

W-L Courses, Downwind Racing, & Maxi-Runner Spinnakers

By Gordon Brown

In 2000, more Offshore events and One Design Classes continued the shift towards Windward Leeward Courses. The reaching parade of the Triangle Courses are becoming a thing of the past, unless of course a wind shift creates reaching legs. The old W-L Course has been jazzed up with Offset Marks at the Windward End and Gated Leeward Marks. Many courses now start and finish in the middle of the course. Strong Race Management teams are now able to shift the Marks at either end of the course to keep it square to the wind. The result is that more place changes are occurring on the Downwind legs than years past. When once a “Runner” spinnaker was an option, it has now become a necessity to pass or even stay with your competition. Downwind tactics are just as important as upwind tactics now. The time of rounding the Weather Mark and cracking the beers has passed. Today’s sailors have to stay focused on all legs of the race.



The Spinnaker Set

Just as Upwind strategy and tactics require a game plan and a tactician, Downwind racing should have crew members assigned to each of the necessary components. The Upwind tactician can help decide your initial plan for the downwind leg. By watching the wind direction and velocity as you go up the Beat, you should be able to see which gybe you would like to be on. Looking up the Windward leg, if the wind has clocked left such that the port tack is favored upwind, then the bear-away set for starboard gybe is favored. If the wind has clocked right, then a Gybe-Set or a Bear-Away Set-&-Gybe will be the favored set. The idea here is to get the boat on the gybe that has you pointing closer to the leeward mark so that you can sail the shortest distance. A few points to note here: If your crew is not accustomed to Gybe-Setting, then you should perform a Bear-Away Set-&-Gybe as soon as possible.

Aside from wind direction, you should be looking for wind strength. The greater the breeze strength, the lower angle you can sail maintaining good speed. So, if the puffs seem to be coming from one side of the course, try to get on the gybe to take you towards them without sailing a much greater distance to the Leeward Mark.

One of the old spinnaker setting methods has resurfaced in recent years with a rule change that allows you to fly the spinnaker without a pole for short periods of time. The Bow Set: With the spinnaker bag in the pulpit, you may set the spinnaker first without a pole. Then, you can determine which gybe to sail, get the main on the proper side of the boat, rotate the spinnaker around in front of the boat, and then attach the pole. This can get you on the desired gybe quickly, without creating mass chaos in the cockpit and on the bow. As always, your mainsail determines which gybe you are on for right-of-way purposes.

Immediately after the Set, locate the Leeward Mark. You will want to determine which gybe has your boat pointing closer to the Leeward Mark. Then, if the start/finish is in the center of the course, determine which end of the line you want to go outside of on your way to the Leeward Mark. You will need to read your sailing instructions to determine whether you MAY or MAY NOT sail through the line during the Run. You can be disqualified for doing so if it is not allowed.

During the Leg Teamwork is the Key

Good teamwork can make the Downwind legs very profitable. The best performing boats seem to have a few things in common: (1) The crew takes most of the decision making away from the helmsman so he/she can focus on driving and keeping the boat moving; (2) There are designated people assigned to watching the wind, watching other boats, watching boatspeed, and making downwind tactical decisions; (3) There is constant communication between the wind seeker, the spinnaker trimmer, the tactician, and the helmsman; (4) They all keep the boat moving. Boatspeed and angle are the two most important elements of downwind performance. Spin sheet pressure & boatspeed numbers can help you make boat angle decisions.

A good conversation might be :

Wind Seeker : “Puff coming in off the port quarter in 30 seconds.”

Trimmer: “Yes, I feel it. The chute has good pressure now.”

Pit Crew: “Boat speed increasing.... 4.5, 4.8, 5.2..”

Helmsman: “Heading down 5 degrees.”

When the puff dies, the spin sheet will lose pressure, the speedo will drop, and you may need to head back up some to maintain good boatspeed.

The Tactician should have two downwind helpers. The key here is to have your Wind Seeker always facing aft looking for breeze strength. You want to try to gybe towards pressure whenever possible. Another person, should be informing the Tactician about the competitors directly influencing your wind and your ability to maneuver. The Tactician should be focused on the big picture, listening to input from the 2 helpers and making the key decisions - what gybe to be on, when to gybe, what to do about other boats around you. Note: Every tactician makes errors at one time or another. As a crew member, it is important to be supportive as your tactician learns the lessons of yacht racing. All the reading in the world cannot teach and simulate the perspective of being on the course as the race unfolds. Good teams are not formed overnight. They take time together, practice and patience.

The Take Down:

When coming into a the Leeward Mark, it is important to have a new Upwind leg strategy planned - which tack to get on, which side of the course, and who to cover or follow. For gated Leeward Marks, this is a little more complicated, because you will have to determine which gate is better for your strategy. If the wind has shifted this should be straight forward, but if it is square, you may not be able to tell which gate is favored. Usually your gate decision is dependent on which gybe you are on, which side of the beat you want to go, and what the boats in front of you and around you are doing. The tactician needs to try to get you around the desired gate in clean air and on the desired tack. At a single Leeward Mark, inside position at the rounding can be very favorable, but with gates, you usually do not see boats rounding 4 and 5 wide, without a major wind shift. Although gates can drop the number of boats rounding a mark at one time, they do make the tactician's job more complex. Not only do you have the usually port/starboard and close hauled over running rules in play, but now you have overlaps to consider on each gybe. Inside at the wrong gate can hurt more that outside at the favored one. Always listen look around to see if there is a course change being signaled. The Race Committee can give you valuable information about which gate is favored to the next beat.

The big decision for the crew is not where are we going next, but when do we hoist the headsail and how do we drop the chute? At a gated Leeward mark this can end up being a last minute decision and create sail havoc. Erring to the conservative is almost always the best and safest way to go. Decide on a mark early, get the jib up, get the pole off and stowed, and then drop the spinnaker. The Weather Takedown is usually the best method for port gybe because it gets all the gear in the proper position for the next hoist. One trick that helps here is the "human pole." Have a crew member assigned to standing at the shrouds, leaning out, holding the guy out as far as possible. This allows you to remove the spinnaker pole early to get it out of the way, while keeping the chute flying. You also already have one person with a line in their hand for the take down.

On starboard gybe, you may want to perform a leeward takedown to get the gear around to the port side for the next run. You can do this a standard Leeward Takedown, even with the “human pole,” or you can do a Stretch-and-Blow type douse. Really, your take down decisions will depend on what your crew is prepared for. If they are flexible and well practiced, you can make final rounding decisions later than if you only know how to do Leeward Takedowns. So get out on off nights in the beginning of the season and practice, practice, practice. It is not as much fun as racing, but it pays off later down the road.

Maxi-Runner Spinnaker Trim:

The Maxi-Runner spinnaker will trim slightly different than conventional chutes. The large shoulders actually make it easier to trim because you can carry a much larger curl without it collapsing. You always want to have an active windward shoulder curl or you are choking the chute. The biggest key to runner trim is the spinnaker pole. Whenever possible, keep trying to get the pole BACK and DOWN. There is more area in a running spinnaker so over squaring and very slightly over lowering the pole will help project more area. In very light winds, however, you will have to sail hotter angles to keep the chute full and the boat moving. As with any spinnaker try to keep the pole about the same height as the leeward clew. You will always want to keep the pole parallel to the water, so any pole height movement should be followed by a corresponding inboard end adjustment. This keeps the pole at maximum length all the time, again for greater projected area.

When running on waves, you can take advantage of the waves by pumping the spinnaker sheet and the mainsheet when the stern gets up on the oncoming wave. This takes practice, but can be very profitable, especially in ULDB's and sport boats. The key is timing, teamwork, and communication, and of course PRACTICE.

Spinnaker Design:

Lastly, we come to the spinnaker itself. A well designed, big shouldered Triradial can help you sail faster than your competition but also at a deeper angle, yielding a big gain for you. Lower and faster is almost always better in Downwind sailing. A good

Maxi-Runner will be a Triradial design, where the panels radiate out of the three corners, and have several horizontal rows of tilted panels as well. Cross-Cut spinnakers are antiquated and although inexpensive, they do not hold their shape as long because they do not orient the spinnaker cloth's strongest direction along the loading path. Unlike Dacron, Spinnaker cloth is stronger in the warp direction (Lengthwise) than the fill direction (across the roll). The idea here is to align the strength of the cloth with the predicted loading direction. Talk to your sailmaker about how they design and cut their chutes. Many companies rely on hand-cutting from patterns and fairing sticks for their spinnaker panel cutting. This adds human error to the part of the process that you want to be the most precise. Other companies use fairing sticks to correct the curves that did not translate as desired from their CAD system to the cutter. The best spinnakers have panels that come of the automated computer cutter Fully Faired, needing only manual assembly to build them; no fairing sticks and no scissors needed.

One other note in spinnaker construction, many of the newer spinnakers are only stuck together with the newest seam bonding tapes. I have seen many of these come in for repair with tears across multiple panels. A better assembly method is to glue and sew the panels together. Then, most tears will stop at the nearest sewn seam. This can save "mucho dinero" in sail repair costs. The old stitching alone technique is also undesirable because the threads can snag on things and get pulled tight creating undesirable panel wrinkling. Glued and sewn spinnakers are the most desirable spinnakers, but they are more labor intensive. Ask your sailmaker how they assemble their chutes. Remember, these are YOUR sails, so it pays to do your homework.

***Gordon Brown** is an avid Offshore and One Design sailor. He currently serves as **Sales & Service Manager at Haarstick Sailmakers** in Rochester, NY. Gordon enjoys sailing with his customers and friends as well as occasionally serving on the RYC Race Committee for major events. He has been with Steve Haarstick since 1992, as a sailmaker on the production floor and as a sales/service representative. His customers have used Haarstick Sails and Service to win Club Division and Fleet Championships as well as events such as the Eight Meter World Championships, Soverel 33 Nationals, Youngstown Levels, J/24 Districts & Great Lakes, as well as LYRA Division, Course, and Boat-Of-The-Year Trophies.*



(Picture by M.Kurzawa)

**J/24 Brain Cramp at the 1999 North Americans in Chicago
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