

RIGGING THE HARPOON 4.6

Your Harpoon 4.6 will arrive with mast, boom, standing and running rigging in a plastic sleeve inside a renell tube for protection. When you remove the mast from the renell tube, you will find everything is taped to the mast. To keep the mast from being scratched, place it on two saw horses or cardboard boxes. It is also an easier working height. Remove each piece of rigging, note that each is labeled. The following is a list of what will be in the package:

Mast, boom, spreaders with seizing wire.

Standing rigging: Headstay with turnbuckle, port shroud,
starboard shroud.

Running rigging: Main halyard, jib halyard, mainsheet 7/16",
jib sheet, cunningham 1/4, outhaul 3/16,
vang tackle with blocks and pennant.

If you have ordered the spinnaker package, the following items will be in separate package:

Swivel block for spinnaker halyard, spinnaker pole, spinnaker halyard, two (2) color coded spinnaker sheets, pole downhaul 1/4", swivel block for downhaul, swivel block for pole lift, pole lift shock cord. All strap eyes for the attachment of the spinnaker package are on the spar.

Once everything is unpackaged you can start rigging the spar.

1. First, turn the spar track down.
2. Install square portion of spreader into spreader brackets and install spreader pin downward. Install cotter pin in spreader pivot pin. It is only necessary to open the cotter pin slightly. When you visually inspect the spreader bracket, insure that there is a limiting pin in the spreader bracket. This pin limits the tip movement of the spreader. Save the seizing wire.
3. Next, install the port and starboard shrouds to the tang plates three

quarters of the way up the mast.

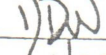
4. Pull the shrouds straight, leading each one thru the slot in the spreader end. Cut the seizing wire into two equal halves. The spreader end has a slot and a hole in it. Seize the wire shroud so it stays in the slot. It is not necessary to seize the wire tight. The purpose is to seize it, so it will not slip out of the spreader slot. Protect your sails from the end of the spreader by carefully taping the spreader with chafe tape, not too bulky, but enough to protect any sharp edges from damaging your sail.
5. Install the headstay to the tang plate three quarters of the way up the the fore side of the mast. Remove wrist pins in the turnbuckle, opening it all the way. All the way means to the point where you can still see wrist pin holes thru the barrel of the turnbuckle. Make certain that there are equal amounts of threading exposed as each end when you look thru the slot in the turnbuckle barrel.
6. Now install the running rigging. Beginning with the main halyard which leads over the top of the mast down the starboard side of the mast. Next, the jib halyard down the port side thru the jib halyard sheave block which is just under the headstay tang plate and thru the turning block near the base of the mast. The cunningham can now be dead end to the strap eye on the port side of the mast, a few feet up from the base. Tie figure eight knots in the bitter ends of the halyards to prevent them from running out of the sheaves.
7. Install the blocks on the boom. The outhaul which goes on the port side of the boom. Lead the line thru the cam cleat port side thru the fair leads and around the fixed turning block near the end of the boom. Once the sail is rigged the outhaul goes thru the cringle of the sail then to the strap eye on the opposite side.
8. Assuming the boat is on a trailer, place the heel of the mast on the trailer tong, luff track down. Place the mast head in the boom mast

crutch support which you have inserted in the gudgeons on the transom. Before actually stepping, look around to make sure there are NO overhead electrical cables in the area. Assuming you may be in a launching area be certain you have clear access to the launching ramp without overhead cable interference. If you have unhooked your trailer from your car, you can not stand in the stern of the boat, as it will be out of balance and tip up, throwing you off balance.

9. Attach the shroud tensioners to the chain plates. The shroud tensioners are delivered connected to the shrouds. The shrouds should be connected to the shroud tensioners in hole number (6) six from the top. Make certain it is the same port and starboard, as this will ensure that the mast will be straight in the boat athwartship. Hole number six from the top of the shroud tensioner has been determined from sailing trials to optimize sailing performance and helm balance.
10. Attach the jib halyard shackle to the tack fitting on the stem head. Check to be certain the jib halyard is clear and not fouled leading from the jib halyard sheave block. Check the headstay to be certain it is clear and in front of the mast when the mast is standing. Uncleat the jib halyard and take the tail aft in your hand to a position just aft of the thwart seat.
11. Standing inside the boat near the mainsheet blocks location, slide the mast aft, until the heel of the mast can slip into the mast tabernacle. (Boom crutch/mast support is an optional extra.) The mast is light, but do it slowly, as the shrouds which are connected to the chain plates may foul a fitting. Lower the mast heel into a slot in the mast tabernacle. Move forward and check that it has seated properly. Pull the jib halyard taught from the lead block on the port side of the mast. Make certain it is clear and not fouled.

CAUTION: Look around again for overhead electrical cables.
Contacting an electrical cable with the mast could be fatal.

12. Lift the mast to shoulder height. Pulling the jib halyard tail taut as you lift the spar. Note that the shrouds will serve as guide wires preventing the spar from falling to either side. Continuing this process of pulling the jib halyard and lifting the spar until it is in standing position. The shrouds will tighten restricting the mast from going too far forward. Pull the jib halyard tight and cleat it. This will hold the mast from falling backwards, while you go forward and attach the headstay. When tightening the headstay you can lean on the jib halyard, this will make it easy to turn the barrel of the turnbuckle. Make the headstay quite tight. Re-insert the wrist pins you removed from the turnbuckle when you are finished adjusting the turnbuckle.
- This prevents the turnbuckle from unwinding when in use. It is not necessary to use tools to tighten the headstay.
13. Install the boom in the mast thru the slot in the after side of the mast.
14. Install the mainsheet. Start the line thru the cam cleat portion of the mainsheet block mounted on the centerboard trunk, continuing to reave the sheet thru the remaining blocks securing it in the becket part of the mainsheet block.
15. Add vang and cunningham.
16. Bend on the jib and mainsails. Install battens in the mainsails. Each batten is labelled. Camber in the upper mainsail batten should be matched to the desired camber in the sail. It is suggested that you begin with a slight curvature.

By: 

Date: 1/23/1978

BOSTON WHALER
HARPOON 4.6

13. EQUIPMENT

No additional equipment may be affixed, to any part of the Harpoon except for the following:

- a. storage bags or receptacles may be attached to the inside of the cockpit.
- b. one or two compasses may be mounted on the deck or in the cockpit, provided that the hull cavity is not pierced by other than the fasteners
- c. wind indicators may be attached as follows:
 - (1) a wind indicator may be attached to the top of the mast provided that the water-tight integrity of the mast is maintained and the sail is not cut.
 - (2) in addition, two wind indicators may be affixed anywhere to the boat, its boom, spars or equipment and
 - (3) ribbons, wool or similar wind indicators may be attached to the sail, or shrouds.
- d. the hiking strap as supplied by the builder may be padded and may be held taut by the use of a shock cord attached to the aft end of the strap and to the fittings at the aft end of the cockpit. Location as per location diagram.

14. SAILS

- a. Only one suit of sails, including a spinnaker, whether new or used, shall be added to any boat's equipment in any one season.
- b. In case of accident the Governing Committee may waive this rule, and there shall be the following exception:
- c. Any new boat may add one extra suit of sails at any time during the first two years afloat, i.e., at the end of the first two years any boat may have three complete suits of

- sails, including the suit that came with the boat. Only one (1) complete suit of sails may be carried when racing.
- d. Sails shall be measured according to the IYRU Sail Measurement Instructions.
 - e. Sails must comply with the measurement diagrams. If any sail is the subject of a protest, measurement shall be governed by the maximum dimensions set forth in the diagram.

15. MAINSAIL

- a. The mainsail shall be made of 5 oz. Dacron white cloth of even weight throughout. The mainsail shall have no aperture other than normal cringles except for an additional cringle, or a device attached to the boltrope or the sail, permitting adjustments to the luff tension. Three battens shall be fitted in the batten pockets.
- b. The sail shall not extend beyond the inner edge of the boom band or above the lower edge of the upper mast band. The forward extension of the line of the upper edge of the boom shall not be lower than the upper edge of the lower mast band.
- c. The following measurements shall be taken and shall not exceed the dimensions on the measurement diagram.
 - 1. Leech-distance in a straight line from upper forward corner of the headboard to the lower edge of the boltrope below the center of the clew cringle shall not exceed 21' 9".

2. Leech 21' 9" maximum
1/4 girth, 7' 9" maximum
1/2 girth, 5' 11" maximum
3/4 girth, 3' 5 1/2" maximum.

The girths are measured from the quarter points on the leech, obtained by folding, to the nearest point on the luff by swinging an arc.

3. Battens: (3 in number)
 - 1) Top is luff to leech, 3' max with leech end 16" plus or minus 1" above 3/4 height.
 - 2) Middle is 28" max, leech end 12" plus or minus 1" above 1/2 height.
 - 3) Lower is 28" max, leech end 8" plus or minus 1" above 1/4 height.

Closed-cell - foam at head, minimum dimensions 1" thick, 13" down luff and leech.

16. HEADSAIL

- a. The headsail shall be made of 5 Oz. Dacron white cloth of even weight throughout.
- b. The leech shall not extend beyond a straight line, i.e. shall not be convex.
- c. The following measurements shall not exceed the figures:
Jib: luff: 14'4" max
leech: 13'5" max
foot: 5' 10 1/2" max

- d. foot skirt: "No part of the sail shall lie below a line obtained by swinging an arc from tack to clew from a point on the luff defined as the luff end of the fold obtained by placing the tack on top of the clew."
- e. one window: 275 sq. in. max.
- f. Luff has no wire, attached to headstay by not more than five (5) piston hanks, which shall be bronze or brass.

17. SPINNAKER

- a. the spinnaker shall be a three cornered sail of optional colored cloth of .75 oz. Nylon even weight throughout. There shall be no battens or headboard. The spinnaker shall be measured folded at its vertical centerline, about which it shall be symmetrical.
- b. There shall be no holes, slats or pockets other than three (3) normal cringles, nor shall any form of adjustment be incorporated in the sail.
- c. The following measurements shall not exceed:
Spinnaker - (measured while folded in half.)
 - luffs: 14' 4"
 - centerfold: 16' 9"
 - 1/2 foot: 4' 11"
 - 1/2 width max: 5' 11"

18. CLASS EMBLEM AND SAIL NUMBERS

1. The class emblem shall be glued, sewn or silkscreened to each side of the sail, back to back, in the third panel from the head.
2. The registration number of each boat, as attached to the transom, shall be the sail number of the boat. The sail number shall be glued, sewn or otherwise clearly marked to each side of the sail, placed parallel to the seam, with the number on the starboard side placed above that on the port side, in accordance with the IYRU Racing Rules.

The numbers shall be of the following minimum dimensions:

Height: 300 mm (11 3/4")

Width: 200 mm (8")

Thickness: 45 mm (1 3/4")

Space Between Adjoining Numbers: 60 mm (2 3/8")

19. MAST AND BOOM

The mast, boom and all fittings attached thereto by the builder shall be supplied only by the builder and may not be drilled or altered or otherwise changed.

No mast which has a permanent bend may be used at any time.

No attachments, fittings or devices may be used which affect or may affect the position of the mast.

Mast step position as well as chain plate location are fixed as per measurement diagram.