

Bring on the Breeze

By Greg Fisher

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Sailboat racing has often been called a game of psychology, a game that the most confident and determined players will win. This is especially true in stronger winds, where a racer too timid to make the right move has no chance of winning, and will have a better chance of capsizing. Any sailor who has prepared himself and his equipment properly, and has practiced enough to be confident, has as good a chance as anyone else on the race course. "Good psych" is the ability to concentrate on the race and the conditions without being intimidated by them.

Often it is difficult to get your crew together to practice in heavy air, but as strange as it may seem, the skipper can learn a lot of sailing alone in a medium breeze. Practice without the jib, and sail through a series of tacks concentrating on foot placement so your feet hit the hiking straps properly after each tack. Once the skipper is comfortable, practicing with the crew will be more productive.

Set up a short windward-leeward practice course (200 yards long) and practice a series of tacks and jibes. Set goals for the team; perhaps five tacks and three jibes, and then increase the number of maneuvers as the team gets better. Keep the practice fun to promote the team spirit and camaraderie. Finally, it wouldn't hurt to capsize your boat (if it's self-rescuing!) to practice righting it quickly.

Pre-Race Preparation

Preparation for heavy-air sailing comes in two areas: physical endurance, and the condition of the equipment on the boat. Stay in shape with some sort of exercise program, concentrating on your upper legs and arms. You certainly don't need to be Charles Atlas, but being exhausted during a race can lead to lapses in concentration. Being comfortable while hiking helps you keep your mind on the race, so adjust your hiking straps accordingly. Your knees and lower back should form two nearly 90-degree turns, so you are literally hanging in the straps. Try to have them adjustable, so they can be changed as your body tires in one position.

It seems that for every hour of heavy-air racing the same amount of time needs to be spent on boat preparation. Check over all the important rigging that could fail and keep you from finishing the race. On our boat, we have a basic routine that we do before the start of every windy race. Each crew member knows the different fittings and areas of the boat that he is responsible for and checks them over thoroughly to be sure there won't be any failures. Too many races are lost because of equipment failures that could have been easily remedied before the race even started.

Upwind Sail Trim

In a big breeze the sails should be set as flat as possible, but not "flat as a board". A very flat sail robs the boat of the necessary power to accelerate through waves and puffs. More importantly, sails that are too flat make it difficult to balance the boat properly.

Since the jib is the leading edge of the sailplan, its shape affects the steering properties of the boat. Interestingly, the desired cross-sectional shape for the jib in heavy air is similar to the best light-air jib shape, although not quite as deep. The powerful entry and flat exit shape of the light-air jib

works well in the breeze too. Since the boat is always being steered up, down, and around waves, and in and out of puffs, the forgiving shape of the full entry is important. It allows the sail to tolerate abrupt changes in wind speed and angle without stalling. A flat exit (open leech) depowers the jib, and is an "exhaust pipe" that reduces the backwind on the mainsail as the wind blows out of the back of the jib and into the entry of the main.

Luff sag determines the fullness of the jib's entry. In light air, luff sag is induced to make the jib full. Because of the added load on the jib and forestay in heavier winds, it is virtually impossible, except in some high-performance boats, to completely eliminate luff sag — but there are other methods to flatten the jib.

Because of the increased loads on the sails as the wind builds, the draft, or deeper part of the sail, will want to move aft. Tension your halyard or jib cloth just enough to remove the wrinkles along the luff. In light air, err towards a looser setting on the luff, but in extremely heavy breezes, you should almost overtension the luff of the jib to hold the draft forward.

In light and medium conditions the jib lead should be positioned so the jib luff will break evenly from top to bottom for maximum power. In heavier air, move the jib lead aft so the luff will break at the top earlier. The lead-aft position develops a flat chord-depth shape. How far aft to move the lead depends on the wind strength and the design of the jib. Generally, set your heaviest-wind position so that the top telltale (nearly a quarter of the way down the luff from the head) will be just stalled (angled straight up or jib just breaking) when the lower telltale is streaming straight aft as the boat is slowly luffed into the wind. On most Lightnings and most jibs, a lead position of 100" to 101" is about right for proper heavy air trim.

In most cases it is best to leave the leads positioned in their standard "all around" athwartship position since the jib is already very flat in its bottom sections. The only exception would be when there is a great deal of chop and the boat's pointing capabilities are greatly reduced. In these conditions, it is helpful to move the leads outboard one to two inches. Don't trim the jib too tight in heavy air. Since the jib lead is moved aft, the top of the jib will be more open, or twisted, so overtrimming will close off the open leech and backwind the mainsail. For the Lightning — this will position the top batten nearly at the end of the spreader. Once set properly, the jib needs very little adjustment upwind in heavy air. Keep it in one position, and adjust the main for proper helm, balance and heel. The crew should never drop the jib sheet; a sudden gust or violent windshift and even a steering error could make it necessary to uncleat the jib quickly.

Mainsail trim has a big effect on the boat's power, heeling, helm balance, and pointing ability. Therefore, the skipper should be able to adjust the mainsheet or traveler quickly and easily from the hiked position.

The main cunningham is trimmed just like the cloth tension on the jib. Set the luff tension on the main to just barely remove the wrinkles, and be careful not to undertrim the cunningham. A loose cunningham allows the draft to move back in the main, which will tighten up the leech and

increase the weather helm and heeling. Like the jib, the leech area of the mainsail should be open at the top, and flat at the bottom.

The outhaul is perhaps the simplest adjustment on the boat. In heavy winds, pull it tight. If there is a question, pull it tighter. The lower quarter of the main, especially at the leech, should be as flat as possible in windy conditions.

On many boats the vang should be set very tight when sailing upwind to help induce lower mast bend, and to keep the boom from rising up in the air when the main is eased. How much vang is necessary depends on how much mast bend you need to flatten out the sail. It is possible to overbend the mast and overflatten the main, which will rob it of the valuable power you need. Stop bending the mast when you see diagonal overbend wrinkles in the lower quarter of the main (see photo). This means that the main is as flat as it will get, and the mast should not be bent further. The same guides apply on boats with adjustable backstays.

The traveler is used to ease the mainsail off the centerline to decrease heeling and balance the helm. Good teamwork is helpful in playing the traveler. If the crew can call the puffs before they hit, the skipper can begin easing the traveler ahead of time so the helm is neutral when the puff arrives, and the boat can accelerate easily.

Upwind Boathandling

When steering upwind in heavy air, remember not to oversteer. Since the boat is going very fast, it takes less rudder to turn the boat, so you don't have to move the tiller very much.

In wavy conditions, make sure the boat is sailing through the waves with the least resistance. Steer higher when sailing up the face of the wave, and when on top, turn and steer lower down the backside of the wave. Careful adjustment of the mainsheet through the wave pattern will help the boat headup and bear off smoothly. Trim the main tighter when heading up the wave, and ease it out when you bear off at the top of the wave.

In flat water, use the main to help work the boat closer to the wind. In a puff, try trimming the main in tighter, and pinch the boat, instead of easing the main out. This can gain some distance to weather; and works well when you are trying to make a mark or pinch off a competitor. When you do this, it is not unusual for nearly half the jib to be broken as the main does all the driving. Make sure to work up plenty of boatspeed before trying this.

Believe it or not, a roll tack will bring the boat through the wind the fastest and with the least loss of speed and the greatest safety. With the skipper and the crew hiking out to windward, the skipper slowly heads the boat up into the wind as he trims the mainsail tighter. When the jib breaks (and not before), the crew should release the jib sheet. At this moment the crew should begin to change sides. Once the sails begin to break, the skipper should increase the rate of turn. As the boat turns through the eye of the wind, the skipper and crew seat themselves quickly on the new windward side. As the jib starts coming in, the skipper eases the main (the amount depends on the amount of wind). It is not unusual to ease the main two to three feet in breezes over 18 knots. This mainsheet ease is not only important to keep the boat from becoming too overpowered after the sails fill, but also to help the boat bear off to its new course. If the main remains trimmed, the boat will try to round back up into the wind.

Downwind Sail Trim

Although large upwind speed differences can produce big gains, on a planing reach in a real blow you can make even greater gains. Speed is not the real key for excellent downwind performance; It's not always how fast you go, but how well you can keep your boat under control that counts. Perfect helm balance is the most important factor to downwind control. The boat tends to build up excessive weather helm on the reaches just as it does when racing upwind. In order to bear off in a puff and accelerate, the helm must be kept neutral or the rudder will stall.

The main is the most important tool in controlling weather helm. If it is overtrimmed or too full, the boat will become overpowered and the helm will increase, so play the mainsheet constantly with the helm as a guide. In sudden puffs, the mainsheet ease will not be quick enough or get the main out far enough to balance the boat. Instead, when a big puff threatens to make the rudder stall and make the boat round up, release the vang completely. This makes the whole upper part of the main luff, and depowers it. The boom will rise up in the air, which keeps it out of the water if the boat heels over a lot.

The spinnaker or jib must be adjusted continuously to keep the boat balanced. If the jib is up and overtrimmed, it can easily backwind the main and throw the boat off balance. The spinnaker must be eased with every puff so the boat can bear off. An overtrimmed spinnaker can also load up the helm, and make it impossible to bear off and keep the boat under the sail plan. Sometimes it is difficult to determine when to set the spinnaker, or just play it safe with the jib. A good conservative rule of thumb is not to be the first one to set the spinnaker in marginal conditions. Be prepared, and if you see others start to gain with their spinnakers, then go for it. A lot depends on the particular boat you are sailing, and the size of the spinnaker. The Lightning's large spinnaker makes it worth setting early. The spinnaker can always be dropped part way down the leg, and the boat headed up on a planing close reach to the mark.

In light and medium air it is always best to ease the cunningham and outhaul to make the mainsail as powerful as possible, but in very heavy winds the opposite is true. If the main is often luffing, there is no sense in making it a powerful sail, so pull the outhaul and cunningham tight. If the boat has an adjustable backstay, don't be afraid to bend the mast and flatten the sail more. A flatter sail won't luff as quickly, and creates less drag.

When racing downwind sit a little farther back in the boat to keep the rudder in the water and reduce weather helm. This allows the bow to lift, and the boat will jump up on a plane a little bit quicker. If the wind lightens, be sure to slide forward again so the transom doesn't drag. Use the flat wake as your guide; if you see bubbles coming out from behind the stern, move forward until the wake flattens out.

Finally, don't be afraid to pull the centerboard well up into the trunk to balance the helm. Sometimes it is necessary to pull the centerboard up nearly three quarters of the way to neutralize the helm on a close reach. Since the boat is going so fast, side slip is not nearly as great a problem as excessive weather helm. With the board up, the boat will bear off more easily and stay under control. Don't be afraid to bear off 40 to 50 degrees (or whatever it takes) to keep the boat under control in the wildest puffs.

Downwind Boathandling

Sailing dead downwind in heavy air is like running on a tightrope. Again, helm balance is all-important; a little bit of weather helm can roll the boat up into the wind and turn it over to leeward. A more common disaster is the "death roll", where the boat spins out to leeward and turns over to weather because of too much leeward helm. There are a few things you can do to survive on the runs.

In waves, sit fairly far back in the boat, using the flat wake as a guide, to avoid burying the bow in the troughs. Be sure not to leave the board down too far, but this time for a different reason: While the board doesn't effect the helm very much when sailing dead downwind, it can induce drag, and the boat will actually trip over the board and broach or capsize.

Make sure the vang is on tight enough on the runs. On the reaches it is best to have the vang loose when the boat gets overpowered, but a loose vang on a run can easily push the mast to windward, and into the water in a death roll. Never let the vang off so that the upper batten is past parallel to the boom. If necessary, overtrim the main slightly to keep the boat from spinning out to leeward. If you are flying the spinnaker, don't pull the pole back too far. On our boat we never pull the pole back so far that the leeward clew can come to windward of the forestay. This will keep the lower quarter of the spinnaker behind the mainsail, which helps

stabilize the boat when it's really windy.

In a really big breeze, the boat will be planing or surfing most of the time off the wind, but if the bow gets caught in a wave and you slow down, a quick pump on the mainsheet can break the boat free and resume the plane.

When riding waves, always keep the boat flat and continually play the sails. Don't just aim for the trough of the wave in front of you, but ride the wave like a surfer, diagonally down the backface. If sailing dead downwind, ride the wave way off to leeward to gain valuable distance from the course, and possibly eliminate the need for a jibe later down the leg.

Jibing in heavy winds is the most exciting (and frightening!) part of the race. Practice is truly the only way to become efficient at it, and here are a few tips to help you. First, remember that any boat is most stable when it is going as fast as possible, so be sure to jibe when the boat is going top speed, either on top of a wave or when it is planing. Be sure the board is up enough so you won't trip halfway through the jibe, and tension the vang enough to keep the top batten parallel to the boom to prevent a death roll. Never hesitate in the middle of a jibe; jam the boat around, and carve an S-turn at the end of the jibe to keep the hull underneath the sails and maintain a neutral helm. If it is really scary, drop your spinnaker and tack around the mark. Don't tack too close to the mark where other boats are attempting to jibe; sail well past the mark, and then go for it.



A Downwind Technique

By Terry Hutchinson

Unlike most boats the Lightning has a hard chine which allows you to do certain things that normally would not work. This tip is geared towards sailing the boat on a light to moderate air run, and the things I have learned that seem to be fast.

In light to moderate breeze, we have worked extremely hard on perfecting the technique of heeling the boat to weather. Heeling the boat to weather does two primary things, first, it helps rotate the spinnaker away from the wind shadow of the main, and second, by sailing with the weather chine in the water it helps the boat track. The tracking of the boat minimizes rudder use and maximizes speed.

Heeling the boat to weather takes good coordination between skipper and crew. The skipper is responsible for the feel of the boat. As the boat speeds up and slows down, he or she needs to communicate that to the crew. When the boat is slow you will be heading up to increase your apparent wind. Once the speed is built bear off and heel to weather. This will start the tracking of the boat. The other two crew play a vital role in this process. Obviously, the middle man is trimming, but they are also helping the helmsman control the heel to weather. The amount of heel the helmsman wants will deter-

mine where the middleman sits. For a lot of heel they will be on the rail. Minimal heel — they will be sitting on the weather tank or in the middle. The forward person's job is to play the centerboard up and down as the helmsman alters course. As the boat heads up the board should be down to help steer the boat, and when the helmsman bears off to run the board should be all the way up.

The following is a sequence of what takes place on my boat.

Helmsman, "Coming up 5 to build speed", Middleman slides in to make the boat level, front person drops the centerboard 6 inches. Helmsman, "The speed is up; let's roll down", Middleman slides to weather to heel the boat, Forward person pulls the centerboard all the way up. Helmsman bears off to keep the boat tracking until he feels the need to build speed back up.

This technique is something that takes time and practice. The helmsman has to have a good feel for the boat, and the crew has to be coordinated enough, and smooth enough to heel the boat. Abrupt movement will disturb the boat too much.

By practicing this technique, you can drastically improve your light to moderate air performance downwind.

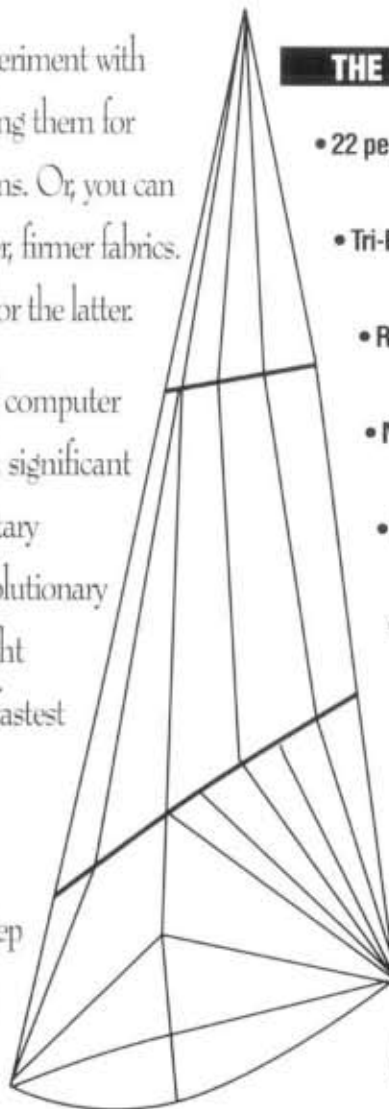
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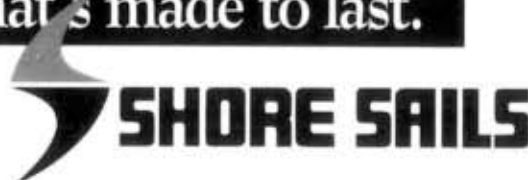
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Lake Sailing

By Brad Read

Skaneateles, Savannah, Rochester (Newport Yacht Club), Red Bank, Old Hickory, Devils Lake, Buckeye Lake, Lake Bomaseen, Mallets Bay, Spofford Lake ... What do these places have in common? These and so many other Lightning strongholds are small lakes. Much of the sailing which we do in this Class is on enclosed (or relatively sheltered) bodies of water. Closed course racing on inland lakes and rivers is by far the most fascinating and fast paced sailing around. The great part about Lake sailing is that the race is never in the bag for anyone. Whether you are way behind or way ahead, don't quit. Positions can change faster than you can say ...

Topographical Influences.

Imagine yourself in the middle of a large city with skyscrapers all around. It is blowing 25 from the west, but while you are walking through the city you get buffeted by wind whipping around buildings from the south, southwest, north and even east. Much of the time there is actually no apparent wind at all. Now imagine a river smack in the middle of that city. Chances are that the buildings will have a large effect on the breeze and your approach to the racing in that particular venue. The same thinking should be applied to any inland lake where breezes come off the land. A knowledge of the way the land will effect a breeze will go a long way in determining how to sail your race course.

Common sense would tell us that wind will travel easiest through low spots and will have a hard time when blocked by a hill. Therefore sailing towards a low spot may help get you to more breeze than the competition. On reach legs, if the rhumbline will take you to the lee of an island or a hill, it would behoove you to sail a course which brings you away from the lee of the hill. Those who take the high road will tend to get stuck under the lee of the hill, while those who stay low can pick up lots of distance and boats by staying in the most breeze.

While going upwind, the landscape can effect the lanes of wind traveling across the lake to hills and a low spot upwind of your race course can significantly funnel the wind through the slot of the land. By doing most of your sailing in that slot, you can assure yourself of sailing where the most wind lies. One side or the other of that lane could potentially be favored over the other, depending on the angle that the wind is traveling across the hill.

Upwind sailing on inland lakes takes a special type of patience. One can usually count on having the breeze shift back and forth quite frequently. One side of the course can have a completely different wind than the other. In fact, in some cases the guy 20 feet to the right of you can have 15 degrees different wind angle and 5 knots more or less breeze in his/her sails. One thing always to remember here is ... sail with what you've got. If you are stuck in an area of the course which has been getting hammered by the other side, don't lose control and attempt to strangle your crew because your boat missed a shift. You can't beam yourselves into another part of the course. Sometimes you can't even get to the shift with a power boat in time to take advantage of a breeze line that has swept down one side of the course. By reacting to the winds around your boat you will always be

able to work your way into the top 1/3 of the fleet even if one side took off in the first part of the beat.

Heading for the mark:

When sailboat racing, we obviously want to get to the windward mark as quickly as possible. One way to accomplish this is by simply sailing on the tack closest to the windward mark. By reacting quickly in the shifting conditions, you can determine if you are heading for the mark. By putting your head on your shoulder and viewing out of the corner of your eye, the windward mark should be plainly in your view. If it isn't there you had better have a very good reason for not tacking on to the closest tack to the mark.

Puffs

How do you determine whether the breeze line you see is going to be a header or a lift to you? Breeze lines, or puffs can arrive in very different ways. Eyesight is crucial in determining what that breeze will do to your heading while going up or downwind. Some will force you to tack as soon as the puff arrives. Others will lift the boat's heading and allow you to continue on that tack throughout the duration of the puff. By examining each puff before they reach the boat, you will be able to find out the best way to get to that breeze, and what it will do when it gets to the boat.

When you approach the puff, try and determine which way the puff is moving in relation to the horizon. Sometimes you will find that wind lines will miss you even though they are close enough to affect the guy 20 feet away. If the puff is coming towards you from abeam, pinch up if you can get into the puff sooner. By placing yourself to leeward of a puff you can assure yourself of a lift on that tack.

If the puff is approaching from the bow, you can be sure that it probably will be a heading puff. Depending on where the mark is, you will probably want to tack to be on the lifted part of that line. These breeze lines offer the opportunity to tack as the line gets to the boat. Unlike the open water sailing, which forces you to dig in to the shift, you can get away with tacking on "edges" because the breeze lines are more definitive, and the puffs more compact. This allows you to bounce off of each cell of wind on your way up the course without getting into a corner.

A "fan", or "cat's paw" is the most common breeze line which we experience on the inland lakes. The fanning puff appears as a gust of wind touches down onto the surface of the water. Many times, the puff will spread out rapidly, so that the different sides of the fan have different angles of breeze. One side can lift you on the tack that you are on, while the other side could make your boat fall off or become headed. If the boat stays in the fan long enough, it can actually experience both sides of the fan. Depending on the way you need to go will determine how to use the puff which comes down the lake. The options are great, and the time to decide, short. A typical conversation up the beat of any of the races of Skaneateles went the following way.

It is thirty seconds or so after the start, and the last boat called over early had finally gotten off our breeze (thanks a lot, Jody)!

Brad: "Where the heck are we?" (heck??)

Bill: "Okay, we're just left of center of the beat, a small puff

to our right, and good speed."

Brad: "Should I pinch up to the puff?"

Bill: "No keep driving. It'll get to you."

Will: "The entire right side of the course has a huge right hand breeze. I think Tom Allen is the leader, but he's a little bit over the horizon so it is hard to tell." says Will Jeffers ever so delicately.

Brad: "What?!!" Brad says (screams). "I can't believe you... we...we missed that!"

Bill: "We couldn't get to that breeze by car if we had to. Let's just sail with what we've got."

Brad: (apologetically) "Okay, are we heading for the mark?"

Will: "Yeah."

Brad: "Alright! Puffs, Bill?"

Bill: "One coming from the bow."

Brad: "Is it a fan?"

Will: "Yeah, hang on a second. We can tack so that it'll be lifting us on the other tack."

Brad: "Will we be heading towards another shift?"

Will: "Yeah! Looks like this one will carry us towards another puff, but looks like this one could last a while."

Bill: (Mr. Conservative.) "Yup! And this will get us back in the middle and heading for the mark."

Brad: "Tacking."

After the Tack

Brad: "We seem to be up on this board. How does the right look?"

Bill: "They're still up on starboard, but they don't have the breeze that our group is in."

Will: "Yeah, I can even see Tom Allen's numbers now." (Bill finds this amazingly funny).

Brad: "Who else are the leaders?"

Bill: "Well, we're second, or third in our group. The left looks light and they are coming with us. The right looks best now but with no wind."

Brad: "We're starting to drop into a lull!"

Bill: "Yes but we're still on the favored tack to the mark. Some of our group is starting to dig back into the left, but there isn't any breeze over there."

Will: "The folks on the right are getting into a breeze line, but it doesn't look like they are lifted."

Brad: "Are they on the wrong side of something?"

Bill: "Don't get cocky, but you are right. Let's tack on the leeward part of this fan and we'll be lifted on starboard while they have the puff in front of them and are pointing right at us on the same tack. By the way who asked you anyway?"

Will: "I hate when he's right."

Brad: "Call it."

Bill & Will: "Go."

By understanding the puffs and lulls a little better in lake conditions and how to determine their effect on the boat you can improve your position dramatically on those inland lake regattas. If my coach during college sailing drilled anything into our heads, it was to keep your head out of the boat. Get in tune with your environment; don't get caught up in looking at a compass, telltales or sail shape for too long. Practice keeping your eyes on the telltales which your surroundings offer you. Other boats, flags on land, a smoke stack, wind on the water, topography and common sense will give you a new perspective on lake sailing. True, lake sailing can be weird, but if you keep in mind that some of the best lake sailors are known to be a little strange themselves, maybe we can all relate a little better to the big picture of lake sailing.



1992 Bluenose in Nashville
Action and the Winners.

Wade Thweatt, Chandler Owen and
Rebekah Walker.

Crew Communication

By Hale Walcott

In June 1977 Bruce Burton and I were sailing for Tufts in the intercollegiate North Americans. In the seventh race we rounded the weather mark first and jibed onto port, closely followed by Ed Adams of URI. Converging with us from to leeward was Washington's Brian Thomas, still beating to the weather mark on starboard. Bruce didn't see him until we were one boatlength away and by then it was too late. As we were doing a 720, Bruce said, "Hale, you have to tell me about these things." "I would have," I replied, "but I thought you saw him coming." What was potentially a good race—one that in retrospect would have won the NAs for us—became a disaster because of a lack of communication.

We all engage in pre-regatta boat and physical preparation, but equally important is preparing to communicate. So before you rush out on the water and have a communication breakdown, think about the following ideas. First, when assembling a crew, remember that you don't need Arnold Schwarzenegger to hike or Gary Jobson to call the shots—you just need a compatible crew that will work together toward a common goal. The amount of talent you need will be determined by the type of boat you sail. For instance, a J/24 is difficult to steer precisely in waves and has a large genoa that restricts visibility, so the helmsman must concentrate totally on steering and rely on the crew to tell him or her what is going on. Conversely, an E-22 is easy to sail upwind and only uses a working jib, so the skipper can afford to look around part of the time without losing boatspeed.

Once you have gathered your crew and ascertained their strengths and weaknesses, assign responsibilities accordingly. Remember, people should do what they're good at. If someone has eagle eyes, put him or her in charge of calling out puffs and/or mark location. Next, decide what information the crew and skipper need to sail the best race possible. For closed-course, one-design racing, I include the following: compass heading, puffs, mark location, boatspeed/pointing, waves, current, location of major competitors, port/starboard situations, sail trim and boathandling. It's clear that with this much information being discussed, you don't have time to talk about the party the night before or why the forward crew thinks the boat is a pig. But you also don't want a running commentary on everything that is happening at every point in the race. Quiet periods are an essential part of the communication process. When no one is talking, the helmsman can optimize his steering, and the crew can concentrate on sail trim, balance and collecting information. Then, when there is something important to say, the other crew members will listen.

Once everyone is tuned in, be sure you're talking the same language. At the 1979 Lightning Worlds in Dallas, Texas, I was the middleman tactician for Don and Ann Brush. In the fifth race we were in second place on the port-tack layline, 50 yards from the finish and on a collision course with starboard-tacker Jim Dressel. I told Don to "go below him;" in other words, to bear away below Dressel and harden up again on port. This would have assured our beating him. Instead, Don interpreted "going below" as leebowing, so we tacked under Dressel and he tacked away, beating us to the

finish. As a result of that communication breakdown, Dressel beat us by one point for the series.

After defining your terms, you should decide how you want the information collected and communicated. I'll briefly describe each piece of information and how I like to deal with it:

Compass heading — This should be done on a relative basis rather than absolute. In order words, "Up five, normal, down five," instead of "295 degrees, 290, 285." Absolute numbers only serve to confuse in the heat of battle and are something the skipper shouldn't have to remember. Having a feel for what the compass is doing is important, especially at critical points like the start, port/starboard situations, and the beginning of each successive beat, but continuous compass readouts are not only unnecessary, they're distracting.

Puffs — It is imperative that everyone on the boat knows when a puff or lull is coming so proper sail trim, boat trim and tactical decisions can be made. Don't just say, "A puff is coming." Estimate the strength, direction, time of arrival and how long it will last; then using telltales and a wrist-watch, determine if you are correct. This may seem difficult at first, but with practice anyone can be right about the breeze 80-percent of the time.

Mark location — Before the start, you must know where the weather mark is. As you sail the weather leg, refer to the mark location as time on a clock. Twelve o'clock is straight ahead, while three and nine o'clock are on the starboard and port beams, respectively. An alternative way to describe mark location, if there are some good landmarks visible, is to say, for example, "The weather mark is just to the right of McDonald's." When you get within a hundred yards of any mark, find the next mark and determine what angle you'll be sailing at on the next leg.

Boatspeed/pointing — Boatspeed and pointing go hand in hand, for the faster you go the higher you can point. But they are relative terms in one-design racing because no gauges are used to determine actual speed or close-windedness. At the start, it's especially critical to know what the boats on your lee bow and weather quarter are doing so you don't get squeezed off or run over. Then, as you sail around the course, keep watching other boats so you know immediately when you are not going well. This is an easy way to realize that a boat or sail trim adjustment is needed or that there are weeds on the rudder. Be sure to realistically evaluate your speed and pointing; overly optimistic or pessimistic reports are simply counter-productive.

Waves — Discuss what waves are coming that you should power up to get through. Also, locate relative flat spots in which you can go for pointing or that you might want to tack in.

Current — Make a note of the current strength and direction every time you pass a lobster pot or moored boat. As you sail each leg, be sure to range the next mark to see which way the current is setting you so you can compensate for it.

Location of major competitors — No matter how fast or in phase you think you are, you still have to beat the other boats. This means knowing at all times where your major competitors are on the course, what tack they're on and how fast they're going.

Port/starboard situations — Right-of-way rules were established for our protection, but you must be judicious in using them to your advantage. Don't just yell "Starboard!" when you see a port tacker approaching. First determine which way you want to go and which way you want him to go; then wave him on or hail "Starboard." Be sure someone on your boat is always watching for other boats so you will have time to make the correct tactical response.

Sail trim and boathandling — Hopefully your crew will be prepared enough so the need for communication in these areas is minimized. This will allow you to talk about more important things. If you have to explain how to do a roll tack on the first weather leg, for example, you need more practice. However, the skipper may have to ask for fine-tuning adjustments such as, "Bring the spinnaker pole back six inches," and the crew might tell the skipper, "Move forward about a foot, I think the stern is dragging." This kind of communication is essential in attaining optimal performance.

Once you know what information you will need, you have to determine who's going to make the decisions. Basically there are three communication systems you can use: the "crew dominant," "skipper dominant," or "feed system." In the crew dominant, the helmsman is simply responsible for making the boat go fast, and the crew tells him where to go. The dominant skipper drives the boat, collects most of the information and makes all the tactical decisions. In the feed system, the crew collects information, recommends a course of action and lets the skipper make the final decision. The latter system is usually the best since it makes the most of everyone's talent. It still lets the person with the best feel for the boat have ultimate control. You can also innovate on this. When I sail with Dave Curtis, he controls the starting procedure; I decide where to go on the weather legs; and then he takes over again during mark roundings. Once you know who is collecting information and who is making the decisions at various points of the race, the information flow will go smoothly.

The last thing you have to prepare for is dealing with the emotional aspects of communicating. For sailing in high-pressure situations with cramped physical quarters, I follow these guidelines: When skippering, never yell at the crew. When crewing, never yell at the skipper. Also, don't respond emotionally to someone else's emotional outburst. Yelling only serves to distract from the race at hand and has never helped to get anything done in the boat. Instead, give encouragement to your crew or skipper in tight situations, and save critical comments for onshore discussions.

A good system of communication should enable all crew members to contribute their fullest to the team effort. If you talk about the kind of information flow that you want with your crew before each race and then encourage everyone to evaluate how things went afterward, you will develop a system of communication that matches the needs of your particular crew and boat, and this will give you the best chance of winning.



Brad Read, Bill Fastiggi



J. Allen & Larson at the pin. Blue Fleet start '92 N.A.'s.



Kathryn Josenhans, John Oldham

Mind Over Matter

By David Dellenbaugh

Sailboat racing is supposed to be fun, and it usually is. There are the thrills of screaming highspeed reaches, the challenges of figuring out a shifty weather leg, the rewards of races sailed nearly to perfection, and the good times with friends both on and off the water. There are also, unfortunately, times that feel less than rewarding — when your skipper gets mad and starts yelling, when you take a flyer out of frustration and end up way behind, or when the post-race party loses its appeal because you're depressed. Such feelings can make the sport seem more like a chore than an uplifting experience. When this happens, the sailor's challenge is to turn these negative experiences into positive ones, and to learn from them so they won't get in the way of doing well and having fun the next time.

When you think about it, it makes sense that psychological factors have such a large effect on one's racing experience. Sailing, with its requirement that many variables be figured out at once, poses perhaps a greater challenge to the mind than any other sport. This is what makes every race unique and the sport so attractive, but it also means that the mind's tricks and quirks come all that much more into play. When you depend on sharp, creative thinking to get around the race course quickly, any extraneous mental blocks or emotional flare-ups are bound to slow you down.

It is surprising, then, that we have been taught so much about tuning and tactics, but so little about how to deal with our doubts and feelings. You can have the fastest boat in the world and the best crew, but if you race when you're depressed, angry or psyched out, the overwhelming odds are that you won't do so well. Consequently, the quickest and easiest way for many sailors to improve their performance and increase enjoyment is to adopt a positive, reflective mental approach to racing.

A Practical Approach

Developing a helpful mental attitude is a process that begins with making a candid evaluation of the present. Think about yourself and the time you spend sailing. Ask questions like, "What times are the most enjoyable? What would I like to change? What are my strengths and weaknesses in racing, and where do I need to improve? How much time and money can I give to the sport?" Getting a clear picture of all this will make it that much easier to figure out where you want to go from here.

The second step is to begin thinking about what goals you have for the future. Perhaps the most important thing to keep in mind when doing this is that *you have the potential to achieve your highest goals*, whether your objective is winning everything in sight or having the best time of your life. Believing this (or at least accepting it as a working assumption) will ensure that you don't settle for false limits on yourself. Achieving any goal is a matter of logically figuring out what to do (we're all smart enough for this) and then having the determination to get it done (sometimes a little harder). For example, we know from our experience that the skills necessary for winning races (tuning the boat right, getting good starts, etc.) can be learned. It logically follows that becoming a championship caliber sailor can be achieved with sufficient learning and practice. (There are, of course, certain physical limitations. It would be difficult, for

example, for a 100-pound person to become a champion Finn sailor.) We also know that it's impossible to change the sport to make it more completely enjoyable. If a certain aspect of the sport bothers you, offer suggestions, get involved in running things, become a judge, etc. You *can* make a difference. Addressing the question, "What can be done to solve the problem?" will always be more constructive in reaching goals than complaining or blaming.

With this in mind, begin to think about and write down specific goals that are important to you. Start with longer range objectives, and then figure out a step-by-step program of short-term goals to move you in the desired direction(s). For example, if your ultimate goal is to win a gold medal in 1996, you might aim to have your boatspeed equal to the best in the class by the end of this summer. And on any specific day, your goal would be to improve your speed at least a little in that day's conditions. Besides providing a tangible measure of success, having goals gives you confidence that what you're doing makes sense and keeps you moving forward when times get tough.

Of course, the scope and nature of the goals you set are affected by the amount of time and money that you can invest. Not everyone has enough of these resources to become a world or even a club champion. This doesn't mean giving up on competing with the best (1982 Congressional Cup winner Scott Perry is an IBM executive who only sails three weeks a year); it just means that expectations must be geared to reality. If you can't practice every day or buy a new boat every year, and that means you don't always win, then look for the many additional rewards of sailing: making friends, conquering the elements, learning, relaxing, going fast ... As Charlie Brown said when his baseball team lost their season opener 123-0 and the players were threatening to quit, "It's not the winning that counts. The fun is in the playing."

Whatever goal(s) you choose, the key to getting there is learning. Watch every race with a detached, objective point of view. By keeping aware of what makes you go fast, which tactical moves work, etc., you store valuable information in your memory files and keep expanding the amount of experience on which you can draw for future decision-making. This not only moves you in the direction of achieving goals, but also guarantees you a certain degree of success, because you can always learn something even when you don't win.

There are a number of good ways to learn about your racing. Two that have been particularly helpful for me are:

- *Keeping a learning log.* After every day of racing, write down in a notebook of what you learned about tactics, speed, weather, interaction among your crew, etc. You'll find yourself becoming much more aware of your learning opportunities, returning to the dock with a head full of things to write down. Once, while frostbiting my Interclub dinghy, it became clear that I could use more input from my crew. I came back in, made a long list of things I wanted her to tell me while racing, and began sharing these ideas the next week. Helpful thoughts like this can be reinforced by reading over your notes every once in a while.
- *Reviewing the race with your crew.* Sit down briefly with your crew or skipper at the end of each day and go over the

racing. What went well? (It never hurts to compliment each other). What was learned? What should be done differently? These can also be written in your notebook.

Other ways to steepen your learning curve include reading instructional material, trying experiments while racing, going to clinics, and talking with your competitors.

This learning and evaluation process is a continual one that should include an occasional review of progress made toward the goals you've set. There is sometimes a fine line between goals that are too easy to reach (and therefore don't mean much when you attain them), and ones that are too difficult (which invite feelings of failure). Finding the middle ground where goals are challenging, yet not impossible, is a trial-and-error process that takes time. Don't be afraid to modify expectations of yourself to set new goals when appropriate.

Overcoming Psychological Blocks

In theory, the steps outlined so far will enable anyone to turn those less-than-rewarding moments into satisfying experiences. In practice, however, while everyone may have the potential for this, the result doesn't always come out so well. On top of the problem of limited resources are numerous psychological blocks and feelings (both by-products of the mind's involvement) that inhibit the learning process and spoil enjoyment.

Psychological blocks are believable myths that are formed over a period of time and run through our minds like broken records: "I'll never win because I'm not smart enough. I can't sail in light (heavy, shifty) air. I can never beat Wally Weedhopper. My boat is slow. I always have bad luck." Some of these blocks result from a frustrating situation that is at least partly "real". Maybe you *do* have a hard time sailing in heavy air, or your boat really *is* slow. In these cases, the mental recordings are simply indicators of where you need to put some learning effort — they can be erased by figuring out how to sail better in heavy air and how to make your boat faster. Other blocks have absolutely no basis in fact, but continue to be reinforced as self-fulfilling prophecies, and are more difficult to overcome.

Countering any mental block requires a lot of creativity and is in itself a challenging mind game. Some of the most successful techniques are ones that sharply contradict the negative messages and keep you focused on your positive potential, such as:

- **Remembering fast times.** Before and during a race, think back on another race when you were particularly smart and fast. Keep a clear image in your mind of the ability and potential that you knew you had then.
- **Visualizing perfection.** Before the start, imagine yourself sailing a perfect race. Keep focused on this view of yourself and how it feels. Remember, "You are what you think."
- **Playing a role.** Choose a sailor that you greatly admire or a mythical "best sailor in the world," and sail the race as if you were he or she. What would your attitude be? Where would you start? How would you sail the first beat? etc.

Many of these tricks are variations on a similar theme. According to Peter Isler, who sailed with Dennis Conner aboard SORC-winner *Retaliation*, one of the keys to Conner's success is his ability to set a positive mood that makes every crew member feel, "We're the best." If you don't have this kind of confidence (at least to begin with), make an effort to avoid getting psyched out. In the 1980 Mallory, for example, I sailed against Dave Ullman for the first time and was a bit over-awed in the beginning. But I kept telling

myself that we were all in the same boats, dealing with the same variables, and that a reputation wouldn't help one bit out there on the course. He still beat us, but only by a quarter point.

Of course, these mental exercises are not meant as substitutes for solid preparation and practice (and they need to be modified a bit for the occasional problem of overconfidence), but they can be very helpful in overcoming psychological blocks that otherwise might keep you from realizing your potential.

Dealing With Feelings

A second group of psychological influences includes the undesirable emotions that surface on the race course. How many times have you felt nervous before the start of a big race, angry at yourself (or at others on your boat) when things didn't go right, discouraged when you got behind, or frustrated when you seemed to have no luck at all? These are all real feelings that are normal to have, especially when a race or regatta means a lot (for whatever reason). But if they are left unacknowledged or unresolved, they will almost certainly interfere with racing performance and ruin a good time.

The main thing to remember about dealing with feelings while racing is that they must not be allowed to influence tactical decision-making, which should always be based on rational thinking about the best thing to do. A case can be made for following one's intuition, but there's a difference between going left because you have a strong sense that the wind is going to back, and banging the left corner because you're mad that someone pinched you off while you were trying to get to the favored right side. Every race moment is unique and therefore requires flexible and creative thinking that is free from impulse, reaction or habit. If you *always* respond the same way (always start at the same end, always go high, or low, on the reaches, etc.) regardless of the circumstances, then you are probably stuck in a rut instead of making a fresh appraisal of each particular situation.

It's not always easy to keep a level head when emotions are trying to take over. And it's not as if you can stop in the middle of a race and work things out. The best solution is to do whatever possible ahead of time to prevent the feelings from coming up while racing, and to find some quick ways to deal with emotions on the water. Before you go out, keep in mind all that you will be getting out of the experience. This way, if one of the benefits (e.g. the "thrill of victory") somehow eludes your grasp, you won't be so disappointed. Another way to absorb potentially ego-shattering blows is to make sure that you're in a good mood before leaving the dock. Some sailors get psyched up by physical activity such as running, or relax by listening to music. At last year's team race championship, we passed around the headphones to a Walkman cassette player while waiting on the dock between races. (We felt great until the Walkman accidentally got knocked into the water and sank.)

On the water there are several things you can do to release tension caused by unwanted feelings.

- **Use teamwork.** Figure out ways for your crew to work together to keep each other psyched. A good sense of humor and a contagious never-say-die attitude can do wonders with a frustrated or discouraged skipper or crew. Arrange ahead of time to make sure that each other's thinking jobs get covered whenever someone is temporarily "under the influence" of distracting feelings.

- *Redirect anger.* Aim it away from people and toward things. Getting mad at yourself or your crew will only compound the problems you already have and make everyone feel bad. If you need to vent steam, yell at the wind or waves or something ridiculously innocent. Or give a quick, non-destructive stomp on the floorboards or pound a fist on the deck; sometimes this will feel just satisfying enough to get your mind right back in the race. If you're the one being yelled at, try to view it as the yeller's problem, not yours. Continue doing your best, and pretend that it's someone else who's being yelled at. It would also probably be a good idea to gently discuss the issue after racing.

- *Change perspective.* When you get behind and you're feeling down, look for a different, upbeat view of your situation. Think of your dilemma as a great learning opportunity, and resolve that you'll never let it happen again. Or pretend that you were suddenly dropped out of the sky into the position you're in, with instructions to sail the best come-from-behind race you possibly can. Or, if you're not feeling so smart, say to yourself something like, "Gee, even someone like me can make a stupid mistake like this." (And remember times when your class champion was at the back of the pack.) In general, always accept where you are as a given, forget how you got there, and start again.

Sometimes feelings arise because of the competitive nature of the sport. Even though most of us enjoy the challenge of competition and strive to improve our performance, the pressure to do well often takes away some of the fun. There are at least a couple of good ways to handle this:

- *Do your "best."* For me, the most constructive criterion of success is whether or not I feel like I've done my best. Sometimes this means winning, sometimes it doesn't. At a Laser nationals (where many of the competitors are in better shape than me and have practiced more), I don't have a huge chance of coming in first, so I try to sail as fast and smartly as

possible, enjoy playing the waves, learn something, and minimize my mistakes. If I can do this then I feel great. There is nothing more discouraging than to have a goal (e.g. to win) that may be impossible to attain. Of course, I always try to elevate what is the best I can do.

The Broader Picture

What's particularly intriguing about the sport of sailing is that it's enjoyable both for its intricate connection with the rest of our lives, and because it is also very separate. It's been apparent throughout this article that most of the techniques for making oneself a better sailor have universal applications. Setting goals, overcoming a challenge, learning effectively and dealing with feelings will help not only on the race course, but in our jobs, personal relationships and other activities as well. Likewise, what we discover about our learning attitudes and emotions outside of sailing can help us improve our racing.

At the same time, racing sailboats is fun simply for its own sake. It's a way to relax, an entertaining game, and a chance to get away from our problems. If one gets too analytical about the sport and sees it only as a means to an end (fame, fortune or *any* goal), then a lot of energy is spent analyzing the past or worrying about the future, and enjoyment of the present is lost.

No one can prescribe how you should or shouldn't approach the sport and balance these elements — that's ultimately up to you. What's important to remember is that there is a wide repertoire of creative mental tools available for achieving any goals. Discovering which ones work for you is an experimental process that can be as enjoyable and challenging as the racing game itself. And once you get in the groove, it's possible to achieve almost anything you wish — it's just a case of mind over matter.



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How To Right A Turtled Lightning

By Bob Mathers
Capsize Specialist

Having capsized more than anyone else in our fleet of over 60 Lightnings, I have finally figured out how to unturtle a turtled Lightning. To accomplish this task you will need a rescue boat with a motor, 50 feet of line, and a 3 to 5 pound weight or an anchor. See numbered diagrams to help explain instructions.

1. Tie a loop or bowline around the backstay, tie the anchor or weight to the loop
2. Allow the loop and anchor to slide down the backstay

3. Move the rescue boat out about 40 feet from the side of the Lightning and slowly pull the mast toward you as you back up.
4. As the mast reaches about half way up, stop backing up, but continue to lift the mast by pulling on the line
5. As the mast comes out of the water, hold it up while one of the crew releases the halyards and lowers the sails. The boat can now be fully righted.

