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Basic Opti Rigging

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McLaughlin Optimist

Having been closely associated with the Optimist for almost ten years, as Opti Pop, instructor, international coach, and manager of McLaughlin Boat Works and Optiparts USA, I have been privileged to work with thousands of young Opti sailors, their families and coaches. Most of the following came from them. Thank you one and all!

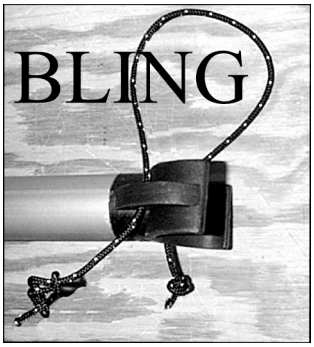
SETTING UP THE CLUB RIG:

The Club Optimist Rig is characterized by silver anodized spars (mast, boom and sprit pole) with eye straps at the masthead and sails that stay rigged on the mast. This is the basic set up for beginning Opti sailors and is the most popular rig for clubs, community programs, sailors just starting out, and sailors who are not concerned with competing past the beginning GreenFleet level.

The advantages are low cost, low maintenance, no pieces to loose and easy rigging. Disadvantages include that the sail is not easy to remove and that the mast is considered not stiff enough for competitive racing, especially by heavier sailors.

The rig consists of a mast, boom, sprit, and rig pack containing lines and small fittings. Add a sail and you're ready to begin!

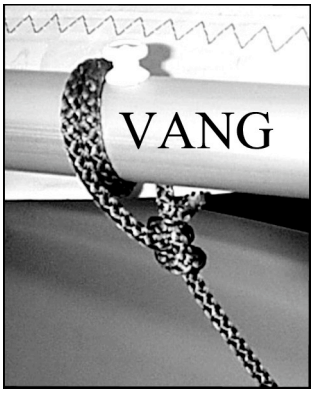
Rig the Boom: bling, vang, outhaul, bridle, and bridle preventer



Starting with the boom jaws, tie the **boom "bling".** Tie a double figure eight knot close to one end (the double twist in the knot makes it far easier to untie in the future). Pass it through the holes in the gooseneck as shown and tie another figure eight knot in the end.

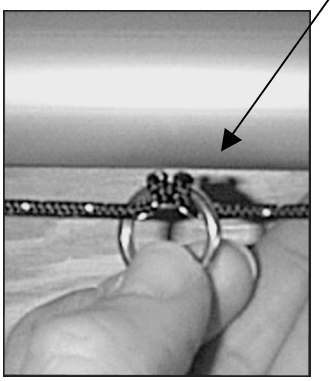
***Note**: The boom bling (boom preventer) is a very important, but often omitted or misunderstood part of Optimist rigging. It works in conjunction with the vang and sprit adjuster, by restricting the downward pull from the van. The bling fixes the inboard position of the boom on the mast and consequently the fullness or flatness of the luff. Without the bling, vang tension also affects the luff tension... By twisting the bling, the*

distance between the boom and bling peg is shortened, thus giving more depth in the forward part of the sail. Consequently, the less twists, the flatter the sail will be. To see how important the bling is when sailing downwind, try this: with the bling off, tighten the vang and see how easy it is to lift the outer end of the boom as if sailing downwind. The vang acts as a pivot point and allows the end of the boom to raise, just the opposite of the desired effect!

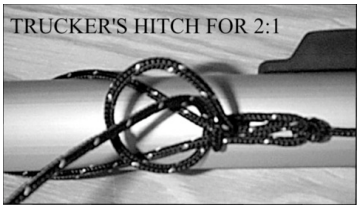


Next, add the **boom vang** and **outhaul**. The vang may be either a short line secured to a wire pennant or simply a piece of 1/4" line. Secure the short line to the wire pennant loop with a bowline or one design knot. The simple line can be secured to the boom with two half hitches or a doubled turn bowline to prevent it from riding over the vang peg toward the mast. Tie a figure eight knot in one end of the outhaul and simply pass it through the port end of the outhaul fitting. (We'll finish it after the sail is tied on.)

Last on the boom, we need to secure the **bridle** for mainsheet attachment. This line must be Spectra or even better, Vectran, as it sees high loads and must not stretch. Start by tying a bowline, tightly around the boom at the forward bridle fitting. Thread a stainless ring onto the bridle and wrap the line twice more through the ring.

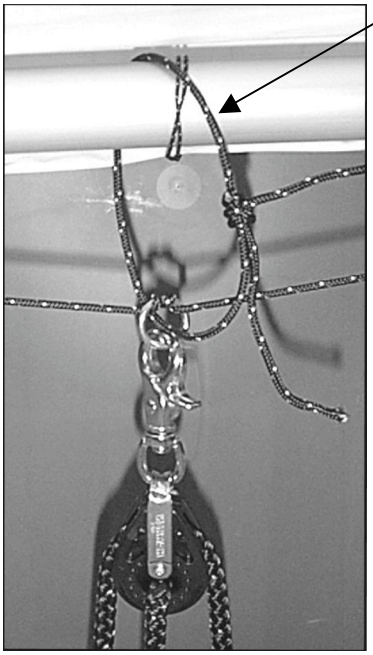


Next, secure to the aft bridle fitting with a trucker's hitch pull the trucker's hitch as tight as you possibly can. To finish it off, wrap the hitch with half hitches that draw it even tighter. Now pull the bridle like an archery bow string. If it pulls close to 10 cm, start over with the trucker's hitch and stretch it even tighter.



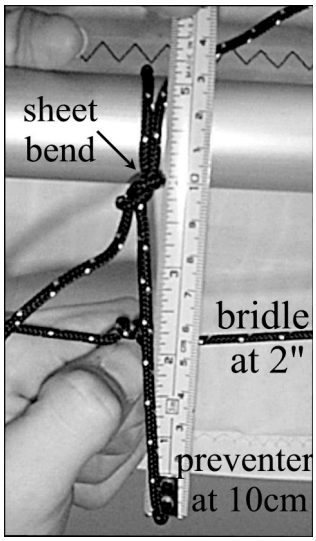
Performance Note: *With the bridle fully tensioned the bridle ring will be very hard to move. To purposely adjust the position, use a screwdriver, pliers handle or piece of line inserted into the ring for better grasp, and then pull the ring to the new position. Why adjust it? Move it forward for larger sailors who may have difficulty getting past the sheet (they are usually strong enough to handle the decreased leverage). Move it aft for a smaller, weaker sailor (especially in a breeze) to allow better leverage yielding less tension on the mainsheet. The median position would be directly above the ratchet block.*

Once satisfied that the bridle cannot pull away too far (I'd try for 3" maximum), add the bridle preventer.



The **bridle preventer** should restrict the bridle to pulling no more than 10 cm from the boom in event it loosens. Tie with a sheet bend (a square knot would flip and loosen under tension).

Safety Note*: A loose boom bridle can hang below the boom in a "v" shape. If loose enough, it can trap a sailor's head resulting in possible capsize and catastrophe.* ***DO NOT ALLOW SAILORS ON THE WATER WITH BOOM BRIDLES THAT HANG FARTHER THAN 10 cm FROM THE BOOM****. Also, use a bridle preventer to help restrict the stretch to less than 10 cm.*



Performance Note*: The bridle is designed to be attached to the boom in two locations for a reason. By doing so, it spreads the load, decreasing bend and destructive point loads on the boom. The boom was not designed to have tension on the bridle preventer. The preventer is to prevent head*

entrapment. Some coaches encourage over tightening the preventer for lightweight sailors in heavy winds to spill air and depower, but this produces a point load that can break or bend the boom. The result is debatable, but sailors who routinely sail with overly tight preventers are sacrificing performance.

Tie the sail on: sail, mast, boom, sail ties
Lay the mast on the floor or grassy area. Next, slide the boom bling around the bottom of the mast and snap the boom jaws to the mast about 6" below the bling peg (see 2nd pic, first page). Be sure the bridle is pointing down away from the top of the mast. The bling peg should point opposite the boom. Now spread the sail out to fit inside the mast and boom with eyelets toward the spars.

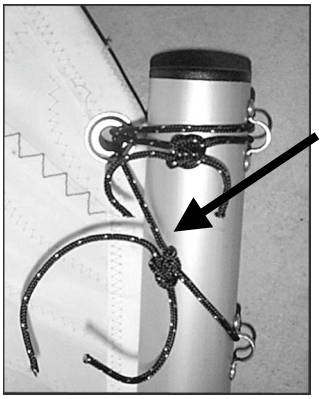
Begin tying on the sail by securing the throat eyelet to the masthead (see pic below). Use the longer, thicker **sail ties** (corner ties) and loop twice through the eyelet, each time passing around the mast and through the upper eye strap. The sail should be very tight against the mast at this point. Secure with a square knot making sure that it's pulled as tight as fingers will allow. Tighten the knot further by grabbing the sail and pulling. This tightens the knot from the inside. It also allows you to check that the sail is still close to the mast, even under pressure. Retie as needed. Savvy Opti sailors will now tie an extra "half of a square knot" to help hold the original square knot from slipping.

Note: *Double length sail ties are recommended as they can be tied tighter than a single wrap.*

Note*: After a day of sailing you may notice that the sail is not tied nearly as close to the mast as it had been. Short Vectran, Spectra, even Dacron sail ties don't really stretch... not <u>that</u> much! The reason is slippage in the knots. To correct for this, all sail ties must be very tight to begin with and knots pulled very hard… from the inside as well as the outside. Basically, on lighter air days the sail can be a little further from the mast, while heavy air days will require the sail touching the mast, even when tensioned. All knots should be pulled tight, <u>always</u>. In addition, the corner ties should always hold the sail close to the spars, not allow it to bind, but so there is no separation.*

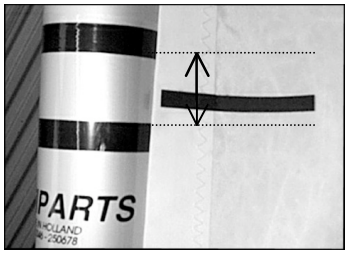
Note*: A masthead wind indicator can be secured to the masthead through the use of sections cut out of a bicycle inner tube (like heavy duty rubber bands).*

The next sail tie to install is the **halyard preventer**. It is also one of the thick ties as it sees higher loads, like the corner ties do. The purpose of the preventer is to keep the sail from riding too high on the mast when the sprit adjuster (halyard) is tensioned.



It loops only once through the same throat eyelet, but at an angle to the lower eye strap. Instead of pulling this tie tight, adjust the loop so the top corner tie remains perpendicular to the mast when the sail is pulled upwards.

Performance note: *Accordingly, the halyard preventer works in contravention to the sprit adjuster by positioning the sail band within the class legal bands on the mast. Loosen it to lower the sail. Tighten it to raise the sail. Keep in mind that after setting it, heavy vang and halyard adjustment can sometimes pull the sail past the mast bands and must be accounted for.*

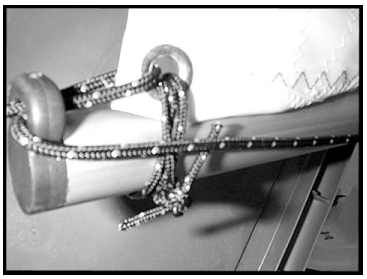


Now you can work your way down the mast, tying each eyelet with a double loop of the thinner sail ties (If you've jumped ahead and installed the sprit adjuster, be sure sail ties go between it and the mast and don't wrap around it or any other rigging).

All sail tie knots should be pulled very tight to avoid the sail pressure pulling the knot and loosening the distance between spar and sail. The four corner ties should hold the sail so it's touching the spar, but not so tight that the sail is bent or disturbed. In light winds, it's OK to have some space showing. Intermediate

sail ties along the mast should be set in the same way. Intermediate sail ties on the boom need to be set loose so the sail can "tack" over the boom fittings. A good rule of thumb is a pencil width. Class rules specify that no sail tie or corner tie be farther than 10mm (about 3/8") from the spar.

The last tie on the mast is the tack corner tie. Make sure it's tied below the bling peg and remember to tie this with extra effort as it sees a very high load.



Finish up by tying the boom corner tie at the tack; followed by the loose intermediate boom ties (be sure to tie under the bridle or outhaul). Don't make the mistake of leaving off the clew corner tie and assume the outhaul will hold it down. This tie is just as important as all the others (see left pic).

Now that the sail is tied on, the outhaul can be rove through the clew eyelet from port to starboard, back through the outhaul fitting on the end of the boom and directly to the jam cleat. You can also weave the end of the vang line through its cleat. Tensioning the vang is achieved with the sheet and then the vang line is pushed into the cleat while the sheet is being eased. Reverse this operation to ease the vang.

***Note**: make sure the tale of the outhaul is not too long. 45" is plenty long enough for the overall length to achieve the maximum 2:1purchase. Tie a bowline in the end to make it easy to grab and to keep it from hanging down and getting in the way. Handles are not allowed and not necessary.*

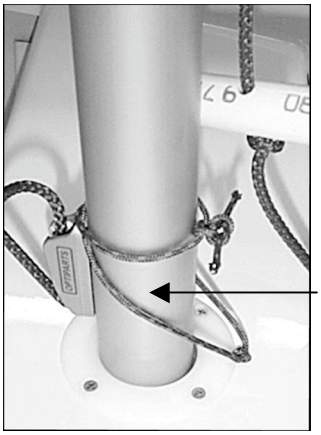
Rig the Sprit Adjuster: halyard, handle and block

The sprit adjuster or halyard is a 2:1 purchase. Tie a small bowline in one end of the smaller of the two lines. Pass the other end downward through the block on the front of the mast. Tie the loose block onto the end with another bowline. Tie one end of the second piece of line to the bridge on the halyard cleat. Pass it through the block and down through the cleat. Attach a handle to the lower end at a position that will allow full halyard tension without hitting the thwart.

The sprit can be installed before or after stepping the mast, but may be easier afterwards.

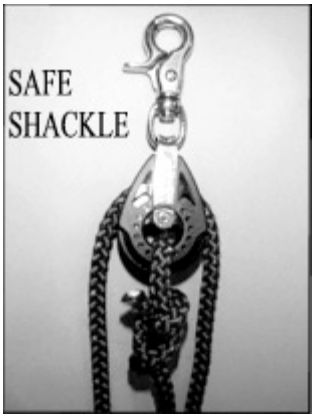
***Performance Tip:** make sure you put the sprit on the starboard side of the mast, not the port! This actually has some merit as the sprit won't disturb the sail shape for a starboard tack start and as most of the second leg is usually on starboard tack.*
To make the sprit easier to adjust for a smaller, weaker sailor, make the tail of the adjuster long enough (about 75") that they can use their foot to push down on the line while holding the loose end.

Stepping the mast: tying in the mast



Most eight year olds are able to step the mast alone after a little practice. The trick is to keep the hands spaced wide apart on the mast and to work in harmony with the wind, not against it. If the rig must be transported any distance or if the wind is too strong, fold the boom up to the mast and carry it folded up.
Immediately after stepping, the mast should be tied into the boat. The mast tie-in prevents the mast from coming out of the cup and damaging the mast thwart in the event of a capsize. The tie-in lines should be long enough to wrap around the mast, crossing over top of the vang cleat and securing in front with a square knot and a half. Test that the mast cannot be lifted out of the cup.

***Safety Note:** The use of mechanical clip on fasteners for securing the mast are becoming more prevalent, especially with racers, but they should be used as a secondary means in conjunction with tie- in lines. Tie-in lines afford a visual check while under sail.*



The mainsheet should be attached to the boom bridle with a shackle that is easy to use, lightweight, inexpensive, takes only one hand to use and is SAFE! Why one handed? So the sailor can steer while connecting or disconnecting.

Make sure to tie a stopper knot at the end of mainsheet.

> ***Safety Note:*** *Clips that can open by themselves are extremely dangerous. They are known as carabiners and at one time were widely associated with the Opti. The danger is they can grab clothing, lifejackets, even tow lines… the result is often capsize which has led to documented cases of near drownings.*

De-rigging the Club Opti: storage

Remove the sprit pole and lay it in boat. Loosen or remove the vang from the cleat and unclip the sheet from the bridle. Lay the rig on the grass or across the boat. Fold the peak of the sail down and across the mast so the battens parallel the mast when the boom is folded to the mast. Lay the sprit on the rig and roll it all together.

If you have the space, the rigs are better stored unfurled. See photographs (Part 2). This allows the spars and sails to dry completely and prolongs the life of the spars as well as the sails.