

Editor's Note:

David Sample is a regular and valued contributor to the S2 7.9 Class Association. His comments and insights can be found here at the S2 7.9 Class Website <http://www.sail79s.org/board/index.php>. Just copy and paste the URL. David has agreed to share his past and current articles which are published in his club's newsletter titled "Strategy with Dave" (sic). I have found David's insights and comments most helpful. Recently I had developed lee helm on my S2 7.9. It was puzzling given the fact I had made no significant changes to the boat. David quickly deduced the fact my rudder tip was possibly set too far forward. Since the 7.9 has a kick up rudder which is pinned across the rudder head to hold it down, the variation at the top of the rudder was 1/8" or less if the rudder were pushed all the way forward. Certainly, I thought, not enough of a change to cause the dramatic lee helm effects I was experiencing. I was wrong of course. When I reset the rudder, shimming it making sure it was back up against the pin, the result was dramatic. Lee helm disappeared and I had back a balanced helm. Very small changes can make dramatic differences in performance. And so I look forward to sharing Dave's future columns with you.

Strategy with Dave

David Sample

As the title suggests [IN jest!], I hope to bring some higher learning about competitive sailing and maybe a little levity. I'll be discussing everything that relates to making boats go fast. Since my background is in keelboats, cats and dinghies and I've been a sailmaker for 18 years, have been racing boats since 1976 and have also been Race Committee Chairman at our club, I think I'm up to the task. I'll gladly entertain suggestions for articles if there's something you'd like covered (bulletsails1@att.net). To start, I'm going to list things I see people doing everywhere that I've ever sailed that are detrimental to success on the race course. When this was written I was the RCC.

#1 ~ Not READING the Sailing Instructions: It amazes me that even when I warn folks to read and know the SI's, many only give it a fleeting once-over. Even some of our Club's best sailors [names withheld to protect the non-innocent] are guilty of this. It is the Race Committee's task to provide everyone with SI's. It's not our task to read them to you at the competitors' meetings, to make sure you've read them, or even answer questions at the meeting (that's a courtesy). It's your task as competitors to read them. Everything that happens on the water and maybe even after [e.g., a protest] starts with a complete and careful reading of the SI's. Do yourself a BIG favor: READ the SI's & have your crew read them! Don't sail by the RC boat and ask questions expecting an answer because none will be given, at least pertaining to anything involved in that day's racing.

#2 ~ Not Having a Prepared Boat: Fresh water is 833 times as dense as air at sea level. Hold your arm in front of you & slowly wave it side to side. Feel the air flow over your hand and fingers? This is DRAG, the most descriptive and self-evident word in our language. Multiply that times 833. That's what's happening on every square millimeter of a boat in or under water - dragging spinnaker sheets, sails, feet, etc. One cubic foot of fresh water weighs just less than 62.5 pounds. A moving boat pushes water down and out to the sides, creating waves. This takes lots of energy, and that energy comes from your sails. A sailor's goal is to maximize sail energy and minimize water resistance. That's done by using crew weight to keep the boat trimmed properly, side-to-side and fore/aft. **Hint:** Get out of the back of the boat! With the transom under water you're literally "dragging" or pulling water behind you. If you don't believe it, drop a ping pong ball in the lake next

to the transom while this is taking place. It will probably still be there 100 yards later! The second part is HEEL. Some heel is a given when the wind is over 7-8 mph [depending on the boat]. Some may be desirable in light air to help fill the sails and induce some weather helm on the rudder. Anything past what's needed to generate a bit of weather helm [a few degrees] starts making drag at an exponential rate as the boat heels more. When you're pulling like crazy on the rudder and hear that sucking sound, drag is out of control. That sound is water and air being pulled behind the stalled rudder and/or keel, and water being forced to move out of the way as the boat slides sideways down the lake!

The part of drag you can't control once the boat is underway is how smooth the underwater surfaces are. This is where boat preparation comes in. The boat bottom needs to be as smooth as a dolphin's rear end so as large a percentage as possible of the sails' driving force is converted into forward motion, not eaten up by drag. You may think that your boat bottom is 'good enough' because it feels smooth to you. Smooth is a relative concept - white oak bark is smooth relative to pine bark! The entire boat bottom needs to be well sanded with at least 400 grit wet or dry sandpaper (600-1200 is even better) to be smooth enough for racing. This makes the most noticeable speed difference in light air because the driving force generated by the sails is so low, but the density of the water hasn't changed. If you doubt it really makes that much difference, pull your boat and do it, You'll be SHOCKED at the difference!!!

Next let's think about what happens above the water's surface. Everything in the air makes drag as the boat moves. The wind always has more velocity with height from the air/water interface because of surface friction between the two. One more time: making waves takes energy. If a 2-3 mph zephyr can make ripples on something that weighs 62.5 lbs per cubic foot, imagine the total impact as it moves over and around the whole boat, rig, sails and, most importantly, bodies! The first three are givens, just like the part of the boat under water. All you can do is keep everything as clean, smooth, uncluttered and well-trimmed as possible. Ah, but when it comes to wind drag, that last thing (bodies!) can either do great harm or be used in ways to minimize harm. The really top-notch, worldclass sailors in many small keelboat classes [J24, etc] actually have 2-3 crew members go below and move forward and to leeward in light air. This accomplishes many things at once (see above), plus minimizes wind drag on the deck and maximizes smooth flow around the sails - our engine. Crew members sitting in the slot, leaning against the mast, sitting upright on the deck - bad news! Even worse is anyone standing up. The final straw is having everyone in the cockpit - a place for socializing on the water or relaxing at the dock, not for sitting in while a race is underway! I've said it many times and will keep saying it: If you are on a sailboat, in a race, and are really comfortable, you're probably in the wrong spot! Comfort's just not in the equation when it comes to making a boat go fast. If you insist on being "comfortable" while racing I guarantee your race results will pay the price.

#3 ~ Being Lazy: Not doing any of the above is being lazy. Not constantly and deftly moving your own weight and that of the crew falls into this category big-time. Not constantly thinking about how to do this better and more timely is being lazy. If someone has to ask you to move, it's way too late. You've already lost to other racers who are doing this better. Not constantly adjusting the sails for minor [let alone major] changes in velocity and/or angle because "it doesn't really matter" is being lazy. This is done in spades by most everyone, everywhere, so doing it less will automatically make you faster! Of all the sail trim issues in this category, the most obvious is just setting the pole

somewhere and leaving it. This may have the greatest impact on boat speed, at least downwind and it's being lazy to the extreme, especially in light or puffy conditions we have so often [like our March 2nd race day]. The spinnaker pole needs constant attention and adjustment to keep the sail generating maximum total driving force. Not lowering the pole when the wind decreases really screws up sail shape, causes it to lose flow which decreases lift, causes the sails to sink, and sets into motion a snowball effect. When this is allowed to happen, the whole trim process has to be started over. That means heading the boat up to try and generate more apparent wind to hopefully fill the sail. Now the boat has not only slowed down but is also losing angle downwind to other boats that have not allowed this to happen. Sadly, even when some folks get to this point, they still don't lower the pole - the height of laziness!

Pole/chute trim is a whole other article but it's not rocket science either. The old "keep the clews level" is pretty basic but rudimentary. More importantly, make every effort to keep the center seam vertical [perpendicular] to the deck [not the water] and the horizontal seams parallel to the deck. If the clews aren't even, forget 'em. When the chute is trimmed correctly the tack will often be lower than the clew. Everyone knows basic pole trim is to be perpendicular to the apparent wind [if possible], but that's just a starting point. You should be trimming it to the masthead and the tack/shoulder of the sail, not the shroud telltales! These are low on the shrouds and will show an apparent wind that is being bent toward the bow by the sails' influence. If you trim the pole to this, it almost always winds up being too far forward and under-trimmed, losing drive in the sail and may even cause it to collapse.

Don't be a lazy sailor! Most club sailors already have the knowledge and the ability to sail much better than they actually do. There are no secret tricks, magic bullets, go-fast doohickies or electronic gadgets that will raise your overall performance on the water any more (or even close to) than simply doing the above. Of course strategy, tactics and rules come into play but the primary ingredients to success are pretty straightforward and right there for everyone to use, if they just will

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