Laser

Welcome

to the growing number of enthusiastic Laser II® sailboat owners. This booklet has been written to familiarize you with your Laser II and we hope you will read it thoroughly and follow our suggestions on rigging, storing and maintaining your boat so that you may enjoy many years of happy ownership. Be sure to keep it as a ready reference.

Copyright by Performance Sailcraft
®"Laser" is a registered trademark of Performance Sailcraft

Brochure: Perception Design
Printed in Canada

Warranty

The Laser II is built to very high standards and covered by an extensive warranty. Details of this warranty can be obtained from your Performance Sailcraft dealer.

Your Dealer

Your dealer wants you to be perfectly satisfied with your new boat. He can provide you with assistance, answer your questions and supply you with spare parts and useful accessories. Should you encounter any problems with your boat, or require additional information, please consult your dealer immediately.

The Laser® Class Association

The Association is a worldwide organization of Laser II sailboat owners. It co-ordinates racing on all levels, publishes helpful and interesting news from all over the world and ensures that the rules and principles of a one-design class are maintained. The Class organization offers you a chance to meet new friends and to participate in activities designed to improve your sailing ability and introduce you to the worldwide community of Laser II sailors.

On purchasing your boat you should be given a membership application form by your dealer. If not, ask your dealer for the address of the Laser II Association.

Safety

Sailing is usually a safe sport and your Laser II is one of the safest small boats available. **But you should always wear a life jacket!** Consult your local Laser II dealer or marine hardware store for advice on the best "PFD" (personal flotation device) for you.

All lightweight dinghies can capsize. Your Laser II has been carefully designed to be righted easily and come up dry. Properly done, the boat can be capsized and righted without the crew even getting wet. This takes a little practice, and it is a good idea for you and your crew to try capsizing and righting intentionally, so that when you go over accidentally you'll know what to expect.

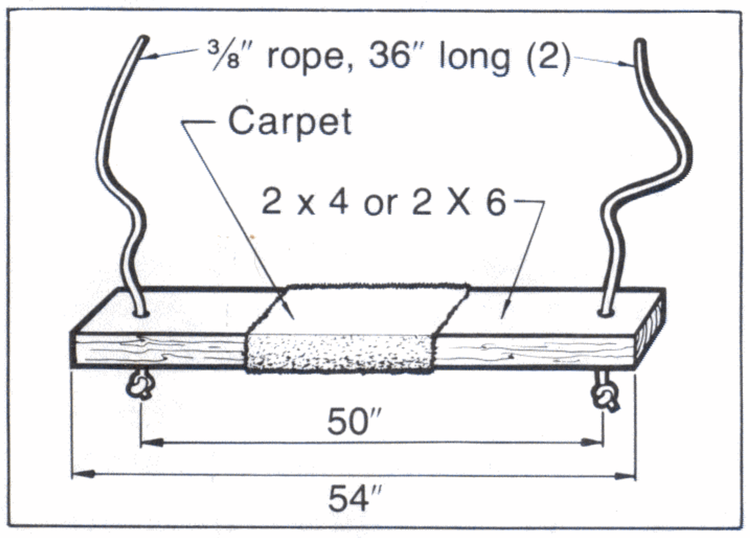
Also, remember that an upside down Laser II floats just as well as one right side up. So, if for some reason you can't right your boat or want to rest a minute before you try, let it turn over, climb up on the bottom and relax. In almost every situation it is best to stay with your boat. The excellent buoyancy plus additional safety flotation of your Laser II, the fact that you may be more tired than you think, the temperature of the water and the relative visibility of a boat compared to a swimmer all combine to make staying with the boat a good idea in most instances.

The simplicity and quality of the Laser II tend to make you forget even the most elementary maintenance, but for your safety you should inspect the whole boat occasionally: tighten loose screws, replace worn-out fittings and lines, seal leaks in the spars and hull, and repair tears or open seams in the sail. A little preventive maintenance goes a long way toward protecting you from unexpected mishaps, prolongs the life of your investment and ensures you many years of carefree sailing.

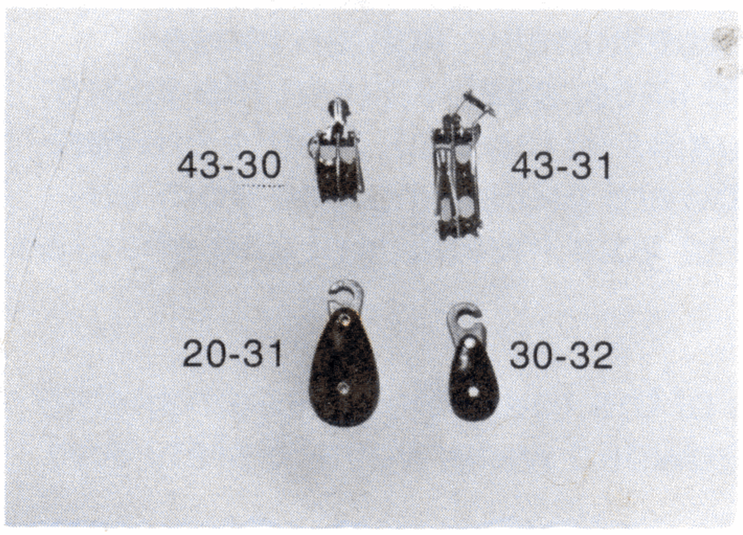
Take the time to learn the rules of the road. Basic seamanship is a must, especially on coastal or crowded waterways. Safety and common sense make for fun sailing.

Rigging your Laser II



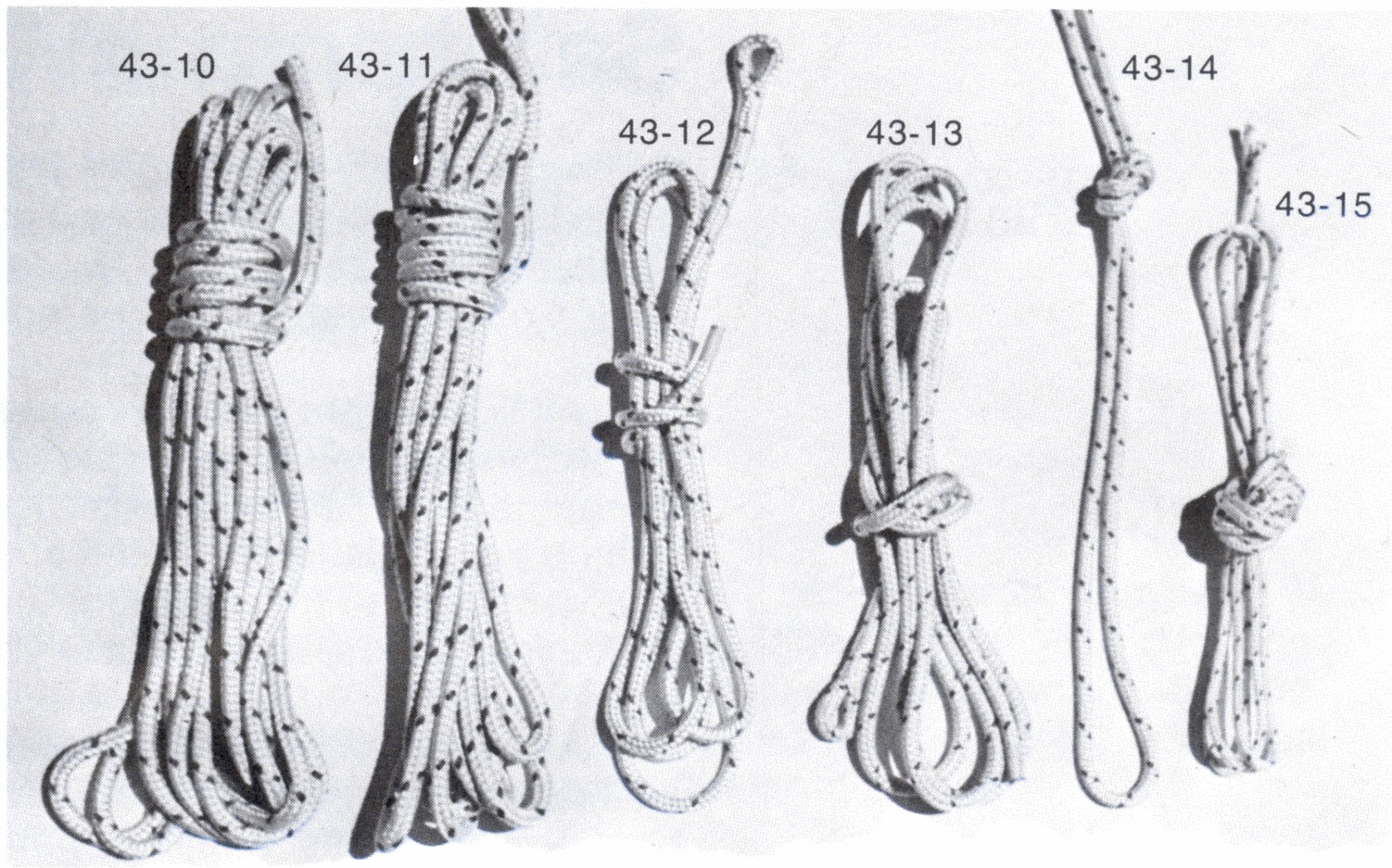


1. Place the hull, bow into the wind, on its trolley or a rigging board. This will secure the boat while rigging. A rigging board can be simply and inexpensively fashioned as shown; the ropes are cleated through the jibsheet fairleads.

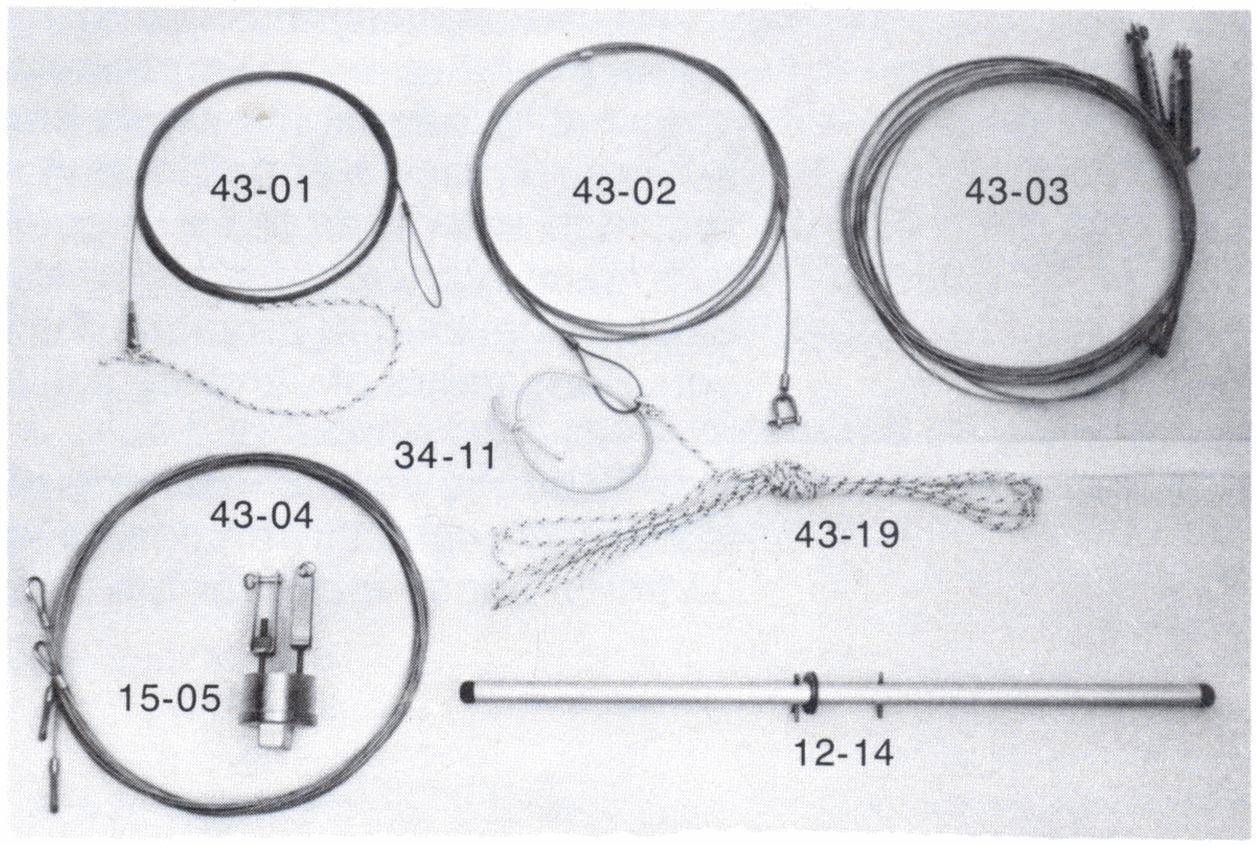


2. Unpack and identify all standard parts:

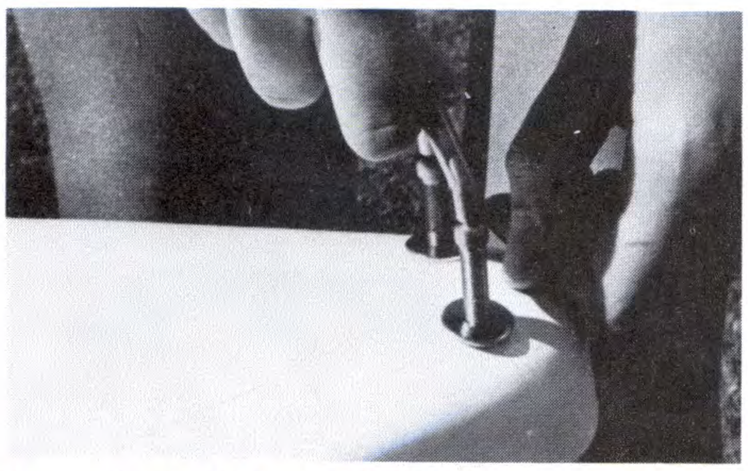
Small Card:
43-30 Double block with key
43-31 Double block with jamb and shackle
20-31 Large block with brummel
30-32 Small block with brummel



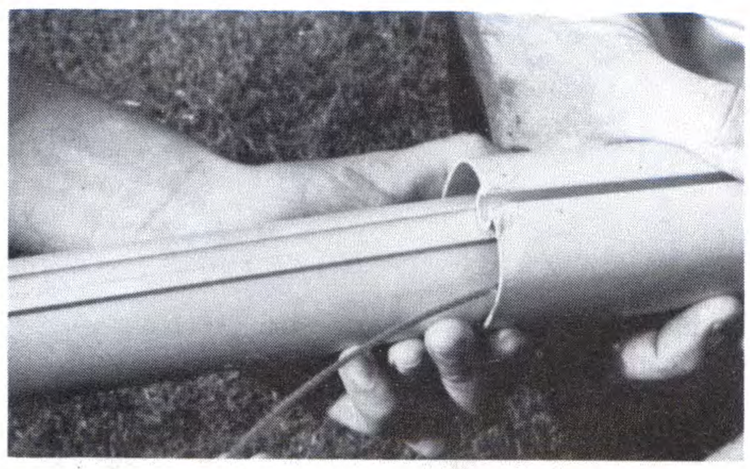
Card #1:
43-10 Mainsheet
43-11 Jib sheet
43-12 Boom vang line
43-13 Traveler line
43-14 Cunningham line
43-15 Outhaul line



Card #2:
43-01 Forestay wire c/w tail
43-03 Shroud wires (2) c/w verniers
43-04 Diamond wires (2)
15-05 Base plug assembly
43-02 Jib halyard complete
12-14 Diamond spreader tube assembly

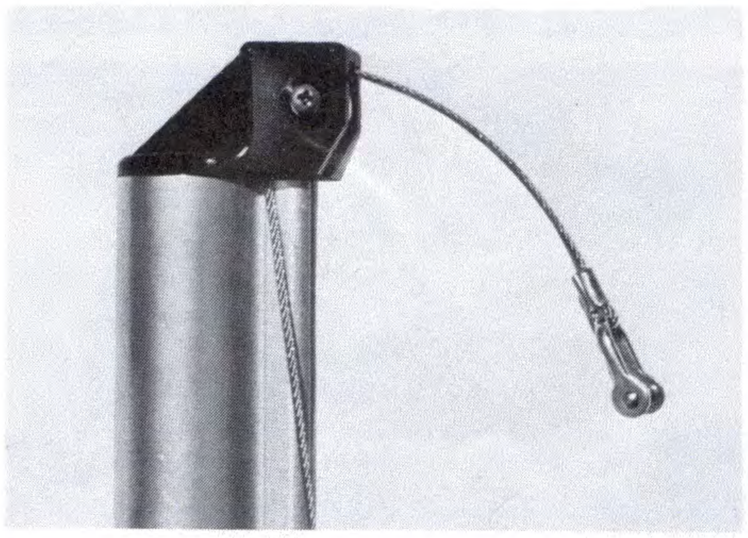


3. Install the U-Bolt (33-01), which is taped to the hiking straps, on the bow. Include the washers and the shackle (12-37) as shown. Use silicone seal to ensure that the fitting is mounted water-tight.

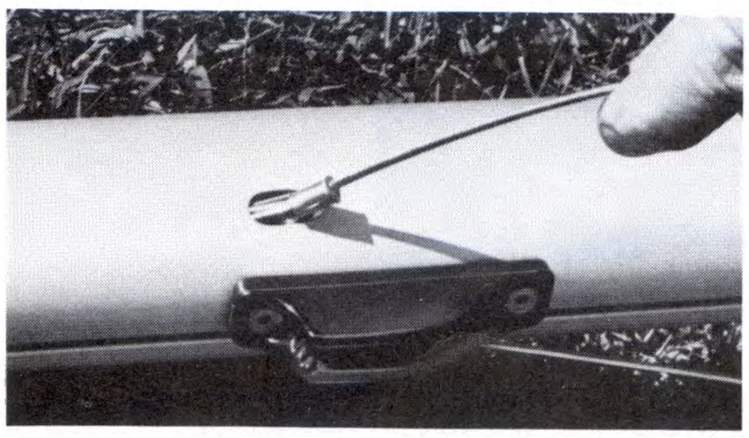


4. Insert the upper mast section into the lower section. Make sure that the main halyard passes on the port (left hand) side of the track.

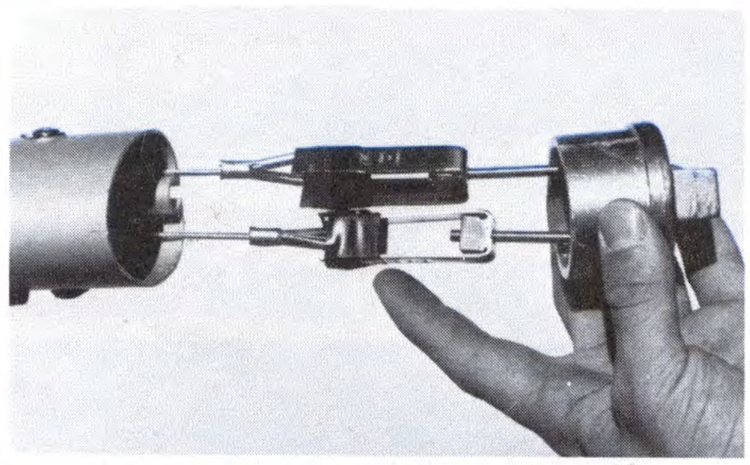
For optimum performance this should be a snug fit and for this reason you may find evidence of the upper section having been filed at the factory and lightly oiled. If fit is too tight, file lightly where contact takes place then sand the area with 280 (or finer) wet and dry paper before reassembling. Keep clean and lightly lubricated.



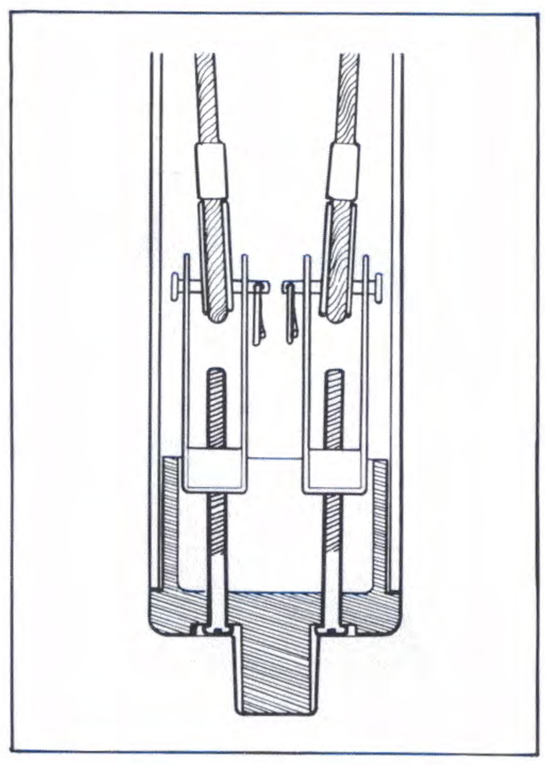
5. Remove the sheave from the mast head fitting on the upper section and insert the main halyard wire. Tie a knot in the end of the main halyard rope tail so as not to have it run into the mast.



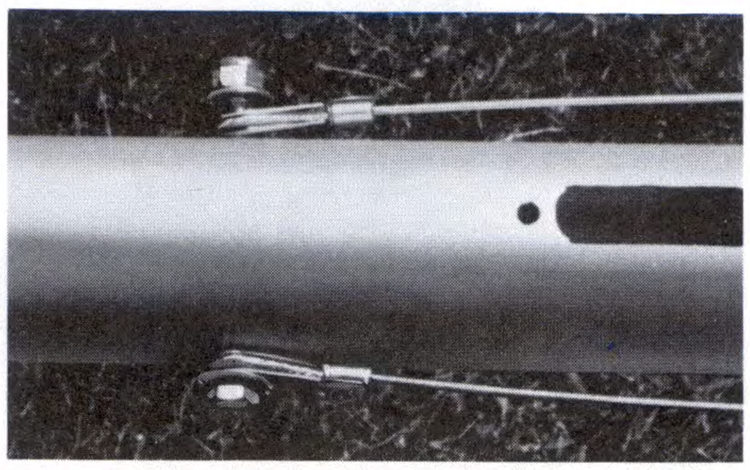
6. Feed the diamond wires (43-04) through the elongated holes on each side of the lower mast section and out the base. It is *very important* that the diamond wires run on the mast groove side of the main halyard and the sheave box. To ensure that this happens, it helps to tension the main halyard so that it does not lie loose in the mast.



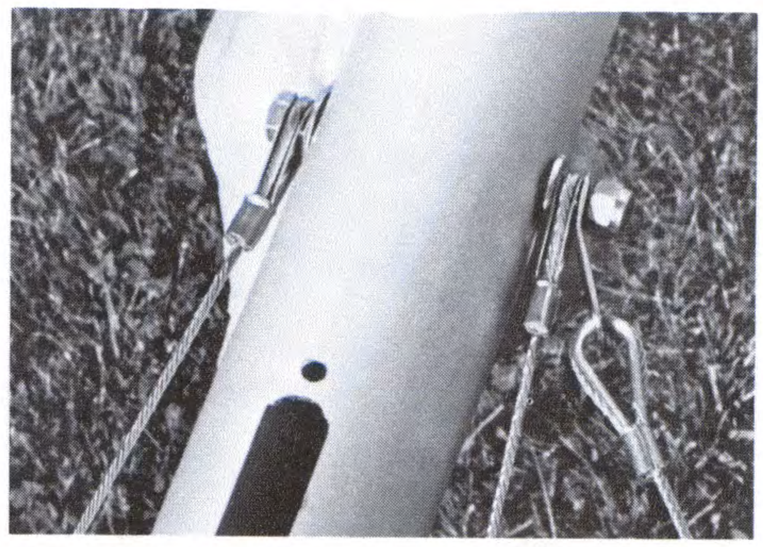
7. Attach the diamond wires to the base plug assembly (15-05). Tape the split rings and clevis pins so that they do not catch. Fit the base plug into the mast, making sure that the main halyard runs forward of the diamond wires (as in step 4).



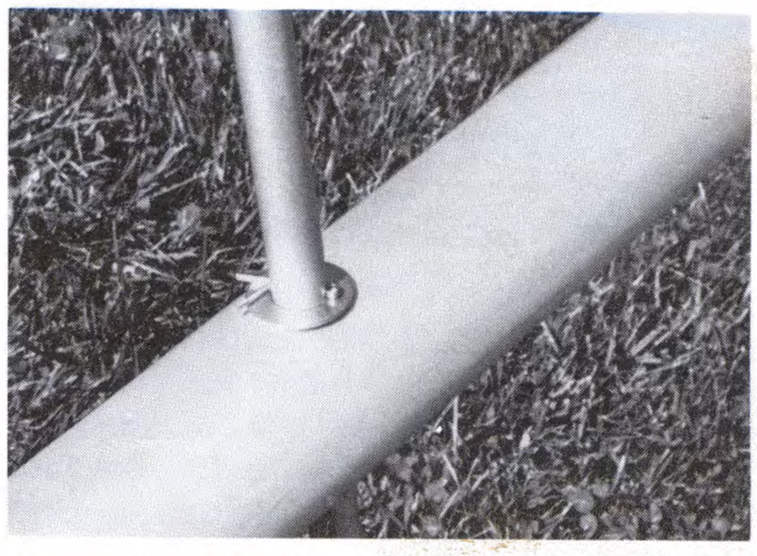
The internal working of the diamond adjusters.



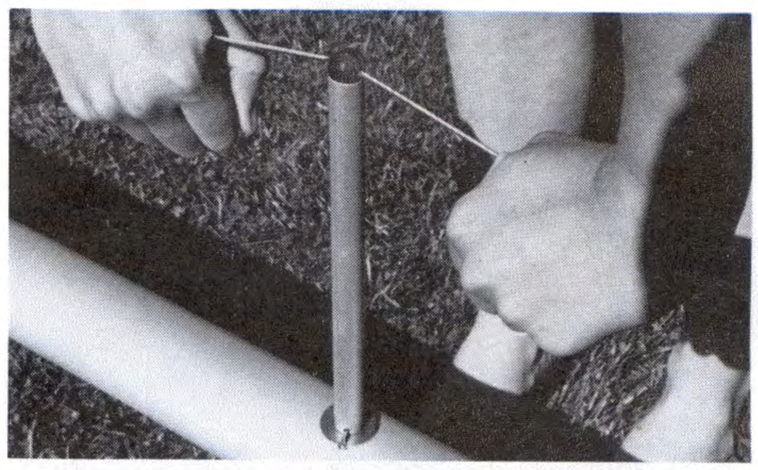
8. Bolt the upper ends of the diamond wires through the uppermost holes in the mast. **Note:** The washers should be on the outside of the diamond wires to hold them on the bolt.



If you have the trapeze option, include the tangs of the trapeze wires (43-06) in place of the washers, out side of the diamond wires.



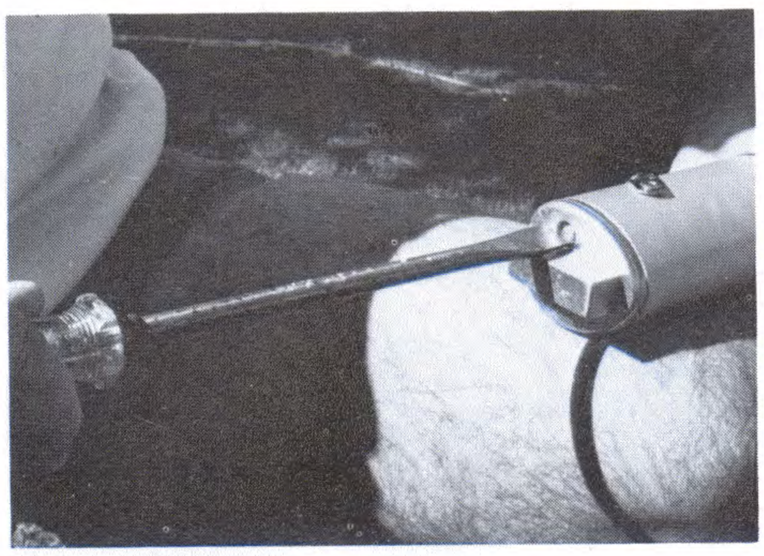
9. Insert the diamond spreader (12-14) through the large holes near the center of the lower mast section. Slip a large washer on each side and insert the cotter pins in the holes in the tube. **Note:** The washers are between the cotter pins and the mast. Bend over the cotter pin ends so that they will not fall out.

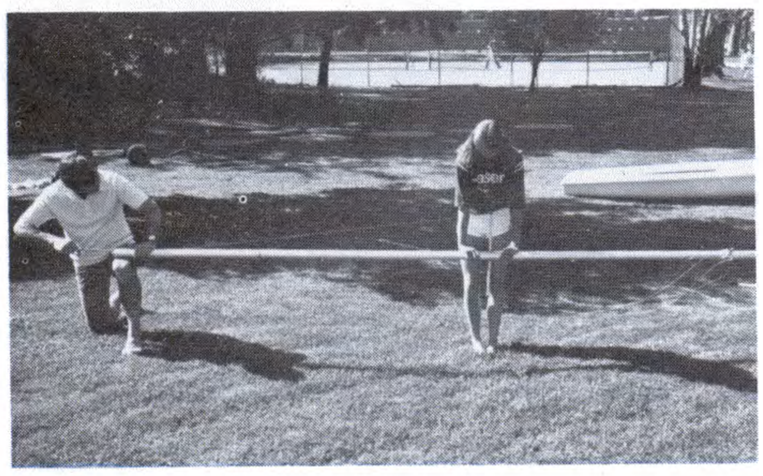


10. Push the diamond wires into the spreader end caps. If the wires do not reach the end caps, loosen them with the diamond adjuster screws in the base plug.



11. Tape the cotter pins to avoid abrasion on the sails. Tape the end caps so that the diamond wires are secured.

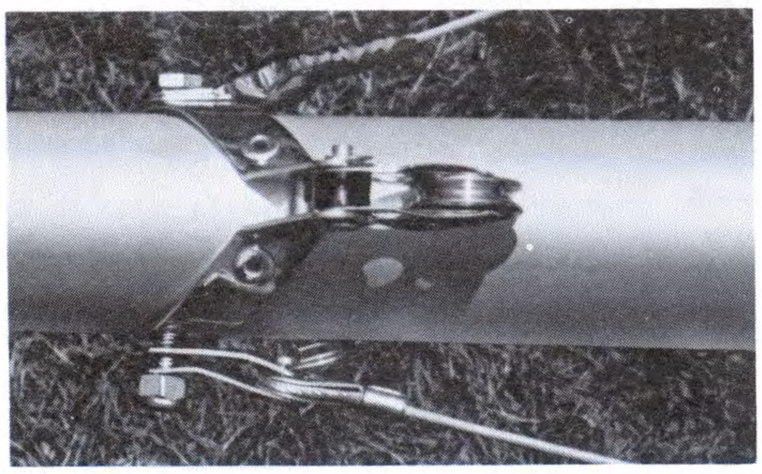




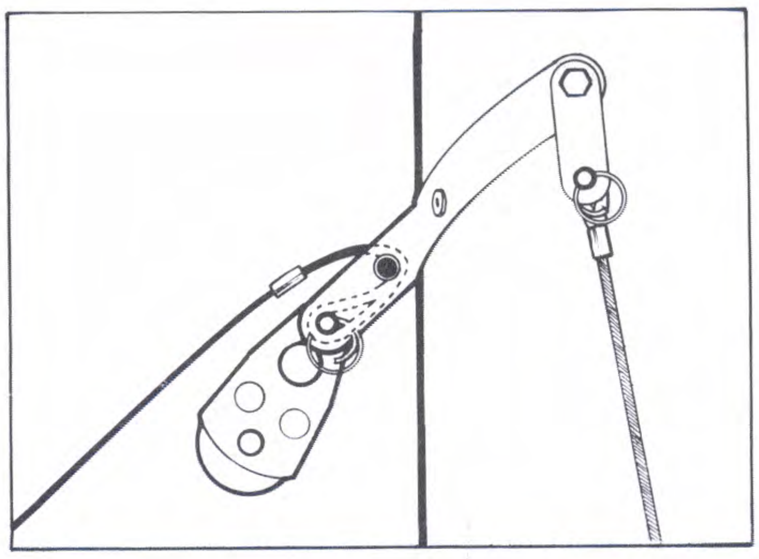
12. Tighten up the diamond wires *evenly* with the diamond adjuster screws in the base plug. The mast must be *absolutely straight.* Check for straightness by sighting down the sail groove. To achieve the proper tension, support the mast at both ends and tighten the upper diamond wire while one of the crew's weight is applied at the spreader.

Turn the mast over and repeat for the other diamond wire, checking for straightness.

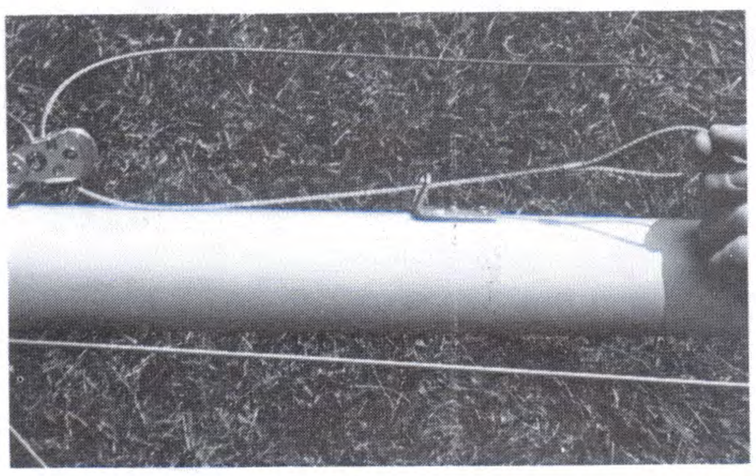
Note: It is important that these wires be very tight and they should be checked and retightened after the first few days of sailing.



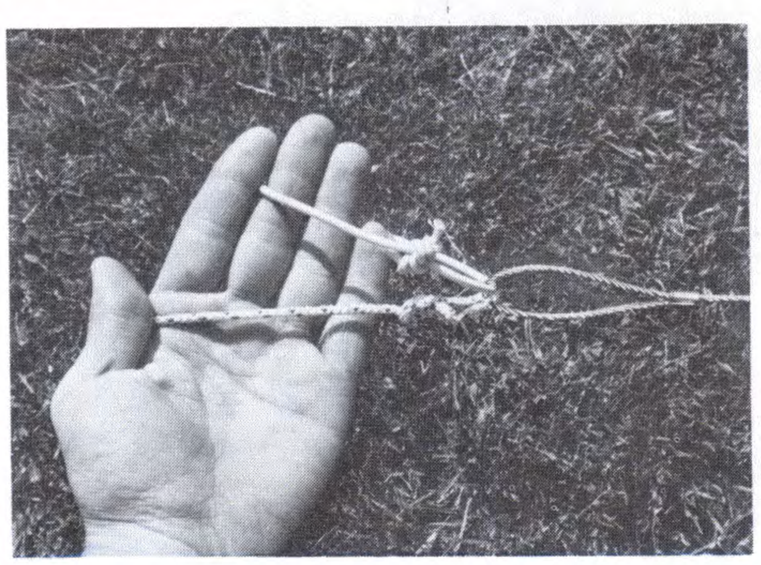
13. Attach the shroud wires (43-03) to the hound fitting by sliding the eye of the wire between the two tangs. Tape the clevis pins, the split rings and the shroud wire swages to avoid tearing the sails.



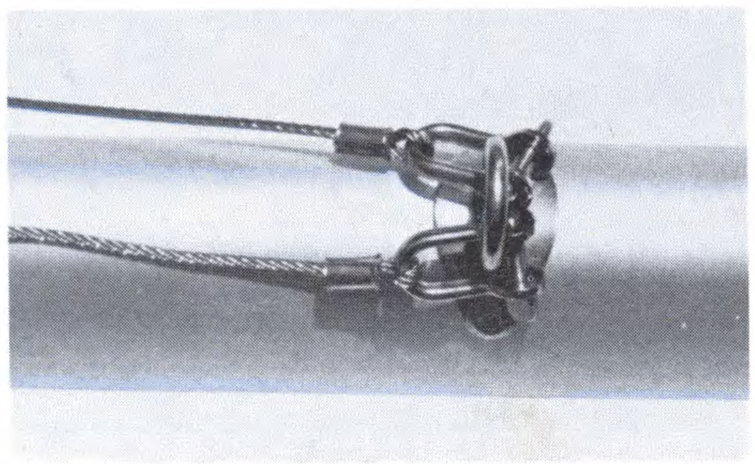
14. Attach the forestay wire with tail (43-01) to the hound fitting as shown.



15. Feed the soft eye of the jib halyard wire (43-02) through the front end of the hound fitting block and then through the "sky hook".



16. Tie the jib halyard rope tail (43-19) and the shockcord (34-11) to the soft eye.

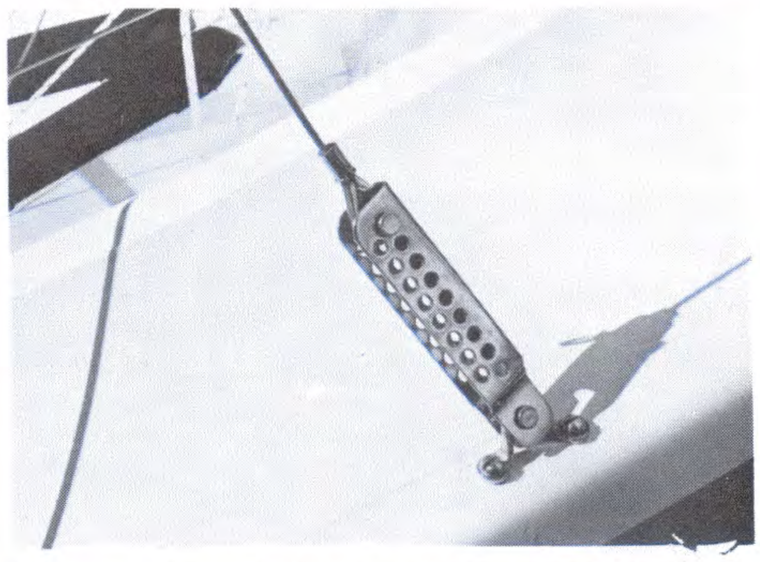


17. Before raising the mast, shackle the halyards to the spinnaker pole ring so as not to lose them up the mast.

Note: If you have the spinnaker and/or trapeze option, refer to those sections for further assembly.

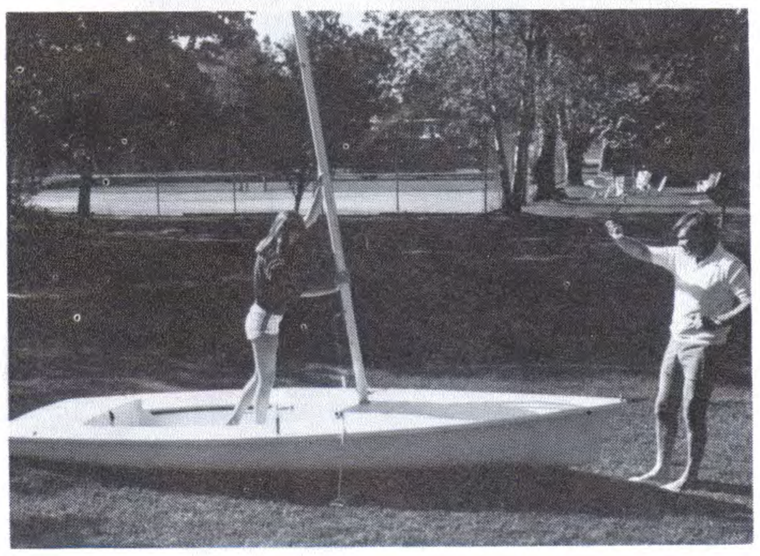


18. Place the mast on the boat with the sail groove down and the foot at the bow.



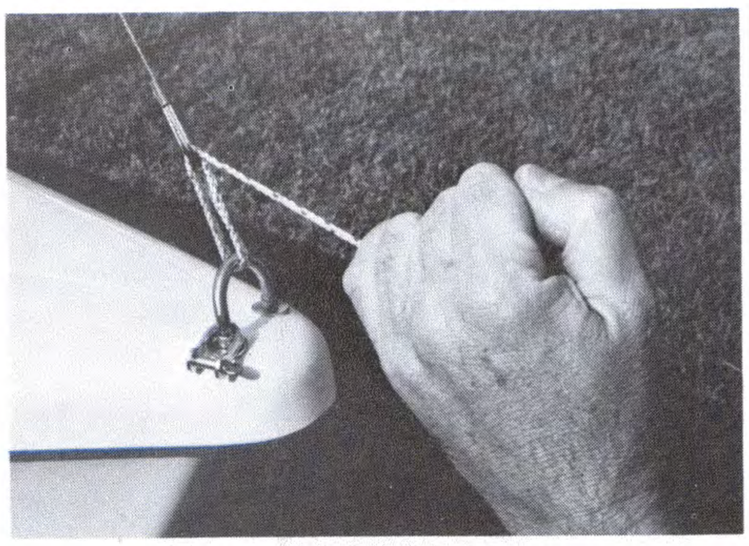
19. Attach the vernier adjusters (42-04) to the shroud straps. Set the vernier adjusters at the uppermost setting.



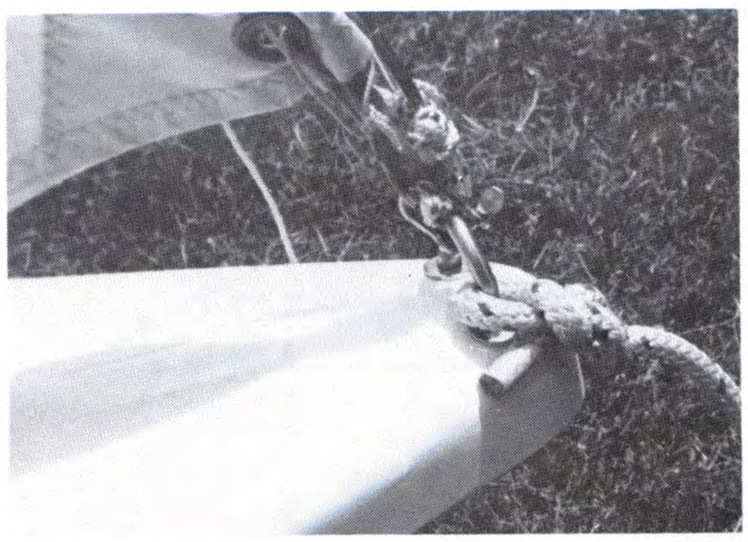


20. Raise the mast and place the base plug in the mast step. Then, with one of the crew holding the forestay, straighten the mast until the shrouds are tight.

Warning!: Make sure there are no electrical wires overhead.



21. Loop the forestay rope tail around the U-Bolt as shown to give you a 4:1 purchase. *Tie the forestay down with as much tension on the rigging as possible.*



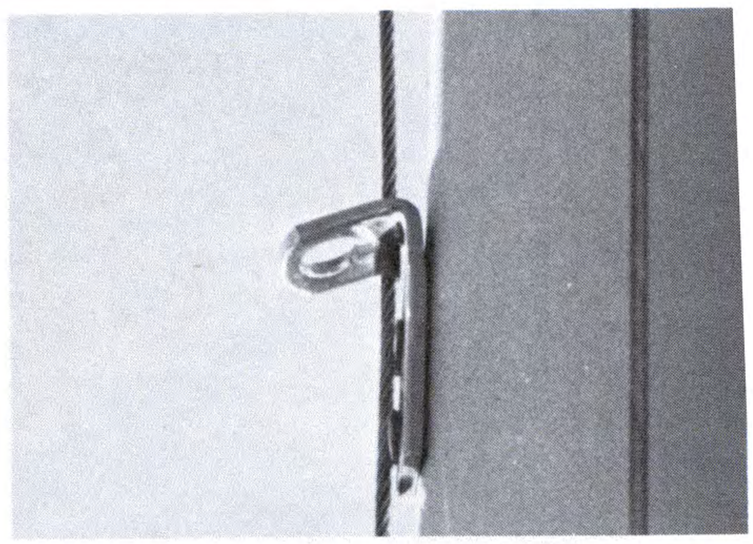
22. Attach the jib tack to the bow using the shackle supplied with the U-Bolt. Tie a painter (a rope to tie the boat) to the U-Bolt on the bow.

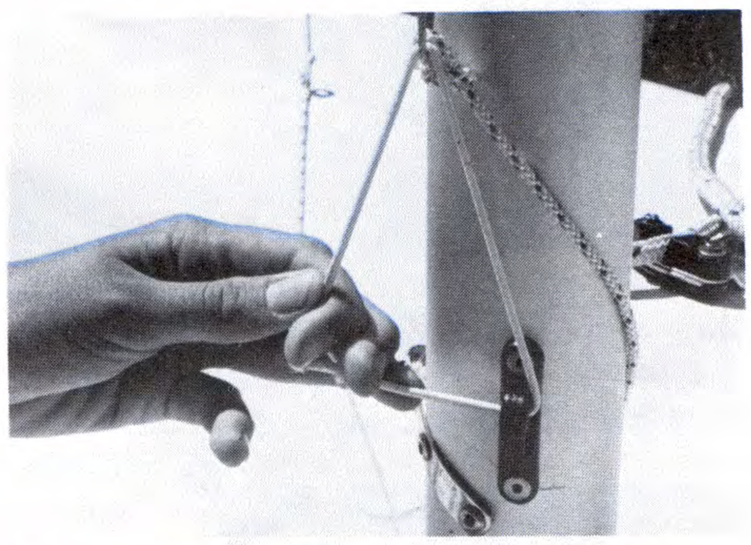


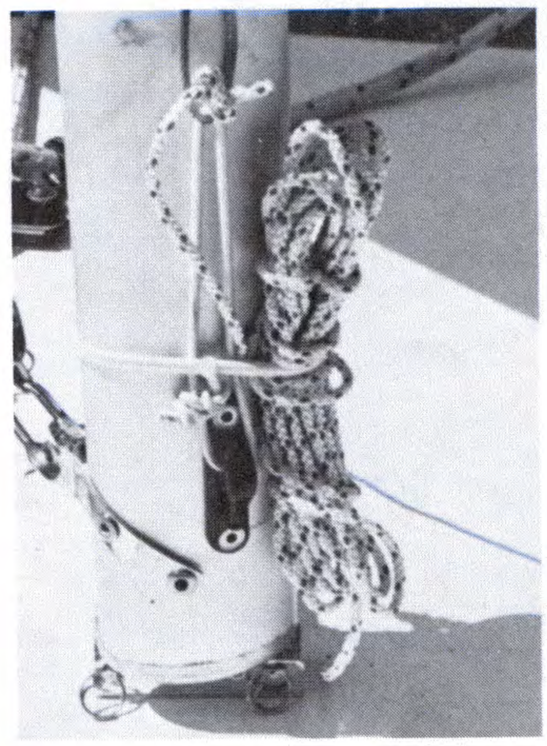
23. Shackle the jib head to the jib halyard.



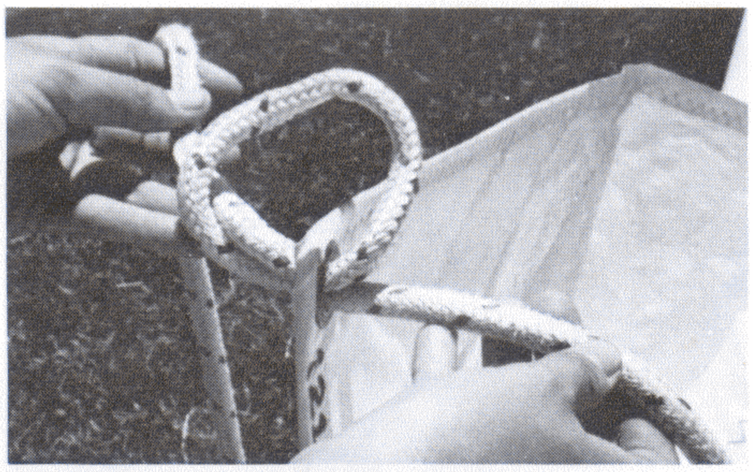
24. Hoist the jib with the crew pulling forward on the forestay (like an archer pulling a bow string), engage the stop on the jib halyard wire in the sky hook. You should not have to pull very hard on the halyard as the strain is being taken by the crew pulling on the forestay. The jib luff should be *rigidly strung.* If not, shorten the shrouds evenly with the vernier adjusters until the jib luff is taut. This adjustment may be required for the first few months of sailing as the wires stretch and become bedded-in. Retighten the forestay, so as not to have it hang loose while sailing, but also to increase the "bow-string" effect.







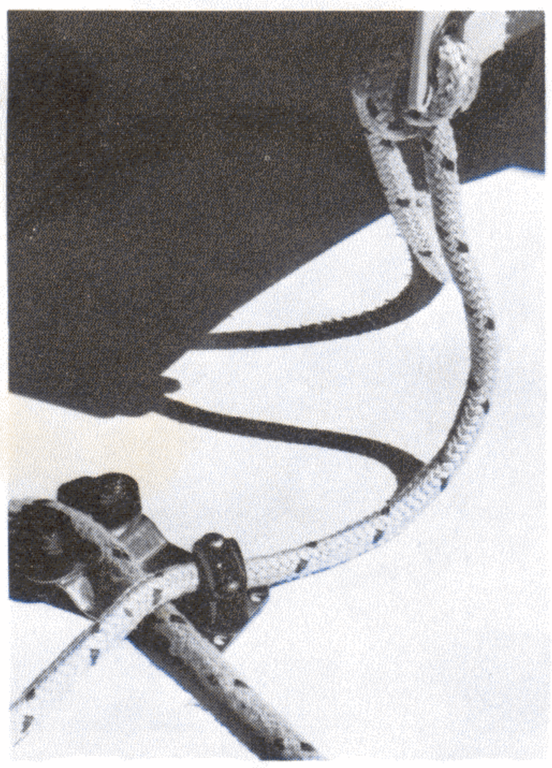
25. Hook the jib halyard shockcord on the black plastic hook. Neatly stow the rope tail by tucking it between a piece of shockcord and the mast.



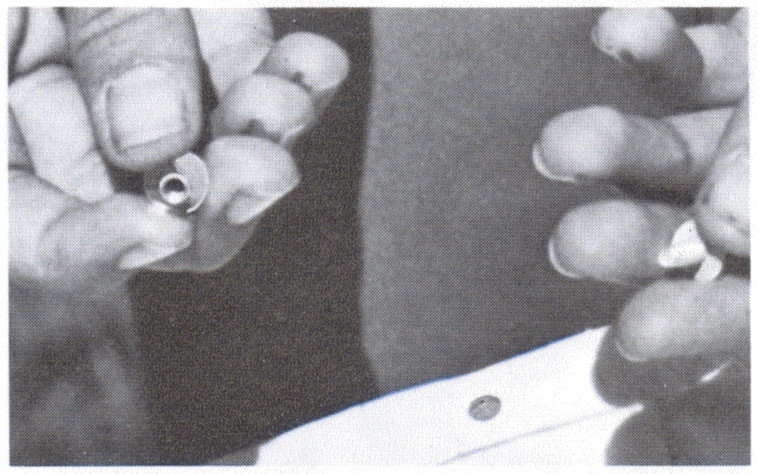


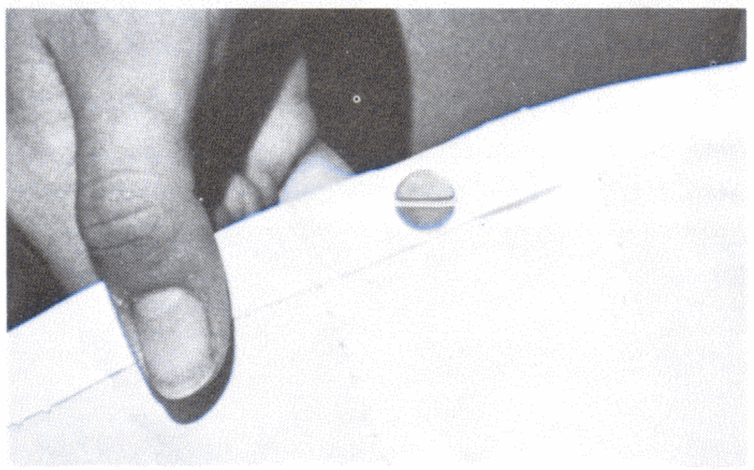


26. Feed the jib sheet (43-11) through the jib clew grommet and knot it in the center as shown.

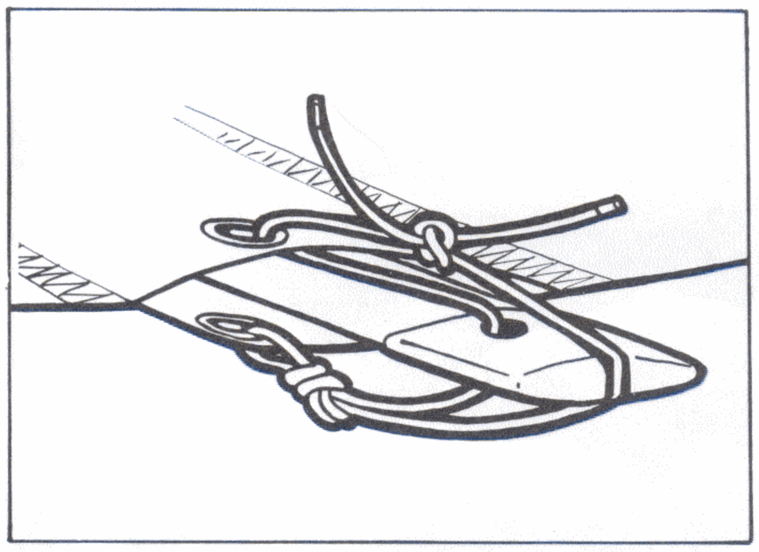


27. Pass the jib sheet ends inward through the jib sheet fairleads and knot the ends.

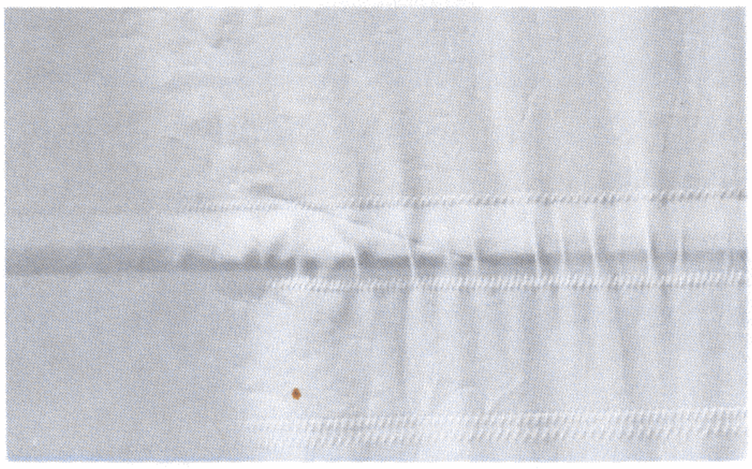




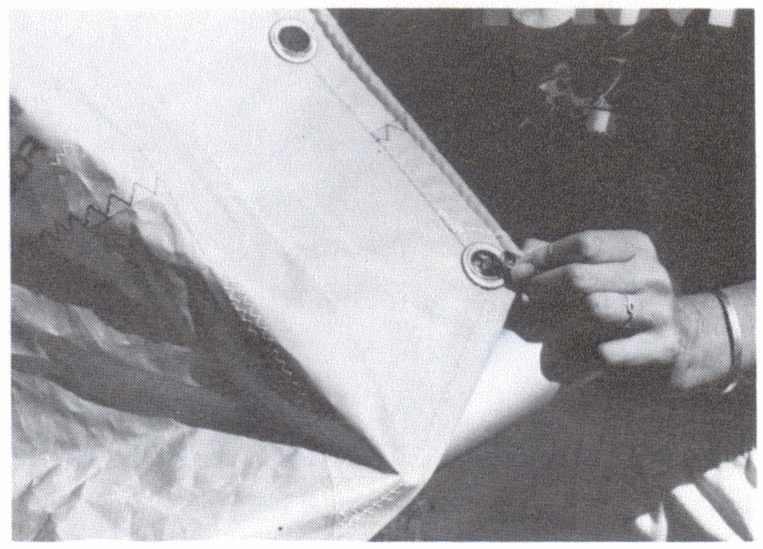
28. Insert the two short battens into the lower batten pockets on the mainsail. Fasten them with the screws and tighten the screws securely.



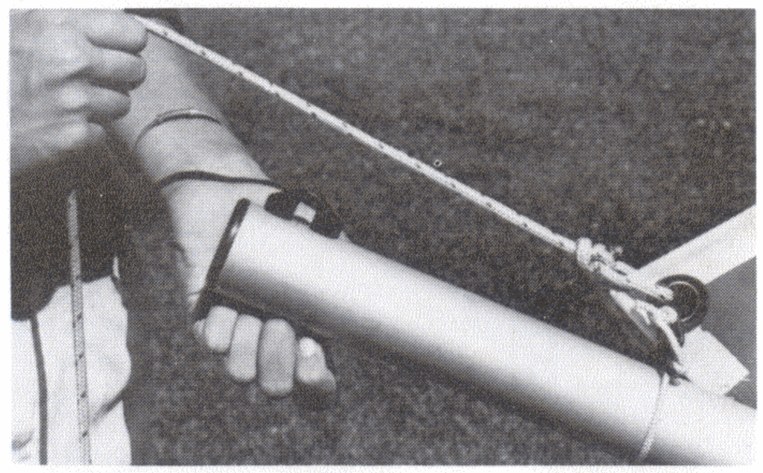
29. Insert the long batten in the uppermost batten pocket and tension it with the tie. Due to the "passive batten" sail design, the tension should be sufficient merely to tension the sailcloth along the batten pocket.

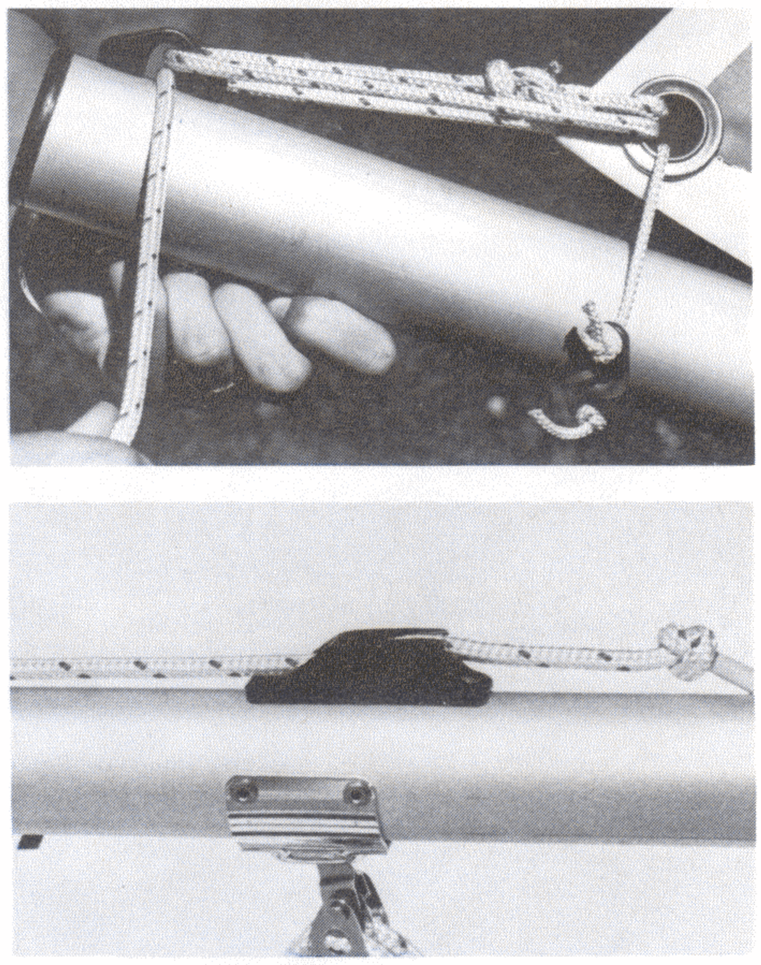


However, if vertical puckering occurs along the batten pocket while sailing, increase the tension on the tie until it disappears.

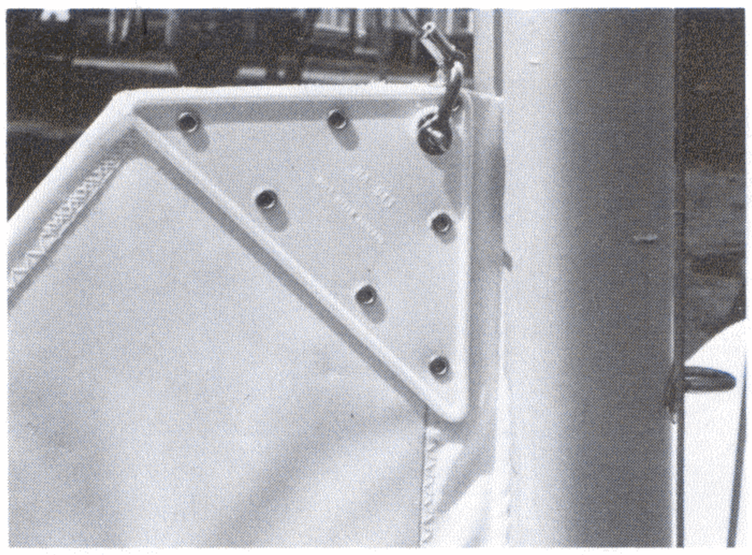


30. Shackle the tack of the mainsail to the boom.

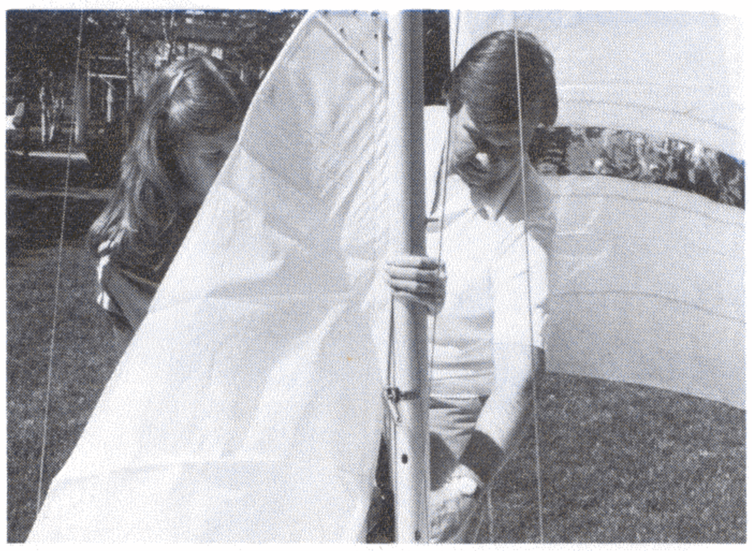


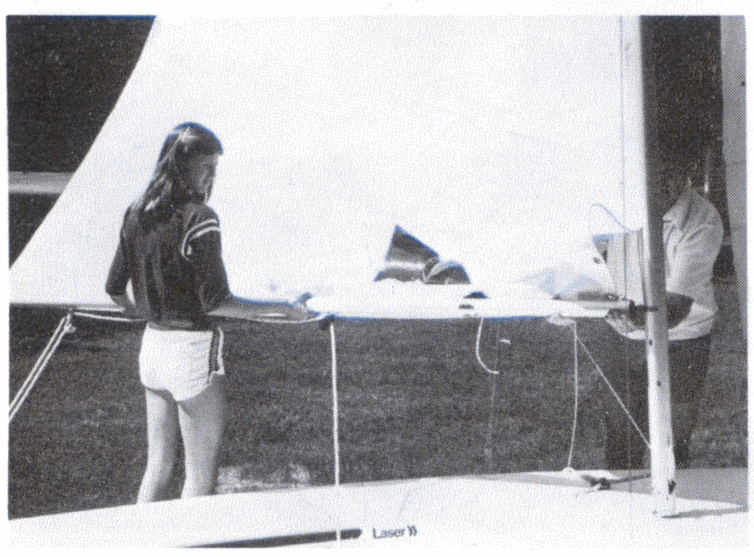


31. Clip the clew tie down (20-15) through the clew grommet and around the boom. Tie the clew outhaul line (43-15) to the clew of the mainsail. Loop it through the black fairlead, back to the clew, through the fairlead again, then take it forward to the cleat at the front of the boom. Knot the end.



32. Shackle the main halyard to the headboard of the mainsail. Feed the mainsail bolt rope into the sail groove on the mast.





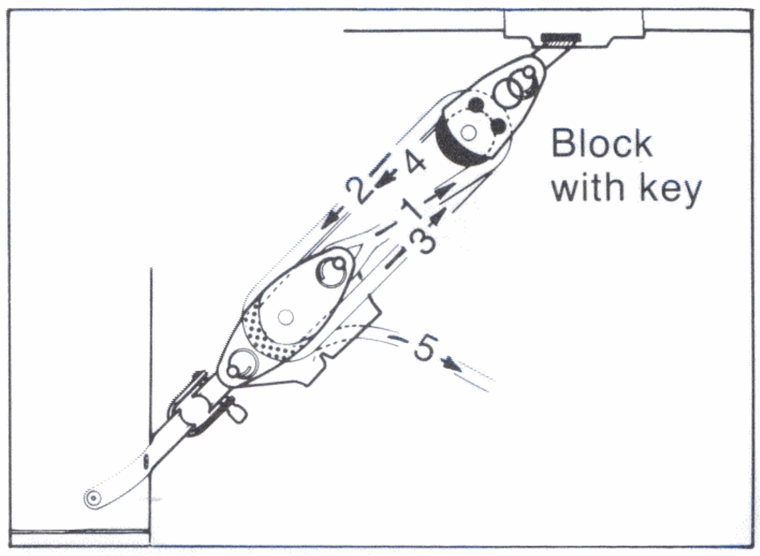
33. You can hoist the mainsail on land if the wind is light. Launching the boat is easier with the mainsail down. Hoist the mainsail with the crew guiding the sail in smoothly. As the sail reaches the top, the crew should lift the boom to support its weight.



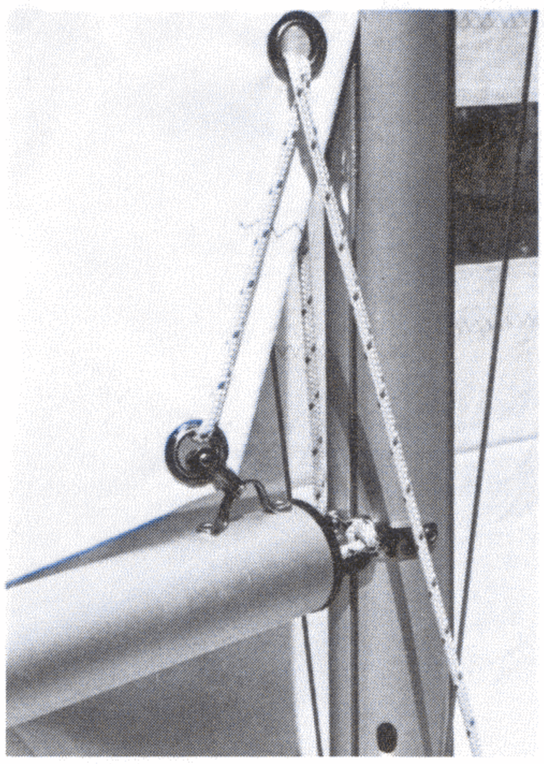
34. Pull the wire loop of the halyard right out of the mast and slip it over the hook immediately above the sheave box.



Stow the rope tail as with the jib.



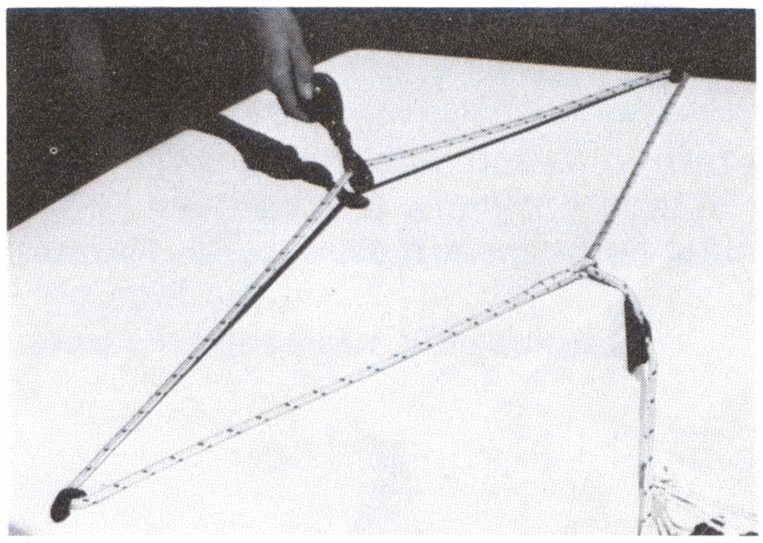
35. Fit the gooseneck into the boom and rig the boom vang using the boom vang line (43-12), the double block with key (43-30), the double block with jamb and shackle (43-31). Knot the end of the line. Tighten the vang slightly to keep the boom on the gooseneck. Allow the boom to swing freely in the wind.

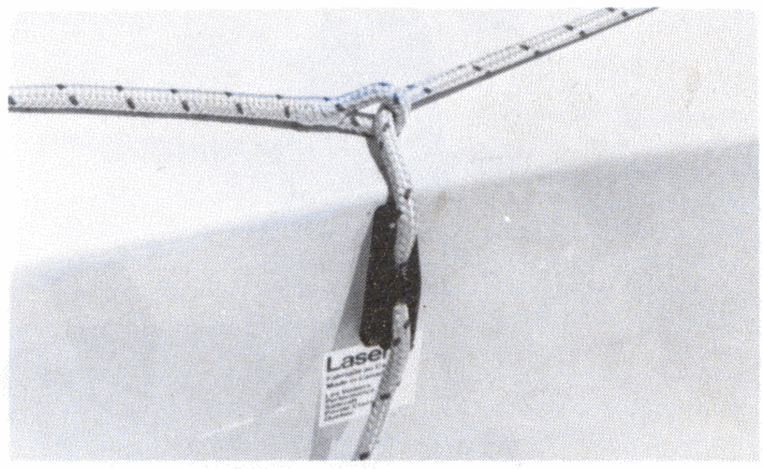


36. The cunningham line (43-14) is tied through the gooseneck, looped through the grommets in the sail and cleated on the mast below the gooseneck. Tie a knot in the end, once through the cleat.

37. The traveler can be rigged in any fashion using only:

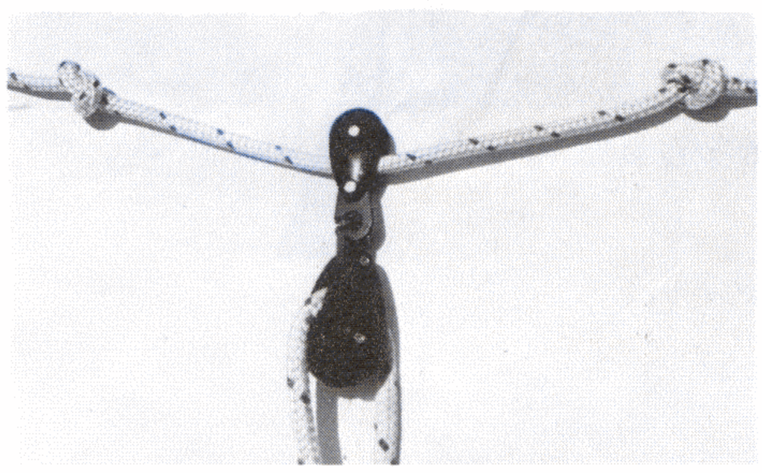
- 20-31 Large block with brummel
- 20-32 Small block with brummel
- 43-13 Traveler line
- Optional lines of your choice
- The traveler cleat and fairleads in their original position.



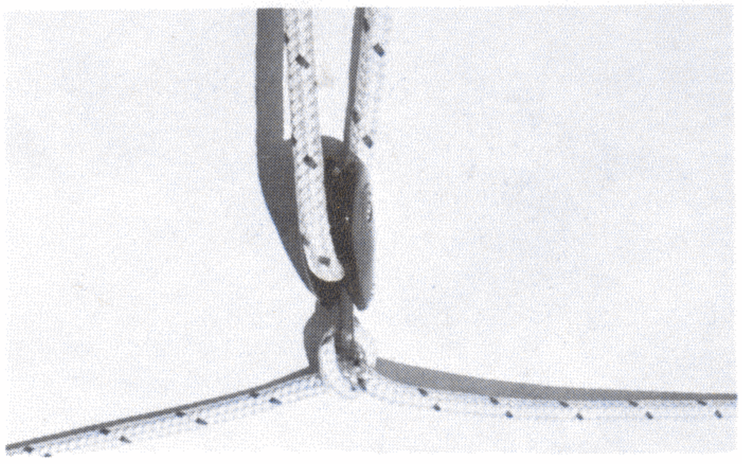


Standard method. Recommended for beginners. The small block with brummel should lift about 4″ to 5″ off the deck when upward tension is applied.

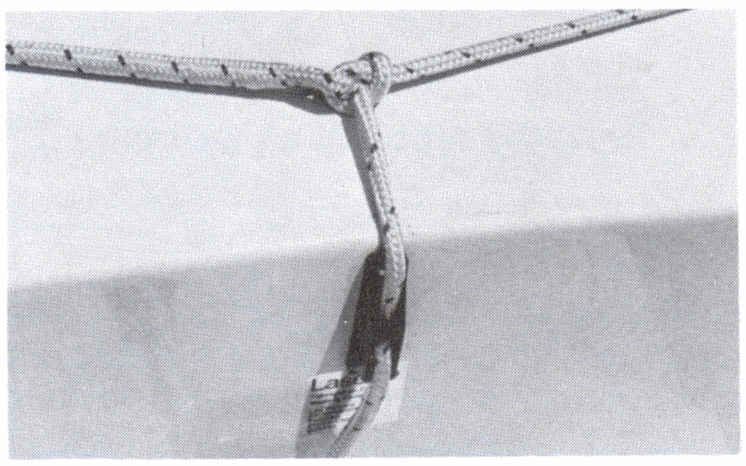
Variations on the standard method.



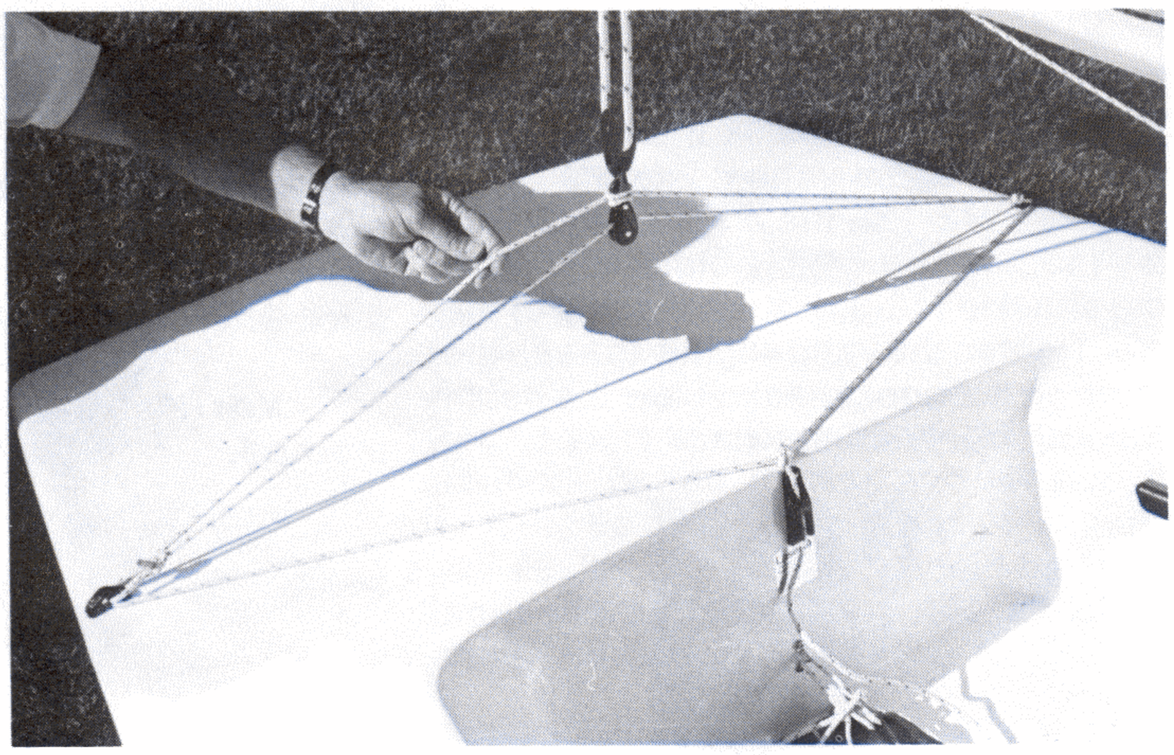
A Knots in the traveler line to limit the travel of the small block.

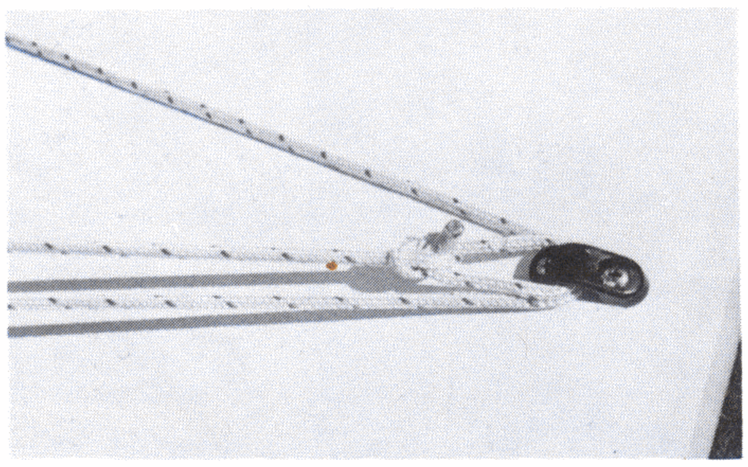


B Traveler line tied directly to the large block brummel (without the small block).



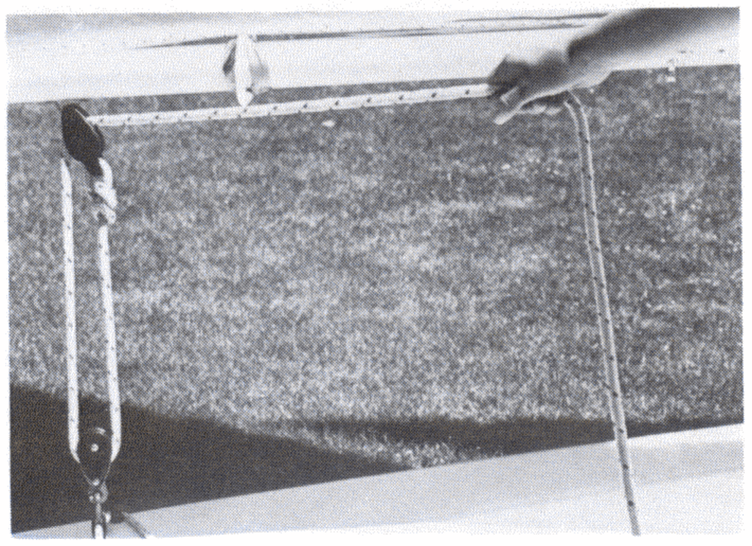
C Knotting the traveler line at the eye to increase travel control and fix the length of the bridle.

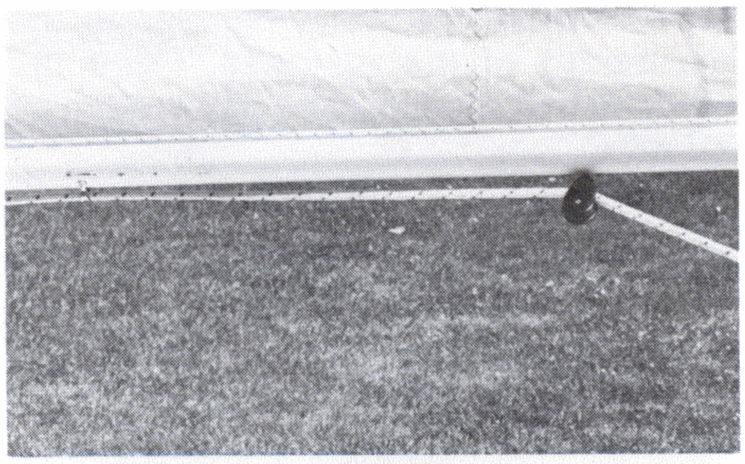


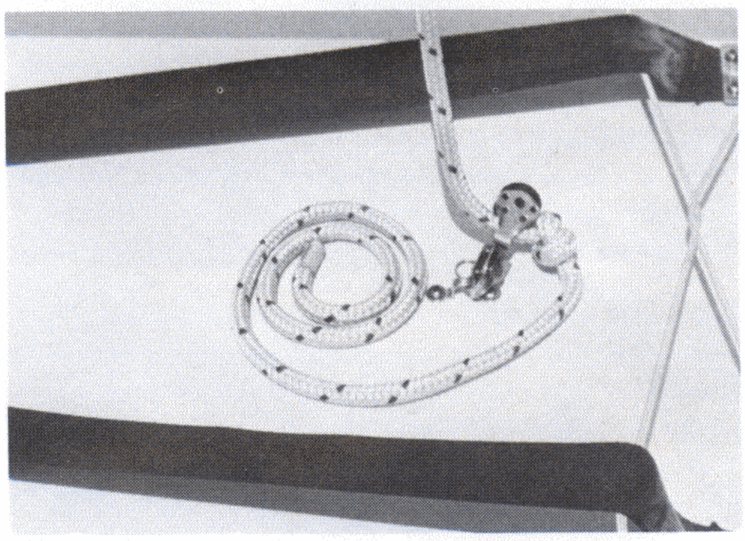


D Racing style: knotted at the fairleads.

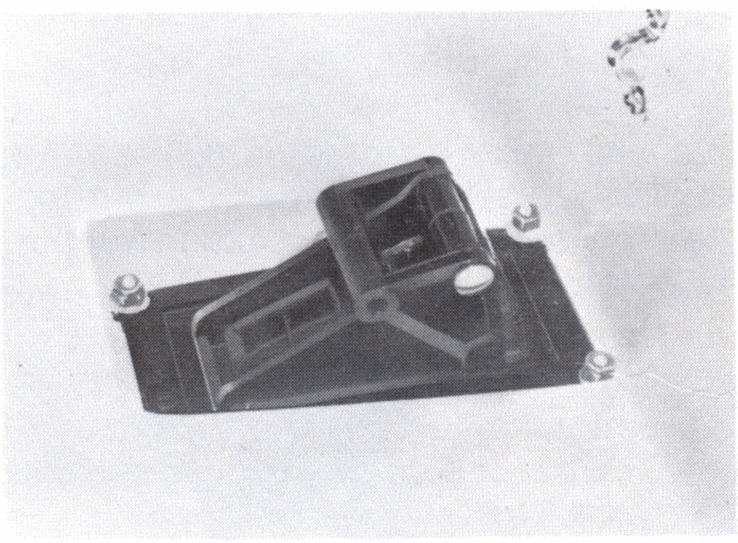
Additional knotted line takes strain. Traveler line (the one being handled in the picture) controls travel.

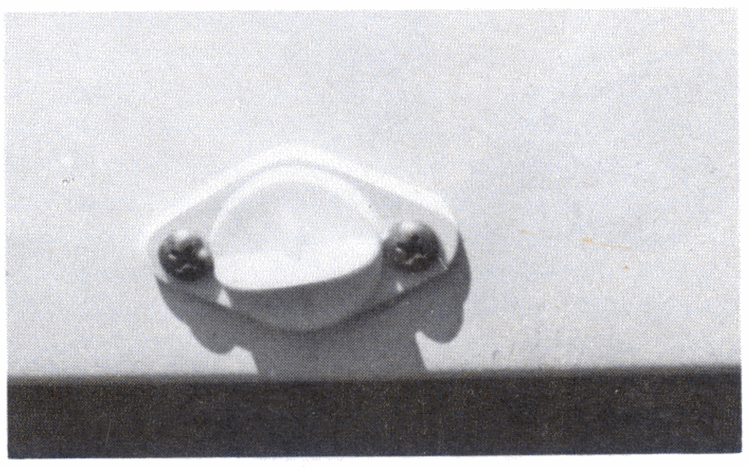






38. Rig the mainsheet (43-10) starting at the becket block on the boom. Knot the end of the mainsheet at a length that prevents the boom from touching the shrouds and wearing through the mainsail.



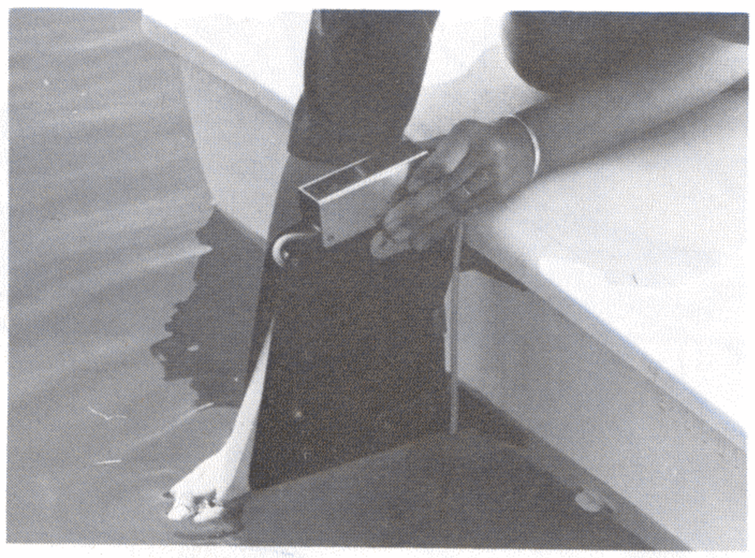


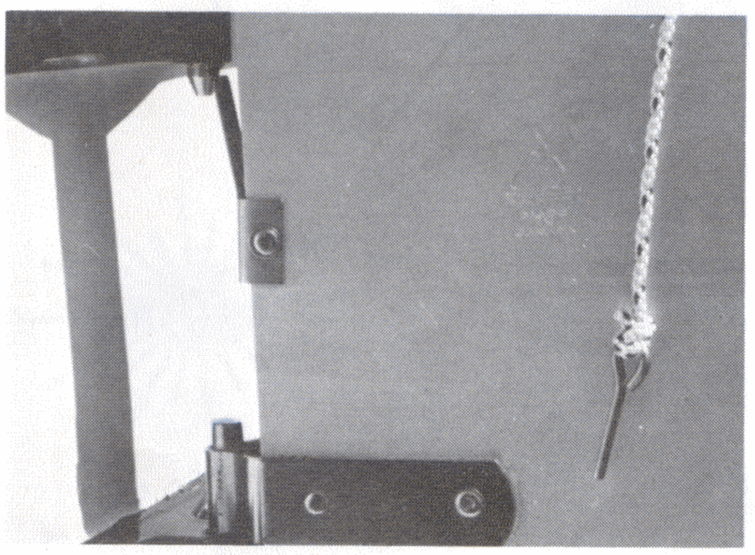
Before launching, make sure that the bailer is up and the drain bung is in.



39. The rigging is complete.

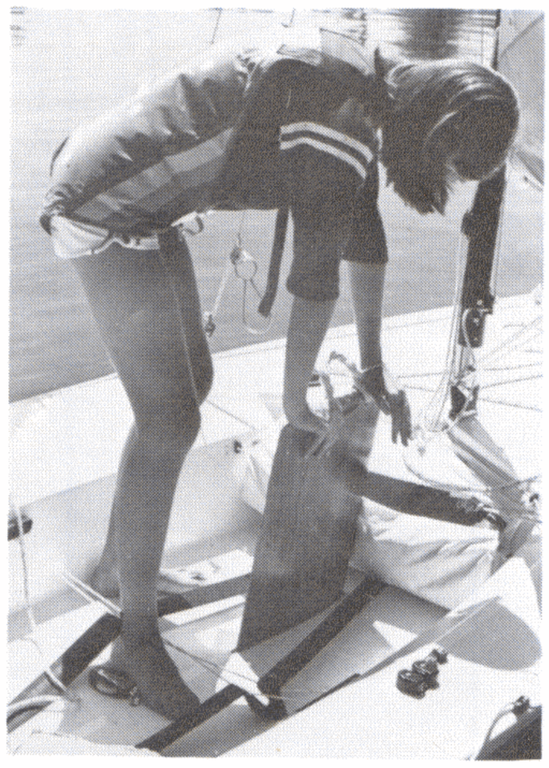
40. Once the boat is launched, let it swing freely into the wind.



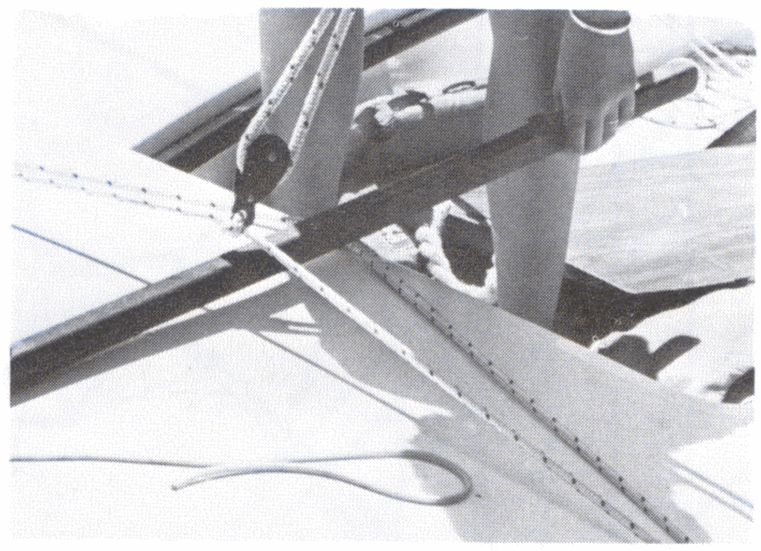


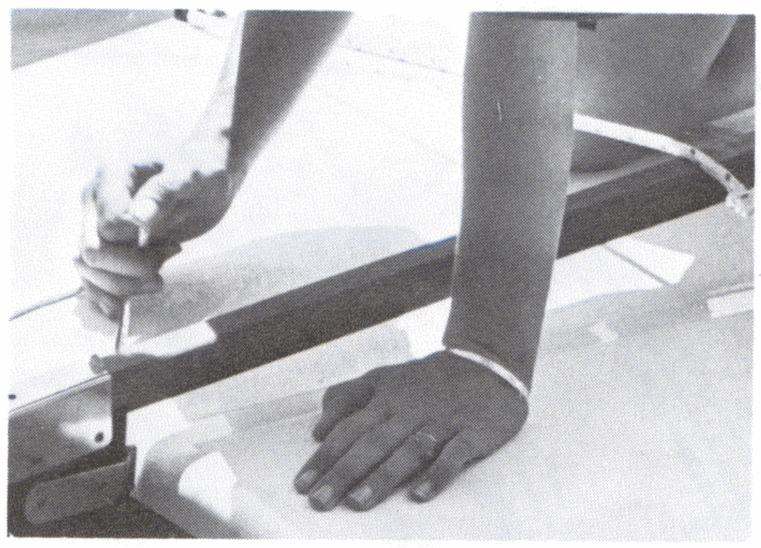
41. Install the rudder, making sure the spring clip locks under the top gudgeon. To remove, simply depress the spring clip and lift. Don't install the tiller yet as it might catch in the mainsheet.

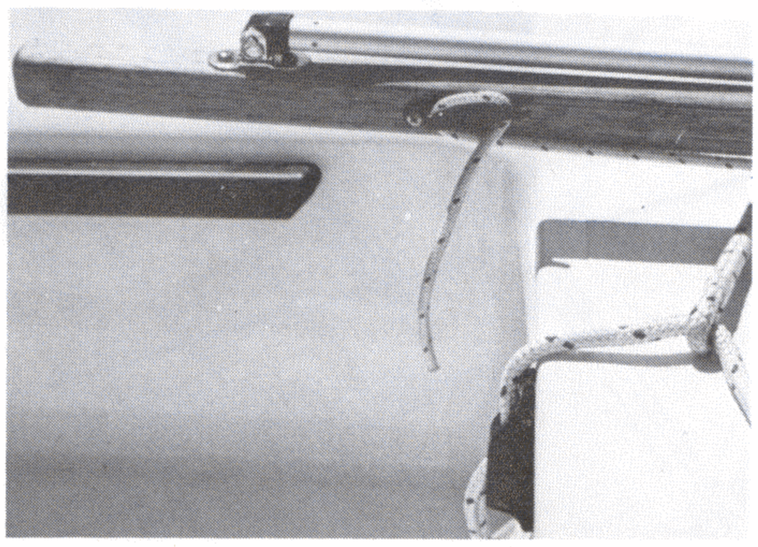
Note: The rudder assembly does not float.



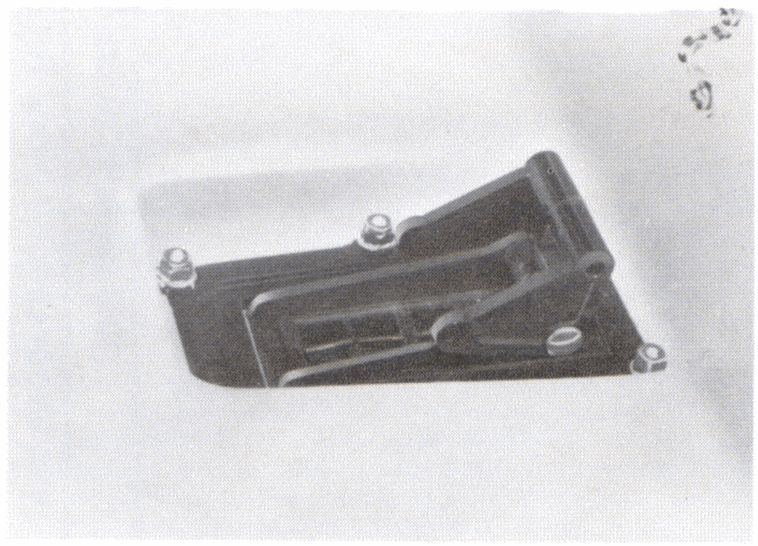
42. Make sure the padding in the centerboard box is clean. Dip the centerboard in the water to lubricate it and insert it into the box. If the water is shallow, leave it out until you reach deeper water.







43. Install the tiller between the traveler lines, insert the retaining pin, pull hard on the downhaul line (if the water is deep enough) and cleat it. The rudder *must* be all the way down while sailing or there will be too much strain on the fittings.



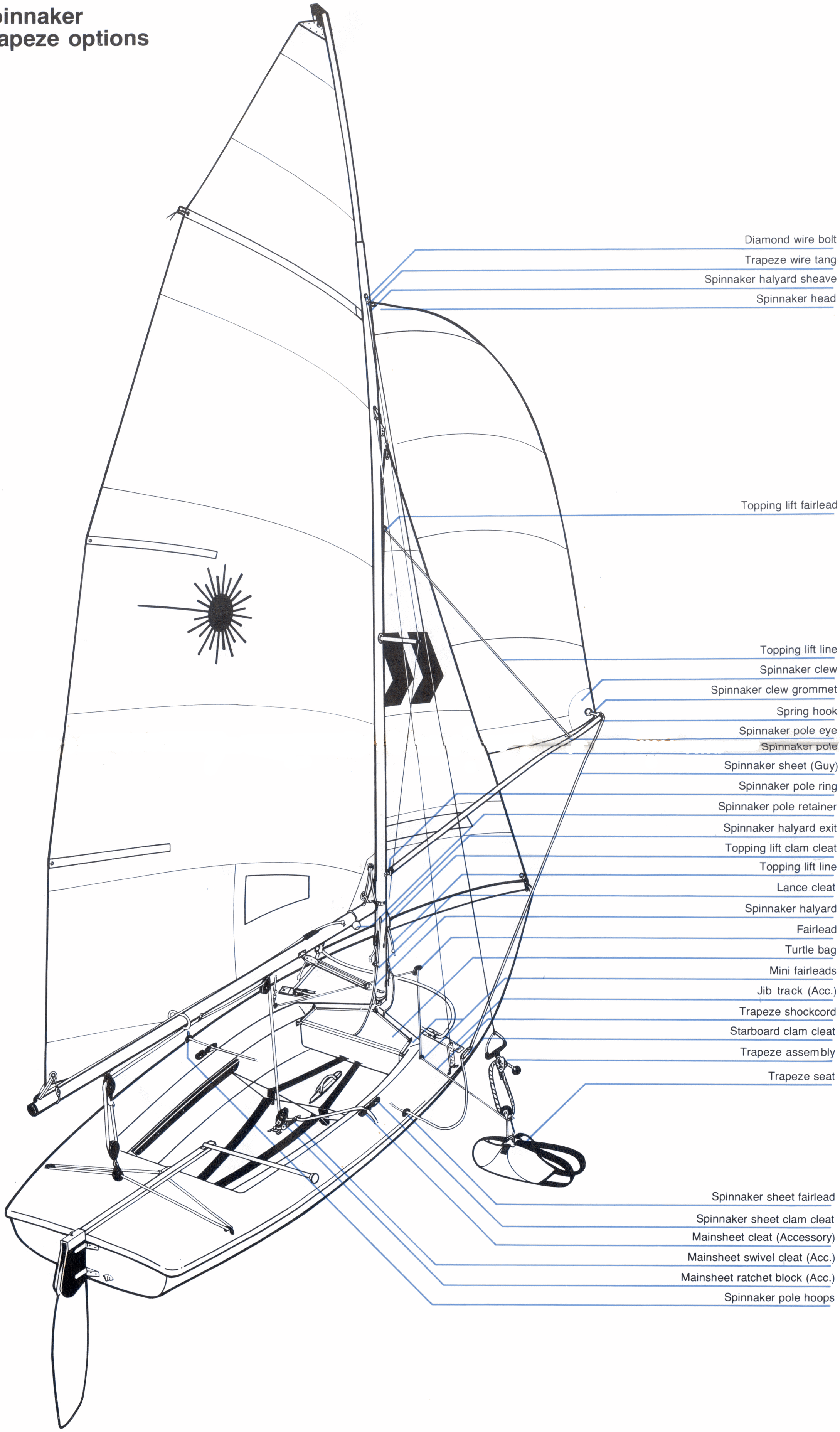
44. The automatic bailer operates when lowered and when the boat is in motion. Make sure it is up when taking the boat out.

Don't forget your life jackets!



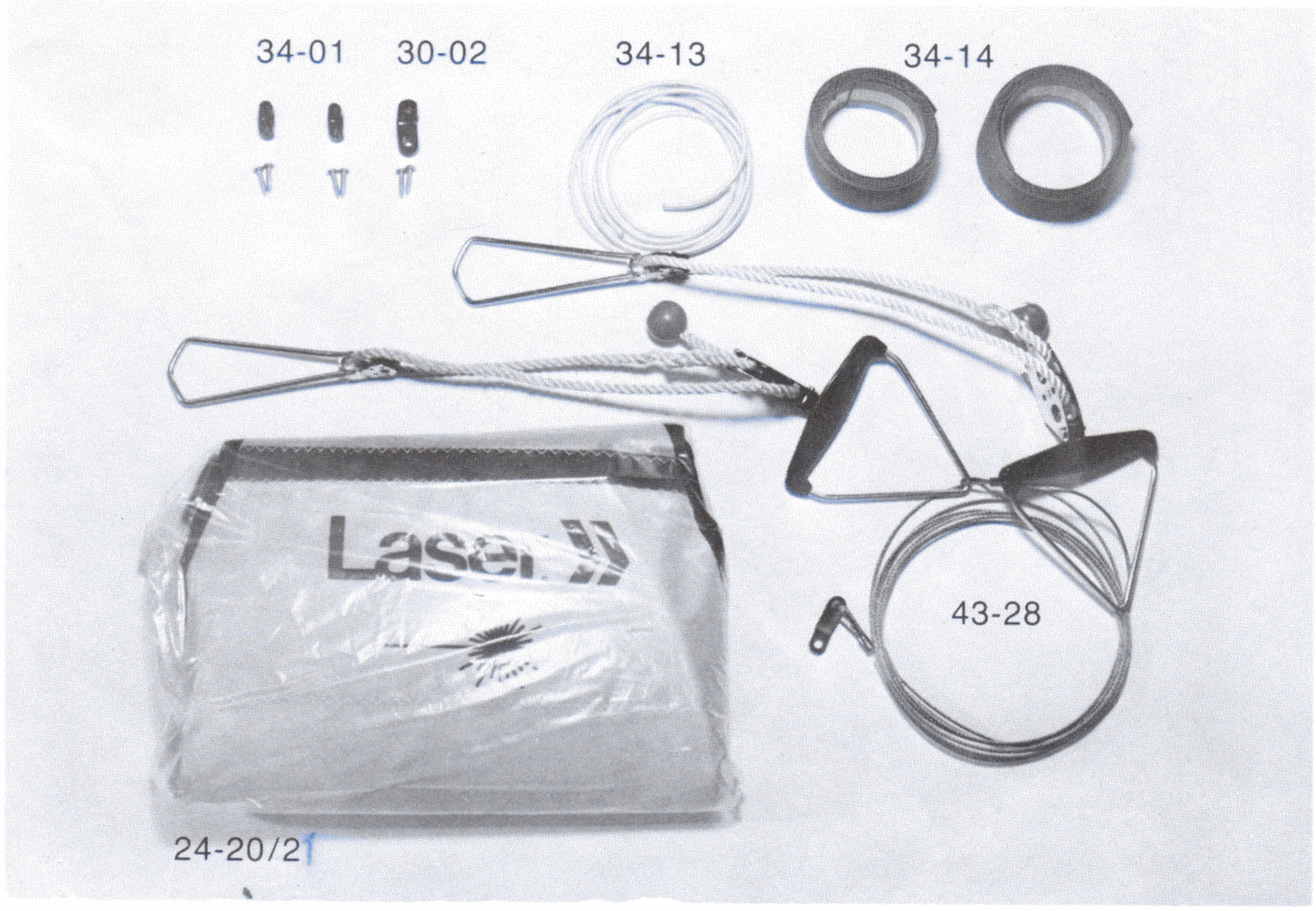
45. Untie the boat, step in and you're off!

The Spinnaker and Trapeze options



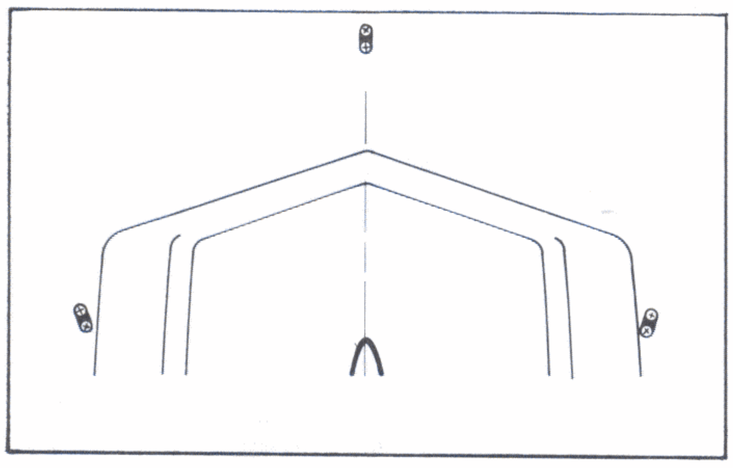
Rigging the Trapeze

* All paragraphs marked with an asterisk are for self-assembly only.
If you purchased your boat with this option installed, this section does not apply.
Tools required:
- Power drill, 7/64″ drill bit
- Phillips screwdriver

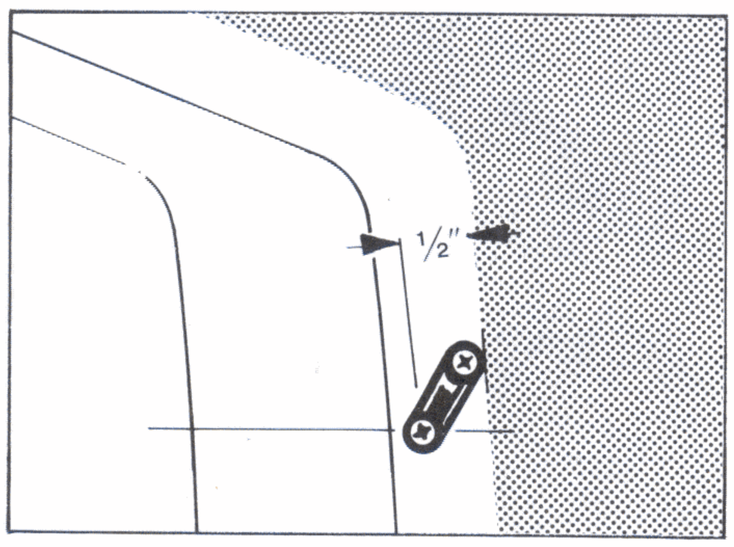


***1.** Unpack and identify all parts in card 4.

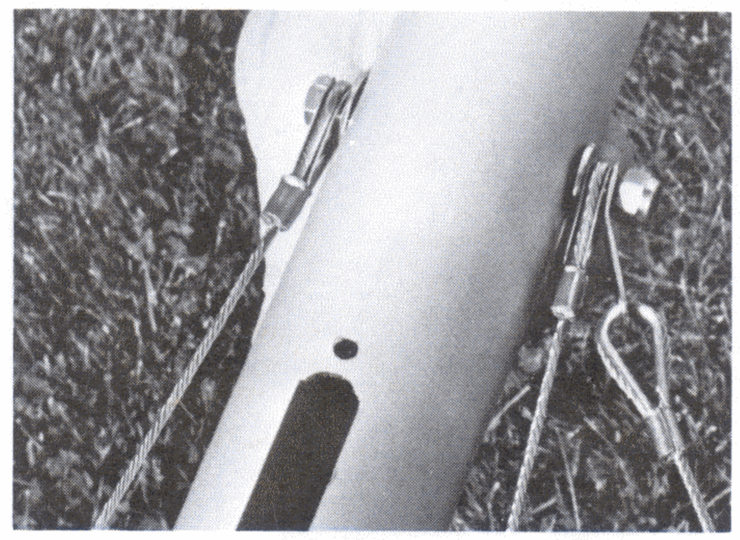
43-28 Trapeze wire assembly (2)
34-13 Trapeze shockcord
24-20/21 Trapeze seat
34-01 Mini fairleads (2) and screws (4) (Self-assembly package only)
30-02 Fairlead and screws (2)
34-14 5′ non-skid (2)



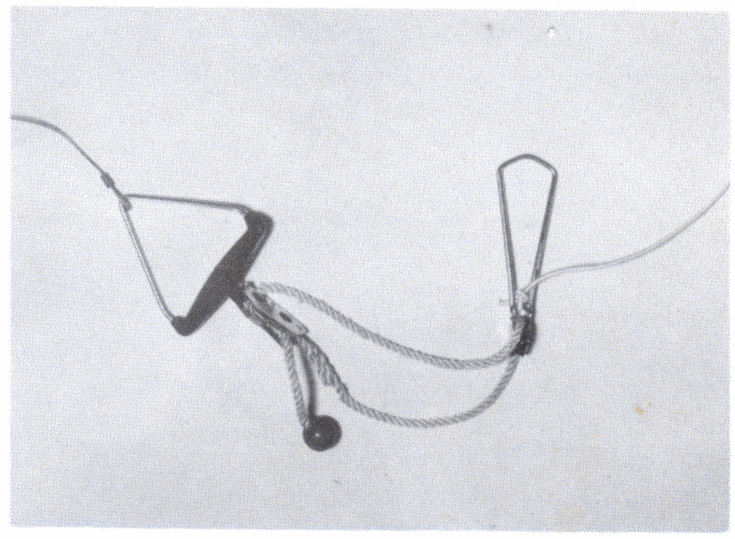
***2.** Install the fairleads (34-01)/(30-02) shown here. Their locations are specified in the self-assembly diagram on page 19.



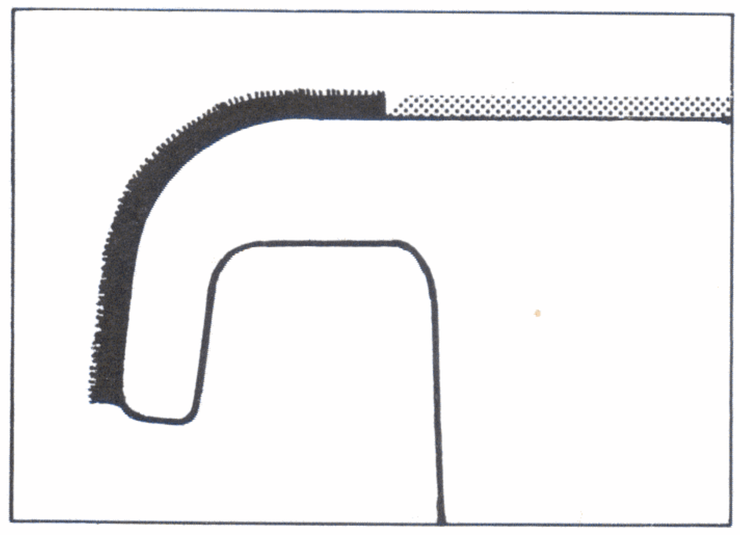
The two outer mini fairleads are angled as shown, with the forward edge of the fitting touching the non-skid surface.



***3.** Lower the mast, slacken the diamond wires and remove the diamond wire bolt to include the trapeze wire (43-06) tangs. The trapeze wire tangs are placed on the outside of the diamond wires, in place of the washers. If you have the spinnaker option there is further assembly required before re-stepping the mast.



4. Attach shockcord to ring and lead through fairleads as shown on diagram in center spread.



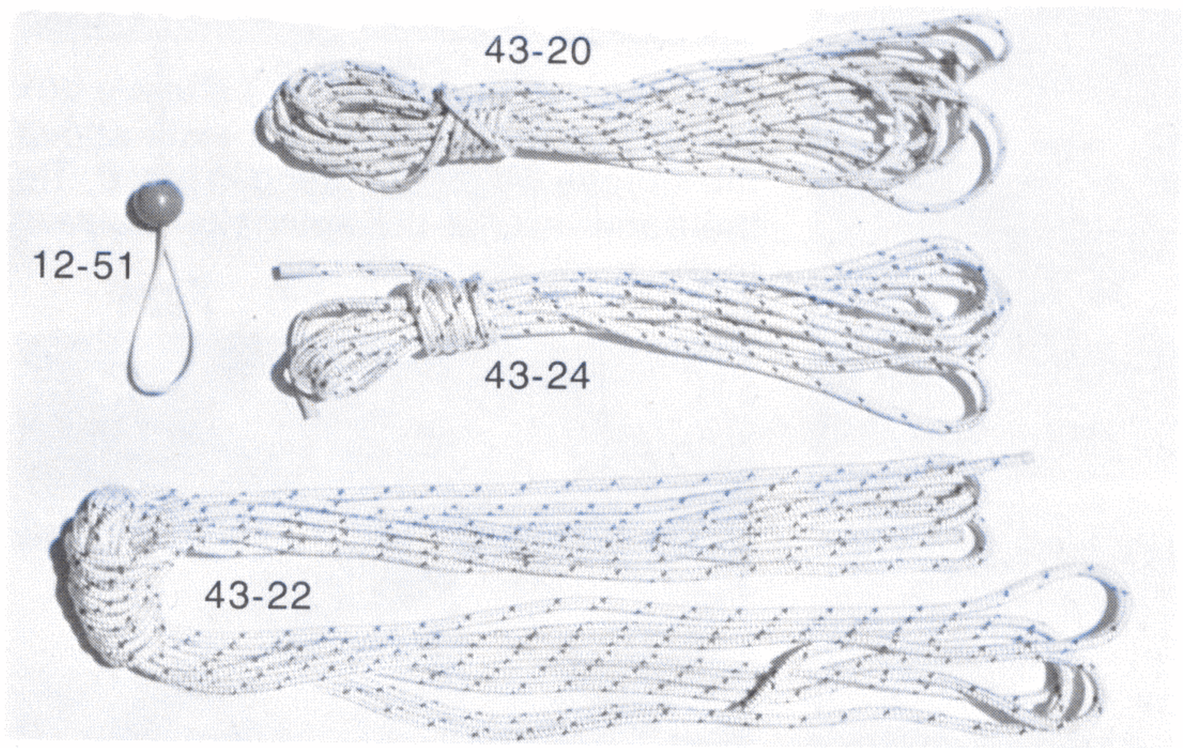
5. Roughen gunwhale from a point 12″ forward of the shrouds and 48″ aft with steel wool (for better adhesion). Apply non-skid, butting up against moulded surface of deck, cutting around fitting. Rub non-skid to remove bubbles. (Rub very hard with something like a screwdriver handle.)

Rigging the Spinnaker

* All paragraphs marked with an asterisk (*1-*13) are for self-assembly only. If you purchased your boat with this option installed, these paragraphs do not apply.

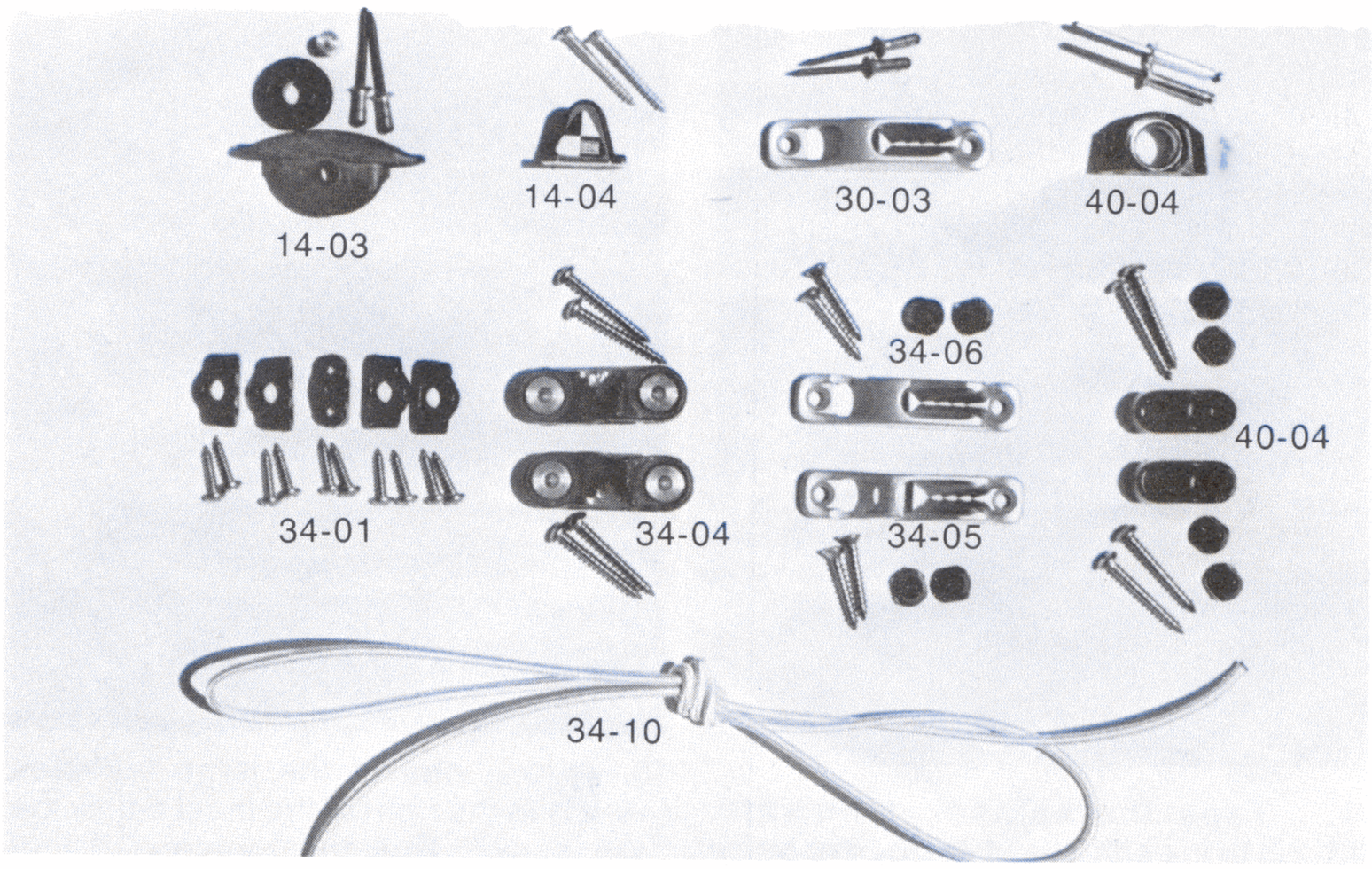
Tools required:

- Pop rivet gun for mast fittings
- Power drill with 9/64" drill bit and 7/64" drill bit (for mini fairleads only)
- Needle-nosed pliers or a piece of stiff wire
- Phillips screwdriver



***1.** Unpack and identify all parts in card 6:

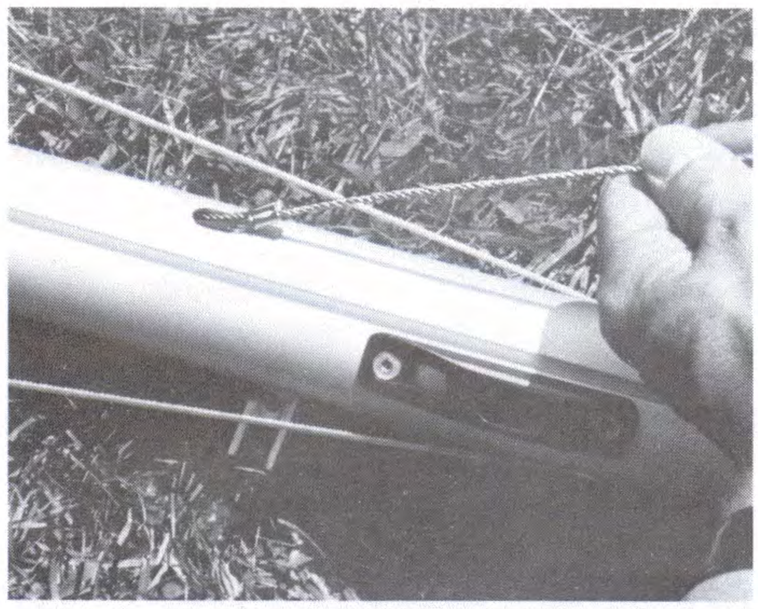
12-51 Spinnaker knob
43-20 Topping lift line
43-24 Spinnaker sheet
43-22 Spinnaker halyard
(Self-assembly only)



Additional parts for self-assembly:

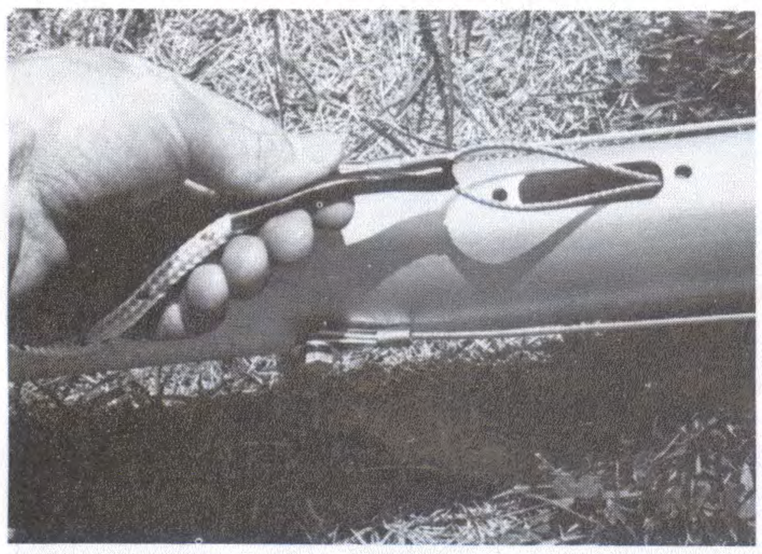
14-03 Halyard sheave and rivets (2)
14-04 Lance cleat and screws (2)
30-03 Clam cleat and rivets (2)
34-01 Mini fairleads (5) and screws (10)
34-04 Spinnaker sheet cleats (2) and screws (4)
34-05 Port clam cleat, screws (2) and screwcaps (2)
34-06 Starboard clam cleat, screws (2) and screwcaps (2)
34-10 Turtle bag shockcord
40-04 Large fairleads (3), rivets (2), screws (4) and screwcaps (4)

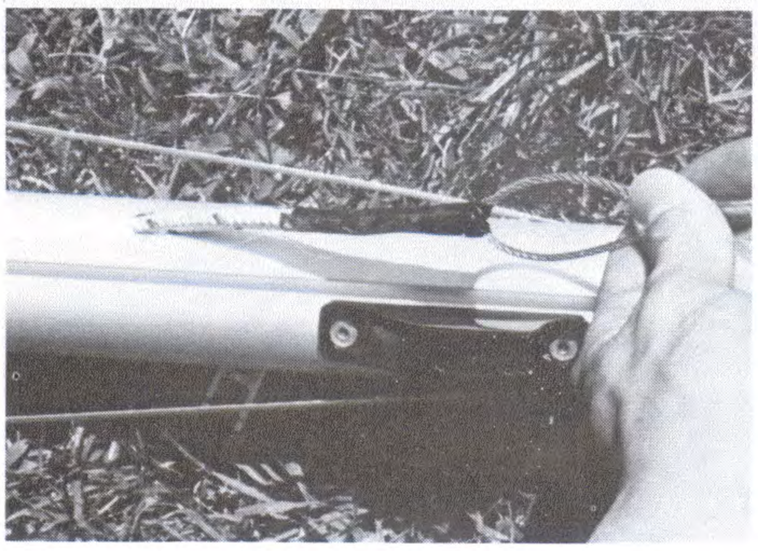
***2.** Lower the mast to a good working position. Remove the jib halyard wire from the mast. You will be using the jib halyard wire as a feeder for the spinnaker halyard. Pull the main halyard tight to avoid intertwining.



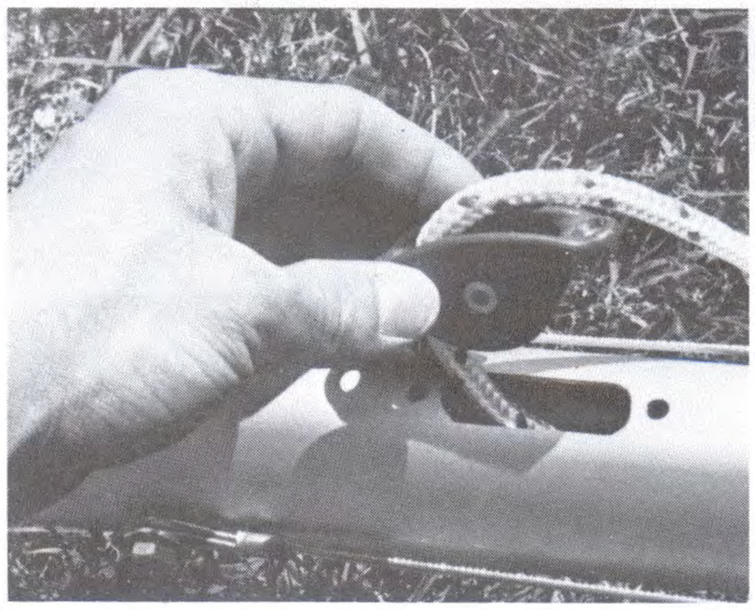


***3.** Feed the soft eye end of the jib halyard (remove rope and shockcord) through the lower exit (below the gooseneck) and up the mast to the upper exit. Pull the jib halyard out the top exit using the needle-nosed pliers.

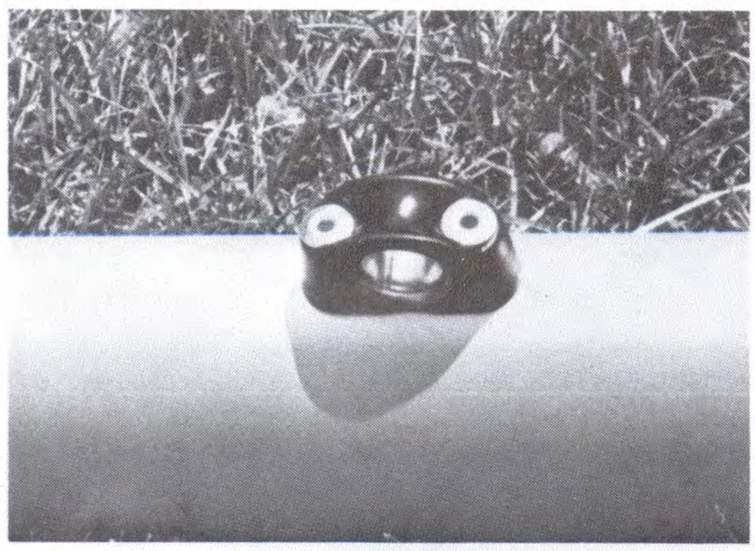


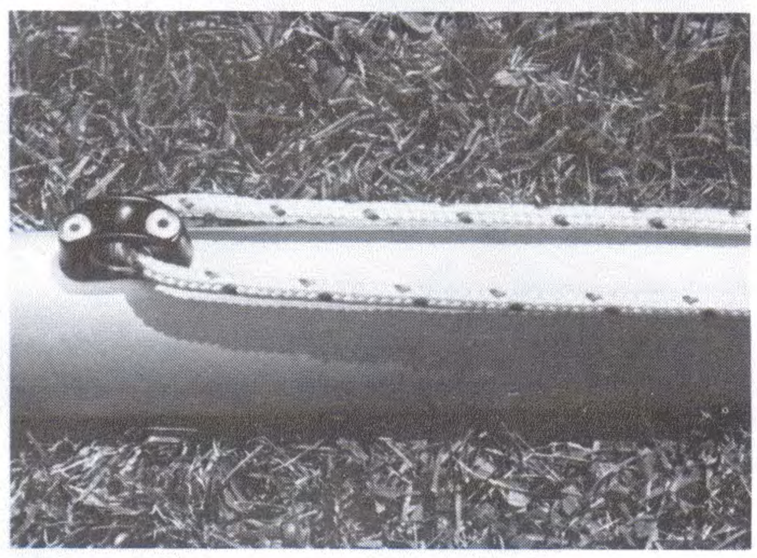


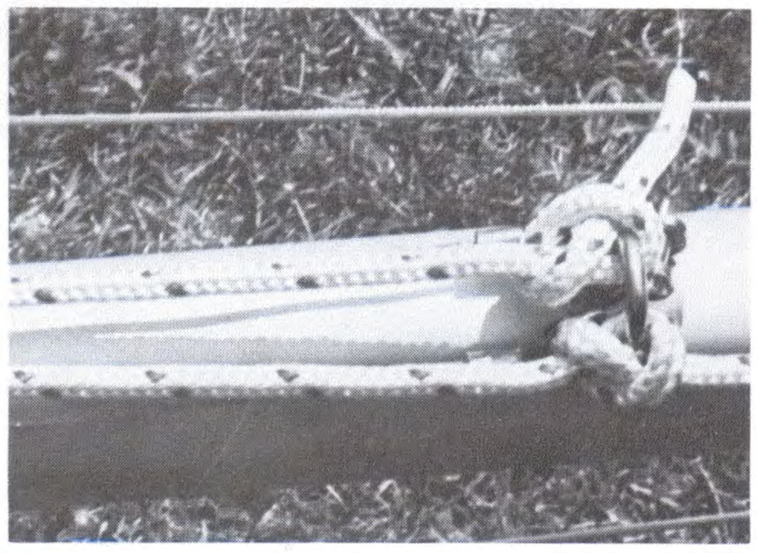
***4.** Tape the spinnaker halyard (43-22) to the soft eye (don't loop or tie it) and pull it carefully through the mast. Once through the mast, knot both ends of the halyard so as not to lose it into the mast.



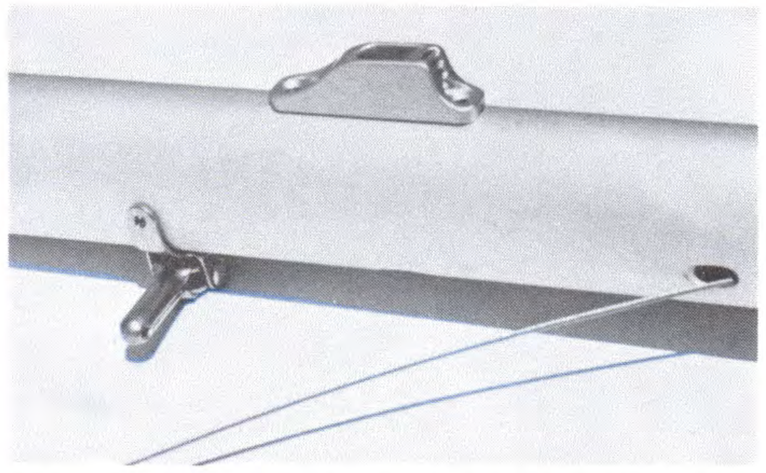
***5.** Assemble the halyard sheave box (14-03) so that the halyard exits above the sheave. Rivet the fitting in place. Tie the upper end of the spinnaker halyard to the spinnaker pole ring.



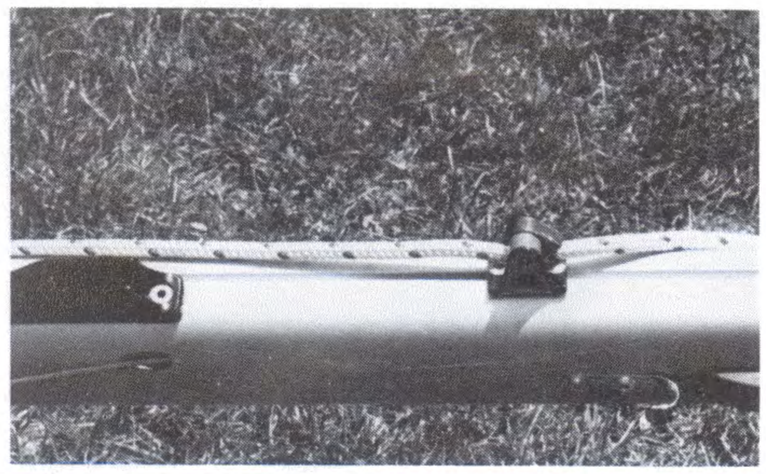




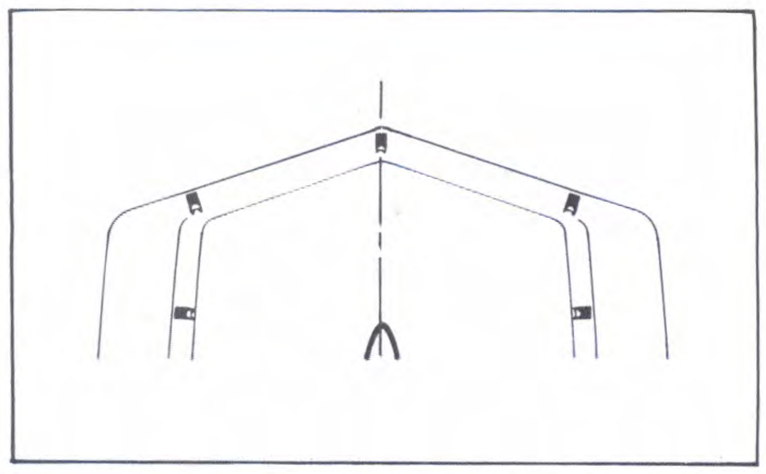
***6.** Rivet one of the large fairleads (40-04) to the front of the mast below the "sky hook". Run the topping lift line through the fairlead and tie both ends to the spinnaker pole ring.



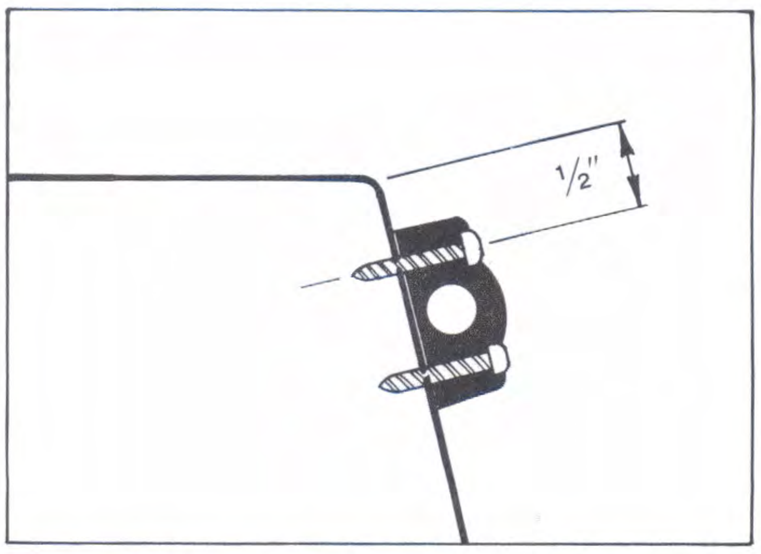
***7.** Rivet the clam cleat (30-03) to the front of the mast adjacent to the lower spinnaker halyard exit. Note the direction of the cleat.



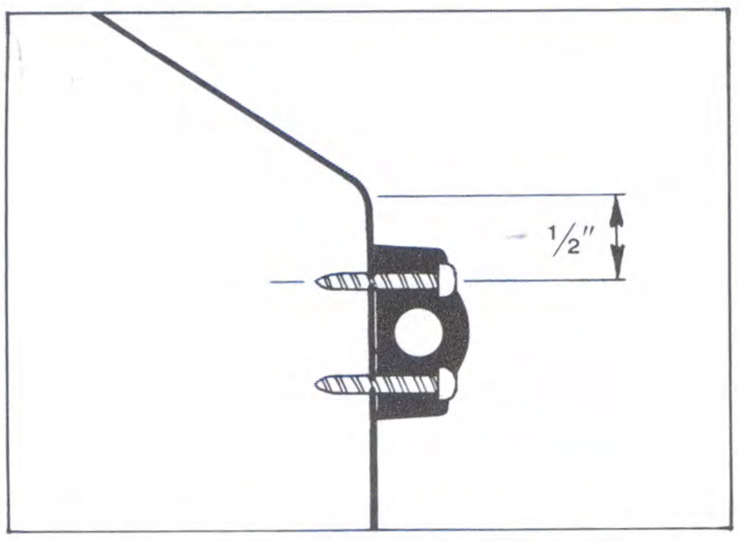
***8.** Fasten the lance cleat (14-04) to the sail groove below the cunningham cleat. Note the direction of the cleat.



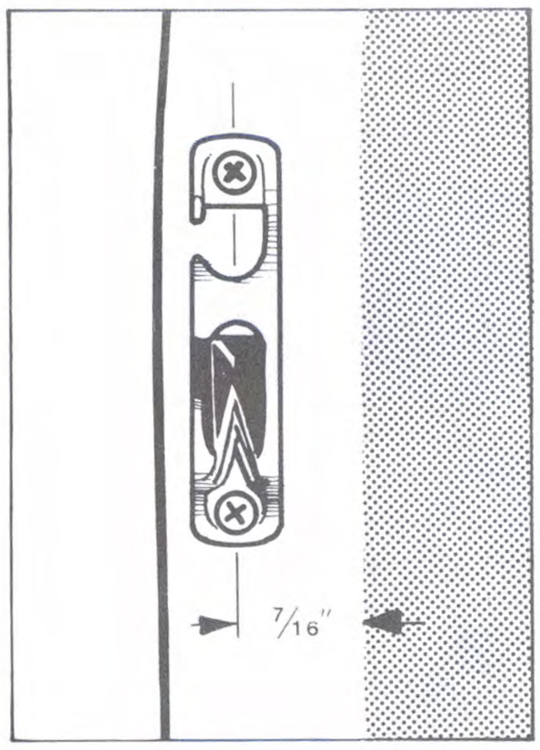
***9.** Install the mini fairleads (34-01) shown here. Their locations are specified in the self-assembly diagram on page 19. If you have the trapeze and spinnaker packages there will be 3 spare mini fairleads.

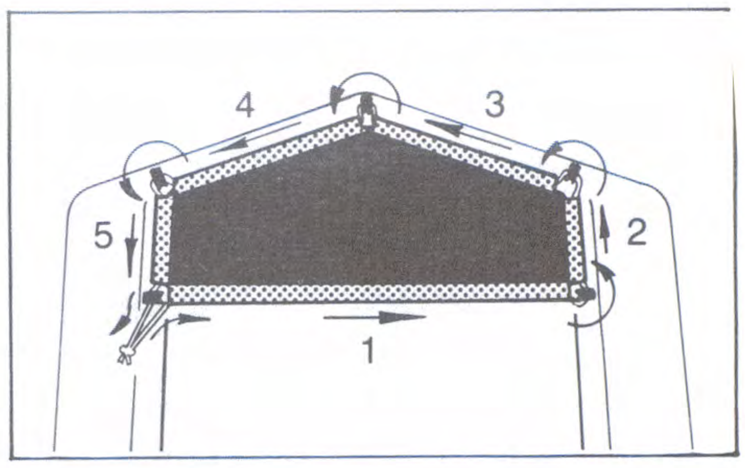


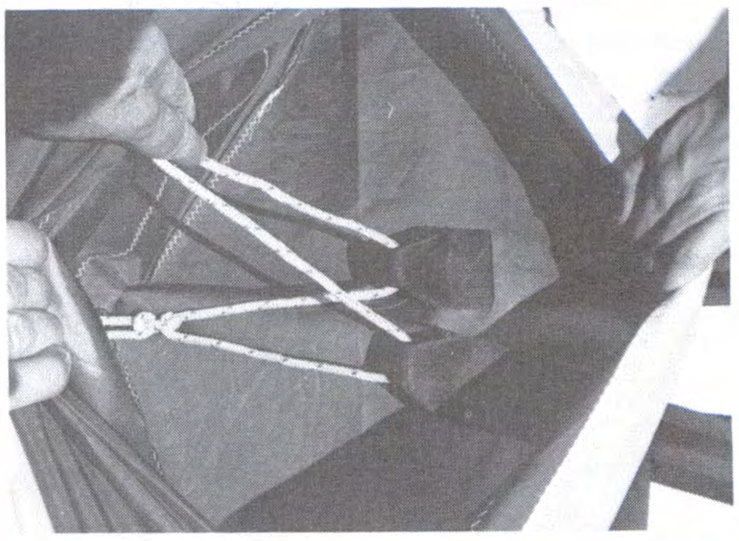
The three center mini fairleads are mounted ½" below the deck top.

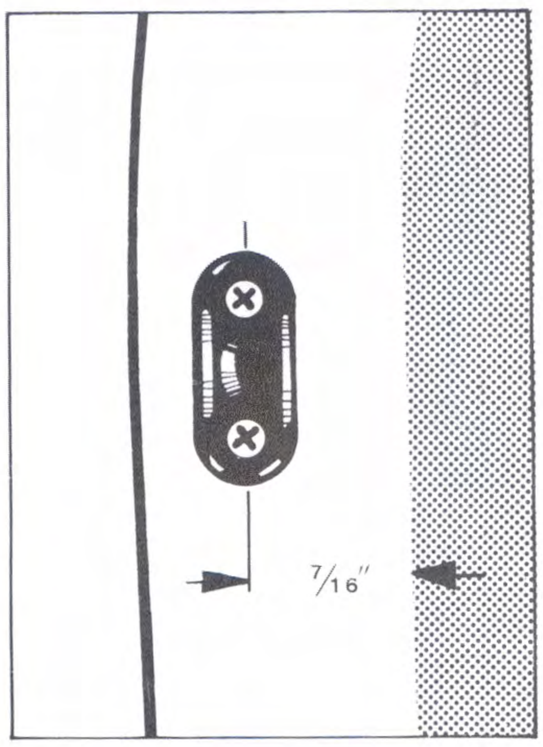


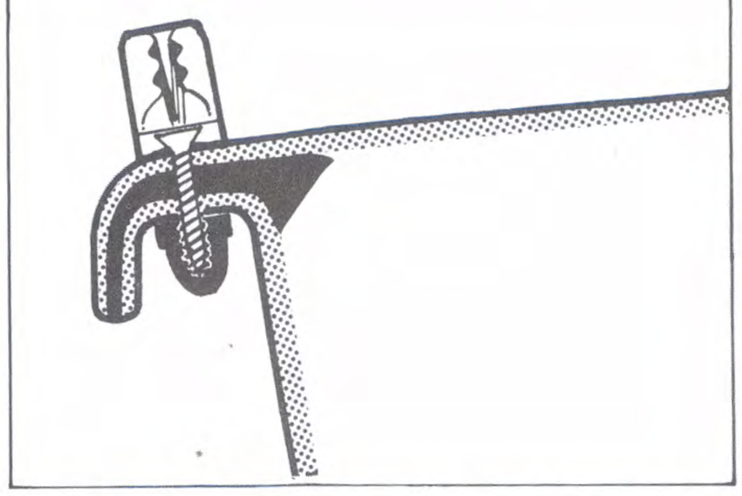
The two outer mini fairleads are mounted ½" below the carlin (beveled surfaces on the cockpit sides).



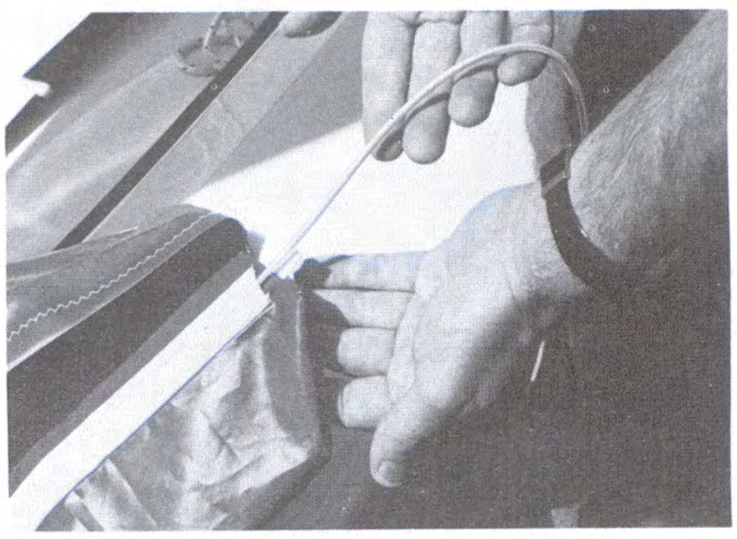


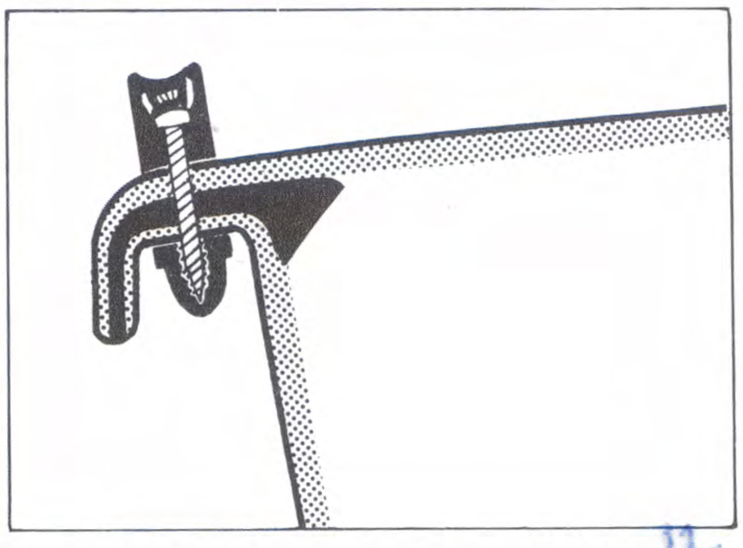




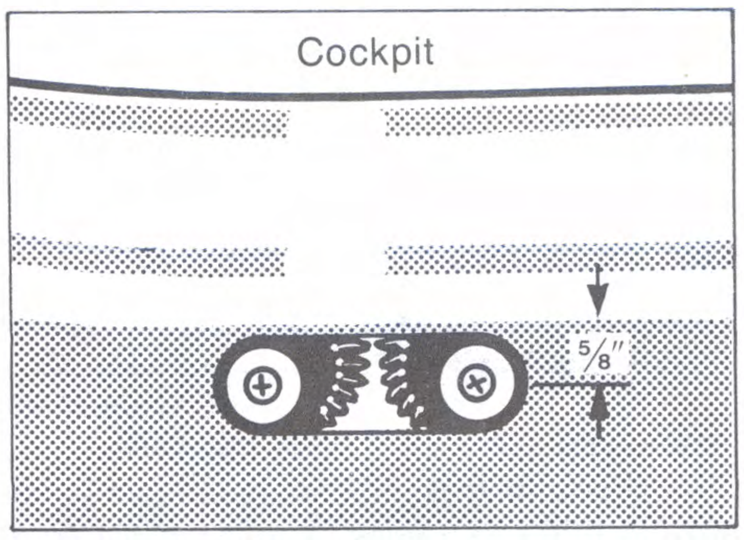


*11. Install the port and starboard clam cleats (34-05/06). Note that the cleats are open to the outside of the boat.

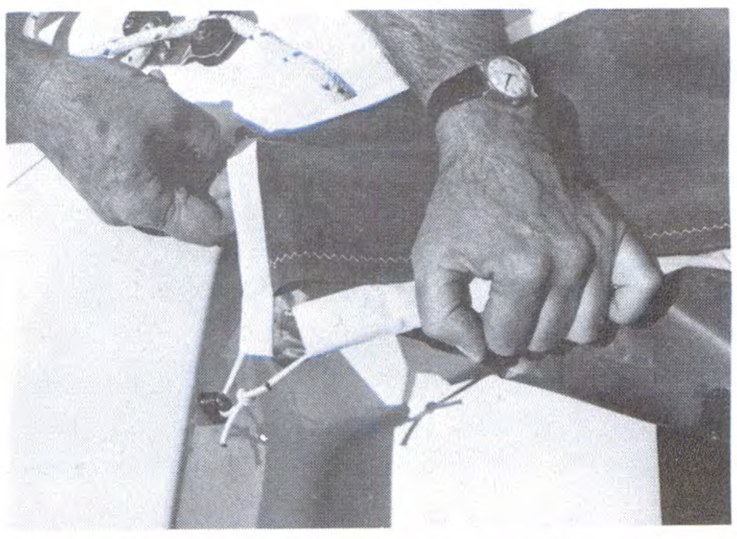




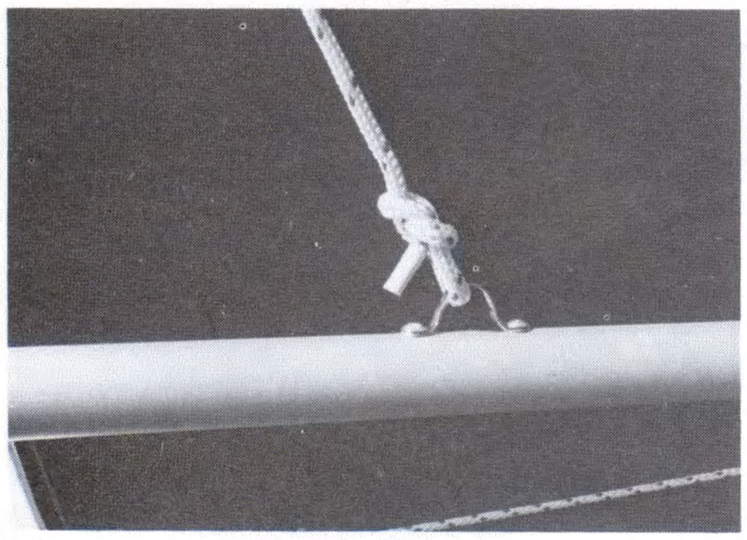
*10. Install the large fairleads (40-04).

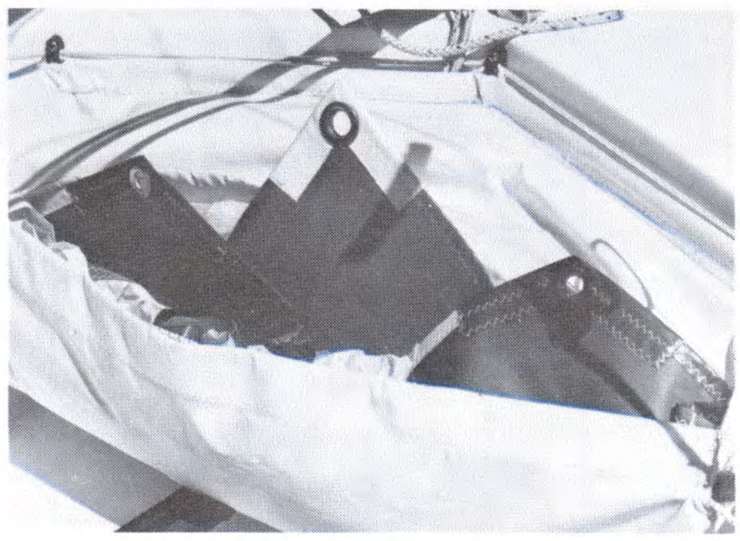


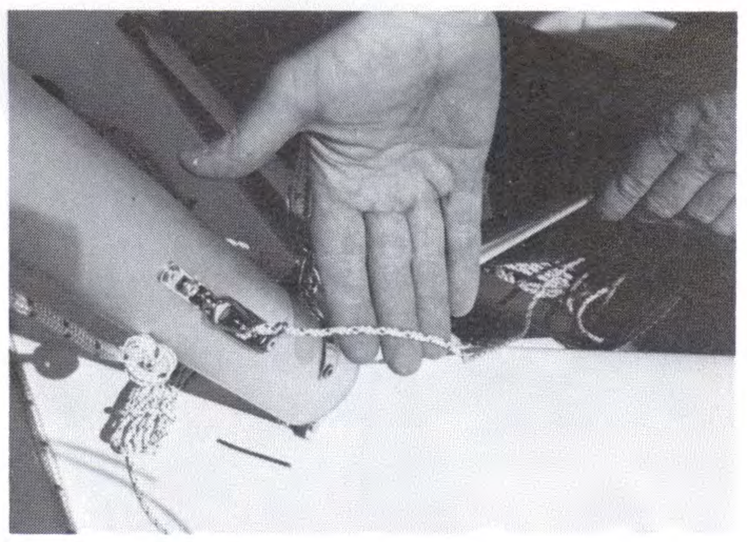
*12. Install the spinnaker sheet cleats (34-04). Note their direction.



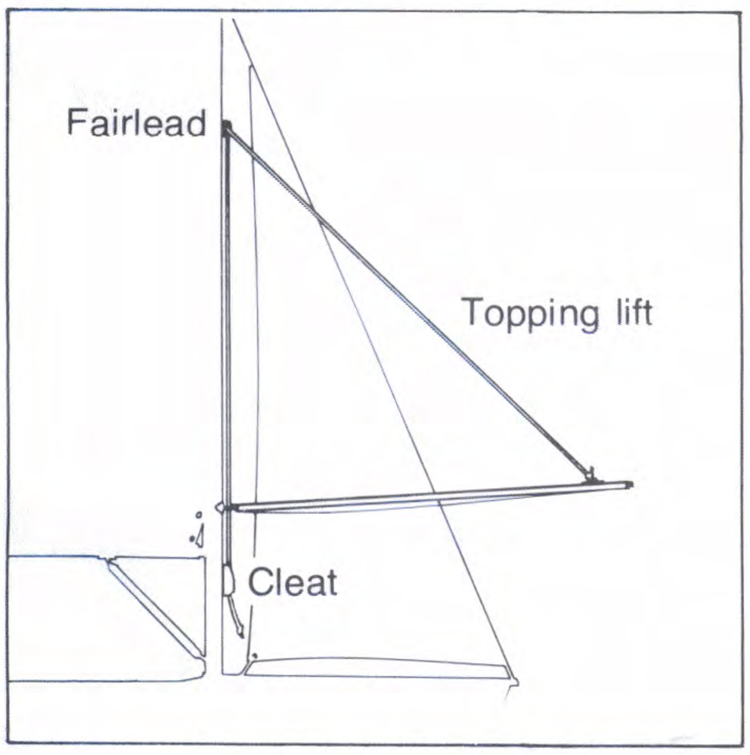
*13. Run the hiking straps through the holes in the turtle bag. Rig the turtle bag shockcord (34-10) through the mini fairleads as shown. Slide the knot in the shockcord back into the sleeve.



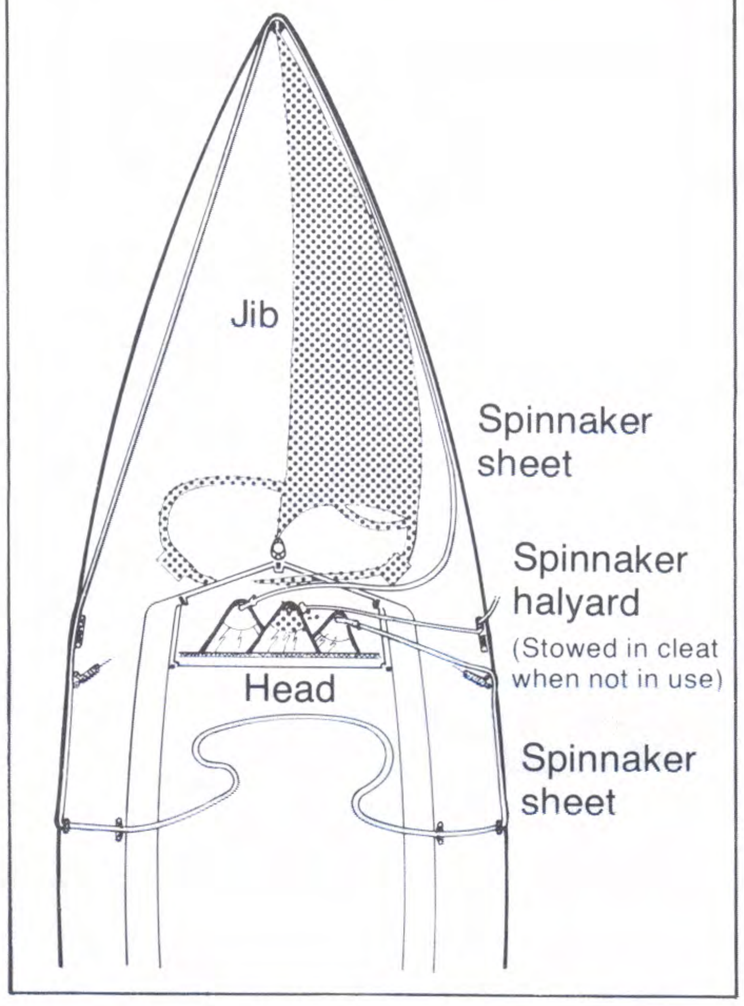




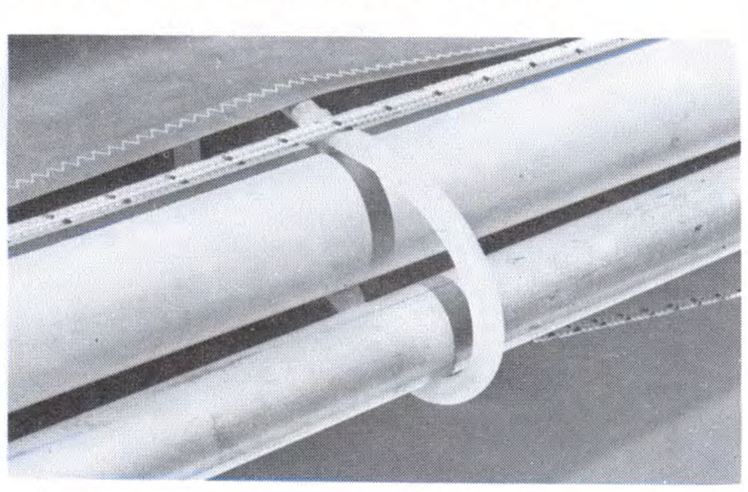
18. The halyards store neatly in the pockets of the turtle bag.

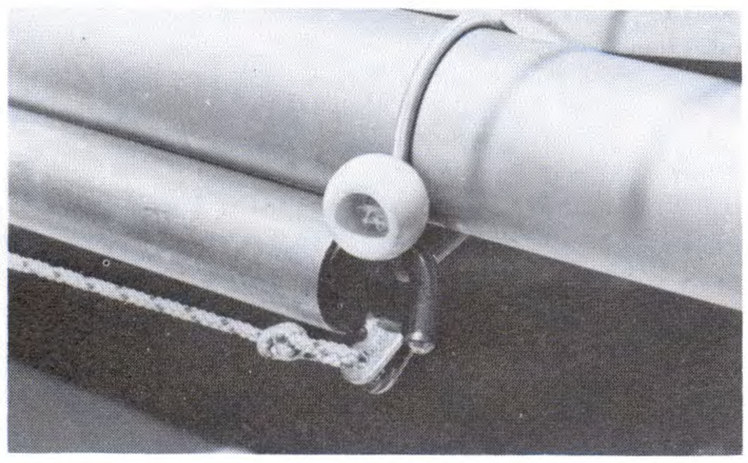


14. The topping lift line (43-20) is tied to the eye on the spinnaker pole, runs up through the eye on the front of the mast (below the hound fitting), passes through the spinnaker pole ring and is cleated in the alloy clam cleat.

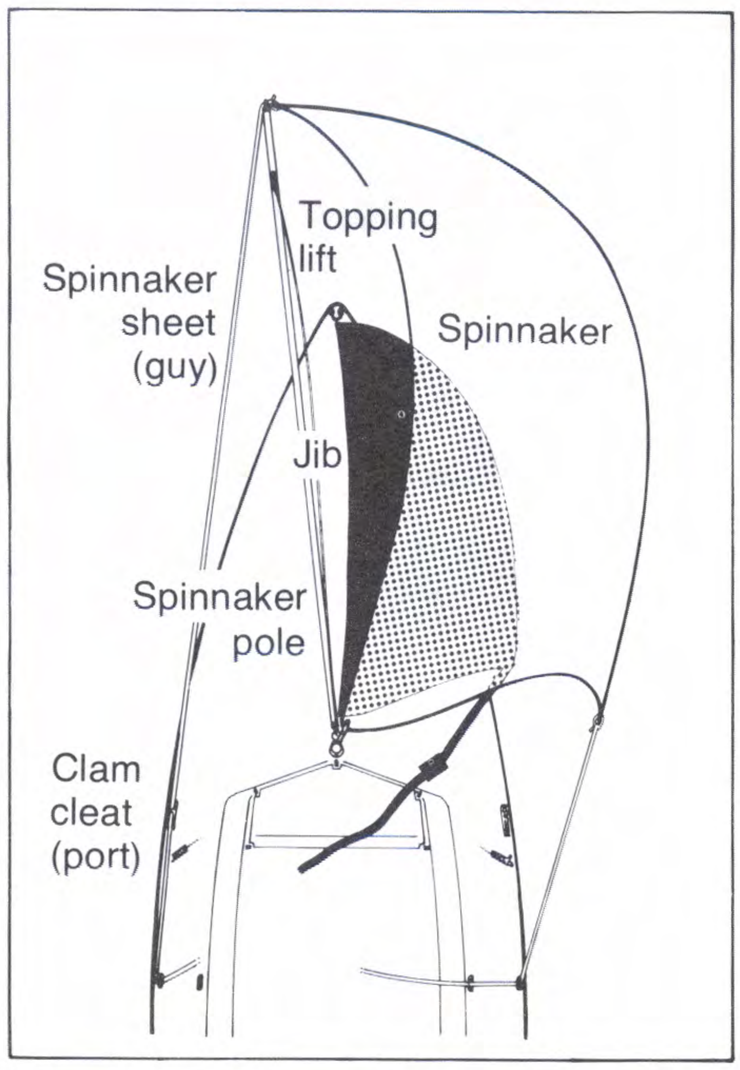


16. The spinnaker is packed, with the head and the clews free, in the turtle bag. The spinnaker sheet (43-24) is set up as in most small dinghies.



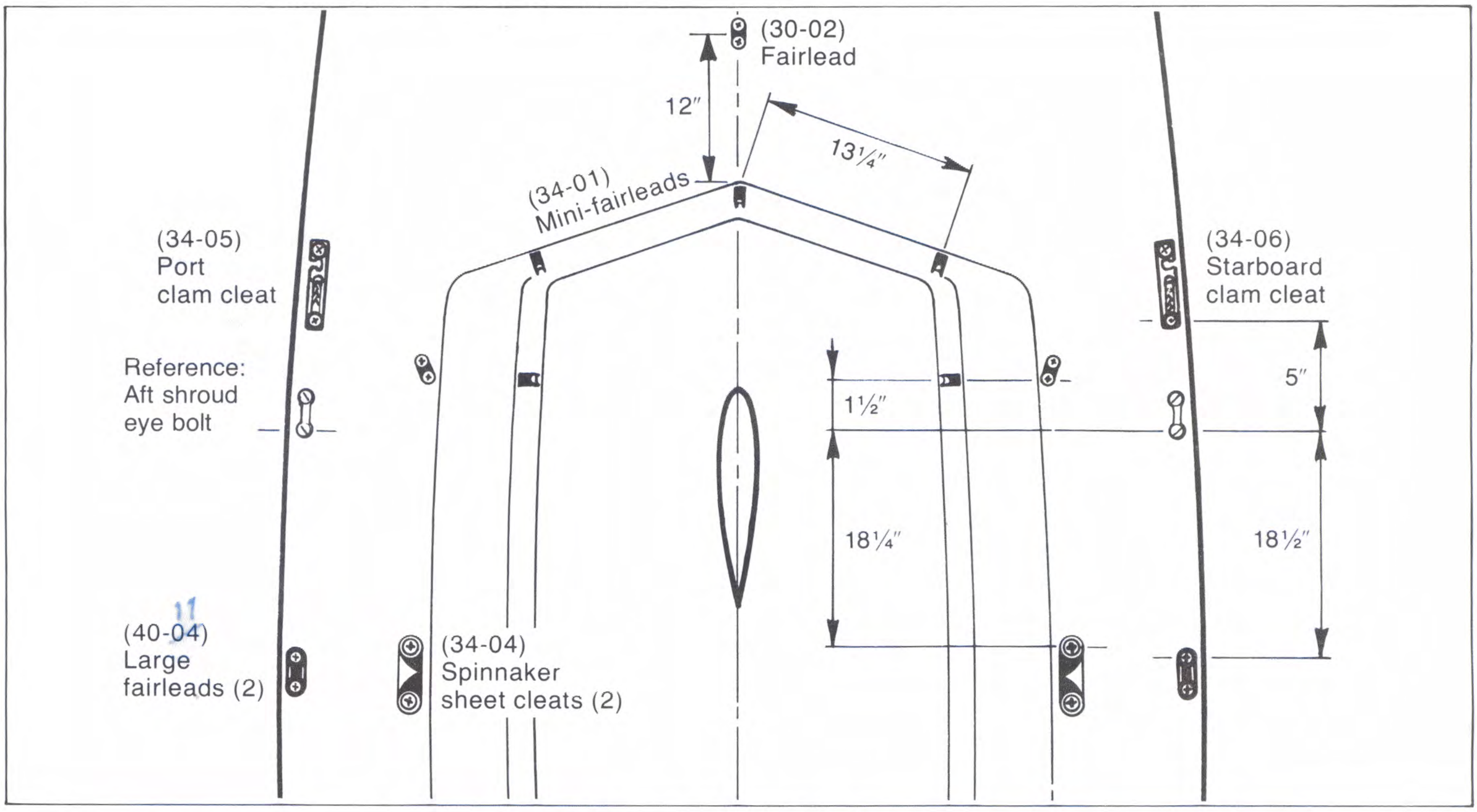


15. The spinnaker pole is stored alongside the boom when not in use. It is supported at the back by the plastic hoops on the boom and the spinnaker knob and shockcord (12-51) at the front. When stowed, the spinnaker pole remains tied to the topping lift.



17. When flown, the guy (windward spinnaker sheet) is cleated in the clam cleat to hold the spinnaker pole down. The spinnaker can be gybed without untying the topping lift line. This feature also prevents loss overboard.

Fastening the self assembly boat fittings



Do use silicone seal on the screws to ensure a watertight fit.

Do hold the screwcaps with vise-grips or pliers and thread the screw into them rather than try to screw them on.

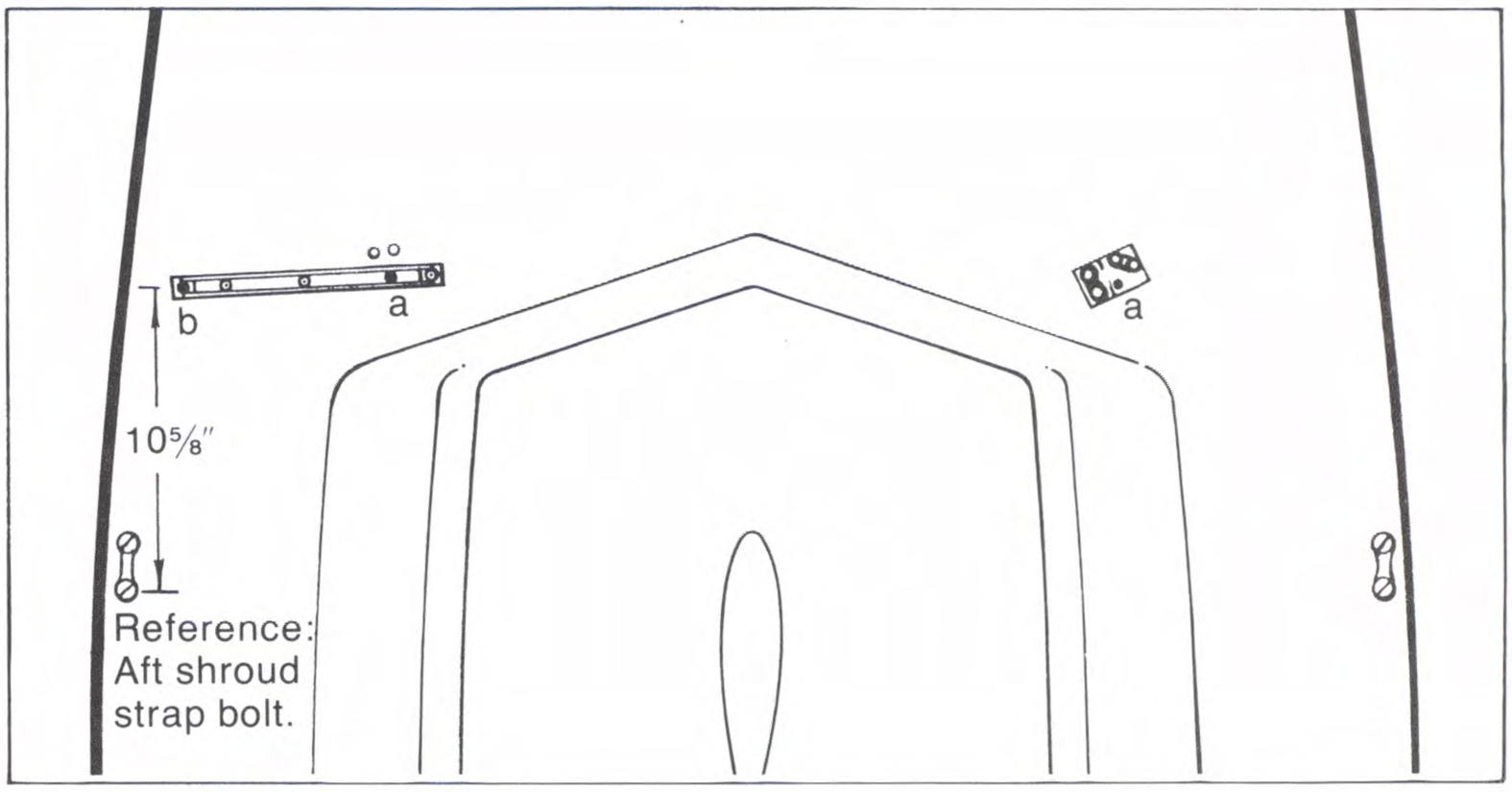
Do set one screw in the fitting before drilling the second hole. This ensures proper alignment.

Do re-drill the hole if the screw binds.

Don't overtighten; stripping and shearing may result.

Optional jibtrack (54-20) installation

1. Remove the existing jib fairlead assemblies.
2. Set the screw in position "a".
3. Position the outboard end of the track and set the screw in the plastic stop in position "b".
4. Slide the car into the track.
5. Insert the inboard stop and set all remaining screws.



Taking care of your Laser II

The Laser II is designed and built to be a lively-sailing and easily-portable boat. It is capable of enduring the roughest conditions of wind and water — however, it is, like any other boat, susceptible to damage if handled without the necessary care. Be kind to your boat, follow the suggestions below and you'll enjoy years of happy Laser II ownership.

Hull Maintenance

The Laser II hull is made of fiberglass and a thin outer layer of colored gelcoat. The deck is also reinforced with a semi-rigid foam. The hull and deck are bonded together to form a watertight hollow shell. Positive buoyancy is provided by the semi-rigid foam and four air-tight polyethylene cubitainers which are loose in the hull and are occasionally heard moving around when the boat is turned over.

Fiberglass is a strong and durable material requiring little care, but contrary to popular belief, it is not "maintenance free". The ultraviolet rays of sunlight, moisture, and the almost inevitable scratches, all can contribute to the deterioration of the gelcoat. Undue stress from abnormal point loads on deck or hull can cause flexing and even distortion of the fiberglass, while a severe blow from a collision can produce a crack or even a complete break in the laminate.

All these "disasters" can be prevented or avoided by following a few simple rules:

Store the boat away from direct sunlight, or if this is not possible, the Laser II cover is a good investment. Two good coats of wax applied to a perfectly clean hull and deck will also help to inhibit sun fade. In addition to preserving the finish, it also makes subsequent cleaning a much easier task.

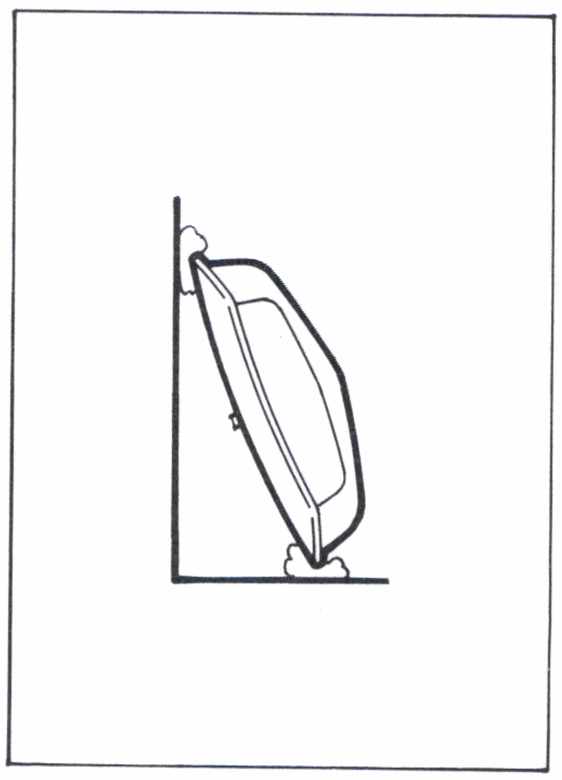
Do not leave your boat permanently in the water or on any surface which would hold moisture against the hull, eg. sand, grass or a wet piece of carpet. No gelcoat is waterproof to the point where a boat may be left in the water unless it is properly primed and painted. Your boat is not painted.

Keep your boat clean. Rinse off sand, dirt and salt. Wash with soap or detergent (do not use an abrasive cleanser!), water and a medium-soft bristle brush. For stubborn stains a little xylol or acetone will do the trick. Warning: Do not allow acetone to stay in contact with the gelcoat for more than 30 seconds or so.

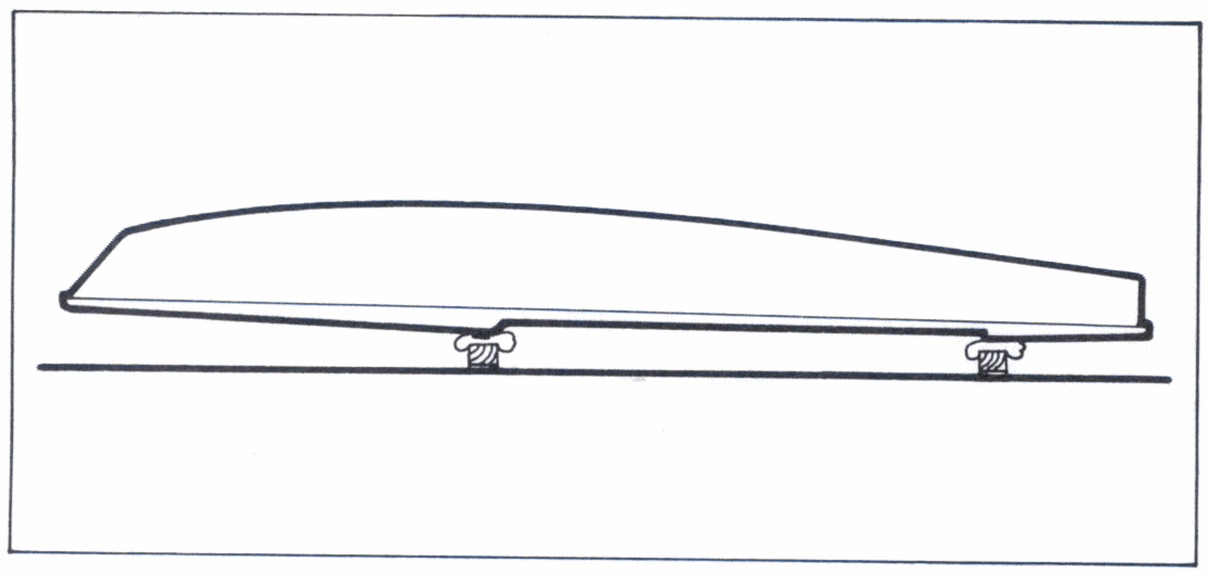
Scratches in the gelcoat surface can often be eliminated by wetsanding and subsequent polishing of the sanded area. Deeper gouges or cracks which leave the fiberglass exposed should be repaired as soon as possible. If you wish to attempt the job yourself, your dealer has small quantities of matching gelcoat and you'll find complete instructions on page 23. The repair of holes resulting from collisions is best done by your dealer or a reputable fiberglass repair shop.

Storage and Transportation

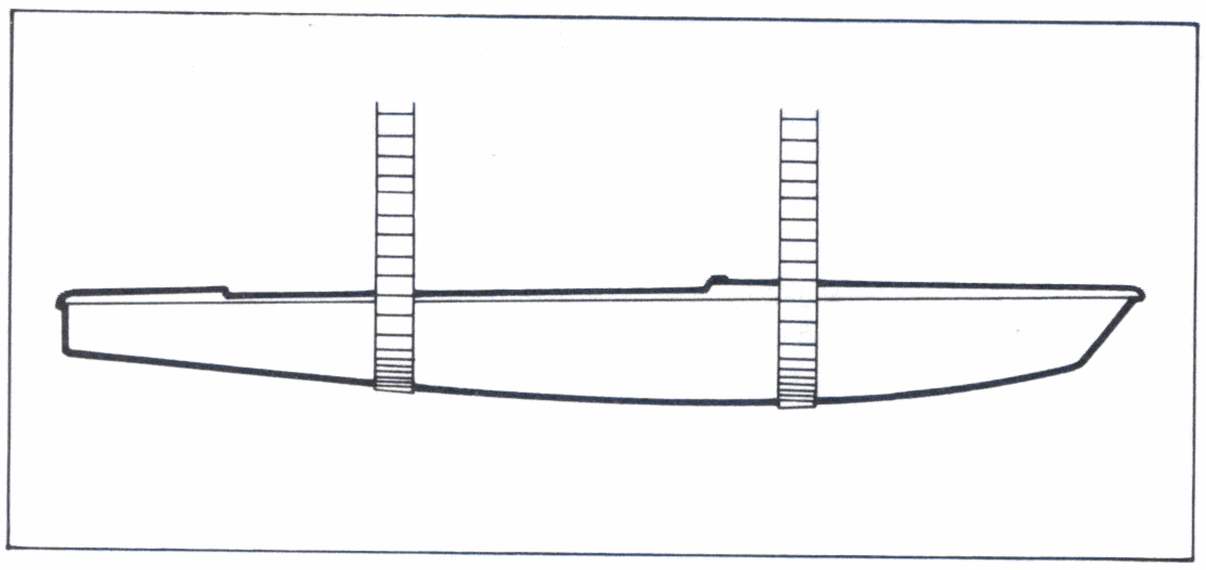
The Laser II may be stored safely in several ways. Always make sure there is no water left in the hull cavity since all fiberglass laminates will absorb small amounts of water. In particular when stored upside down, there is greater potential for water absorption over the wide flat surface of the deck. In winter, the boat should be stored indoors, as rapid successive changes in temperature may affect the boat's structure and water in the hull cavity may freeze and cause damage. Drain holes and inspection ports are best left open.



1. On its side, against a wall: The supporting areas of the gunwhale should be padded by pieces of carpet, mat, or styrofoam.



2. Upside down: The supporting points should be at the maststep and at the aft edge of the cockpit. Covering the supports with carpeting or another soft material will help distribute the weight over the width of the deck. Note: Never support the boat, even temporarily, on the flat areas between the cockpit and the stern.



3. Right side up or suspended in straps hung from the ceiling: Ideally the weight of the boat should be supported at the maststep and at the aft end of the cockpit but, in any event, by supports which distribute the load over as wide an area as possible.

If you are storing more than one boat, do not put one atop the other, but rather on their sides as suggested above.

The Sails

The sails are the engine of your Laser II. They are made from the best quality dacron cloth available. The careful testing and rigid quality control standards used by our sailmaker ensures unmatched consistency and excellent performance. With proper care and maintenance they will last for years.

Don't wad the main or jib into tight bundles or stuff them hand-over-fist into their bags.

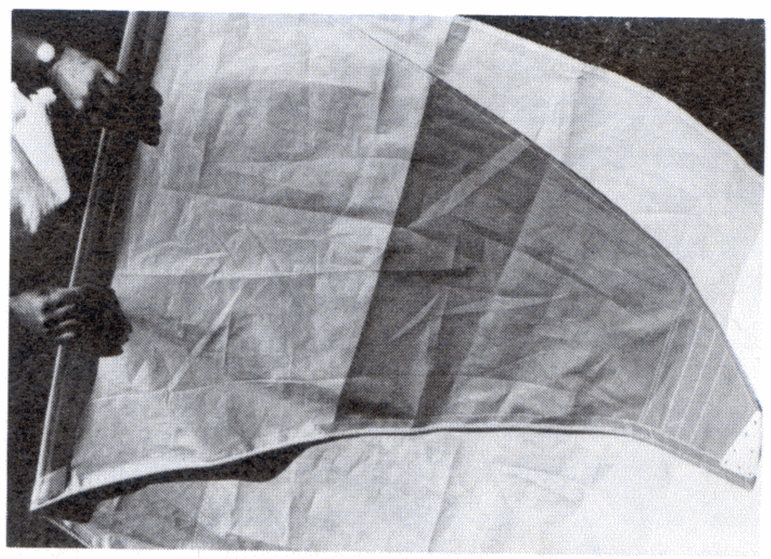
Don't let the sails flutter in the wind or lie in the sun at the dock or beach. This weakens the stitching and breaks down and fades the sailcloth.

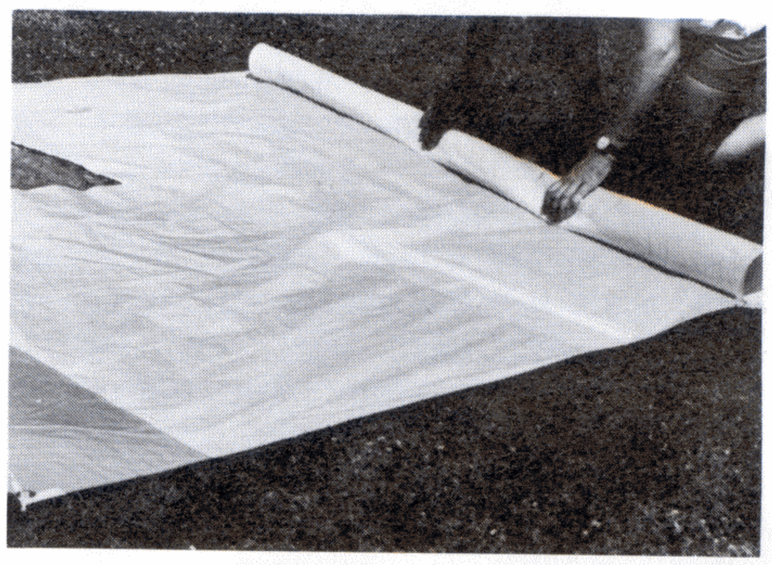
Don't wash the sails in hot water or in the washing machine. Don't try to iron out wrinkles, it will destroy the cloth.

Don't allow chemicals, oil, tar or paint to come in contact with the sail. There is no known cure for stained sails.

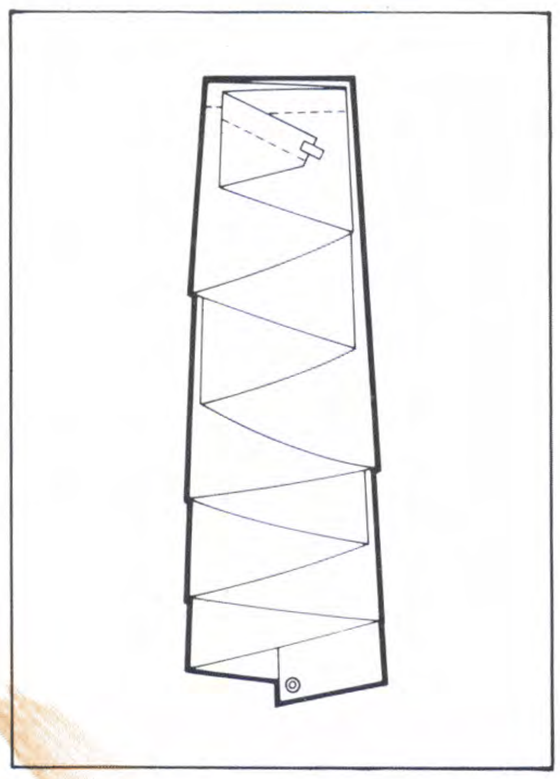
Don't store the sails while they are wet. Damp sails can mildew, discolor and soften.

Don't roll the sails around the boom. (Boom fittings can mar the sail).

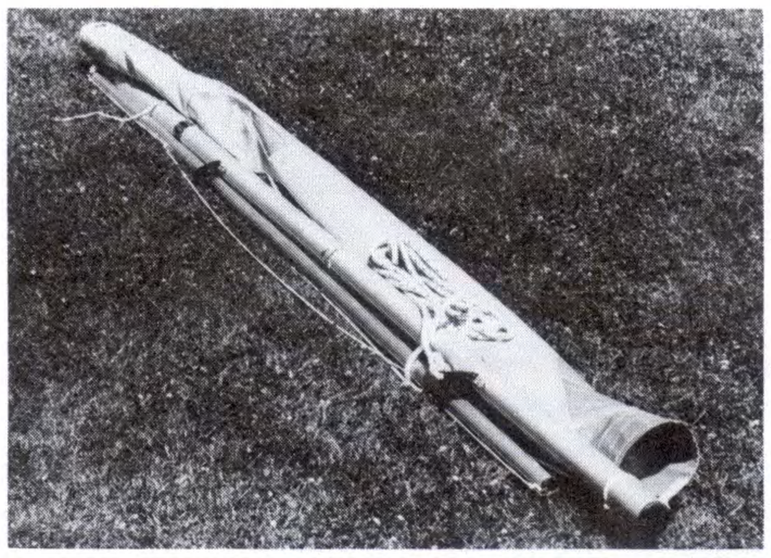




Do roll the sails after every use. For the mainsail, fold the sail at the top batten and roll downwards to the foot. Store it fully battened alongside the boom and spinnaker pole in the long sailbag. Roll the jib from the top downwards, parallel to the foot, without creasing or folding it. Store it with the mainsail. Simply stuff the dry spinnaker into its bag; its lightweight cloth does not crease like the main or jib.



If your boat did not come with a long sail bag, fold it as shown and then roll up loosely.





Do rinse off the sails occasionally with fresh water, especially after sailing in salt water.

Do wash the sails only with cold water and sail soap or mild detergent. A two hour soak in the tub and a scrub with a soft bristle brush is all the cleaning that should be attempted.

Do avoid scratching or creasing the mylar windows. However, windows which have become scratched or clouded can be partially restored by using a soft damp cloth and plexiglass cleaner.

Centerboard and Rudder

The Laser II's centerboard and rudder are manufactured from high-density self-skinning polyurethane foam reinforced by a carefully constructed pattern of high-tensile steel wires. This material, though similar to wood in weight and properties is completely uniform, without grain, and does not absorb water if broken.

The surface can be scratched, dented or cracked in the same way as wood. Therefore, protect your centerboard from excessive loads or impact as you would a wooden board. In particular do not stand on the trailing edge when righting after a capsize. *Except when clearly a manufacturing defect, broken edges are not covered by warranty.*

The polyurethane is stable at temperatures between −40°C and +80°C (−40°F and 175°F). At lower temperatures it becomes more brittle and at high temperatures it will begin to soften and may warp. For this reason boards and rudders must never be left exposed to extreme heat while under any stress (in the trunk of a car or in direct sun) as they may take on a permanent set.

Dents and scratches can be repaired with polyester filler of the type used for auto bodywork. Pieces which have broken off may be glued back in place with epoxy glue; for complete repair instructions, see page 23.

Centerboard and rudder should be stored flat without any weight on them or better still, hang them from the wall to save space.

The same principles of support apply to the proper methods of cartopping and trailering. Do not use a trolley or trailer which has only bilge blocks or rubber rollers for support. A good Laser II trailer should have snugly fitting contour cradles or support the boat by its gunwhales. When cartopping, ensure that the carrier is well padded; no matter how tightly the boat is tied on, there is always movement which will scuff the gelcoat.

Repairs

Gelcoat

Scratches in the gelcoat surface can often be eliminated by wet sanding. Use 400, followed by 800 grade, wet sandpaper wrapped around a wooden block. If a dark-colored tinge begins to appear, stop sanding; you are wearing through the gelcoat and getting too close to the fiberglass. Polish the sanded area with a rubbing compound (available from hardware stores for cleaning and polishing cars).

Deeper gouges and dents require filling with gelcoat. Done properly, these repairs are quick, simple and inexpensive, but please read these instructions carefully and completely before attempting any repairs.

Tools and materials required:

Chisel
Dry sandpaper, grade 60 or 80
Clean rags
Paper cup or other non-metallic disposable container
Gelcoat, available from your dealer
Catalyst (hardener), sold at hardware stores (MEK Peroxide — 60%)
Wooden spatula or coffee sticks
Transparent tape, preferably one inch or wider
Wet sandpaper, grade 400, 600, 800 and 1000
Sanding block
Bucket of water
Polishing compound

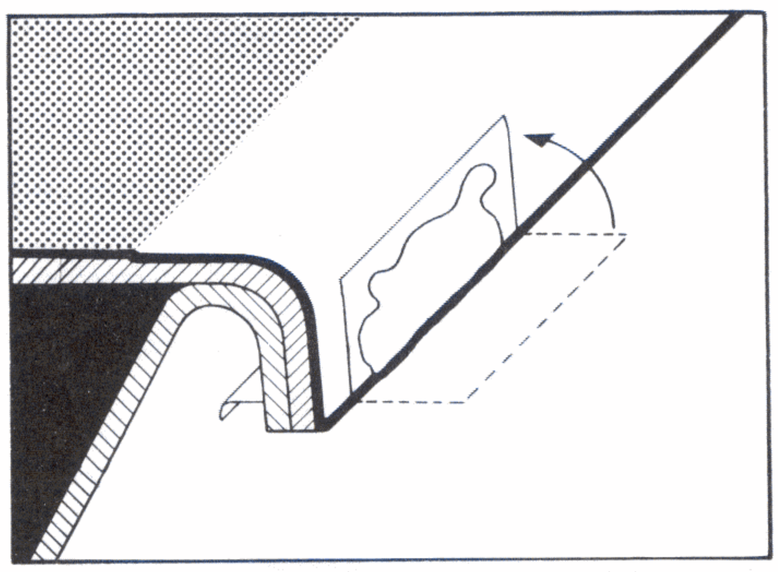
1. Eliminate all loose gelcoat with chisel; only take off loose material.
2. Sand area with dry sandpaper to provide rough surface, including at least one inch of undamaged gelcoat all around.
3. Clean area thoroughly of dust and loose particles.
4. Fill at least half a paper cup with gelcoat and add 2 parts catalyst to 100 parts gelcoat. That's about half a teaspoon to half a cup (4 fluid ounces). Mix thoroughly with the wooden coffee stick for at least two minutes.

The catalyst sets off a chemical reaction which will progressively harden the gelcoat. The time required will vary with the ambient temperature and humidity, and the amount of catalyst in the gelcoat. The warmer it is, the faster the reaction. (Under 10°C (50°F) reaction may be very slow and additional catalyst needed.) Let gelcoat sit in cup for about 5 minutes to start reaction going.

Warning: *Avoid catalyst contamination with other materials. Avoid catalyst contact with skin and clothing. Should this accidentally happen, flush with plenty of water. If eyes are affected seek medical attention as soon as possible after immediate and prolonged flushing with water.*

5. Apply gelcoat with wooden spatula or coffee stick until the area is evenly covered.

On horizontal surfaces: Smooth out to a slightly raised surface over the entire area.



On the gunwhale: Put a strip of transparent tape below the patch first, then apply gelcoat and bend tape over patch.

On sloping or vertical surfaces: To keep the gelcoat from dripping, cover small patches with transparent tape or, for larger areas, add a spoonful of talcum or baby powder to the gelcoat/catalyst mixture to give it a firmer consistency. This will lighten the color of the gelcoat, but makes the application much easier.

Let gelcoat harden for 30 to 45 minutes.

Fill the cup of leftover gelcoat with water and let it cool down completely before throwing it away. Catalyzed gelcoat in a large mass can generate enough heat to cause combustion and is a source of many "fiberglass fires".

6. Remove all the tape. If not covered with tape, a thin layer which is only on the surface of the patch will still be tacky as gelcoat does not cure in the presence of air. The rest should now be hard. Scrape off any tacky gelcoat with the chisel and start sanding with the 400 grade wet sandpaper dipped frequently in water; continue with 600, 800 and finally 1000. If only 600 grade is available, use it with lots of water — you will have to polish with compound a little longer to obtain a perfect finish. Wrapping the sandpaper around a small wooden block will help fairing the patch into the hull. Check the patch constantly while sanding, if a dark-colored tinge appears, stop sanding. You are wearing through the gelcoat and getting too close to the fiberglass.
7. Polish the patch with the polishing compound and a clean rag.

Centerboard and rudder

The Laser II polyurethane centerboard and rudder can be worked with normal woodworking tools. You should be aware however, that the reinforcement (steel wire) runs the length of the components in a strip approximately 3¼" (9 cm) wide and located 3" (8 cm) from the leading edge of the centerboard and 1¼" (4 cm) from the leading edge of the rudder, and this reinforcement is only 1/32" (1 mm) below the surface. If damage occurs it should be treated as follows:

Dents — Rub down the damaged area with sandpaper or steel wool, ensuring that the surface of the dented area is completely clean, without any gloss, before attempting to place the filler. Any polyester filler of the type used for auto bodywork may be used.

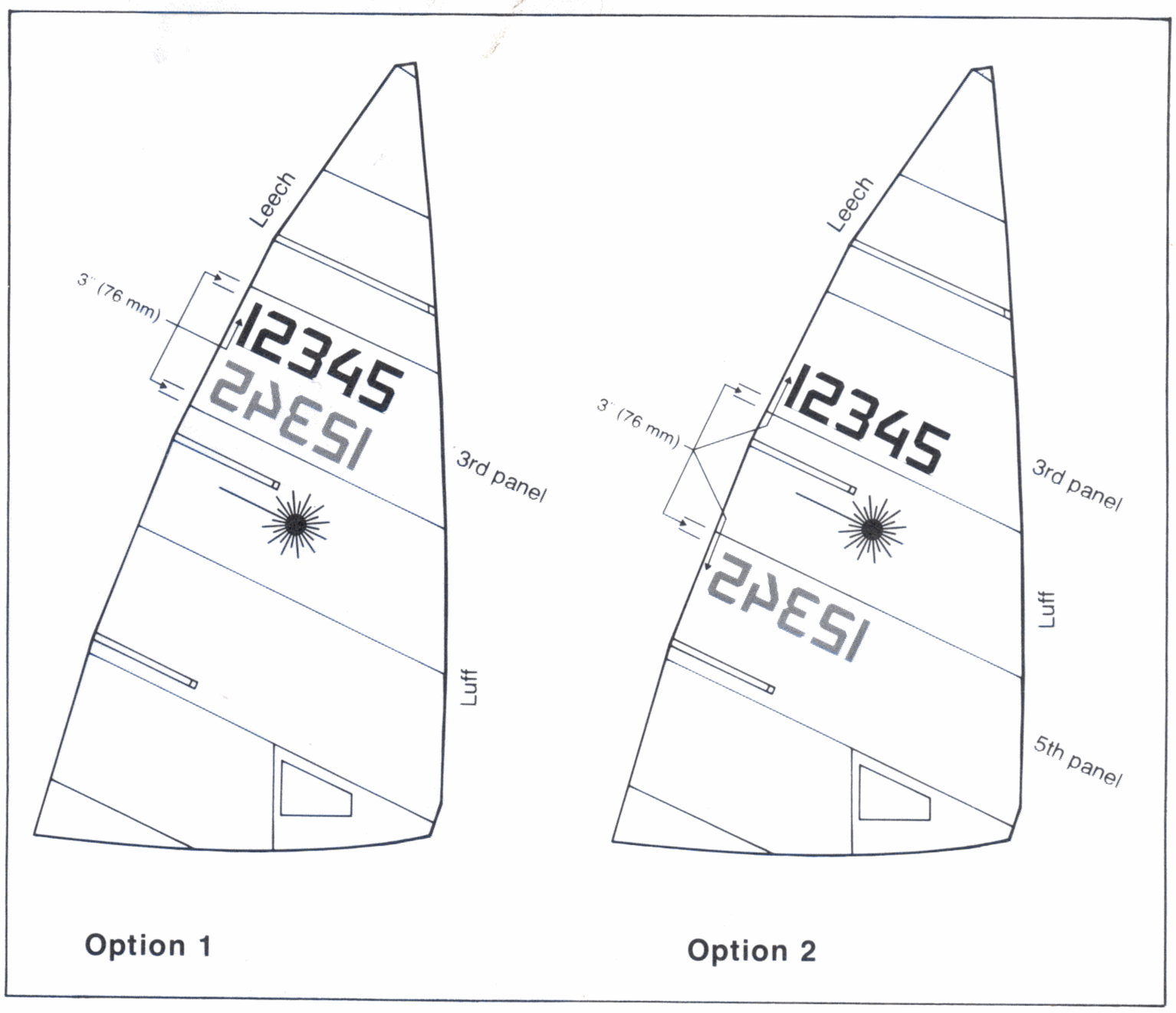
Scratches — Generally, scratches will be treated similarly to dents. However, if the scratches are deep enough to expose the steel reinforcement, careful examination should be made to see if rusting has occurred. If this is the case, cut back the polyurethane locally to expose the rusted area and clean off thoroughly with steel wool before applying the filler as above.

Breakages — Breaks will not extend appreciably into the reinforced area but will be limited to the leading and trailing edges. Cracks should be filled with an epoxy glue and when this is set the surfaces can be restored as above.

If the breakage results in a piece becoming detached, this may be glued back into place with epoxy glue, or if lost, may be replaced with a piece of wood which can then be planed and sanded to the original contours.

Blisters — There is a remote chance that a few centerboards could blister up to several months after manufacture. If this occurs, the affected area should be planed flush, filled if you break through the bubble, and painted.

Painting — After repairs have been carried out, the repair should be lightly rubbed down with sandpaper or steel wool to provide a key for the paint. Polyurethane based paints should be used, giving at least one coat of primer undercoat and one coat of gloss. A final rubbing down with fine cutting paste of the type sold for auto body finishing will blend the new paint into the surrounding area and render the repair almost imperceptible.



Option 1 **Option 2**

To participate in Laser II regattas, you need numbers on the sail. The sail number should correspond to the number found on the hull.

The numbers must be 30 cm (12″) high, 20 cm (8″) wide and 4.5 cm (1¾″) thick. They must be positioned exactly as shown with 6 cm (2⅜″) between adjoining numbers, with the number on the starboard side placed above that on the port side.

Performance Sailcraft Australia,
401 403 Victoria Road,
Gladesville, N.S.W., Australia

Performance Sailcraft Corp.,
33 Duffy Place,
San Rafael, California 94901

Performance Sailcraft Ireland Ltd.,
Industrial Estate, Waterford, Ireland

Performance Sailcraft Japan Limited,
1913-2 Kamitsuchitana,
Ayase-shi, Kanagawa-Ken 252, Japan

Performance Sailcraft (NZ) Ltd.,
62 Porana Road,
Glenfield, Auckland 10, New Zealand

Performance Sailcraft SA,
Quai Suchard 20, P.O. Box 60,
CH 2003 Neuchâtel, Switzerland

PSI Yachts Pty Limited,
P.O. Box 234, New Germany 3620, South Africa,
and: 34 Halifax Rd., Pinetown 3600, Natal

Performance Sailcraft (UK) Ltd.,
Unit 6, Tramway Industrial Estate,
Banbury, Oxon OX16 8TL, England

S.D.N. Laser France S.A.,
Rue des Meuniers, 39/41,
F-92150 Suresnes, France

Norden Laser,
Frejgatan 39,
S-14900, Nynashamn, Sweden

Performance Sailcraft Inc.,
550 Delmar Road,
Pointe Claire, Quebec,
Canada H9R 4A6