

LESSONS FOR NEW MOBJACK CREWS

- Miscellaneous Tips

- Be pointed head-to-wind before raising mainsail.
- The rudder does not float.
- Raise the centerboard before jibing.
- Wax the entire boat twice a year.
- Ease the jib halyard tension slightly if the jib is left on the boat overnight. Also, pass a line through the jib clew, around the forestay and tie securely.
- A belly strap securing the boat to the trailer is not adequate to prevent the boat and trailer from being overturned during a storm. Pass one line around each chainplate to a stake secured in the ground if the boat is left with mast up.
- The jiffy reef and the jib furler are tops for reasons of safety and convenience.
- The jib furler-to-jib tack connector must be free to rotate without binding. (See Figure 1)
- The boat sails best with no heel. Keep her flat and level and she will go her fastest as well as being less likely to capsize. To keep the boat level, the following steps can be taken as the wind increases: 1) hike out, 2) hike out more, 3) ease the traveler, 4) ease the mainsheet, 5) furl the jib, 6) reef the mainsail, 7) stay at the dock.
- A mast rake of 7 to 15 inches is recommended. Rake is measured by hanging a plumb from the main halyard when the boat is at the dock and measuring the distance from the mast track to the plumb. The centerboard and rudder should be in normal position and the jib halyard tensioned normally when the measurement is made. A change of chainplate adjustment of 3/8 inches (usually one hole) will change the rake by three inches.
- The screw shackles on the mainsheet blocks and on the jib tack should be tightened with a pliers so the clevis screw does not vibrate loose in heavy air.

- If your Mobjack is equipped with an elastic cord to tension the forestay, the jib halyard must be sufficiently tensioned so the forestay wire does not bounce against the stops. (See Figure 1).
- The forestay length adjuster should allow the wire to extend $1/2''$ to $1''$ from the block when the jib is tensioned, as shown in the figure. If the wire extends less than $1/2''$, it will not exit the block smoothly (a sharp bend in the wire or repeated bouncing against the stop will cause the wire to break). If the wire extends more than $1''$, it allows too much play in the rake, so the mast can be unstepped if the jib tension is released.
- Figure 2 shows a boarding line which provides a quick and easy means of boarding the boat from the water, such as after a swim or a capsize. An eight-inch diameter loop with the knot at the waterline provides a sure foothold for stepping into the boat. The other end of the $5/16$ -inch line can be tied around the hiking strap and left permanently on the floor.

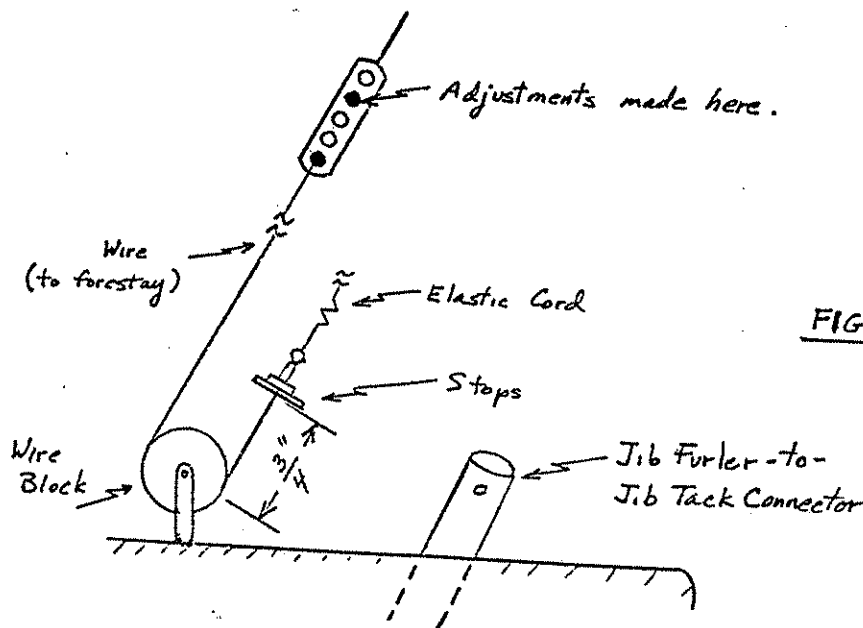


FIGURE 1

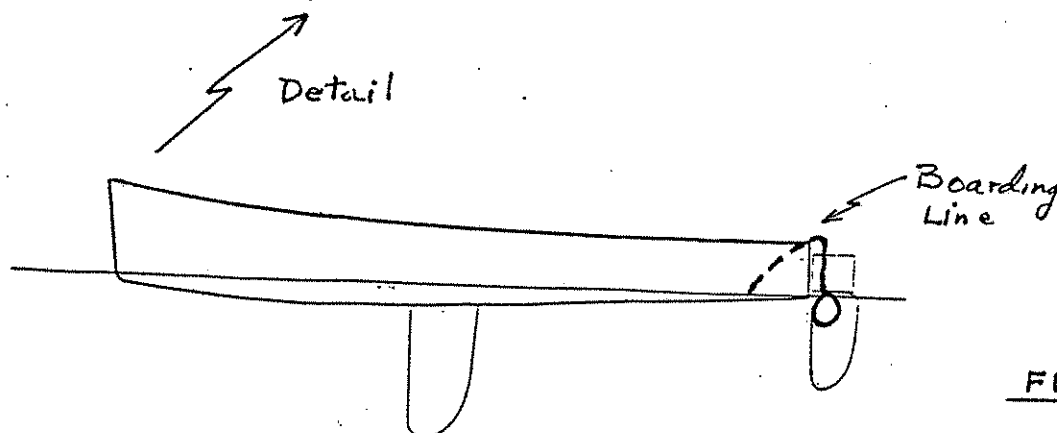


FIGURE 2

SAFETY TIPS

1. Cold water can be lethal.
2. Mast flotation is essential to prevent the boat from turning turtle.
3. The diamond and rhombus wires must be secured with safety wire to the spreaders to prevent loss of the mast.
4. Shock cord strong enough to prevent the rudder from "kicking up" on a plane should be used. A capsize can result.
5. Split rings used on the shroud adjusters can be snagged by a line and opened, thereby causing a demasting. Cotter pins are safer and should be covered with tape to prevent cuts.
6. Life jackets, plus a throwable cushion, anchor, and paddle are essential safety equipment. Put on your life vest before things begin to happen--not after. Have the anchor ready to use and accessible.
7. Masts should not be used to knock down power lines.
8. Get the sails down before the squall hits.
9. Keep clear of the mast and rigging during a lightning storm. It's possible to add a grounding rig for the mast and rigging.
10. Hands should not be used to fend off an impending collision.
11. All turnbuckles should be wired safe.
12. Never leave your boat.

TIPS ON THE MAINTENANCE AND CARE OF MOBJACKS

The MOBJACK is virtually as maintenance free as a yacht can be, so the following potpourri will be brief.

- (1) The main halyard tube should receive a drop of oil twice a season. The groove of the mast track should be cleaned with a soft brush each Spring. An old toothbrush works fine.
- (2) If the boat is on land (even overnight), remove the drainplug, open the scupper flaps, and store with bow tilted up far enough to allow all rain and condensate to drain.
- (3) If the boat is in the water (even overnight), open the scupper flaps to allow rain to drain off the floor.
- (4) Wash the boat twice a year with warm water and detergent using a soft scrub brush.
- (5) Raising the mainsail headboard above the black band causes excessive bending and hence breakage of the wire halyard.
- (6) Periodically inspect the tape on the end of the spreaders and replace when necessary. The tape holds the wire or adjuster in position on the spreader when the wire is slack.
- (7) Inspect centerboard gaskets and expect to replace them every three years.
- (8) Inspect the hiking straps and expect to replace them every three years. The straps fail without warning and a capsize can result.
- (9) Inspect the pintles and gudgeons two or three times a year. Be certain all fasteners are tight. Replace at the first sign of weakness or upon the appearance of a slight crack.
- (10) Use the trailer bunks to provide the principal support for the boat. The bearing area of each bunk should be at least 4 x 54 in.
- (11) All cotter pins and rings should be covered with tape to prevent injury or accidental loss.

MOBJACK

RIGGING AND HANDLING INSTRUCTIONS

Now you have your new MOBJACK, so let's introduce you to her various parts and tell you how to rig her and get the most enjoyment out of her.

The basic components of the MOBJACK include the centerboard, rudder, tiller with extension, mast with rigging, boom, vang mainsheet blocks and line, jib-sheet, and your mainsail and jib and battens. Before rigging your MOBJACK and taking it for a sail, check over the various parts as follows.

Your mast has wire main and jib halyards and, in addition to the diamond and rhombus stays, a forestay and two sidestays (shrouds), each of which should have a stay adjuster attached to its lower end. Check all the attachments of the various wires to the mast to make certain they are properly secured, and to make sure that the diamond and rhombus stays pass over their proper spreaders, and are secured to the spreaders in such a way that they cannot accidentally detach themselves.

The diamond stays and rhombus stays should be set up taut but not tight. Under sail, the mast should be approximately straight, when looking for athwartships bend (it will automatically bend fore and aft, depending upon how hard the mainsheet is trimmed). Any but the slightest deviation from a straight mast athwartships should be corrected by adjusting the turnbuckles on the rhombus stays and/or the adjusting nuts on the ends of the diamond spreaders. Always be sure that the rhombus stay turnbuckles are properly wired or locked after any adjustments are made, to prevent accidental loosening. It is permissible to allow a slight uniform bend to leeward of the mast, and this is preferable to over-tightening the diamonds and rhombus stays, which could lead to excess compression loads and mast breakage. In general, tighten the diamonds and rhombus stays only enough to assure a reasonably straight mast, and no more.

Be sure the stay adjusters at the lower ends of the shrouds have two clevis pins and cotter pins in them. The upper clevis pins will attach the stay to the stay adjusters, while the lower clevis pins will be needed to fasten the stay adjusters to the chainplates in the hull along the rails.

Your MOBJACK tiller will have an extension fastened to it. To install the rudder and tiller unit, mount the rudder on its gudgeons, and pass the tiller through the hole in the transom, into the rudder head. A cotter pin secured by a chain is then used to fasten the tiller to the rudder. In case of a capsize, the rudder will be restricted from coming adrift due to the proximity of the transom above the hole through which the rudder passes.

The MOBJACK mainsail is designed for four battens, which should always be installed in their pockets when sailing. Insert the thinner end of the batten into the pocket first. Elastic strips at the inner ends of the pockets will snap the battens into place when they have been fully inserted.

We suggest that the jibsheet be secured to the clew of the jib with a flat seizing, made with marline or strong thread. This is simply done by finding the center of the jib sheet, and passing one end of the sheet through the clew cringle until the center of the sheet is at the cringle. Bonding the sheet back upon itself, and lashing the parts together completes the seizing. Keep the sheet with the jib permanently. If you do not want to use a flat seizing, a ring hatch will do nearly as well, but offers more bulk and can cause hanging up on the shrouds or mast more easily during tacking.

To step the MOBJACK mast, lay the mast on the hull with the butt forward, and the masthead extending over the stern. Attach the shrouds (side stays) to their chainplates, using the stay adjusters and their clevis pins. Be sure these wires are not fouled or twisted. Next, either tie the heel of the mast loosely to the centerboard handle or have someone hold the heel of the mast near the step. Standing in the stern, raise the mast toward a vertical position. Walk forward, bringing the mast up to near vertical, as you go. When the mast is practically vertical, move the foot of the mast into the mast step. Then holding the mast forward against the pull of the shrouds, the forestay is attached to the forestay chainplate.

The stays for the MOBJACK mast need not be drum tight, since tension on the mainsheet will automatically tension the rig as the boat is sailed to weather.

If you are raising the mast while the MOBJACK is on the trailer, be sure before moving to the stern, that the hull is secured to the trailer and car, or that the aft end of the trailer is supported so that your weight in the stern will not tip the bow of the boat up in the air.

We suggest that the mast of the MOBJACK be given a slight rake or tilt aft, and that the stays be set up moderately, but not excessively tight. Rake is adjusted by using different holes in the stay adjuster. Be sure to keep the mast over the center of the boat laterally by adjusting the port and starboard shrouds approximately the same.

Once the mast is stepped, the boom should be installed by dropping the sliding gooseneck over the mast track, using the "gate" cut into the track. The optional boom vang is secured to the boom keyhole slot or boom bail and to the mast foot.

The mainsheet can be rigged in either of two ways: the final part of the sheet leading from the transom or boom.

When hoisting the jib, the load should be put on the jib rather than on the forestay.

To set the mainsail, first install the battens, as outlined above, if these are not already in place. Then pass the foot of the sail out along the boom inside the groove. Secure the tack to the gooseneck, then tension the foot by passing the clew outhaul line through the eye on the end of the boom. Then attach the main halyard shackle to the headboard, glancing aloft to make certain the halyard is clear. Feed the slides onto the track at the small gate in the track. Then, hoist away, raising the main as high as it will go without going above the top black band. Downhaul tension is secured by pulling the gooseneck stop pin and pulling it down until it locks in the desired pin hole.

Launching the MOBJACK is easily done with the standard trailer from a ramp. If you plan to use a hoist, the standard lifting sling is a three part wire bridle which fastens through the large hole in each shroud chaimplate and to an eye strap located on the keelson just aft of the centerboard trunk. Shackles or "S" hooks on the bridle are used to make the connections.

Your MOBJACK is fitted with a transom drain plug. This is furnished so that condensation and accidental leakage between the hull and deck can be detected and removed. Drain the hull periodically, and especially before racing. Even though a hull may be perfectly tight, the enclosed air space between hull and deck can accumulate a surprising amount of condensation, particularly in humid weather, and when wide variations in temperature occur.

Once your MOBJACK is afloat, the rudder and tiller are fitted as described previously, the sails are hoisted, and you are ready to sail. You will find that MOBJACK has a good deal of stability, even at a dock, so getting aboard can be done over the bow, if you prefer.

When sailing the MOBJACK to windward in a strong breeze, trim both main and jib in hard and "feather" up into each puff to avoid heeling too much. DO NOT ease the sheet except as a last resort. Of course at these times, you and your crew will be hiking out as much as possible. While a heavier crew will be somewhat faster to windward, a lighter crew will plane sooner and faster.

Safety:

MOBJACK with its self-bailing cockpit, air and foam flotation, and keeper on the rudder, is about as safe as a boat of this type can be. Nevertheless, proper seamanship and safety precautions should always be followed to avoid accidents.

Wearable life jackets should always be aboard, and should be worn whenever winds are brisk, and while single handling the boat under ANY conditions.

By far the most common accident in small sailboats is the capsize. In the MOBJACK this is not serious most of the time, and we suggest that every MOBJACK owner practice capsizing and righting his MOBJACK on purpose, in moderate breezes at first, so that he or she will develop confidence to handle this situation if and when it should occur during a race or in strong winds.

If during a capsize, you do not fall out of the boat into the water, righting is very simple, and is accomplished easily by climbing out over the upper side of the capsize MOBJACK, putting your feet on the protruding centerboard, and levering the MOBJACK up, crawling into the cockpit as she comes upright.

If you fall into the water swim around to the bottom side of the boat, reach up, grab the centerboard, and pull down on it. As MOBJACK rights, grab the rubrail to steady her, then climb aboard. Be sure to release the mainsheet and jibsheet before righting, if these have been cleated.

If you are sailing with a crew, righting the capsized MOBJACK is easier, and the crew may provide added weight on the centerboard or aid by pushing the masthead up from the water for a quicker rescue.

The MOBJACK has a unique self-bailing ability which is an outstanding safety feature. Once upright, the self-bailing cockpit will drain itself, even without forward motion of the boat. Within a minute the MOBJACK will be dry without anyone having to bail a drop.

Very rarely the MOBJACK, like other boats, may turn completely "turtle" (with its mast pointing straight down). If this happens, she can still be righted by one person, although it will take a little longer. First, be sure the tansom flaps are open, to avoid possible vacuum which can be difficult to break. Then climb up on the overturned hull using a free line from the opposite side or grab the protruding centerboard, and lean as far back as possible on the leeward side. She will right herself—first very slowly, then gradually faster. As she assumes a normal capsize position on the way up, complete the normal righting procedure. Basically in a capsize enough of the centerboard will protrude from the trunk to allow it to be pulled out for leverage. If it is not down, however, it will be necessary for one crewman to keep the boat from going turtle while another lowers the centerboard.

It must be kept in mind that the MOBJACK is a large boat for the type and will require two people, properly using their weight to recover from a capsize under difficult conditions, though under ideal conditions, one very knowledgeable sailer can do the job.

As mentioned previously, it is a good idea to capsize the MOBJACK intentionally in good weather to develop your righting techniques and to give you more confidence when sailing and racing her.

List of Suggested Books:

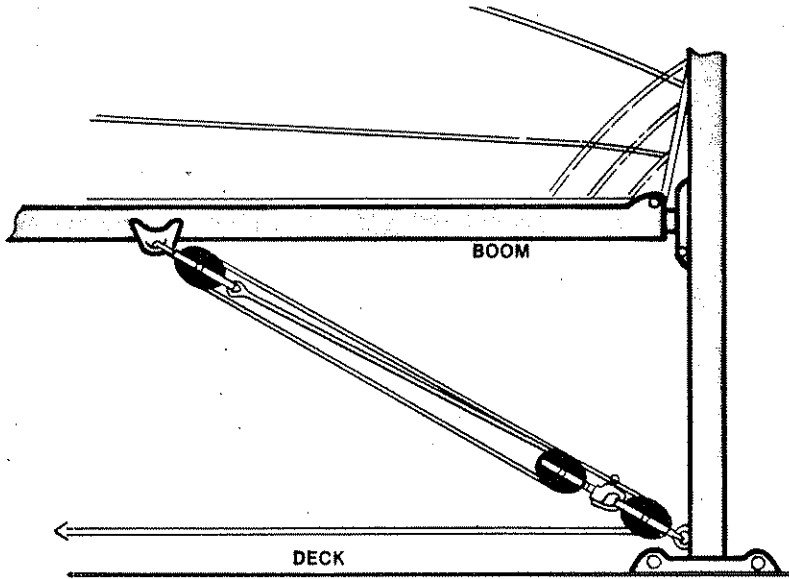
Racing Dinghy Handling	Ian Proctor
Scientific Sailboat Racing	Ted Wells
The Science of Sailing	Bill Robinson
Bill Robinson's Book of Expert Sailing	Bill Robinson
Race Your Boat Right	Arthur Knapp
Techniques of Small Boat Racing	Stuart Walker
Sailing to Win	Bob Eavier
Tactics of Small Boat Racing	Stuart Walker

Suggested Membership

Please join the International MOBJACK Association (IMA) each year. This is your class association which operates on a non-profit basis. The funds are used to publish the class magazine, Jack Tar, which brings you class news and technical tips. The funds are also used to send out newsletters, pay for advertising in magazines, publish brochures, and provide for space for the MOBJACK in boat shows. IMA needs your support to promote growth in the class and to provide a forum for class members.

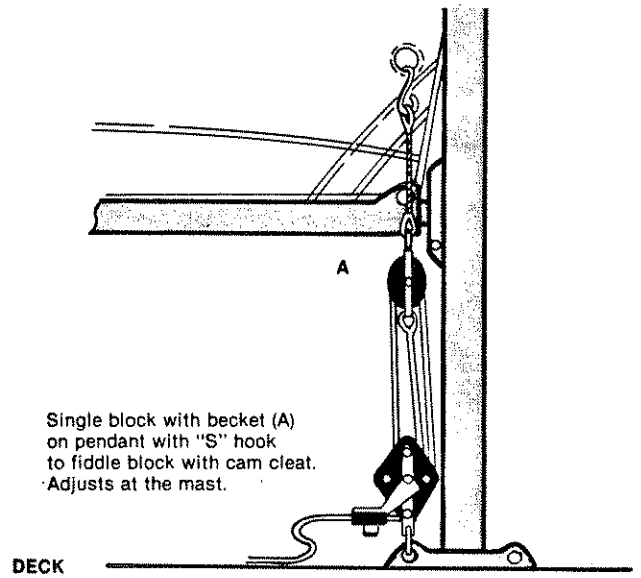
BASIC RIGGING GUIDE

BOOM VANG



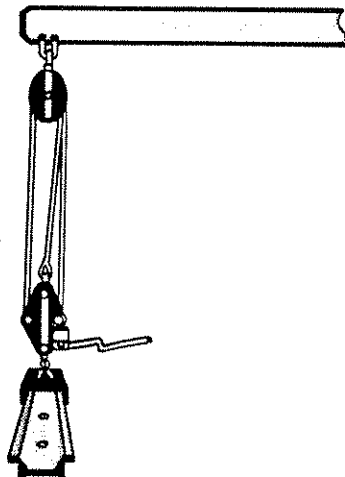
CUNNINGHAM

Adjusts tension along mainsail luff.



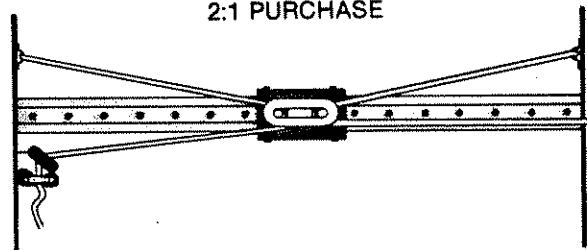
Single block with becket (A) on pendant with "S" hook to fiddle block with cam cleat. Adjusts at the mast.

BOOM END MAINSHEET
Allows maximum tension on leech of main. Shown with fiddle block/cam cleat attached to traveler car, double block on boom.

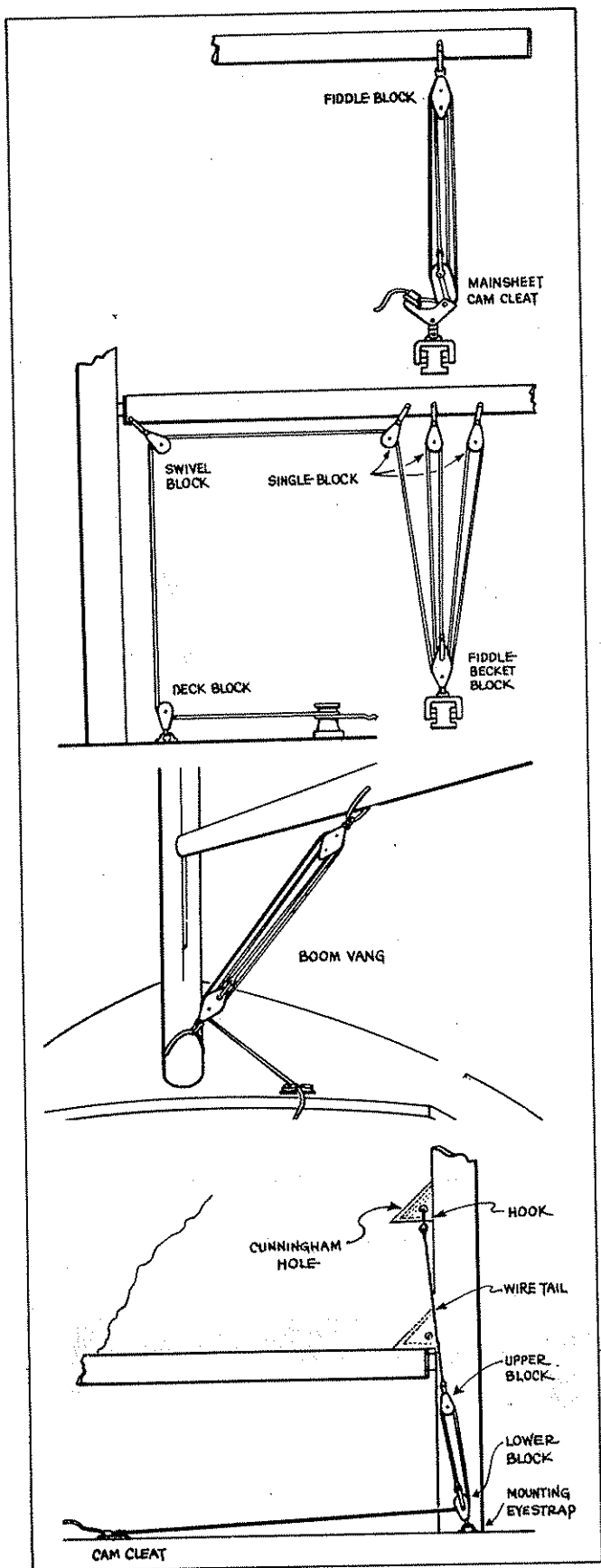


MAIN SHEET TRAVELERS

2:1 PURCHASE



SAIL CONTROL SYSTEMS



Today, a mainsail is built with various controls which make this sail adaptable to a wide range of wind and sea conditions. Ease of handling, speed, and efficiency are the important criteria for selecting the most suitable systems for your boat. The mainsheet, boom vang, and cunningham are the basic controls which help you maintain a balanced boat and a smooth, working sail shape.

THE MAIN SHEET

A properly designed mainsheet system provides power for the mainsheet adjustment without backbreaking effort. Size of the mainsail, location of mainsheet attachment to boom, traveller arrangement, winch selection and sheet size are factors which will determine the best system for your boat. The trim of the mainsheet must be co-ordinated with the traveller. These two controls adjust the leech tension and affect the balance of the boat. Slightly less twist in the leech is required for maximum pointing ability and maximum speed in smooth sea conditions. More twist in the leech is necessary in very light air and in heavy air conditions. Traveller location and mainsheet tension can also control the amount of helm you might have. Generally, most boats sail upwind best with 3° to 4° weather helm. To reduce weather helm the traveller should be eased.

THE BOOM VANG

The "vang" or "kicker" as it is often called is a vital element in controlling the shape of the mainsail. The boom vang takes over where the traveller leaves off (when the boom end location is further out than the rail). The vang controls the leech of the main by controlling the up and down motion of the boom. Basically, the vang eliminates excessive twist to give maximum projected area in offwind sailing. The vang system can also be used as a preventer in downwind sailing. By attaching the vang tackle to a stanchion base near the shrouds, the boom can be prevented from accidentally jibing in both light and heavy conditions.

THE CUNNINGHAM

The luff tension of the main is very critical in determining overall shape of the sail. As the wind builds and the draft moves aft in the sail, you want to be able to move the maximum draft location forward (generally, the draft should be 50% back from the mast in mainsails). This is accomplished by an adjustable gooseneck downhaul or by the cunningham. Having this adjustability means that in light air, or choppy seas, or off the wind, the sail can have the fullness necessary to give the boat drive. In heavy air, or smooth seas, you can adjust for a flatter main with the draft forward for acceleration. Remember that when adjusting the cunningham or downhaul, not only is the draft location in the main moved, but also the leech of the sail is controlled. By tightening the luff, the upper part of the leech "twists" and becomes more open. By easing luff tension, the leech of the main tightens and reduces "twist." Naturally these changes can be balanced by changing traveller, mainsheet and boom vang.

THE IMPORTANCE OF A TRAVELER

A boat has its fastest sailing speed to windward through the combination of several factors:

1. The best set of the sail (downhaul, outhaul, sheet)
2. The best angle of the sail to the boat (traveler)
3. The best angle of the boat to the wind (helm)

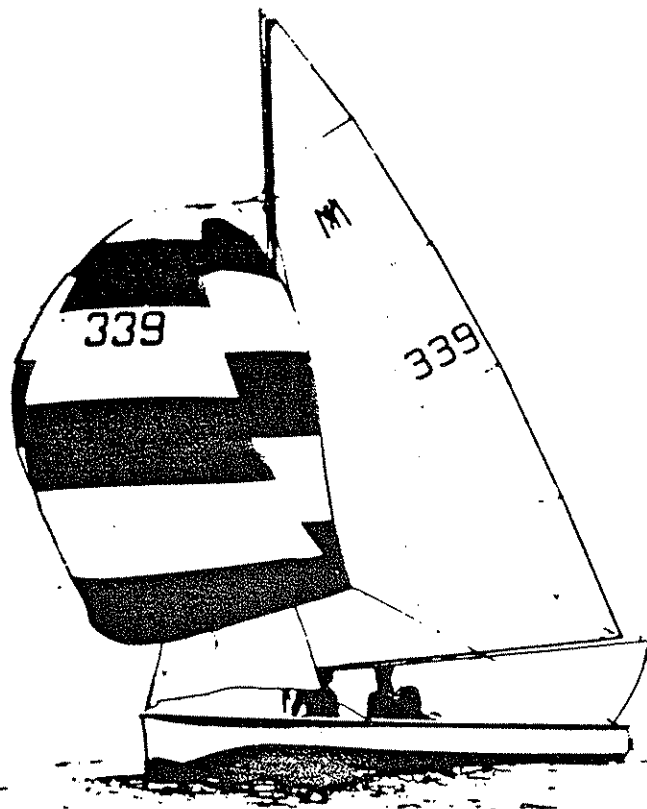
There is only one combination of the above that is optimum for each wind and sea condition. No one can give the exact settings; they have to be found through trial and error by constant adjustment. It is important that the devices controlling sail shape and sail trim be easily changed.

Desired sail shape (amount and location of draft) is obtained on the mainsail by adjustments of the outhaul, downhaul and sheet tension.

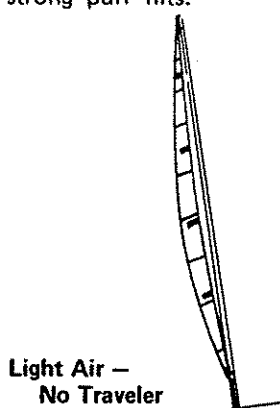
Once the sail shape is set properly, the entire sail as a fixed unit can be trimmed inboard or outboard by a traveler — a track running athwartship under the main — containing a ball bearing carriage to which the boom block of the mainsheet is attached. The carriage has control lines to locate an exact athwartship position. The traveler track needs to run as wide as possible from side to side so that the main can be trimmed to the most possible outboard point on the deck without changing mainsheet tension — hence without altering sail shape. Many boats set sail shape and then vary only the traveler in puffy conditions.

Moving the traveler inboard allows better pointing in lighter air (figures 1 and 2) but as wind velocity increases, the traveler has to be eased to reduce heel. In a rough sea the sail is moved outboard to get a better forward angle to the sail to produce more drive through the sea (figures 3 and 4).

As a result, the traveler is one of the most important sail handling devices on the boat. Ball bearings in the carriage are vital for quick and low friction movement. The old method of using fixed stops is no longer practical because the traveler is constantly adjusted for each wind or sea change. For the racing and cruising sailor alike, the traveler offers a quick anti-heel device when a sudden strong puff hits.

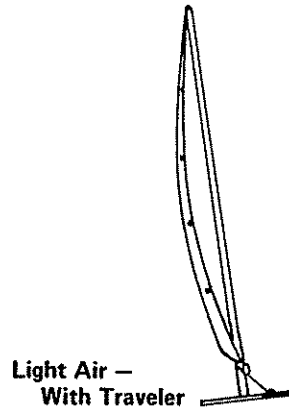


The traveler control lines should be positioned so they are readily handy for adjustment in stronger airs. The wind pressure on a sail pushing it outboard can be quite large so bringing the sail more inboard on the travelers require some mechanical advantage. A 2:1 block system is used on one designs and larger cruisers use a winch for the running control end.



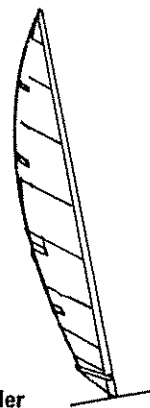
**Light Air —
No Traveler**

In order to keep boom on centerline, mainsheet tension has to be fairly hard. This causes a tight leech and stall situation because upper leech has no fall off or "twist."



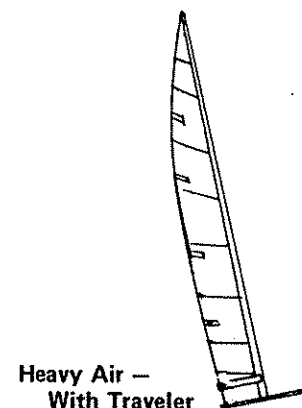
**Light Air —
With Traveler**

By positioning the traveler car to "weather" and easing mainsheet, the boom remains on centerline. The leech will assume a proper "twist" and a stall situation will be relieved.



**Heavy Air —
No Traveler**

When mainsheet is eased, end of boom lifts. Leech falls off and amount of sail curvature along with angle of attack loses uniformity.



**Heavy Air —
With Traveler**

Traveler is adjusted, instead of mainsheet. Leech tension and camber ratio remain constant. Angle of attack is moved uniformly.

Rules of the road

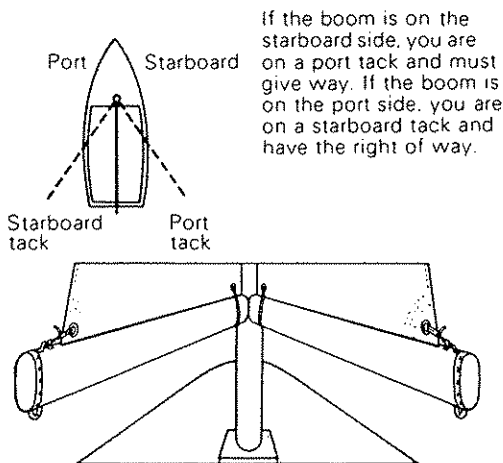
As with any form of transport, there are rules governing the conduct of boats when they are afloat. The full name for these rules is the International Regulations for the Prevention of Collision at Sea, but for simplicity's sake they are often referred to as "the rules of the road".

There is a basic rule which states that power gives way to sail, but, in fact, it is often safer for a sailboat to ignore this rule and maneuver out of the way, particularly in crowded waters such as confined channels. Even in open water, you should still be prepared to get out of the way if there is any chance that you have not been noticed, or your course has been misunderstood by an approaching powered boat (it may easily be – the movement of sailing boats often appear unpredictable to non-sailors).

The principal rules to remember are to keep to the right in confined channels and, if you have to cross a busy channel, do so at right angles to the main flow of traffic.

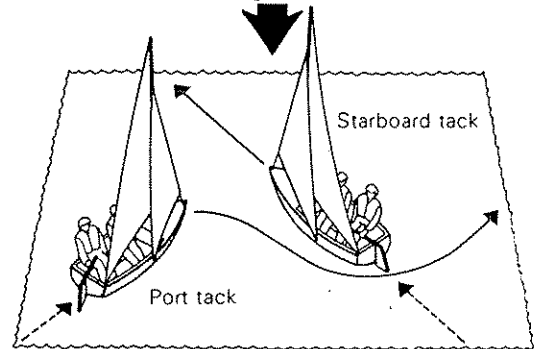
Port and starboard

When the wind blows over your left bow (port side), the boat is on a port tack (see below) and when it blows over the right bow (starboard side) it is on a starboard tack (see below).

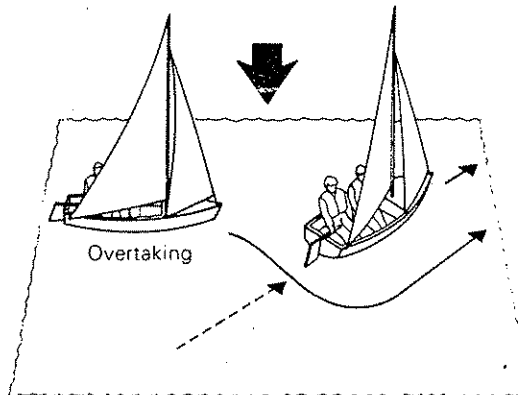


Rights of way

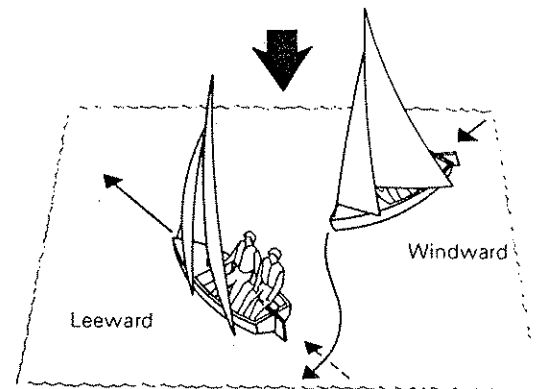
There are three main rules to remember on a collision course: that, if in any doubt, you should pass behind another boat, not in front of it; that a boat on a port tack gives way to one on a starboard tack and that, when on the same tack, the windward boat should give way to the leeward one, and the overtaking boat to the slower one.



Opposite tack rule
When two boats are on opposite tacks, the port tack boat must keep clear of the starboard tack one.



Overtaking rule
When both boats are on the same tack, the overtaking boat must keep clear of the slower boat.



Windward rule
When both boats are on the same tack the windward boat must keep clear of the leeward one.

