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Greg Fisher's *SPEED SESSION*

Trying out a new class is one way to learn more about boatspeed. This step-by-step guide will help whether you change classes or not.

The Ten Commandments of Boatspeed

No.1 Most boats perform best upwind with a nearly neutral weather helm. At times, the boat will develop weather helm, especially when in point mode, but an excessive tug on the tiller indicates that the boat is badly out of balance. The quick fixes: sail the boat flatter, raise the centerboard, decrease mast rake or flatten the mainsail.

No. 2 In most conditions, trim the mainsheet so that the top batten is parallel to the boom, rather than pointing inboard or outboard. To judge this, cover the last 10 inches of the upper batten pocket with black tape. Then sight up the leech from under the boom, trim to the right spot and mark the mainsheet.

That said, there are times you can break this rule. When trying to accelerate, develop power in light-to-medium winds or when greatly overpowered in a breeze, the upper batten

Ever been lapped in a one-design race? The thought had never crossed my mind, at least not until I gave the Flying Dutchman class a try. My debut was the pre-Olympic trials, and I painfully recall a race when I had to look backwards to see the leaders. We finished so far in last that it was dark by the time we completed the long, slow trip back to shore. Fortunately my wife, who maintained a better sense of humor than myself, aimed the car headlights down the launching ramp, and with a smile asked if we had stayed out for some extra practice.

After such humiliation you might ask, "Why bother trying a new class?" After all, if you're comfortable sailing your own boat and finishing pretty darn well at times, why rock the boat? The answer is simple: new boats demand new techniques, and if you want to become a sharper sailor, you have to expose yourself to alternative ways of sailing. Heck, the experience can even be enjoyable — if you have the right attitude and a good game plan.

The game plan is easy. The attitude is a bit trickier. Setting unrealistic, unattainable goals can totally derail your plan for learning the new boat. Remember that no matter how hot you are in your own class, there are accomplished sailors with equally impressive results in the other classes.

After our enlightening experience in the Flying Dutchman, we completely reassessed our expectations. For sure, we recognized that unless some incurable plague attacked the rest of the U.S. FD fleet, we didn't have much chance of making it to the Olympics. Instead, I focused on just plain enjoying the exhilarating ride, learning as much as possible and applying what I could to the other boats I sail. That didn't mean I suddenly discovered how to make a Flying Scot or a Lightning plane upwind, but I did, for example, learn a great deal about helm balance when sailing upwind in a breeze.

Let's say you've picked a new class and you've got the right attitude. Now it's time to get up to speed as fast as you can. To make the most of your new experience, you need a plan of attack.

Step 1: Preparation

can be angled outboard 10 to 20 degrees.

Conversely, when trying to point extra high in moderate air, it's OK to slightly overtrim the main so that the batten hooks to windward in relation to the boom.

No. 3 Figure out what is maximum mast bend, and then strive to attain it in most conditions. Maximum bend is the point at which overbend wrinkles (speed wrinkles, inversion wrinkles, etc.) develop in the lower quarter to lower third of the mainsail. Depending on the boat, you can bend the mast with mainsheet tension, vang tension, backstay tension, rig tension, mast blocks, spreader angle or a combination of all of the above.

No. 4 Every boat has its optimal rig tension. Find out what it is and maintain it. Most boats sail best with the rig just tight enough so that the leeward shroud starts to go slack when it's blowing 10 to 12 knots.

If the rig is too loose, the jib entry will become quite full. The result is poor pointing ability. Too tight a rig, on the other hand, is sometimes indicated by overbend/inversion wrinkles in the entry of the jib — a small scale version of what happens to a mainsail with maximum mast bend. In addition, if the rig is too tight, the entry of the jib will be quite flat and the telltales will break on both sides of

Research. First, gobble up all the written information that is available on the new boat. Call the major sailmakers and ask for a copy of their tuning guide. Be sure to contact the class secretary and ask for back issues of the class newsletter that have articles about tuning, sail trim and most important, boathandling techniques. Be sure to keep track of any questions that develop because there will be plenty of opportunities to ask them later.

Watch a race or two. The knowledge gained from watching the new class race can be a huge help. Watch how the fleet approaches the start. How do they trim their sails and handle their boats? Even the back-of-the-fleeters' mistakes can be educational. If you really want to be fancy, take video footage. Watch the hot guys and take note of the questions you want to ask them later.

Set up your new boat. Armed with tuning guides, articles and the information you gained from observation, it's time to set up your boat. Try to duplicate what you've seen and make notes on areas you don't understand or can't duplicate.

Call the sailmaker. After you think you have your boat set up like the hot guys, call the sailmaker and get the lowdown on the details of sail trim and boat setup. Be sure to ask, "How should the boat balance?" The sailmaker should give you some idea of the feel on the helm in the various conditions. Then ask, "How should the sails look in light, medium and heavy winds? What are the trim differences between normal speed and pointing, the high pointing mode, and the footing/ acceleration mode?"

Of course, you'll have the tuning guide in front of you so you'll be able to reference your questions about outhaul, cunningham, etc. For me, it helps to compare the trim and tuning that I'm used to on my old class to that of the new class. If the trim is different, try to find out why.

Step 2: Dry run on shore

Boathandling and teamwork is just as important as sail trim and tuning. Running through the rough moves for tacking, jibing, hoisting and dropping the spinnaker, etc. on shore can smooth out the edges before you and your team take to the water.

After my first day of racing in an MC Scow, a handful of near capsizes (it was blowing all of 8 knots) and getting stuck in irons while tacking, I had the opportunity to watch an on-land seminar by one of the class hotshots. As soon as he demonstrated his first tack, the light bulb came on. I realized I had been doing it all wrong. The only way I knew how to tack was to put the hiking stick in front of the tiller. This technique doesn't work on an MC because the mainsheet is too close to the end of the tiller. As soon as I flipped the hiking stick behind and over the top of the tiller, my tacks were much cleaner. Had I spent just five minutes going through tacks on shore before I

the jib at nearly the same time. In short, the jib becomes hard to steer to.

No. 5 Sail the boat on its lines. Usually, a boat will not perform when its bow or stern is buried in the water. Besides the obvious drag, this can affect the balance of the boat and the tug on the tiller (e.g. bow down creates weather helm). Instead, position the crew weight so the transom is just kissing the water. The result is a smooth, undisturbed wake. Watch where the top sailors sit and copy them.

No. 6 Trim your jib so that, if there were a batten in the middle of the leech, it would be parallel with the centerline of the boat. Put a piece of dark tape on this real or imaginary batten. Only in rare exceptions does a jib ever get trimmed off this position. One time would be for acceleration — ease the sheet so the mid-leech stripe is angled 10 degrees outboard from centerline. This trim is for “first gear” and should match to the mainsheet ease when the main’s top batten is also angled outboard for acceleration.

No. 7 Set your jib leads so that your jib luff breaks evenly from top to bottom. When the boat is overpowered, move the lead aft until the top breaks just ahead of the lower and middle telltales.

No. 8 Set your jib and main luff tension so that there are always some slight horizontal wrinkles

put the boat in the water, my first day of racing might have been a bit less humorous. Here are some of the things to concentrate on during your dry run:

Practice the hand-off. The skipper has to become comfortable with switching hands between mainsheet and tiller extension while facing forward, both tacking and jibing. It’s a good idea to hook the main halyard on the boom and hoist it until the boom is at sailing height to simulate actual sailing trim. Obviously the same is true for the crew with trimming the jib from tack to tack. Dry land tacking will also help the crew determine if they should be facing forward or aft when trimming the jib from tack to tack.

Perfect your footwork. How often do you come out of a tack in a breeze fishing for the straps while the boat heels precariously, slipping sideways? As you become comfortable with your hands, practice the placement of your feet. During a tack, you want to land on the new side with your feet finding the hiking straps automatically — not digging around for them with your toes.

Test your spinnaker handling. Without question, much can be gained by simply running through the basic drill of setting the pole and play acting a hoist, drop, etc. Going through all the moves beforehand will make your first sail more productive, and probably generate some more questions to ask your fellow competitors.

Step 3: On the water

Common sense tells us that our first race in the new boat shouldn’t be a major championship. Certainly not the Flying Dutchman pre-Olympic trials! Instead, pick an event you can approach with a light attitude. This is important, as the first experience will have a strong effect on your future attitude.

Getting up to speed in a hurry requires good onboard communication. The skipper needs constant feedback from the crew on how his experiments with trim and steering affect boatspeed. When I’m concentrating on steering and the balance of the boat, I rely on my crew to compare our speed and pointing ability with that of boats around us. Hopefully they say, “We’re higher and faster,” but there are often times when we’re lower and slower. That’s when it’s time to experiment. While the goal is to be higher and faster, learn to be content with equal height and speed.

Objective assessment of the situation by the crew is critical, but while I appreciate a crew who is brutally honest, saying “Geez, do we have a bucket out?!,” doesn’t help. The crew should pick a boat close by — a boat that isn’t in a different wind — and then describe its relative speed and height without emotion.

Kelly Gough, a multi-class champion, has a technique that his crew uses to feed him information. He calls it, “Good news, bad news.” His crew might say, “The boat to weather is slightly higher and nearly half again as fast.”

along the luff. In very light winds, completely relax the luff tension so there are slight wrinkles all the way from head to tack. Tighten it gradually as the wind builds, so that in heavy air slight wrinkles appear only in the lower few feet of both sails.

If the luff tension is too soft, these wrinkles will be too big. But they'll never be as long or pronounced as the inversion wrinkles from excessive mast bend or too tight a forestay. Those wrinkles angle from luff to clew. The wrinkles controlled by luff tension are much smaller and lie perpendicular to the luff.

No. 9 Every boat has a "sweet spot" — a precise steering angle for optimum performance upwind. Every boat also has a groove, which is the range of acceptable steering angles. It's up to the skipper to learn both. The lower end of this range is for acceleration. At this angle, both jib telltales should be streaming straight aft. The luff of the jib should rarely break, but the leeward telltales should never stall.

The center of the groove is the sweet spot, where the boat should be sailed 75 percent of the time. Here you should steer so the weather telltale is slightly stalled. The other end of the groove is the pinching mode, which is used in breezy conditions, especially in flat water. This side of the groove is usually higher than simply letting the weather telltale

When this happens, Kelly asks for the good news. His crew might reply with something like, "Now I don't have to turn my head as far to see them!"

Step 4: Post-race assessment

When he got into the Snipe class, Ed Adams was not bashful about pestering the class hotshots with questions. After one race, Ed approached Jeff Lenhart, a perennial Snipe ace known for his economy of words. But before Ed could get his first question out, Lenhart rolled his eyes and said, "Ten questions." "What?" was Ed's response. "Now you have nine," was Jeff's answer. Ed made the remaining questions count, and within a year, became a Snipe hotshot himself. The moral is, if you don't understand something, don't be afraid to ask.

Remember the importance of attitude; the desire to win must take a back seat to the desire to learn. When your eyes and ears are open, you see and hear a lot more. Copy the fast sailors, then quiz them on it later.

There should never be a shortage of questions, especially if you involve your crew. Start with the start. What's the best technique to get off the line? How much time does it take to accelerate? Does the boat slide sideways when you trim in? Be sure you understand how to "change gears" upwind, not just with sail trim, but also with steering, hiking position, etc. Learn each step the top crews go through when rounding a mark. Find out the best way to catch a wave or get the boat up on a plane.

The questions can be endless, so you must prioritize. Sit down with your crew on the way in from the race and mentally run around the course together, figuring where you lost the most ground to the leaders. Then you can focus your questions on those parts of the race.

I vividly remember my first heavy air downwind leg in an MC. I learned all too quickly that these long, flat boats have a tendency to bury their bows when it's lumpy and breezy. I panicked the first time the front half of the boat stuck itself under water and stayed there. Just ahead of me looking back, as my crew and I scrambled to the transom, was the eventual regatta winner. That evening I tracked him down and asked how he kept his boat from doing the Titanic imitation. "I figured you'd come looking for me," he said, then went on to explain that the boat had to be quickly heeled either to windward or to leeward so the bow could pop free from the water.

Step 5: Reality check

It should go without saying that, with all this questioning and research, you should keep a notebook. Then you can go back and review your notes. Often, answers to your problems will become crystal clear. Better yet, the creative juice will lead you to experiment in the other boats you sail. But sometimes your notebook may harbor what seem to be confusing, illogical or contradictory answers to your questions. That's when it's time for a little

lift. On most boats you can actually steer so the front of the jib breaks as much as a foot back from the headstay for short periods.

No. 10 When in doubt, copy the fast guys!

reality check.

Take all the things you've learned and compare them to what I call "The ten commandments of boatspeed." (See sidebar.) These are universal guidelines that seem to apply to almost any type of boat. Sometimes you can use these rules of thumb to create respectable speed without a whole lot of research beforehand. But these rules are most useful as a reality check. If your notebook seems to tell you to do something that contradicts one of these rules, you'd better understand why. Oops! I guess that means you have to ask more questions! Isn't learning fun?

A sailmaker for North Sails One Design, Greg Fisher has won championships in the Lightning, Flying Scot, Highlander and Thistle. However, he is best known for his dedication to helping others learn to sail their boats faster.

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