

## Speed Testing Techniques

*Speed testing is the quickest way to improve your boatspeed and your straight-line sailing ability. The same principles apply in all boats and at all levels of sailing ability. If you follow the rules and guidelines below and keep an open mind towards learning and improving, you will see a rapid increase in your boatspeed.*

Before you go on the water, check these key items off your list:

- 1) You have two to four teams who are completely honest, open and willing to share information. Keeping things secret only hurts the program and the long term goals;
- 2) Three or four teams are better than two because it gives you a reality check to insure two boats are not going off in the wrong direction;
- 3) Four boats is the maximum number because any more are too difficult to control and line up accurately, the boats get too far apart and end up in different wind;
- 4) You have two to four teams who are similar in sailing ability and weight, and boats that are in similar condition and weight;
- 5) You have sails of the same sailmaker and age, unless you are testing one sailmaker's sails versus another sailmaker's sails;
- 6) You take the time to mark setting numbers on the sail controls so you can talk on the water and take notes where each team's settings are;
- 7) You tune the boats the same for the first few sessions.

After you have these things accomplished, you can finally go sailing. For the first few runs and probably the first few days, you will end up spending time learning how to work with each other and getting the boats going the same speed. This is of utmost importance before you can begin testing things! Once the boats are out on the water, setting up properly is the key to the success of the drill. The boats should set up so they are close enough to be in the same wind, but not too close to affect each other's wind.

The general rule for upwind tuning is the boats should have a lateral separation of three boat lengths. The leeward boat should have her bow even, to one quarter of a boat length ahead, of the windward boat. The leeward boat runs the drill. When she is ready, she signals the windward boat that she is ready to start sailing and the windward boats key off of the leeward boat to line up properly. Once sailing, the boats sail as hard as they can for their best VMG (velocity made good), as if they were racing.

It is important to remember that this is not a match race, you are not trying to beat the other boat by pinching when you are the leeward boat and footing when you are the windward boat. You are trying to determine who is faster when sailing normally at your

best VMG. Continue sailing until one boat falls behind into the other boats wind shadow. When this happens, stop, talk about why one boat was slower (boat set up, wind shift, wind velocity change, etc.), change something if necessary, line up again, and go. The goal here is not to spend all day on the water. Minimize dead time and line up again as quickly as possible. Quality tuning is far better than quantity!

Reaching and downwind tuning is a little harder to set up and quantify than upwind tuning, but just as important. The best way to line up for reaching tuning is to start sailing upwind in a single file line, one boat behind the other, with three boat lengths separating the boats. Once the boats are set, the first bears off onto a reach and the second boat follows. Downwind tuning can be set up the same way with the boats sailing upwind single file. When the boats are ready, the boat behind bears away first. As she is bearing away the boat in front begins her bear away also. The goal is for the boats to end up with three boat lengths of lateral separation and the leeward boat just slightly aft of the stern of the windward boat. This will take some practice to execute smoothly. The goal is for the boats to be in clear air and the leeward boat not in the wake of the windward boat.

Speed testing should be performed in all wind and wave conditions. The process is to get to the boats going the same speed in all conditions. Once this is achieved, one boat makes a change, only one change at a time, while the other boats remain the same as the control boat. If the change is slower, make a note and you have proven it slower and undo the change. If the change is faster, make a note of it being faster and that boat now becomes the control boat. The old control boat, now the slower boat, makes a change to try to improve. With this process the boats can leap frog each other and improve rapidly and scientifically.

Speed tuning's negative is just mindless sailing. After a few hours of speed tuning, one can become bored and uninterested. When this begins to happen to yourself, try other things to keep yourself fresh. When tuning, try looking backwards or closing your eyes to feel the boat. Remember that when you are racing you are concentrating on lots of things at once and you are constantly looking around. The whole goal of speed tuning is to be able to go fast in a race, not just in your speed testing runs. If you can go the same speed while looking backwards in your speed run, then you have accomplished your goal. This applies to both the skipper and the crew!

When you notice the group is getting tired and unorganized it is time to stop the tuning drills. A great way to end a successful day of speed tuning is with a few short races. This gets the competitive juices flowing and allows you to test your new speed techniques in a race. It also gives you the opportunity to practice the other aspects of racing such as boat handling and tactics. If you do not have a coach boat to run races you can do rabbit starts and either set a mark or use government marks. After a few days like this you will be quite far ahead of the teams that just show up at regattas to race.

At Ullman Sails we use this speed testing method in all types of boats. We use the knowledge we learn in certain classes in other classes. For example, the large windows we now use in the Cal 20 came from testing in the 505 class. The jib cloth we use for the

Cal 20 jibs is the same cloth we use in Tornado jibs to win World Championships and Olympic medals. The testing method at Ullman Sails involves a vast wealth of experience and knowledge to design and build sails that are as fast as possible. This allows you, the sailor, to go sailing and test sail controls and have the confidence that your new sails will be fast.

*Article compliments of Ullman Sails*