge of the bolt rope to the after edge of the headboard and shall not exceed 5".

2. Options - Cunningham holes and adjustable clew outhaul in mainsail; adjustable luff jib; zipper luff jib, and furling jib.

F. Measurement Methods (Also see Plate 3 of the Plans):

1. Corner to corner dimensions of the mainsail - Shall include the bolt rope and shall be measured in straight lines as follows:

a. Luff Length - between the highest point of the headboard and the lowest point of the sail directly under the center of the tack cringle.

b. Foot length - between the most forward point of the sail directly ahead of the tack cringle and the aftermost point of the sail at the clew.

c. Leech length - between the lowest point of the sail directly under the center of the clew cringle and the highest point of the headboard.

2. Corner to corner dimensions of the jib - Shall be measured in straight lines as follows:

a. Luff length - between the highest point of the sail at the peak and the tack.

b. Foot length - between the most forward point of the sail at the tack and the aftermost point of the sail directly aft of the center of the clew cringle.

c. Leech length - between the lowest point of the sail directly under the center of the clew cringle and the highest point of the sail at the peak.

3. When measuring a jib of the "zipper luff" type, the material forming the "zipper luff" (in the closed position) shall be considered as part of the sail.

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4. When measuring a jib of the "adjustable luff" type, the luff length shall not exceed 17' - 1" when pulled out to maximum adjustment.

5. A light pull of about 3 lbs. shall be applied to the corner which is opposite to the side being measured. The luff and foot of the mainsail shall be subjected to a direct line pull of 16 lbs. while being measured; the jib luff, jib foot, and all leeches shall be subjected to a direct line pull of 8 lbs. while being measured. Mainsails should be measured with or without battens in place and with all pucker or leech lines released.

6. Girth measurements of the mainsail and jib shall include the bolt rope. The mid-point of the luff of the mainsail shall be determined by folding the sail upon itself, with the top most edge of the headboard even with the lower most edge of the bolt rope at the tack. The mid-point of the leech shall be determined in similar fashion with the headboard folded down to the clew. The quarter-points will be determined by folding the headboard down to the mid-points previously determined. Sufficient tension shall be applied to remove wrinkles. The mid-points of the jib luff and leech and the dimension of same and of the roach in the foot shall be determined (with wrinkles removed) as outlined above for the mainsail, except that the peak, tack, and clew are the points of intersection as shown on Plate 3 of the Plans.

7. The spinnaker shall be laid out on the floor, folded in half along the center seam, and shall be pulled out as nearly as possible wrinkle free. Girth and diagonal points shall be chalk marked on the sail by taping from a point directly above the head cringle. The leeches shall be measured under a pull of 3 lbs. from a point directly above the head cringle to a point directly below the tack-clew cringles, taken to the extreme edges of the sail. The foot shall be measured under a direct line pull of 3 lbs. from the extreme edge of the sail directly in line with the tack-clew cringles.

G. Bands on Spars:

1. Bands are to be black except on dark colored spars where they are to be white.

2. The lengths of the luff and foot of the mainsail are to be limited by 1" wide bands painted around the mast and boom. The luff of the mainsail is to be limited by two such bands. The uppermost edge of lower band is to be a maximum of 1' - 11" above the deck. The lower edge of the upper band is to be maximum of 20' - 8" above the upper edge of the lower band. Both measurements are to be made along the aft side of the mast with the mast raked to its normal sailing position. The extension of the bottom edge of the foot bolt rope shall never extend below the upper edge of the lower band except as provided below. No part of the sail including the headboard shall extend above the lower edge of the upper band. The foot of the mainsail is to be limited by a third band painted on the boom, the forward edge of which shall be 10' - 8" (measured along the boom sail track with the boom in its normal position) from a line which is an extension of the forward edge of the luff bolt rope. The foot of the mainsail shall not extend beyond the forward edge of this band.

3. Additional pairs of bands of matching colors (other than the color used for the specified bands) 20' - 8" apart shall be added to the mast below the specified bands if the mainsail will be carried lower on the mast.

Article VII - Rigging:

A. Standing Rigging: Only the Youngquist and the 5-stay rig are approved.

1. Chain plates must be located as shown on the Plans. Material is optional.

2. Forestay as shown on Plans - 1/8" wire rope or equivalent. Optional: 1/8" solid. Intersection of forestay and forward face of mast to be between 18' - 0" and 18' - 6" above the deck, measured along the mast.

3. Side shrouds - 1/8" wire rope or equivalent. Optional: 1/8" solid. Main tang bolt, measured along mast must be between 18' - 0" and 18' - 6" above the deck.

4. Spreaders - Required with the 5-stay rig. The centerline of the spreaders must be located within 6" of the projected intersection of the lower side shrouds with the outer side of the mast.

5. Lower side shrouds - may be of 1/16" or heavier wire rope or equivalent but must be led directly from mast to a pair of side chain plates shown on the Plans. It is recommended that the intersection of the shrouds with the outer side of the mast be between 9' - 0" and 10' - 0" above the deck. May be led to either fore or aft side chain plates.

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6. Option: The Youngquist mast rig shown on the Plans, jumper stays, 1/8" wire or rod (optional 3/32" or rod must be carefully rigged and maintained) to restrict lateral bending only are permitted.

7. Shrouds and stays adjustable while racing are prohibited. Back stays are prohibited. Both side shrouds may be led to the aft chain plate.

B. Running Rigging:

1. Main halyard must be 1/16" wire rope or rope, of equivalent or better breaking strength.

2. Jib halyard must be 1/16" wire rope or rope, of equivalent or better breaking strength.

3. Jib peak and tack shall be led within at least 2" of the forestay.

4. Option: Jib halyard strap may be of any length. Jib halyard block may be mounted inside the mast.

5. Spinnaker halyard must be a minimum of 1/8" rope. Spinnaker halyard must not be led higher than 19' - 6" above the deck measured along the mast.

6. General Options: Internal or external halyards may be used. Halyard winches may be used and may be located on hull or mast.

7. Other Options. Type and location of sheet blocks. Single or double purchase jib sheets. Number of mainsheet purchases used. Either mainsheet bridle or traveler may be used. Use of cleats, halyard locks, snubbing winches, bulldog jam cleats, or equivalent.

ARTICLE VIII Fittings:

A. Miscellaneous Fittings: The pattern, location, and type of material of miscellaneous fittings is optional except as otherwise covered in these restrictions but they should equal and serve the purpose of those on the Plans.

Article IX - Painting:

A. Finish: The hull may be painted, varnished, or coated. The application of impregnated mats of glass fabrics is permissible but cannot be used to reduce the thickness of the hull plywood except for the deck as specified in Article III herein.

Article X - Sail Numbers:

A. Assignment: Official numbers shall be assigned by the secretaries of the National Associations. In all cases, the official number, once assigned, remains as identification of the said boat, regardless of ownership.

B. Marking:

1. Sails - the size of the yacht's number and Class letter "Y" must not be less than 12" high. The Class letter Y and registration number shall appear on both sides of the mainsail and the number only on the spinnaker. Place numbers on mainsail below Class letter near leech. Starboard side number to be about 6" above the port side number, preferably between the first and second battens.

2. Hull – the HIN (Hull Identification Number) for all hulls beginning in year 2004 and shall be as follows: The first three characters are the maker, the next 5 are the boat, the next 2 are the month and year of make, with a letter being the month and a number the last digit of the year, and the last 2 characters are the model year. This number shall be permanently affixed to the transom. The boat number may also be engraved into the starboard side of the bedlog between frames 6 and 7, on wooden boats, with characters a minimum of 1 inch high. Example: TUNY2792C404 is a Turner built boat Y-2792. It was molded in March 2004 and of the 2004 model year.

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