

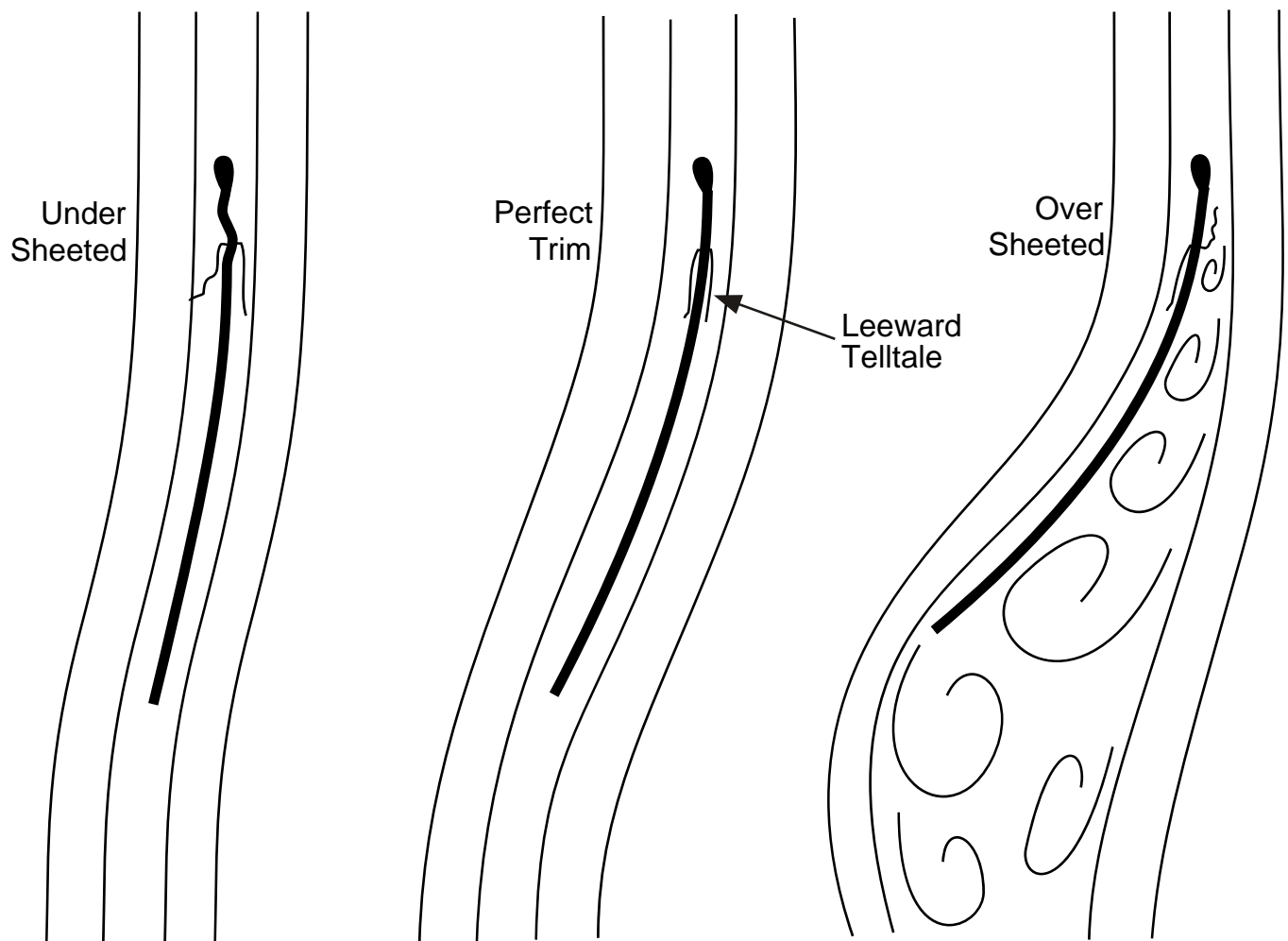
Sail Trim

Sail trim first requires that you use the main/jib sheet and traveler controls to adjusting the shape and position of the sails with respect to the wind. Secondly that you steer your boat so that the leading edge of the sails smoothly cut the wind while the rest of the sail gently bends the wind.

The left diagram, *under sheeted*, shows a sail that is soft just behind the leading edge or slightly luffing. This sail will generate very little power. To correct this situation, either bring in the trailing edge of the sail by sheeting in, or turn the boat off the wind slightly to fill the sail.

The center diagram, *perfect trim*, shows a sail that is smoothly cutting the wind and bending it to generate maximum power in the sail. Note that the tell-tails are smoothly flowing back on both sides of the of the sail. The most important tell-tails are the leeward tell-tails, usually the ones on the other side of the sail from the skipper. Keep these tell-tails flowing back at all times, the windward tell-tails may act up a little and in higher winds they will fly back and up at about a 45° angle.

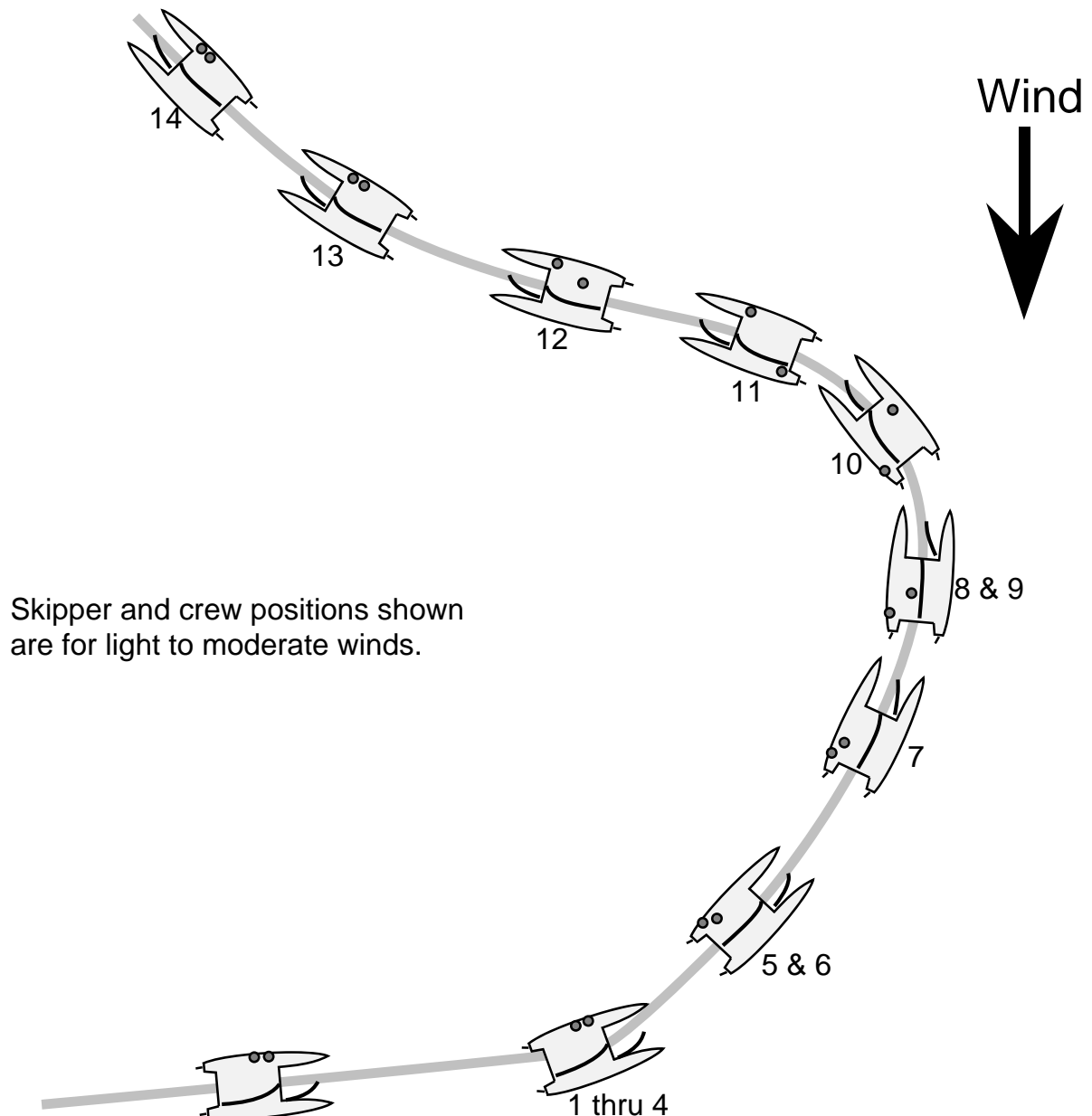
The right diagram, *over sheeted*, shows a sail which is trying to bend the air flow too much, the air flow breaks away from the sail on the leeward side and the air becomes turbulent causing the leeward tell-tails to dance forward and back. To correct this problem, either sheet out to reduce the bend of the sail, or turn the boat more into the wind allowing the air to better flow along the leeward side of the sail.



Anatomy of a Tack

Rick White's Roll Tack, Illustrated by Bob Mimlitch

1. If not close hauled, come up to a close hauled course (traveler in and main sheeted hard).
2. Insure your speed is up prior to initiating a tack. Don't pinch.
3. Insure you are clear of traffic and will remain clear during your tack.
4. Alert the crew and await their response indicating that they are Ready to tack.
5. Push the tiller smoothly and move to the rear windward corner.
6. Crew moves to the rear, uncleats and holds the jib while removing slack from the lazy sheet.
7. As the jib starts to luff, feed out sheet and fly the jib across keeping it flowing as it goes.
8. At the same time the crew takes the lazy sheet and moves across and forward sheeting the jib.
9. As the boat comes head to wind the skipper releases 2 feet of main sheet (more for unirigs).
10. Continue increasing the rudder angle and turn beyond the desired new course.
11. Straighten the rudders, pass the tiller across, move across and forward taking excess sheet.
12. Foot to accelerate and trim the sails.
13. Shift gears (with sail shape) as you accelerate and come up to optimum course.
14. Balance the boat and take care of general housekeeping.

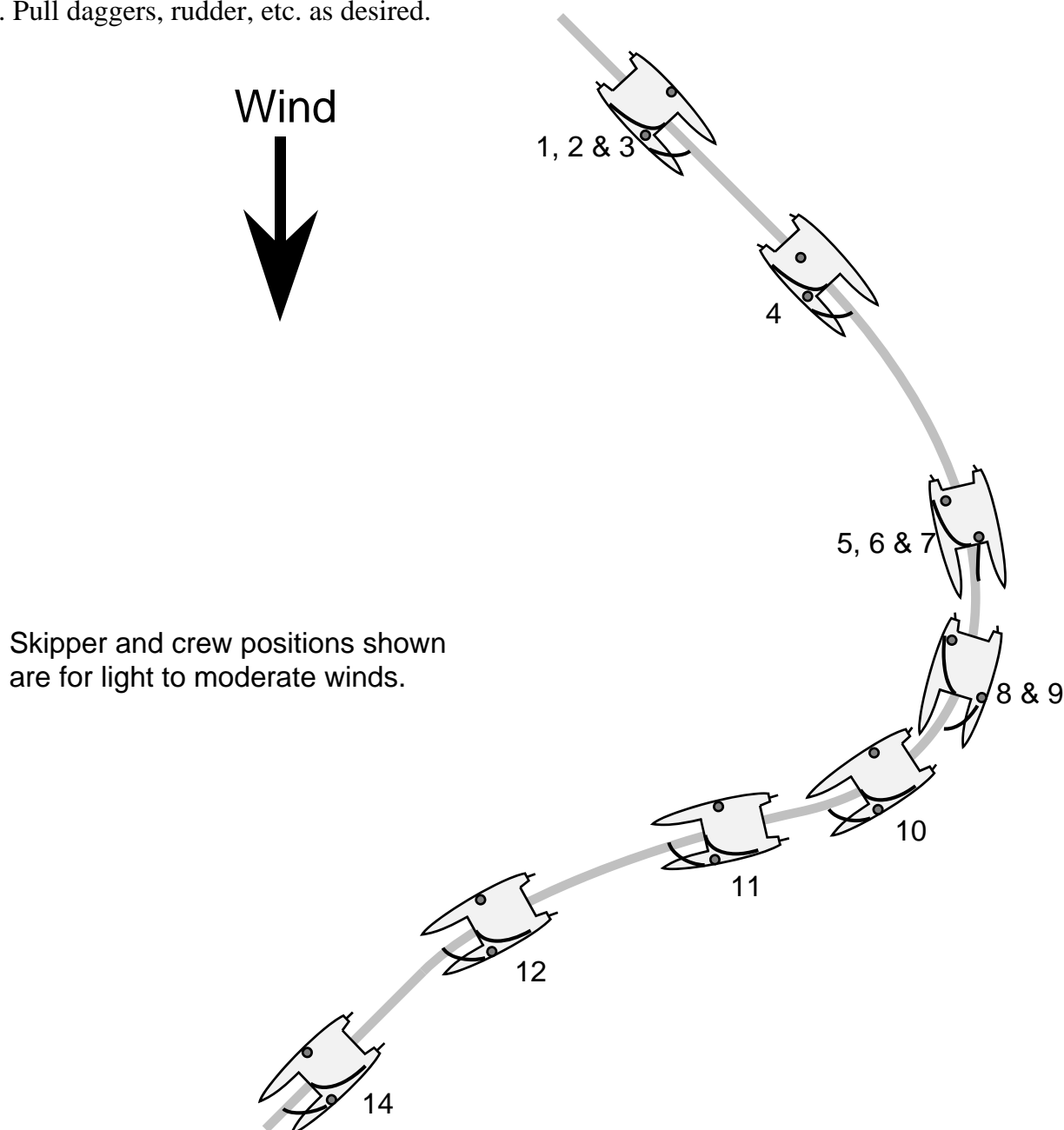


Skipper and crew positions shown
are for light to moderate winds.

Anatomy of a Gybe

by Bob Mimlitch

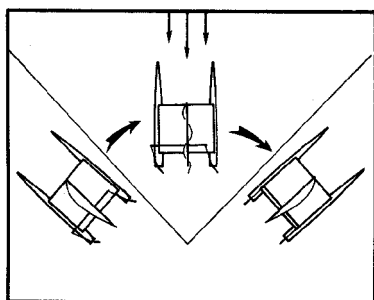
1. Insure your speed is up prior to initiating a gybe.
2. Insure you are and will remain clear of traffic during the gybe.
3. Alert the crew and insure that you get a response.
4. Move in and pull the tiller smoothly.
5. Skipper moves to the opposite side and grabs the tiller outside the main sheet.
6. Crew moves to the opposite side and catches jib on opposite side by sheet or clew.
7. The skipper grabs the main sheets below the boom and pulls against the sail.
8. The crew trims the jib by pulling on the leech which give the boat power.
9. As the pressure on the main sail gets light, alert the crew and swing the main sail across.
10. Continue the turn until above the optimum course.
11. Trim and match your sails.
12. Shift gears (with sail shape) as you accelerate and come down to optimum course.
13. Balance the boat per conditions.
14. Pull daggers, rudder, etc. as desired.



Tacking and Gybing by Hobie Cat USA

Turning into the Wind

Turning into the wind, or coming about, is the most common sailing maneuver: When coming about, the object is to pass the bows of the boat through the eye of wind and over to the other side. Let's refer to the clock example. Suppose you are sailing to the ten o'clock position, but wish to change course and sail to the two o'clock spot. You would first move the tiller toward the sail to move the bows through the wind coming from noon. Then you would straighten the tiller once the boat is heading on the desired course.



Here's the procedure step by step.

1. Before coming about, ask yourself what you are trying to achieve by doing so. Where do you want the boat to be when you have completed your turn? It's a good idea to pick a spot on land and aim the boat toward that spot for reference. Remember you must turn the boat at least 90 degrees or you may stall in the wind (put yourself in irons).

2. Push the tiller smoothly but firmly about half the distance toward the sail while letting the mainsheet out about one foot.

3. As the boom swings over duck and move to the other side, opposite the new sail position.

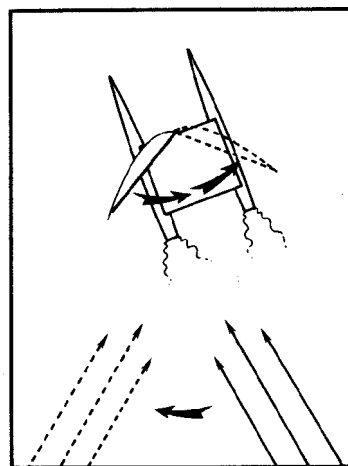
4. Exchange the mainsheet and tiller extension in your hands. The mainsheet should always be in your forward hand, the tiller extension should always be in your aft hand.

5. Straighten the tiller after you have completed your turn and the boat is moving toward your reference point.

Notes: Move the tiller firmly but avoid sudden, jerky moves. Try to carve a smooth arc in the water. Forcing the tiller all the way over will put on the brakes and put the boat in irons (or stall it). Don't let go of the tiller or the boat will straighten out before you want it to. When tacking a catamaran with a jib sail, keep the jib sheet cleated until the bows are fully through the eye of the wind. Then release the jib sheet and pull it in on the other side. This is called "backwinding."

Turning Away From the Wind

Turning away from the wind, or gybing (sometimes spelled jibing), is changing course while sailing downwind. Just think of gybing as the opposite of coming about. When coming about bows cross the wind. The sterns cross the wind when gybing. When gybing in light air you will probably have to give the boom some help in swinging across to the other side of the boat.



To gybe, just pull the tiller extension toward your body with the same smooth motion as when coming about, grab the mainsheet just below the boom, and, when the sterns cross the wind, warn the crew and swing the boom across. As soon as the sail begins to fill with wind, move to the other side of the boat and off you go.

Gybing in heavy air can be more difficult since everything will have to be speeded up correspondingly. In heavy air, the boom can snap across with a lot of force. For this reason, it's best to come about in heavier winds until you have had a chance to practice gybing to the point where you feel confident that you can handle heavy air with dexterity. You should be especially aware of wind shifts in heavy air. If the wind should suddenly change direction as it blows across the stern of the boat, it could grab the sail and swing it far out to the other side very quickly. This is an unplanned gybe and could damage the boat if the wind is strong enough, or it could cause injury to unaware crewmembers.

LAUNCHING OFF A WEATHER SHORE (wind blowing from the shore onto the water)

1. In most situations and conditions you will be able to simply point the boat in the desired direction and sail off. When this is not feasible, try the following.
2. Rudders kicked up, all sheets uncleated and slack, nothing dragging in the water.
3. Boat pointed into the wind.
4. Skipper and crew, one on each bow, push off from shore. The depressed bows will allow the boat to track straight backwards as the wind pushes it away from the shore. A foot gently dragging in the water from the appropriate bow can steer the boat if you get slightly off course.
5. The jib can be held out perpendicular to the wind to push you backward faster.
6. When the depth of the water allows you to lower the rudders (carefully) without touching the bottom, turn the rudders to point the bows in the desired direction and sail away. If you go into irons, refer to Getting Out Of Irons.

LAUNCHING OFF A LEE SHORE (wind blowing from the water onto the shore)

1. Determine which tack (port or starboard) will take you more directly off the shore.
2. Point the boat in the direction of that tack and push it off the shore with the jib sheeted in and the rudders dragging behind you.
3. With the traveler out a foot or two, sheet the main in slowly until the boat maintains a constant direction approximately 10 to 15 degrees below what would be your close hauled course.

You are steering (balancing) the boat with the sails.

Note that with the rudders not being locked down and very little or no dagger board down, you will have horrendous weather helm. If you over sheet the main you will weather vane into irons. The importance of a trimmed jib cannot be overemphasized as it helps to counteract the weather helm.

4. Lower your rudders as the depth allows, weather rudder first, until they are both locked down. The rudders will steer more effectively the more they are lowered. You will also be able to sheet in the main sail more without going into irons as the rudders are lowered.
5. Lower your dagger boards (carefully) as the depth allows, weather board first.
6. If you are launching off of a beach with surf, see LAUNCHING THROUGH THE SURF, below.

TACKING

• Skipper

1. Look over your rear shoulder and pick a geographical point to indicate your new course.
2. Push the tiller. Steer progressively into the tack. Do not jam the tiller over too quickly; this will act as a brake, slow you too much, and blow your tack. Maintain a constant pressure on the tiller through step 4.
3. Ease the main sheet at head to wind. The main sheet blocks should come apart 1 to 2 feet, or more. In light air, pull the boom toward you while staying on the leeward side until almost on your new course. The light air will not have enough energy to force your main sheet blocks apart, and the main sail will weather vane you into irons.
4. Change tiller hands while switching sides. Reach around and behind the main sheet blocks to grasp the tiller with your new hand, pivoting on your knees.
5. Once pointed onto your new course, straighten the rudders and sheet in the jib, then the main sail. If the main sail is sheeted in before the jib, the boat may weather vane into irons.

• Crew (crew actions and where they fit into the sequence)

2. Move to the other side of boat head first, taking the new jib sheet with you.
5. When pointed onto your new course, tack the jib by releasing the old sheet and pulling in the new sheet

MAN OVERBOARD (MOB) (For Beach Catamarans)

1. Stop the boat, immediately.
 2. Perform the Dime Tack.
 3. Assume the Safety Position, and the boat will drift toward the sailor in the water.
- Alterations of the direction of your "drift" can be made by sailing to weather or by sailing backwards.



CAPSIZE

1. Uncleat the jib and main sheets.
2. Point the bows into the wind (not the mast). By standing on and submerging the bow you can get the hulls to rotate around into the wind. Hanging on to the righting line during this process will help your balance, and it will help to prevent the boat from turtling
3. Stand on the lower hull, grab the righting line, and lean back over the water to right the boat. This must be done quickly or the hulls will rotate around pointing the mast into the wind, and the boat will be harder to right. If you have difficulty gripping the righting line when applying a lot of leverage, try wrapping it around the hook of your trapeze harness.
4. Grab the dolphin striker or the lower hull as the boat is righted to prevent it from continuing on and capsizing to the other side.

Warning: Be sure to position yourself so that the hull does not land on top of you when it is righted.

TURTLED (Boat Upside-Down)

1. Do not allow your boat to turtle. It will be much more difficult to right. Pulling on the righting line (step #3 under Capsize) will help to prevent your boat from being turtled. Do this as soon as possible.
2. Once your boat is turtled, move to the leeward stern and pull on the righting line.
The combination of your weight, the pull on the righting line, the wave action, and the wind will hopefully be enough to lift your weather bow higher and higher out of the water.
3. Once the weather bow is well out of the water, move to the center of the hull while maintaining a constant pull on the righting line. The boat will settle on it's side. Continue pulling on the righting line until the mast is at the surface of the water.
4. Right the boat by following the procedure under Capsize.
5. If you are unable to right your turtled boat, signal for help. In calm weather conditions, it may be impossible for you to right a turtled boat without outside assistance.

LAUNCHING THROUGH THE SURF

1. This is an advanced maneuver depending on the wave, water, current (rip), and wind conditions. It is included here as a future reference and should not be attempted until you become a proficient and experienced sailor.
2. With light winds and heavy surf it will probably be impossible to get out through the surf. You will need a minimum amount of power to punch through the waves. The conditions will dictate what you are able to do, and experience and good judgment are invaluable. When in doubt do not attempt to launch. What follows are tips and suggestions.
3. Waves come in sets. You want to time your departure from the beach so that you will sail through the worst section of surf during the lull between these sets.
4. The rudders should be dragging behind you as you leave the beach. They should not be locked down until you are out of the surf line, which is relatively shallow water. When a wave hits your boat it will drive the bows up, the stern down, and the boat backwards onto its rudders. A large wave can drive your rudders into the bottom in five feet of water and snap them off.
5. Keep the boat moving forward as fast as possible under the conditions - rudders dragging behind, dagger boards down only a foot or less, disturbed water, rip tide.... You will obviously want to get past the surf line as quickly as possible.

Note: It is extremely important to trim the jib throughout the launching. A trimmed jib will help to counteract weather helm and the tendency to round up into irons. In simple terms, it pushes the bow down.

6. Steer the bows up into the waves but off of perpendicular. You want the wave to knock the bow down onto a reach so that you can accelerate forward and tackle the next wave with speed, not to push the bow up into irons.
7. Keep your body weight forward on the boat when going through the surf. Standing up is also a good idea so that the white water coming over the trampoline hits only your legs and not your body, which could push you to the back of the boat and thus promote capsize. Throw your weight forward against the mast or front crossbar or pull on the shrouds to drive (ooch) the boat forward as a wave hits your bow. This also helps to keep the bow down and the stern from being driven under too far which could cause the boat to flip over backwards.
8. Never let a wave hit you broadside. It won't take much to flip the boat and destroy the mast (or the entire boat) in the surf. And do not let smaller surf lull you into over confidence. Smaller surf can ruin your day, not to mention your boat!
9. When you find yourself in a bad position, turn the boat the best you can and head back to the beach. Your course must be perpendicular to the wave, not to the beach, or you may be broached. Keep your weight as far back as possible when a wave catches your stern to prevent the boat from pitchpoling in the surf. He who turns and runs today lives to sail another day!