

DAY SAILER, OSPRAY and JAVELIN RIGGING INSTRUCTIONS

(The glossary on page 6 will help you identify many of the terms used in these instructions. Also note that some of the pictures are of other models, but the basic setup is the same.)

The following is a list of parts which come with your boat. (Standard equipment)

1. A long shipping tube containing mast, halyards, stays, two spreaders, (two jumper struts for the Day Sailer and Javelin keel model only).
2. A shorter shipping tube containing boom with blocks, mainsheet (44 feet), jib sheet (26 feet), and outhaul line (3 feet).
3. Flat package containing rudder, tiller (bolt and nuts for this assembly), (outboard well cover, two outboard motor transom plates with accompanying screws (4) for Day Sailer and Ospray), and a paddle boom crutch.
4. Sailbag containing mainsail and jib sail, if ordered. (The battens for the mainsail will be found in the sailbag.)
5. If your boat is the Javelin keel model, you also receive 6 keel bolts, nuts, and "O" rings.

SUGGESTED EQUIPMENT FOR RIGGING BOAT

You will need a medium-sized screwdriver, a pair of pliers, (a 11/16" socket wrench for keel bolts for Javelin only), a small roll of tape to cover cotter pins, and hand drill for attaching outboard motor transom plates to inside of motor well.

INSTALLING KEEL -- JAVELIN ONLY

You will need help for this job. Remove the center floorboard, and raise the hull enough to allow the keel to be hung. Slip the 6 keel bolts thru the holes in the keel (the two 4" bolts go forward and the four 3½" ones, aft), and slip an "O" ring over each bolt. Place the keel in position under the hull. Bedding compound should be inserted between the keel flange and the hull. One man is needed in the boat to put washers and nuts on the bolts as they are shoved thru. Set the nuts up with a 11/16 inch socket wrench, using moderate force. Replace the floorboard, but leave it loose, in case the keel bolts need tightening a little to stop possible leaks when the boat is floating.

Caution: The keel is an iron casting, and therefore extreme care should be taken that the 6 bolts are drawn up a little at a time, as any undue strain on one or two bolts could cause the keel flange to crack.

MAST

The first step is to remove the two spreaders which are taped onto the mast. You will notice that these two aluminum tubes, or spreaders, have a hole in one end and a slot in the other end. These spreaders should be fastened with clevis pins onto the fittings on either side of the mast about one third up. (Picture 1) Open ends of cotter pins after they are in place and tape.

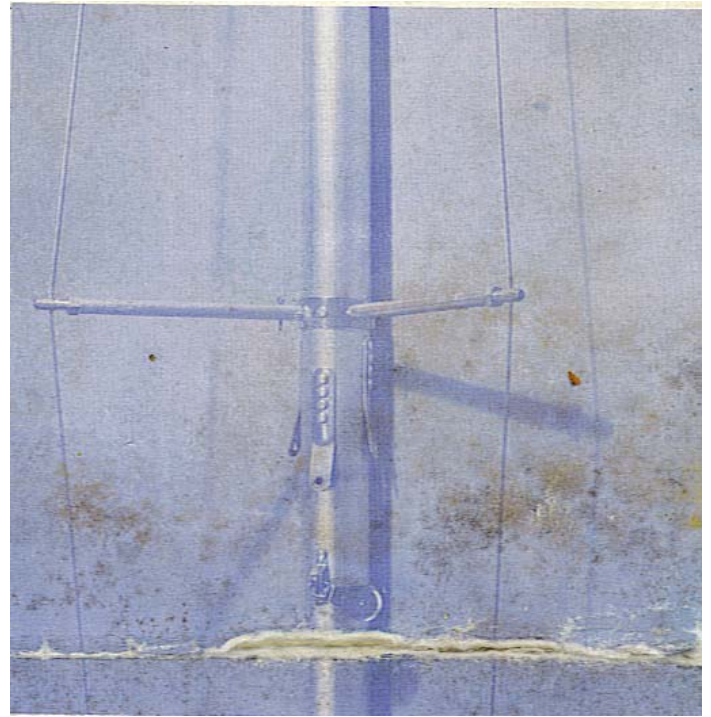


PICTURE 1

Into each of the slots place a side stay. A small wire will be found in a hole at the slotted end of the spreader. Wrap the wire around the stay as many times as possible which will prevent the stay from jumping out of the slot. (Picture 1) This area should then be covered with tape to protect the mainsail when it is blown up against these rough edges.

This applies to the Day Sailer and Javelin keel models only. The next step is to assemble the jumper "V" strut (Picture 2). Slip the two similar aluminum tubes of the strut over the jumper strut holder. Insert the two cotter pins through the jumper struts which will prevent them from falling off. Back off the nuts on the adjustable bolts until the jumper stays can be slipped into the slots on the ends of the bolts. (You will have to remove the screws on the ends of the adjustment bolts in order to accomplish this.)

Carefully turn the adjustment nut so that the bolt moves out of the tube, tightening the jumper stay. When the tension is right you should be able to push the stays in about two inches at the mid-point with your forefinger, using moderate pressure. Lift the top of the mast up (with the groove facing up) and sight down the mast to see that it is straight. Any correction can now be made by adjusting the adjustment nuts. Now



Picture 2

replace the screws on the ends of the adjustment bolts which will hold the jumper stay in place (Picture 2), and then cover with tape.

Before you step the mast, tie a figure 8 knot in the end of each halyard to prevent them from getting out of reach, then pull the shackles on the other end of the halyards to the foot of the mast. This puts the shackles in reach when the mast is stepped.

STEPPING THE MAST

We recommend that you get assistance in stepping the mast. This is a slotted mast and the slot side faces the stern when in position to be stepped.

For those of you who are unfamiliar with the function of the mastjack — this device eliminates the use of turn-buckles by tightening up all three stays at once. The base of your mast is recessed in order to fit over the top of this mastjack which is directly underneath the hole in the deck, through which the mast is stepped. Make sure when stepping the mast that the big screw nut on the mastjack is turned all the way down.

Now fasten the side stays to the chainplates with the clevis pins provided. As a precaution it is suggested that the ends of these cotter pins be turned back and covered with tape to prevent accidental cuts and scratches and ripping of sails. Now fasten the head stay to the stemhead fitting. This fitting should be taped as well.

Now the mast is in place. The next step is to take the slack out of the stays. You will find a brass rod called the mastjack handle taped to the centerboard handle. On the Javelin you will find the mastjack handle taped to the top of the centerboard fairlead housing. Place the mastjack handle in one of the holes in the big screw nut and with a counterclockwise motion, raise the mast just enough to 'take the slack out of the stays.

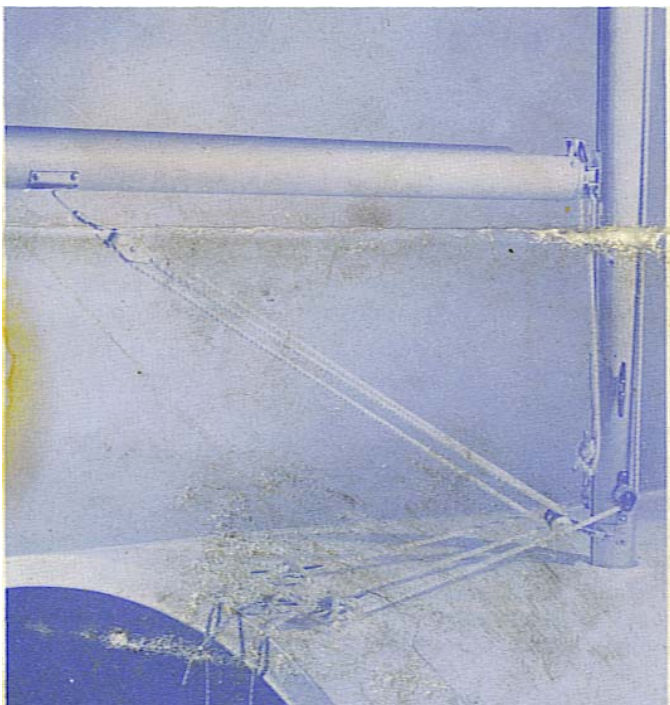
Caution! It is very important that you do not tighten the stays too much as this can cause damage to the hull.

ATTACHING BOOM TO MAST

Slip the gooseneck on the boom (slot side up) into the slot on the mast and rest the other end in the paddle boom crutch .(pictures 3 or 4).



PICTURE 3



PICTURE 4

(Note that this picture show a typical Boom Vang setup.)

MAINSHEET

Take the free end of the mainsheet and thread it through the blocks on the port, then the starboard side on the stern of the boat, and up through the block on the end of the boom, through the block on the center of the boom, and finally, on the Day Sailer only, down through the cam action mainsheet cleat which is mounted on the centerboard trunk. Tie a figure 8 knot in the end of the mainsheet so that you won't lose it (picture 5 or 6).



TO ATTACH RUDDER

On the stern of the boat are two grudgeons into which are inserted the pintles on the rudder. Be sure to place the tiller over the mainsheet.



PICTURE 6

CENTERBOARD

JAVELIN - CENTERBOARD

The centerboard winch is a reel type winch which makes it possible to raise or lower the 50 lb. centerboard. **YOU WILL FIND IT HELPFUL TO KEEP AT LEAST A TURN AND A HALF OF WIRE ON THE DRUM AT ALL TIMES.**

Never lower the centerboard all the way, as it can hit the front of the centerboard trunk and could fracture the fiberglass. Be sure to raise the centerboard all the way and insert the centerboard pin through hole in the centerboard trunk so it will pass through centerboard, which will take the strain off the cable while trailing or when you are through sailing. Should the centerboard bolt leak, it can be tightened — a little waterproof grease between the rubber gaskets and the centerboard trunk will act as a sealant.

DAY SAILER AND OSPRAY

First push lever on centerboard trunk forward. Lift the catch at the lower forward corner of the handle and pull handle back lowering the centerboard. Caution should be exercised always in lowering the centerboard. The catch pin can be broken, if abused. We recommend that you **gently** push the centerboard lever forward and then raise the catch.

If the gasket on the centerboard lever leaks, it can be controlled by tightening up the three screws holding the fitting on the centerboard trunk. If the centerboard mechanism still leaks, then back off the three screws and apply some waterproof grease between the rubber gasket and the centerboard trunk. This will act as a seal. The friction on the centerboard lever can be controlled by tightening or loosening the three screws, thus allowing you to position the centerboard for most efficient sailing. After sailing or when trailing, be sure to raise the centerboard all the way and set the catch.

TO HOIST OR RAISE MAINSAIL

To raise the mainsail, insert battens and then starting near the gooseneck, feed the foot of the sail, clew first into the slot on the boom. The pin in the gooseneck slips through the tack of the sail to hold it in place. Draw the foot of the sail out along the boom until the foot is tight. The outhaul line should be attached to the clew of the sail, then passed through hole in fitting on end of boom, then cleated on boom cleat (picture 7). Next fasten the main halyard (Day Sailer, 23' 3" wire, 23' rope; Ospray, 52' rope; Javelin, 46' rope) to the head of the mainsail, and feed the luff of the sail into the mast slot, (picture 7) Hoist the sail fully and cleat it.



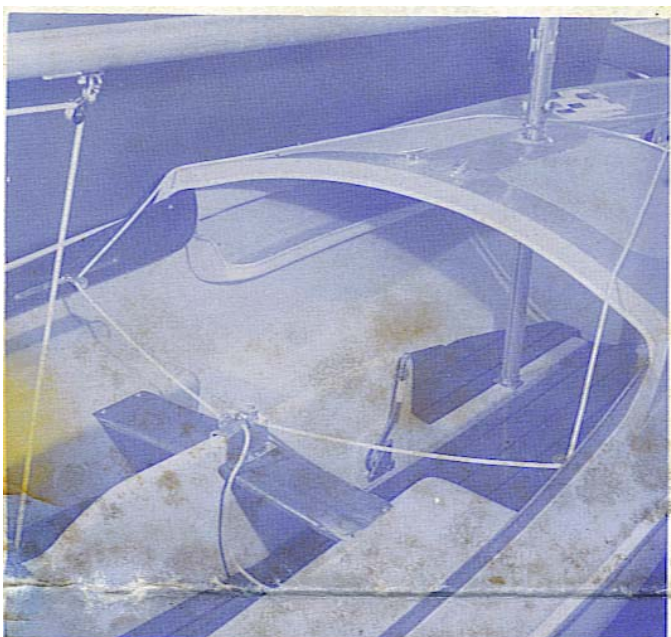
PICTURE 7

DOWNHAUL

Tighten the luff of the sail by pulling down on the line attached to the gooseneck and then cleat it (picture 3 or 4).

TO HOIST JIB

Fasten all the jib snaps on the luff of the jib to the headstay and attach fitting on the tack to the stemhead fitting. The jib halyard (Day Sailer, 15'8" wire, 20' rope; Ospray, 14'8" wire, 20' rope; Javelin, 15'9" wire, 20' rope) is then attached to the head of the jib just as the mainsail was. Fasten the jib sheets to the clew of the jib and run them aft on either side of the mast inside the stay wires, through the blocks to the cam action jam cleats on the centerboard trunk, Day Sailer only (picture 8). On the Ospray and Javelin, the jib sheet is fastened to a cleat on the centerboard trunk.



PICTURE 8

OUTBOARD WELL

DAY SAILER AND OSPRAY

The outboard well is provided to take an outboard engine with a long shaft. Recommended h.p. is 3 to 6. The two outboard motor transom plates should be installed to fit the particular design of the clamps on your engine. You would be unwise to install the motor without these plates, as you run the risk of the motor falling off.

JAVELIN

The Javelin is not equipped with an O/B well, as the engine can be clamped directly to the transom.

Caution care should be taken in operating the engine with the rudder in place as the propeller can hit the rudder blade.

ROLLER REEFING

Your mainsail can be easily reefed, as the boat is equipped with a spring loaded gooseneck. First, remove the block in the middle of the boom. Second, release the main halyard but - keep it under tension. Third, pull the boom back from the mast so that you can turn it. Fourth, roll the boom clockwise as you or your crew lets off slowly on the halyard. The sail will roll onto the boom. Fifth, when you have rolled about 5 or 6 times you will have reduced your sail area by 1/3. Experience will teach you how much to reef under various conditions. Sixth, lock your boom back into place by letting the boom go forward and tighten up: halyard. When reefed the mainsheet is handled directly from the end of the boom. To shake out just reverse procedure.

FLOTATION

There is sufficient foam flotation (in block form) in the seat and bow tanks to support the crew and normal gear, should a capsizing occur or the hull become punctured.

DRAIN PLUGS

Just aft of the centerboard trunk or keel, you will find a nylon drain plug. This is provided to drain the bilge when the boat is out of water. Check to see that the plug is securely installed each time before putting your boat in the water.

RECOMMENDED EQUIPMENT

Other than ordinary safety gear.

1. Boom Vang — an important item which goes between boom and mast. When jibing this device holds the boom down.
2. Tiller extension — good for sailing alone, as it allows you to move forward to handle lines, etc., and makes sailing while sitting on the gunwale easier.
3. Cockpit cover — (tent type) useful for cruising, keeping the boat clean and dry while at the mooring.
4. Spinnaker and spinnaker gear — a must for fleet racing and for those who want a little more speed and excitement off the wind.

OTHER IMPORTANT INFORMATION

Before you set sail be sure to move everything on the boat to see how it works. Let the centerboard down, pull it up, and then let it down again. (Until you are more familiar with sailing, it is best to keep the centerboard down all the times while sailing.) Check your tiller before setting sails, examine the stays, haul the sheets in and out, and the halyards up and down.

Should the boat capsize while sailing, there are a number of steps that should be taken to insure the safety of the boat and crew.

1. Make sure that each occupant has a life jacket on.
2. To prevent the boat from turning turtle (upside down), which can occur, put some weight on the centerboard which will hold the boat horizontal or place a life jacket under the end of the mast.
3. Take down the sails
4. Right the boat and try and bail it out.
5. Remember your boat is equipped with flotation material, and it can act as a life preserver

Flotation tank plugs -- Perhaps you have wondered about the plugs in both the 'Bow and seat flotation tanks. These tanks should be checked from time to time by removing the thermos bottle type plugs to drain out any water, which may have accumulated from condensation. While your boat is in storage the plugs should be removed to air the tanks, especially in hot climates. Please note these plugs are adjustable by simply turning the lever clockwise to tighten and counterclockwise to loosen.

The fiberglass requires an occasional wash with a detergent to keep it looking new. Waxing and polishing with a hard wax twice a year is recommended to maintain the high gloss. If the boat is to be left in the water (fresh or salt), the bottom should be painted with an antifouling paint. Follow the directions on the can. If the hull is damaged due to abuse, you can repair it yourself using a kit available through your dealer.

Your boat may be stored outside, but cover it to keep out the rain. The hull should be supported to prevent possible hull distortion. If blocks are used, they should be well padded. Lay the mast and boom on a flat surface or hang well supported in a horizontal position for storage.

Sails should be thoroughly washed with fresh water and dried before storing. Hanging in a dry, well-ventilated place is best. Next best is to store them in the sail bag.

Woodwork-- varnish once a year using any good marine varnish (more often, if boat is used year round).

TRAILER - CENTERBOARD MODELS

Normally any good marine boat trailer is sufficient for the Day Sailer, Ospray, or Javelin that will carry an 800 pound load. Make sure that the majority of the weight is supported along the centerline at various points and that there are two rear bunks offset which will hold the boat steady.

JAVELIN - KEEL MODEL

Here again you will need a trailer which will support 800 pounds. You can purchase a flat-bed trailer and simply secure the storage cradle on top of the trailer, or you can have a special frame made up which will hold the boat in the proper position with the keel attached. It is a good idea to support some of the weight of the keel.

G L O S S A R Y

AFT: In the neighborhood or direction of the stern.

BATTEN: A thin wooden strip placed in a pocket in the leech of a sail to help hold its form.

BLOCK: Pulley consisting of a frame in which is set one or more sheaves (shivs) or rollers. Ropes are run over these rollers.

BOOM: Spar at the foot of the mainsail.

BOW: The forward part of the boat.

CENTERBOARD: A keel-like device that can be hoisted or lowered in a trunk that acts as a keel in shoal draft boats

CHAINPLATES: A flat strip of metal bolted to the boat's hull near the deck line to take the stress of stays.

CLEAT: A fitting with two horns around which ropes are made fast.

CLEVIS PIN: A small stainless steel pin that has a hole in one end for a cotter pin and is used to secure stays to chainplates and mast fittings.

CLEW: The aftermost corner of the sail.

COCKPIT: An open area lower than a boat's deck where the occupants sit.

COTTER PIN: A split metal pin, the ends of which are bent after insertion through a clevis pin.

DOWNHAUL: A device used to tighten the luff of a sail.

FAIRLEAD: An eye used to load lines in the direction desired. For example, a fairlead is often secured to the deck in such a position as to change the direction of a jib sheet in leading it to a cleat.

FOOT: The lower edge of a sail.

GOOSENECK: A metal device that secures the boom to the mast.

GUDGEON: Any of the metal sockets attached to the transom to receive the pintles of the rudder.

GUNWALES: The upper edge of a boat's side, where it meets the deck.

HALYARD: A line for hoisting (or raising) sails.

HEAD: The upper corner of a sail.

HEADBOARD: The fitting at the head of a sail with a hole in it to receive the main halyard.

HEADSTAY: The foremost stay on a sailboat. A jib is set on a headstay.

HULL: Main body of a boat.

JIB: A triangular sail set forward of the mast.

JIB SNAPS: Small fittings that are attached to the luff of a jib which secure the jib to the headstay.

JIBE: The action of the mainsail when shifting from one side of the boat to the other.

LEECH: The after edge of a sail.

LINE: The common expression for a rope in use.

LUFF: The forward edge of a sail.

MAINSAIL: The largest sail.

MAINSHEET: The line used to trim a mainsail.

MAST: An aluminum tube designed to stand on end so as to support a boom plus one or more sails.

MASTJACK: This device eliminates the use of turnbuckles by tightening up all three stays at once.

MAST STEP: A metal -fitting that holds the base of the mast in position.

OUTHAUL: A line used to haul the clew of a sail out to the end of the boom.

PINTLES: A pin on the forward side of a boat's rudder designed to rest in and pivot on the gudgeons secured to the transom.

PORT: The left side of a vessel, facing forward.

RIGGING: The wire supporting the spars is called standing rigging (stays or shrouds) and the ropes used in setting and trimming sail are known as running rigging (halyards and sheets).

RUDDER: A vertical plate attached to the stern of a boat for use in steering it.

SHACKLE: A U-shaped piece of metal with a pin across the open ends.

SHEET: A rope used to trim a sail.

SLACK: The opposite of taut. Slack away or off, to pay out.

SLOOP: A one-masted vessel with two or more sails.

SPAR: A mast, a boom, etc.

SPREADERS: Aluminum tubes that project from a mast in a traverse direction in order to keep a stay at proper tension and to help hold the mast erect.

STARBOARD: The right side of a boat, facing forward.

STAY: A length of wire used to support a spar.

STEMHEAD FITTING: The fitting nearest the bow on the deck where the headstay attaches.

STEP: To step a mast is to set it in position.

STERN: The after part of a boat.

TACK: The lower forward corner of a sail.

TILLER: A piece of wood connected with the rudder head. By this the rudder is moved as desired.

TRIM: To trim sails, to put them in correct relation to the wind by means of sheets.

TRUNK: Of a centerboard — the vertical shaft it lifts and lowers.

TURNBUCKLE: A device;; used to maintain correct tension on rigging.



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