

Jibing Centerboard

By Fred Bere

Earlier this year after pretty well perfecting my ability to pinch I started thinking about jibing centerboards. I had been working my way through Mark Elliot's "Cookbook" and had done most of the easy things to my boat. The big advantage of being an expert pincher is that you don't have to worry about wind shifts or tactics because you can just look up and see what all the boats ahead of you are doing. This leaves plenty of time to think about things like jibing centerboards during a race. Well I probably should have thought about it on dry land too because when I launched forth on the project I hadn't worked my way through the nuances of jibing centerboards.

I am getting good at doing them now as I have already done it twice. The first time I added the jibing strips at the rear of my board. It took me two evenings of hard work and was an unpleasant little job. The bylaws say that the lateral movement at the leading edge can't be greater than $\frac{1}{4}$ " more than the movement at the trailing edge. My board didn't move at the trailing edge so the movement at the leading edge was + or - $\frac{1}{8}$ ". I go new sails at about the same time and the next time I raced I moved back to the rear of the fleet. I got a negative feeling about both the sails and the board. I know it takes a while to get used to new sails, but the jibing centerboard was supposed to be the supercharger that took me to the front of the fleet. It is funny, but I kept the negative

feeling about the board. I never felt fast after I made the change. Physically it wasn't much of a change, but psychologically I felt slow.

When I went to the Nationals at Fort Walton Beach I paid attention to everyone's centerboards. It became clear that the board has to pivot closer to the center of the board. In the "Cookbook" I think Mark recommended 60% of the way from the front to the back. The pivot point has to be behind the center of pressure of the board so the board jibes instead of tacks. Whipping out the old sliderule and doing some calculating with approximate C-15 centerboard and centerboard trunk dimensions I found that after putting the jibing strips at the rear of the board it made an angle of about 0.6 degrees to the centerline of the boat. By moving the jibing strips toward the center of the board and depending on the thickness of your board and the width of your centerboard trunk you could get an angle of as much as 4 degrees. That is a big difference. A board can swing more than one inch in front and more than three-quarters inch in the back and still meet the jibing limitation in the bylaws. If you really want your board to jibe you could make it narrower at the leading and trailing edges in the trunk area and get it to jibe more. Some boats at the Nationals had removed the metal brackets that board hangs on and replaced them with a pin through the trunk. That opens up the centerboard trunk a little and makes it possible for the board to jibe

even more.

There is probably some optimum jibe angle. I don't know what it is. If you know I would like to hear. It is clear at some point too much jibe will start to cause drag. It may even start to stall your rudder.

I think our current bylaws do not provide sufficient control of the jibbing centerboard for our kind of one-design fleet. The thickness of the board above the waterline is not controlled. The width of the centerboard trunk is not controlled. You can pretty well do what you want with your board. Putting a limit on the absolute movement at both the leading and trailing edges would provide better control than the current bylaw which just limits the difference between movement at the front and back of the board.

Last week I decide to improve my jibing angle a little. The work went faster the second time. I did it in one night from about 5:30 till 2:00 AM. I got very good at holding the flash light in my teeth as I peered into the centerboard trunk trying to improve the fit. The next morning after the epoxy had dried I tried it out. Much to my chagrin all that beautiful fit-up was for nought. The board just pressed my new jibing strips into the soft and flexible walls of my centerboard trunk. I figure I have two choices now. I can cut some access ports into the floor of the boat and go in and stiffen the sidewalls of the trunk or I can make my board look like one of the Reimann or Waterrat boards by filling in from the leading and trailing edges to the jibing strips with epoxy and fiberglass cloth to spread out the load on the sidewalls. I bet that's fast.

A Case for Tight Rigging and Stern Sheeting Rebuttal to Wes Prisbrey's Article From Mark Elliot

I'm sorry, but I believe that a tight rigged boat with stern sheeting is better in all conditions, whether the boat has a "winch ape" or not.

Talk to Kevin Meehan in Oklahoma. Allison and I ran a clinic in Oklahoma prior to the 1989 Nationals and encouraged the fleet to convert to a tight rig and stern sheeting. They race as part of a combined handicap fleet and after changing their boats were finishing an average of 3 minutes faster for a one hour race. Talk to Greg and Sue Mansfield in Minnesota. They also race handicap and were battling to finish in the top 5 in their local races. After changing their boat they now consistently win and have resorted to sail-

ing with old sails to get tactical practice.

This year at the C-15 Districts in Long Beach we had 20+ knots of wind and waves, conditions that put a premium on crew weight. Allison and I won but Keith Dodson, sailing with his 115 pound wife Claudia, finished second. I think that you would agree with Keith and the rest of California that Claudia is hardly a "winch ape." Keith and Claudia finished in front of Ole Eichhorn (crew weight 150) and Phil Ash (crew weight 170 lbs). Keith has been sailing C-15's since 1973 and he said that the switch to stern sheeting was the single most important change he has ever encountered on the boat.

Allison and I have worked hard with

our fleet here and with the fleets at the various Nationals to help everyone sail as fast as possible with the LEAST amount of effort possible. We are NOT in the business of promoting some "fad" or style of sailing which is unsuitable to the majority of the people we sail with in the C-15 class.

We have made ourselves available to run clinics on boat tuning and sailing for any fleet upon request. We have worked hard with the sailmakers in our class to design sails that work well in light air, are easy to depower and forgiving to trim. We want the people we sail with in the C-15 class to have the opportunity to learn what we learned as part of Allison's

Olympic campaign . . . Sailing is a complicated sport and SIMPLE is FAST.

Decisions about tuning changes in the C-15 have not been made in a vacuum. Our C-15 setup evolved over a 5 year period of time and we have had a lot of help from Larry Tuttle, Dave Ullman, Greg Fisher and Bill Shore, to name a few. We are happy to share our lessons with everyone.

Foremost, we have strived to make sailing a C-15 simpler, for ourselves as well as the people we sail with. If you read the tuning guide from 10 years ago, C-15 sailors were told to change their mast rake, their rig tension, their spreader angle and their jib leads as the conditions changed. Now you rig your boat the same way every time, making no changes to the standing rigging, and you go faster most of the time.

It is a myth that dazzling decisions and magical boat speed win C-15 races. What wins is a tedious and methodical approach devoted to the elimination of mistakes . . . Mistakes in sail trim and tactics. Yes, a loose rig may be better in some conditions, and a traveler can be a handy adjustment at times. The problem is that these things add complexity to a task that is already very difficult.

Let me let you all in on a secret. At any one moment we are probably not the fastest boat on the course. We do not always go the right way. What we do is engage in a fanatical search for the bonehead mistake we are about to make; splitting from the fleet when we are leading, banging a

corner when we are losing, or sailing with our main undersheeted.

By removing the traveler and tightening the rig maybe we sacrifice some speed but we have eliminated a great deal of complexity at a small cost, and have eliminated many potential bonehead mistakes.

Wes and I both agree that you need to be able to point well in order to be competitive in a C-15 race. This is ESPECIALLY true if it is windy and you have a light-weight crew. In Wes's article he says by pulling the "main in tight . . . you can maintain a pretty tight headstay".

Just how tight do you pull in the main to prevent jib luff sag with a loose rig? What does happen to the jib luff when you pull the block out? If the wind lightens do you pull up the traveler or trim the main or ease the vang or put the mast block back in? Or do you do all four? And just where is the boat pointed when you are doing all these things? How often will you answer these questions correctly as you are sailing, steering around waves, watching for shifts, the marks, and other boats? Have you ever tried to trim the jib on a windy reach with a loose rig and the block out? I have, and I'm not good enough to do it right.

Forget about your luff sag worries, you solved that when you followed the instructions in the tuning guide for rigging your boat. Now forget about the traveler, you solved that when you pulled that bar out and threw it in the garbage. Screw down those jib leads at the trim line and

forget about them. Leave the mast block in unless the wind is so light that your crew is sitting in the boat, where they can (and should) easily pull it out.

Things are getting simpler. Now if you can't keep the boat flat LET THE MAIN OUT and TIGHTEN THE VANG until the boat is flat. Leaving the mast block in bends the mast up where you want it, at the sail, not down low at the partner. If the wind gets light simply ease the vang until the leech tail on the main starts to flow and then trim the main in until the tail stalls about 20 percent of the time.

The tight rig is safer too, an additional bonus. In conditions like you encounter on Colorado lakes, large wind shifts with big variations in velocity, the shock loading that can occur when the mast is loose and unrestricted can break spars and shrouds. Stern sheeting is not some fad. The factory has been producing boats this way for a year now, and the truth is, I have yet to hear of anyone who has taken the traveler bar out and wanted to put it back in. The response of even the most stubborn converts, Allison included, has been a huge sigh of relief.

I can't read Wes's article and believe that he has tried sailing with a tight rig and stern sheeting. It's clean, it's simple, no more bar to step over, no more traveler to adjust, you can sit right next to your crew, and the boom and the sails lie flat in the boat after you unrig. When you race it's with the main in one hand and the tiller in the other, sailing the old fashioned way.



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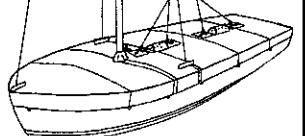
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