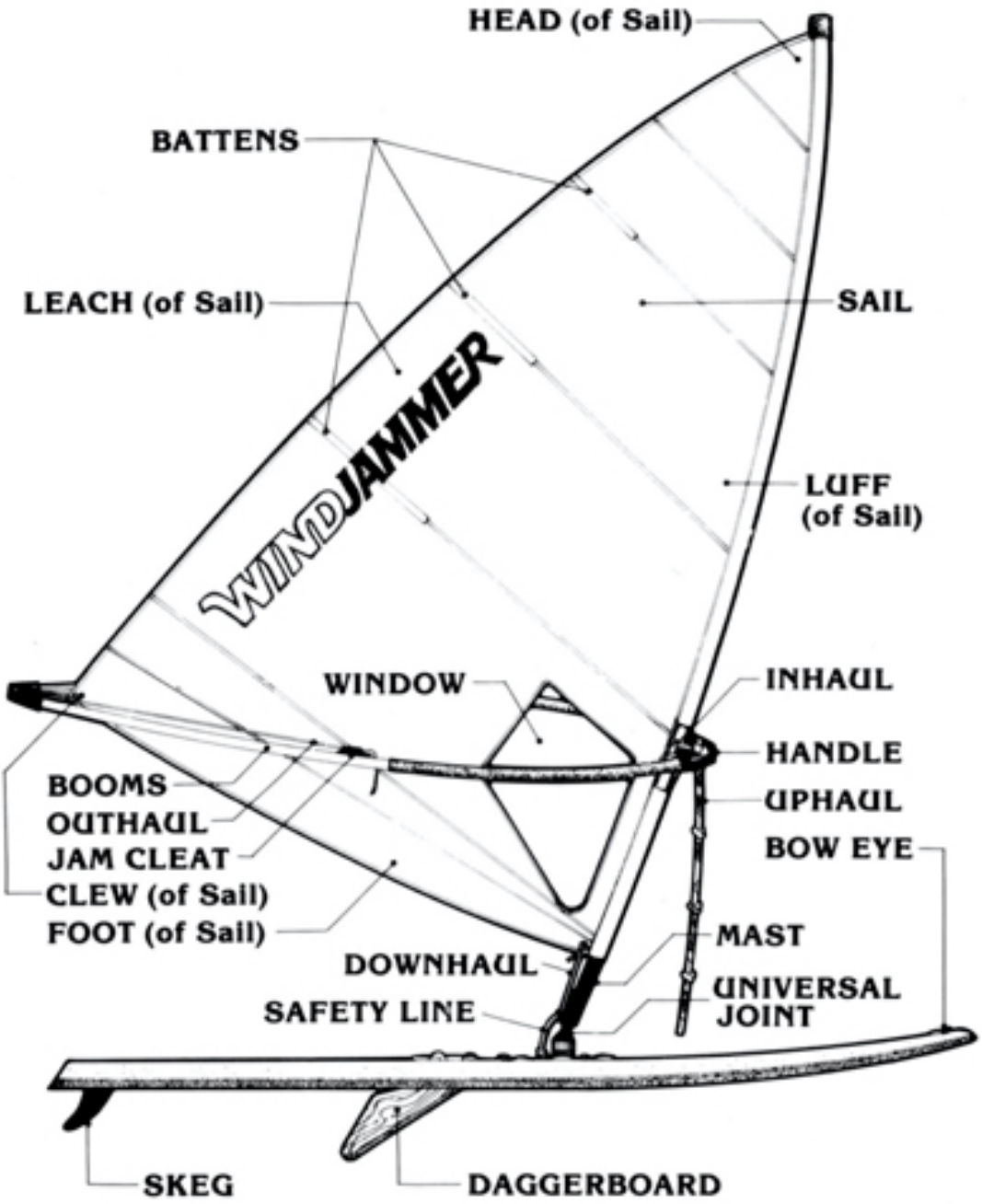
Windsurfing guide

Choosing a Location

When first learning to sail, a good location is essential. You should look for a small lake or lagoon about 100 * 100 meters. Since it is easiest at first to sail on a reach or across the wind, look for a place where the wind is blowing parallel to the shore - that way, if you can sail out, you can also sail back in.

Do not attempt to learn to sail in the open ocean. Sailing out through the surf is for experienced sailors only.

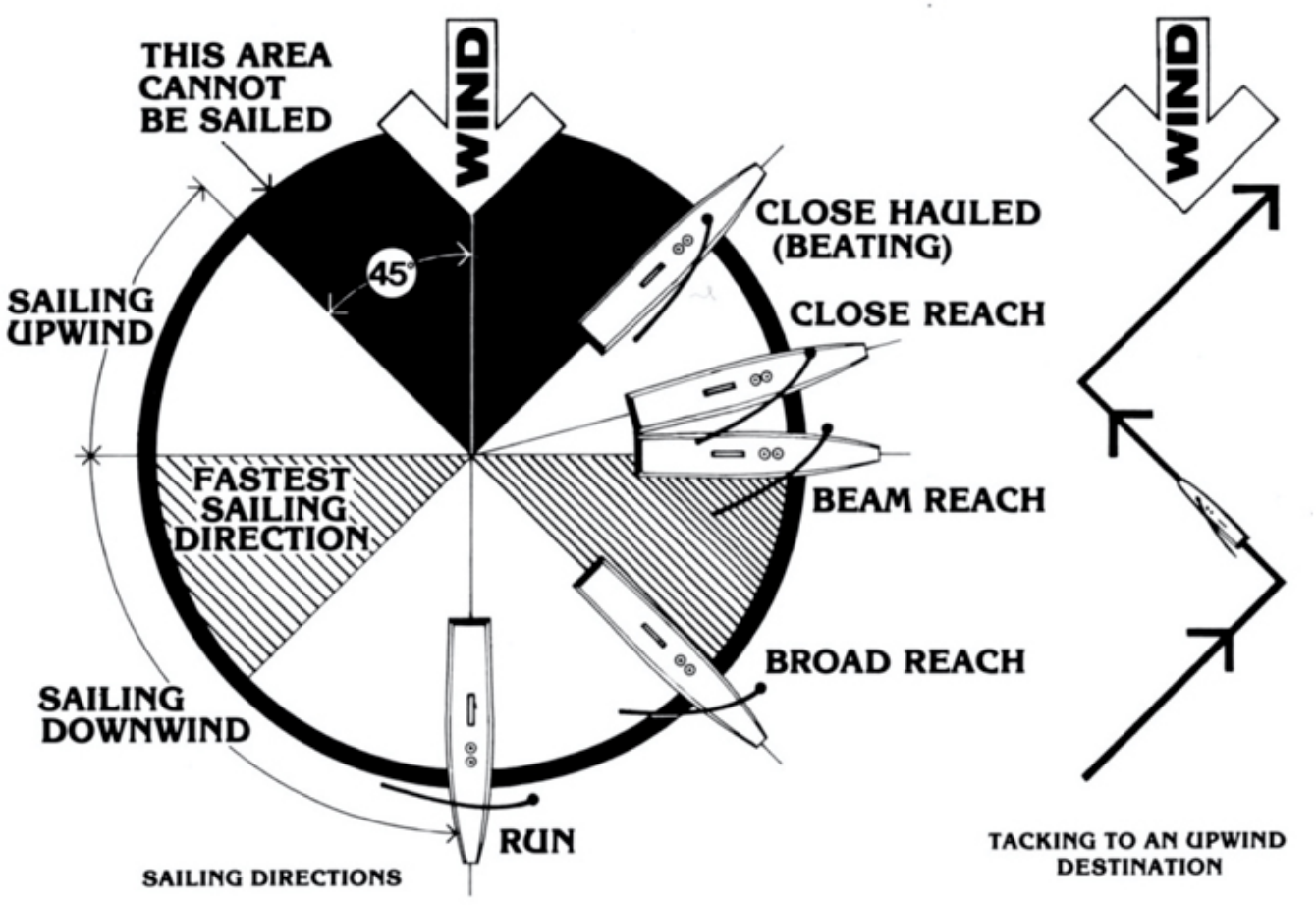


Wind Strength and Direction

If the wind is blowing stronger than 10 miles per hour, wait for another time to learn. Winds as strong as that are more than a beginner can handle and can make the learning experience a very frustrating one. As you get better, you will be able to handle more and more wind and will seek out windy conditions for the thrilling ride they provide, but when just starting out, too much wind will keep pulling you over.

Ideally, the wind direction should be parallel to the shore. If you cannot sail in a location with those conditions, be very careful not to allow yourself to blow too far from shore. If the wind is blowing directly offshore, you can blow a long way in a hurry while learning. To counter this, you can use a tether line attached to a dock or the shore (or a small anchor) to pull yourself back (~ 30-50 yards of line). Tie the line to your mast base or daggerboard handle.

As a last resort, you should be familiar enough with your rig to be able to disassemble it in the water, roll up the sail on the mast, place the rig between your legs on the board and paddle it back. Most beginners experience paddling their boards back to shore.



Practicing on Land

Before you try to haul the sail up for the first time in the water, get the feel of the wind's pull on your rig by assembling the mast, booms, and sail on shore. Use MSC *trenajor/trainer*. Alternatively, place the mast base in the sand or on the grass, haul up the sail and allow it to "luff" or blow downwind like a weathervane. Imagine the direction the board would be pointing. Place your feet on the boards' centerline, one on either side of the mast

(about 12" to 18" apart), and haul in the sail. You can get a very good feel for what the pull on the sail will be like in the water without the additional problems of balance, waves, etc. Never damage the fin/skeg (at the stern)

Preparing the Board's Surface

The deck skin of your windsurf board offers very good traction when properly conditioned.

However, when it is new, the polyethylene deck may be too slippery for your liking.

The best way to reduce the slipperiness is to scoop up a handful of wet beach sand and rub it on the deck with your hands until it no longer feels slippery.

If there is no sand where you sail, you can simply scuff up the deck with your bare feet.

Don't stand on the board while it is on the ground if the fin is in place - it could break off.

The deck should not look rough; it should just not feel slippery. The longer your board is used, the better the deck traction.

As with any board, don't lay on it wearing suntan oil, or it will become very slick when you stand up.

Note: Always clean the mast step holes to remove all sand before inserting the mast base.

Going Sailing

Assemble the board and rig as described in the assembly manual included with your windsurfing kit.

Make sure there is no sand in the mast step hole before you insert the mast base.

Insert the mast base, lock it in place, and walk the entire rig out to waist-deep water. Arrange the board so that it is pointing in the direction you wish to sail.

Your back should be to the wind, and the sail should be laying in the water downwind and at a 90-degree angle to the board.

Kneel on the board with one knee on either side of the mast facing the sail and retrieve the uphaul line.

Note: It's easier to rotate the nose of the board around to get the line than it is to try and crawl out the mast to find it.

Holding the line, stand up with one foot on either side of the mast base.

Your feet should be on the board's centerline about 12 inches apart and with the mast base right in the middle.

Hauling Up the Sail

With your back to the wind, lean back slightly and pull in on the uphaul line.

Keep your back straight and use your leg muscles to lift the sail out of the water.

It will be heavy at first, but as you lift the sail and the water starts to run off, it will come up easier and easier.

Use a hand over hand motion cm the uphaul line and pull the sail up until you can take hold of the handle at the front of the booms.

Pull in until the back of the booms are out of the water and allow the sail to blow downwind like a weathervane.

Starting to Sail

Reach your mast hand - the hand closest to the nose of the board - over the hand holding onto the boom handle and grasp the boom 6" to 8" in the back of the mast. Lean the mast toward the nose of the board on the board's centerline while you release the hand on the front of the boom. Move that hand your shoulder's width back to grasp the boom - this is your "sheet hand."

Pull in slightly with the sheet hod while leaning the mast toward the nose of the board.

Slide your rear foot back about 12" more. This should all be done quickly and in one smooth move.

You should now sail off in a straight line. At this point, what usually happens to beginners is that the board beg, to turn upwind, the sail luffs, and they fall over backward.

The reason is the mast is not leaned far enough toward the nose of the board, and the board turns into the wind.

Remember to lean the mast way forward. If you start to turn away from the wind, just lean it back a bit to resume a straight course.

Once sailing, don't pull the sail in too far. If you start sailing sideways, you've got it pulled in too far.

The wind must be released from the rear of the sail in order for you to move forward.

If a gust of wind begins to pull you off balance, sheet out quickly with your rear hand to dump some wind out of the sail.

As soon as you recover, pull back in with your sheet hand and resume your course.

If you get pulled forward too far, don't let go with your mast hand.

Always let go with your sheet hand first. As soon as you release your sheet hand, the sail will stop trying to pull you over.

If you release the mast hand first, the sail will continue to pull, and you will have to drop it in the water and start from scratch.

Steering

Turning the board is accomplished simply by leaning the mast on the board's centerline toward the nose to turn away from the wind (head off) or toward the tail to turn into the wind (head up).

What you are doing when you tilt the mast forward or back is moving the board's "center of effort" ahead of or behind its "center of lateral resistance" - the daggerboard. When the mast is forward, the center of effort is in front of the daggerboard, and the board heads off.

When the center of effort moves back, the tail of the board comes around, and the board heads into the wind.

Turning while running downwind is accomplished by leaning the mast to the left or right, but you are still doing the same thing. The moveable center of effort is the key to the free sail system, and the reason sailboards don't need a rudder to steer.

That's all there is to it. It may sound complicated at first, but it's really not - just keep trying, you'll get it.

Proper Body Position for Sailing

When starting out, try to keep your front arm bent at the elbow at all times. Adjust the pull of the sail by letting out or pulling in with your sheet (rear) hand.

Keep your back straight and shoulders back - don't bend at the waist and let your rear hang out. Keep the boom in fairly close to your chest so that the mast stays on the board's centerline - don't lean it away from you.

Keep your front leg fairly straight and pointed toward the front of the board. Through it, you transfer the sail's force to drive the board. Your rear leg should be slightly bent to help you adjust your balance.

In stronger winds, you will move your feet out closer to the windward rail and lean back more to counter the increased pull on the sail.

Tacking or Coming About

Since it is impossible to sail directly into the wind, to travel upwind, you must sail on a series of tacks close-hauled, making a zig-zag course until you reach your destination.

Coming about is turning to the new upwind tack by bringing the nose of the board across the wind.

To come about when sailing close-hauled, first, lean the mast way back until the board heads up into the wind.

Drop the back end of the boom into the water to slow you down and assist in pivoting the board.

Allow the sail to luff and take hold of the uphaul line or the boom handle.

Step around in front of the mast as the board heads up using small steps and staying close to the mast base.

Lean the mast to the side of the board toward which you wish to turn, and the nose of the board will come around in that direction.

This is called a "rope turn." As the board comes around to the new direction, keep your back to the wind by continuing to step around the mast base.

When the board is pointing the direction, you now wish to sail, tip the mast forward, sheet in as before, and sail off on the new course.

Jibing

If you are sailing downwind on a broad reach and wish to turn so that the wind is coming from the other side, first lean the mast toward the nose of the board so that you begin to sail straight downwind.

As the board comes around, move your feet until you are standing with one foot on either side of the daggerboard well, centered on the board.

Release your sheet hand from the boom, and holding onto the uphaul line, let the sail swing around over the nose of the board so you can grab the boom with your other hand on the opposite side.

Step forward with your new forward foot slightly and sheet in to set sail in the new direction.

Running

From a broad reach, begin sailing downwind by tilting the mast toward the nose of the board. As it begins to head downwind, step around so that both feet are placed equally on opposite sides of the daggerboard, well facing forward.

Bring the sail around so that it is approximately perpendicular to the board, with the mast leaning to the ski windward side. Look through the sail window and steer the board by leaning the boom and mast to left or right instead of forward or back.

Leaning it to the right makes the board turn left and vice versa. Balance is difficult in this position, so you may want to assume a slightly lower stance with knees bent more.

Breaking Down the Rig for Paddling

Should you ever be completely becalmed, break a piece of equipment, or find yourself in more wind than you can handle, you can partially **disassemble your rig in the water** and paddle back to shore.

First, drop the sail and release the mast base from the mast step. Pull the mast across the board so you can reach the outhaul line on either side of the booms. Release the outhaul line from the cleat and let it all the way out through the grommet in the clew of the sail. Tie off the excess outhaul line.

You may then simply gather up the sail around the mast and rotate the booms up against the sail and mast, place the mast and booms down the centerline of the board, kneel on either side of the mast, and paddle.

The mast does not float, so don't completely disassemble the rig out in the water.

The daggerboard may be removed and placed on the deck to reduce drag if you wish.

Summary Tips

Safety

1. When participating in any open-water sport, it is always a good idea to wear a Coast Guard-approved life jacket.

2. Stay close to shore while learning and never boardsail alone.

3. Choose your location carefully. Avoid locations with jagged rocks, strong currents, strong offshore winds, waves, powerboats, and overhead power lines. For obvious reasons, do not sail when there is lightning in the area, even though the high winds may tempt you. Avoid sailing in the surf until you are experienced enough to handle it.

Sailing

1. Pulling in the sail without heading upwind is hard for most beginners. Remember, you have to lean the mast toward the nose of the board to get going. Once sailing, ease the mast back to hold a straight course.

2. If the wind pulls too hard, hold on with the mast hand and release the sheet hand. Always release the sheet hand first to dump wind.

3. Learn the right-of-way rules for sailcraft and other boats.

4. Check the local regulations where you sail. Sailing may be restricted to certain hours or designated areas for your safety. It's up to you to inquire.

Equipment

1. The deck of a new board may need to be roughed up with a handful of sand to make it less slick. Go easy; just rub until it feels right, don't overdo it.

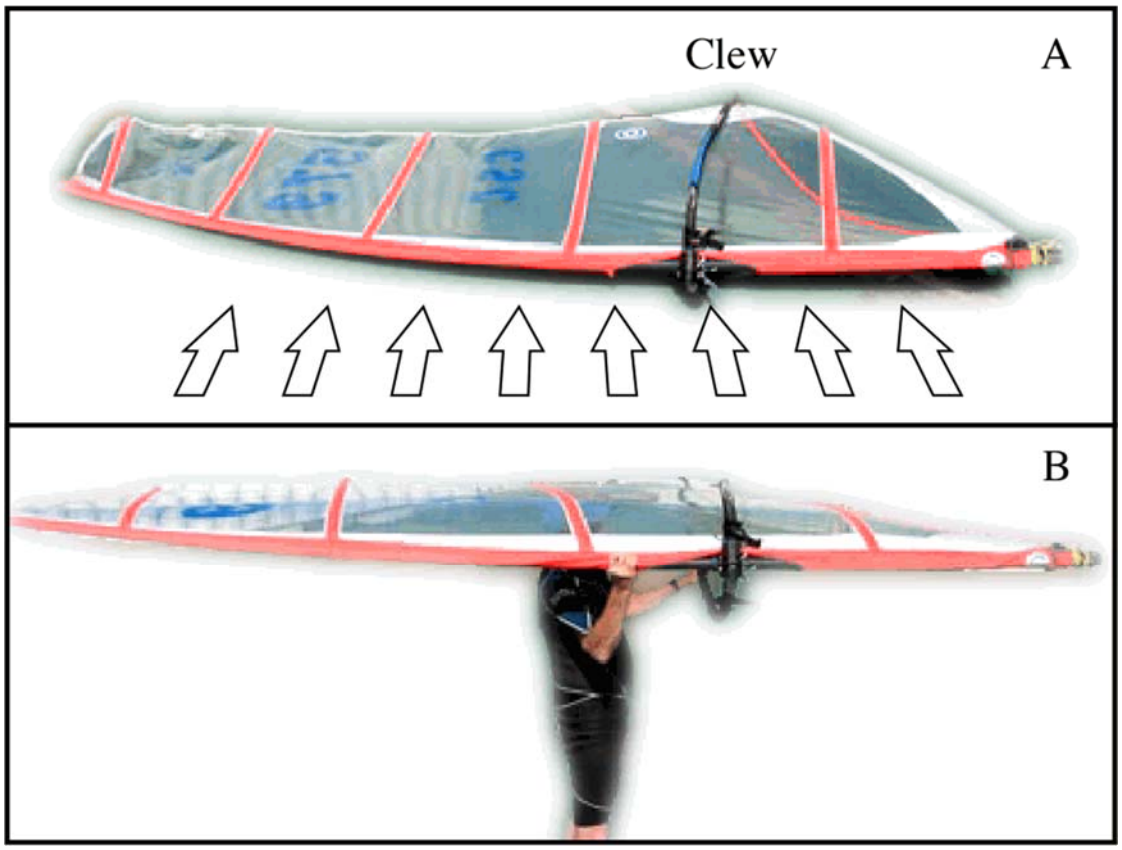
2. When sailing in salt water, always rinse off all your equipment with fresh water before putting it away. Dry your sail before rolling or folding it up for storage.

3. Clean out all sand from the mast step hole before inserting the mast base.

4. If using roof racks to transport your windsurfing kit, use the soft type if possible as they don't dent the rails of your board. If you see any tiedown strap digging into the rails, use a piece of cardboard at the tiedown point to spread the load and keep it from cutting into the board. Dents will come out slowly, but it's best not to get them in the first place. When transporting on top of a car, place the board top side down with the nose to the rear of the car.

Carrying the Rig: Getting to the water

There are a few ways to get to the water. With a large beginner board, you will probably have to carry the board and rig (sail/boom/mast) separately. Carry your board to the water before you carry your sail to the water. In a windy area, make sure you attach your sail to something (such a board, a picnic table, fence, etc.). By itself, a sail can "take-off" and become a dangerous missile!



To safely carry your rig (sail, boom, and mast), first orient the sail on the ground so that the wind is at a right angle to the sail.

Lift the sail over your head, keeping this angle. Place one hand on the mast, one on the boom. You may rest the sail on your head but don't rest your head on any clear part of the sail (vinyl or monofilament). You can move the sail back and forth a bit to find the optimal angle to the wind. As you walk to the water, keep this angle. If you turn around, your direction will change (relative to the wind), but the sail should stay in the same orientation in relation to the wind.

Get into the water in either one of the following two ways. If on sand, attach the sail to the rig on land and drag it to the water holding the fin out of the sand. Otherwise, put the sail in the water, and return to the beach to get your board. Attach the sail to the board and then walk out in the water far enough so that you can put the centerboard all of the way down.

When you progress to a smaller board, you can carry the board and sail together as shown below.

The sail and mast should be downwind of the board, with the clew of the sail away from you. In most circumstances, you can walk into the water in this position. However, if there are breaking waves, you want to reposition the board and sail so that the sail rests on the board, and they are both downwind of you. This last adjustment just before entering the water will keep you from being "sissored" between the mast and board, if a wave should hit you.

The final way to carry your board and rig (only with a small board) is to balance the entire rig and board on your held. To learn how to do this, go to the beach and look for someone with a flat spot on their head. They will help you!

A Safety Hint

You started out from the beach in San Diego with a light on shore wind and no surf. As you were out having a great time, the wind steadily built, and so did the surf. Now you have to negotiate a line of breaking waves to get back to shore.

There are two ways to get through the surf. If there is enough wind, you can usually sail through. Sail slowly just out side the surf line. When you see a break in the surf, sheet in and go for it. When you get in, you will have to hop off your board and quickly carry you rig and board to the beach before the next wave mangles it. Stand between your board and rig with the sail downwind of you, clew pointing away from you. Grab the board with one hand, and the boom with the other, and lift until the sail is out of the water.

The second way to get through the surf is probably more practical for the beginner. Swim to the tip of your mast and hold tightly to it. Go through the surf, swimming with your board and sail in *front* of you - toward the beach. When a wave comes, hold on tightly with both hands. They way you will not get crushed between the board and wave. Get out of the water as described above.

Uphauling the sail

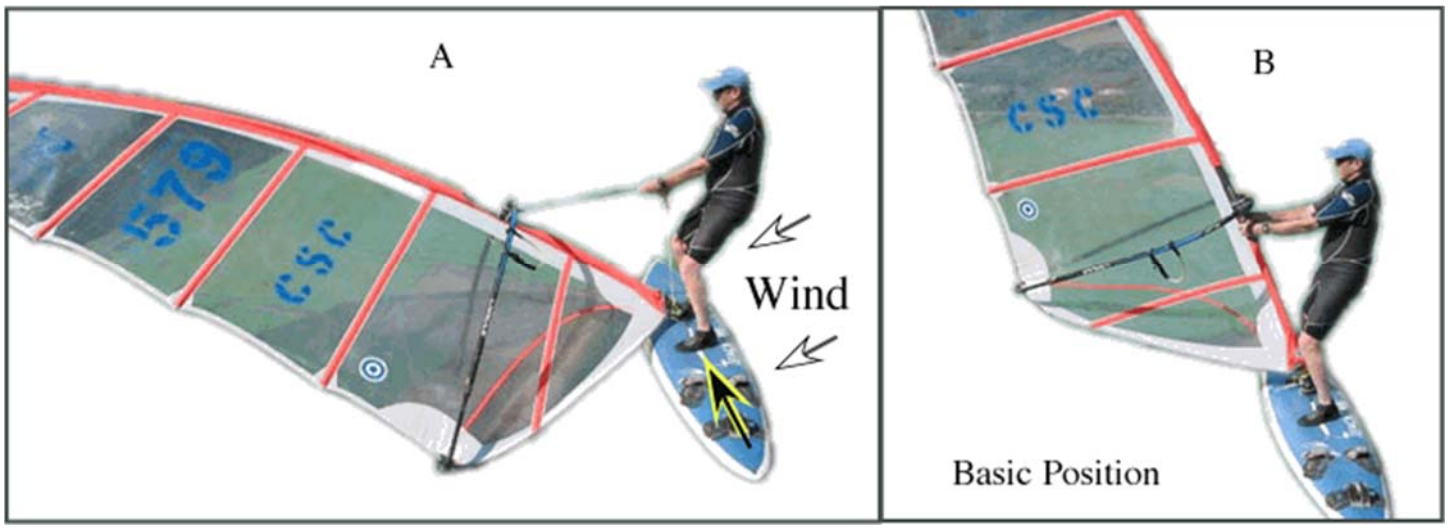
Put the centerboard in the down position so it extends below the board. Walk or paddle away from other people and obstructions so that if you fall, your mast will not hit anything hard (like a head). Begin with the board at

approximately a right angle to the wind, and the sail on the leeward side of the board (i.e., downwind of the board, see Figure A below). Crawl up on the board. Take the uphaul in your hands and stand up slowly. Your front foot should be just in front of the mast, and your back foot about shoulder width apart from your front foot. *Both feet must be on the centerline of the board* (arrow in Figure A, below), your knees slightly bent, and your weight on the balls of your feet.

Slowly, lift the sail with the uphaul until it is about a foot out of the water and wait until the water drains out of the mast sleeve. Then finish lifting the sail, all the time keeping the mast at a right angle to the board. Take your time, uphaul slowly, hand over hand on the uphaul, while keeping your arms mostly straight.

The following are the key points:
• Keep your feet on the centerline (tip to tail) of the board
• Keep the mast at a right angle to the board
• Keep your knees bent
• Keep your arms straight

Continue lifting until the sail is entirely out of the water. When you succeed in getting the sail out of the water, rest for a second before proceeding (Figure B below). You should have arms straight, sail out of water, knees slightly bent, sail at right angle to the board. This is the **basic position** it's very stable. You could read War and Peace, or do your taxes in this position.



Unfortunately, sometimes the sail falls on the windward (wrong) side of the board. Here are three different strategies for getting the sail downwind of the board (on the leeward side).

1. Swim the board around. (It is easier to move the board through the water than move the sail).
2. Muscle the boom and sail to the correct side.
3. Uphaul with the sail on the wrong (windward) side. The wind might whip the sail around to the correct side, and cause you to fall. However, if you keep your arms straight and the sail "away" from you, you might put this off. You shouldn't be afraid of this strategy because you already are wet. This method is the one we often use, falling and all.

Miscellaneous stuff: Figuring Out the Wind Direction

If you have the mast at right angles to the board, the board will always swing around to be at a right angle to the wind (beam reach). This fact is very handy. If the wind is very light and you can't tell exactly where the wind is coming from, get into the basic position and the board will swing around to a right angle to the wind (i.e., wind at your back - a beam reach).

You will almost always want to start to sail at a right angle to the wind (beam reach). However, from the basic position, if you swing the mast forward, the nose of board will head downwind. If you swing the mast backward, you will point upwind. So having the mast a 90° angle to the board will make the board 90° to the wind, and that is just right!

If you want to "park," not move forward while in the heave-to position, try putting one hand one the boom and back wind the sail very slightly.

A Safety Hint - Getting downwind

If you are **upwind** of where you want to be and for some reason have trouble sailing downwind, heave-to and just stand there (knees bent, arms straight). You will drift downwind eventually. You will also probably sail forward to some extent. When you've gone too far on one tack, head back the other way and heave-to. When the wind gets strong, many sailors find themselves upwind of where they want to be. You can use this technique to get home. Just stand there and let the wind do the job.

Startup Sequence

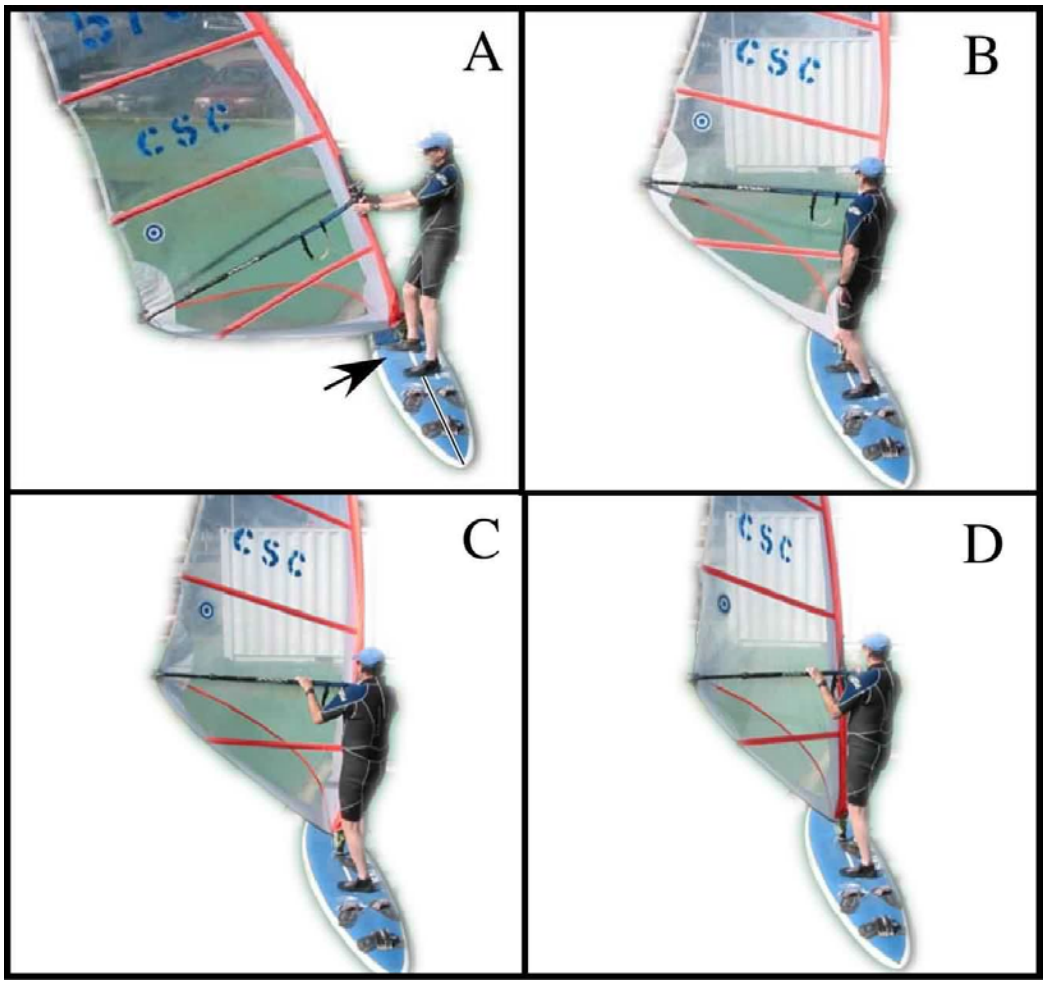
It's time to get moving. Here is how.

 Step 1. You're in the basic position. Your feet are on the centerline of the board, straddling the mast base, your knees are slightly bent, your arms are straight, and you are holding the mast with both hands below the boom.

 Step 2. First move your feet behind the mast (A below). Next, with your front hand (which is holding the mast) should move the mast and sail in front of you and across the board (B). The sail and mast should be balanced, so it will take very little effort to hold it in front of you in an upright position. Now grab the boom with first your back hand and then front hand, but keep the sail parallel to the wind (C). Finally, slowly bring in the sail with your backhand (D, “sheet-in the sail”).

 Step 3. Think of the sail as a door. With your back hand not pulling on the sail, the sail is out, parallel to the wind, and the wind passes through the door. To catch the wind, move your back hand in (D) to partly close the door and catch the wind. Congratulations, you have just gotten your first ride. You are now officially a windsurfer.. You will sail off at a beam reach. When you get to Hawaii, send me a postcard.

Resist the temptation to panic and drop the sail. If you think that the wind is too strong, gently let out with your backhand and let some wind out the door. As you feel more comfortable, pull in harder with your backhand. Congratulations, you have just gotten your first ride. You are now officially a windsurfer.

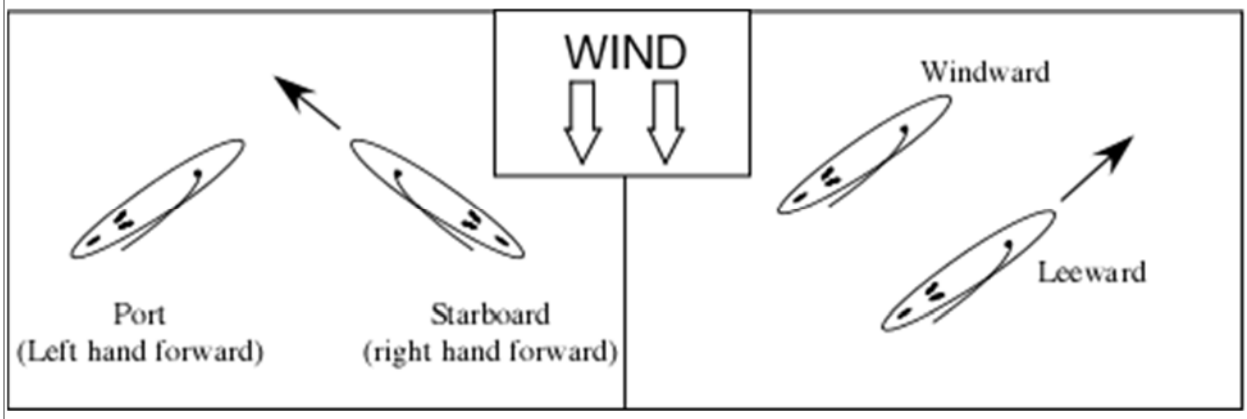


Resist the temptation to panic and drop the sail. If you think that the wind is too strong, gently let out with your backhand and let some wind out the door. As you feel more comfortable, pull in harder with your backhand. You will have to lean back to counter the pull of the sail. On light wind days, be careful not to pull in too hard with your backhand. That will "stall" the sail and you will just go sideways. A little wind always has to be let out the door. If you feel that the wind is too strong, let go with you backhand, but never let go with your front hand.

Right of way rules Now that you are flying along, it is a good time to consider what happens if you are about to collide with another vessel (i.e., boat or sailboard). *Collisions at sea are a good thing to avoid.* There are two aspects to avoiding collisions at sea: (1) **The Law**, also called Rules of the Road; (2) Uncommonly good sense.

The Law (Simplified)

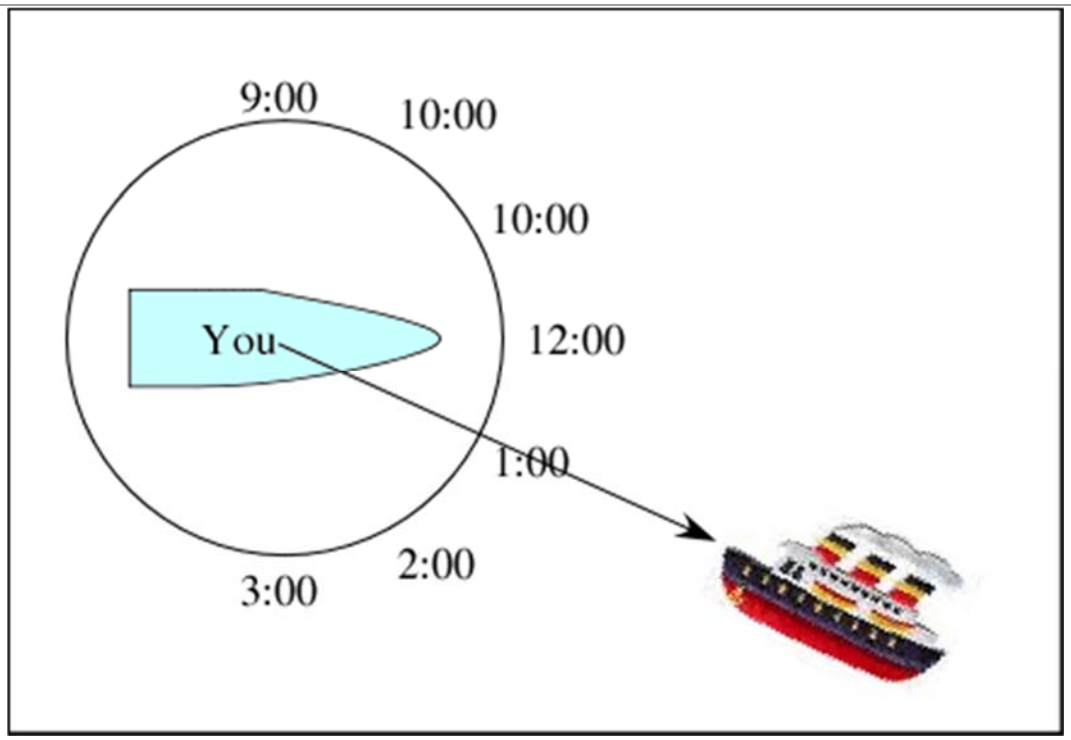
It is just as important to observe the universal right-of-way rules on the water as it is when driving on the road. For purposes of right-of-way, a windsurfer (or kiteboarder) is the same as a sailboat. Right-of-way can always be determined by applying the following four rules:
1. A boat overtaking another boat shall keep clear of the boat being overtaken.
2. A boat on starboard tack has right of way over a boat on port tack. In windsurfung, if your right hand is forward on the boom you are on starboard tack and have right of way over a port tack vessel (Right is right!).
3. When two boats are on the same tack, the boat to windward shall keep clear of the boat to leeward.
4. A boat that is towing a boat or windsurfer has the right-of-way.



Uncommonly Good Sense

Some of these points are not obvious.

1. First, you don't want to panic without reason. There is a simple way to tell if you are on a collision course with another vessel. First take a bearing on the other vessel. A good system of bearings is the "clock face" as shown below:



The Queen Mary has a bearing of 1:00 (1 o'clock). Wait a minute and check the bearing again. If the bearing changes (e.g., from 1:00 to 2:30) you are not on a collision course. If the bearing does not change, you are on a collision course. Gulp.

2. If you have right of way, make sure that the skipper of the other vessel (boat or sailboard) sees you. The other sailor or kiter may be doing what we do much of the time: daydreaming. Try to establish eye contact. Yell (nicely), if necessary, to get the other guy's attention.

3. If you alter your course, do not make a small change; make your change in course large enough so that the other sailor doesn't have to guess your intentions.

4. It is safer to pass behind another vessel than it is to pass in front of it (particularly the Queen Mary). Sailors often have a tendency to try to scoot in front of an oncoming vessel instead of passing behind it (like a deer darting in front of a car, with the predictable consequences). It is also safer to pass to the leeward of another sailboard than to pass to windward. If you fall, or "spin-out" you will not drift into the other board.

5. Most collisions between sailboards happen when one sailor jibes or tacks (i.e., turns) without looking. Look twice, jibe (or tack) once.

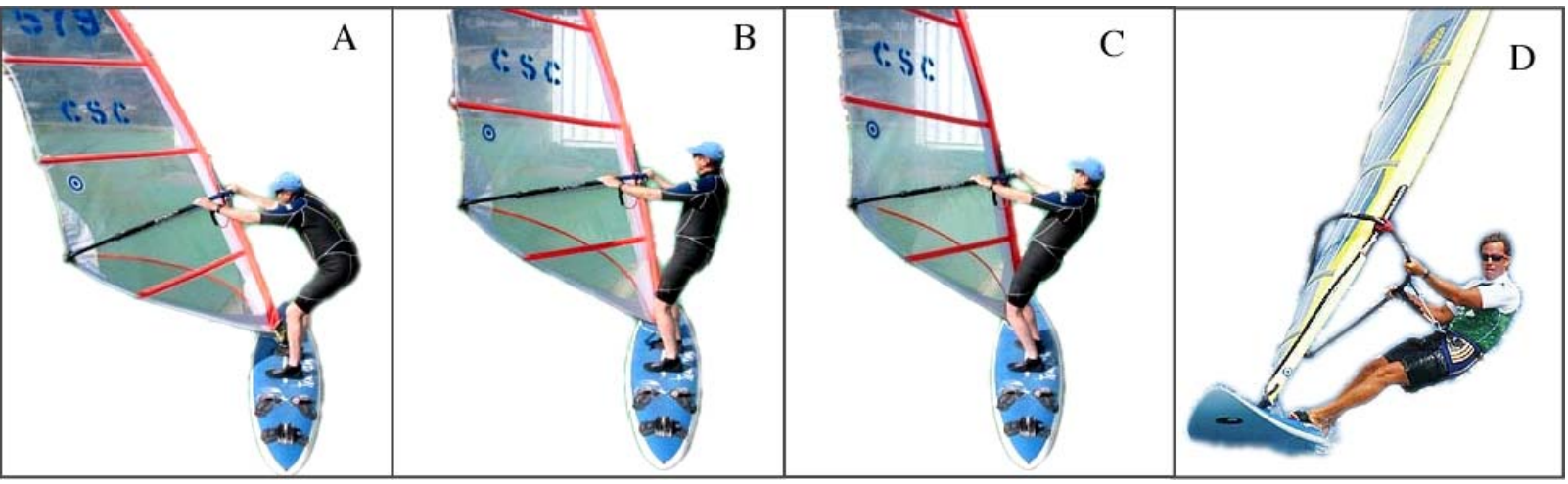
Stance and sail control

The correct sailing stance is everything. With the correct stance you will fly without many strain, aches, or pains.

Here are some things to watch out for. A (below) is the stance to avoid: sail is leaning over to the side, your butt is hanging out, and you are bent at the waist. If you get in this horrible stance, let the sail out with your backhand, bend your knees, and tuck in your butt.

B is a good stance. The mast is more or less vertical. Knees are bent, your derriere discretely tucked in, and your back is straight. When the wind is light, to keep the mast vertical, your elbows (particularly your front arm elbow) should be bent and pointing down. When the wind is strong, you will need to lean way back to counteract the wind in the sail and therefore your arms will be straight. Both feet will be behind the mast, about shoulder width apart. If you are a heavier person and you notice the tail of the board sinking, move forward. If the bow is sinking, move backward. As the wind gets stronger, you will have to more back on the board to keep the bow from purling under the waves. For now, it is important that your knees are slightly bent and your feet on the center line.

In higher winds, try C below. You should have a slight “pelvic thrust.” Like a paper straw, the fewer bends in your body, the stronger your stance. D below is a high wind stance. You will not use this stance for a while, but it’s the stance you will ultimately aim for as you become an advance sailor. In the high wind stance, your arms are straight, and your body is straight. (No kinks in the straw.) Most of your body is over the water and you are hanging your weight off of your harness lines. (I will cover harness use later, but you will need to use a harness as you progress.) As you get into high winds, you will move your feet into the footstraps on the windward side of the board.



A few hints

We said **NEVER** let go with your front hand. (The only exception is when you are coming back to the beach and you want to drop the sail in the water.) There are two reasons for not letting go with your front hand. Most importantly for now, if you let go with your front hand, the sail will drop in the water and you will have to uphaul again, a definite drag. If you let go with your back hand, you will just let the wind out of the sail. Then you can always return to the basic position and start again without having to uphaul the sail.

Second, when you get "launched" into your rig (which will happen), holding on to the boom may keep the boom (or other parts of your equipment) from crashing into your dental work (or other expensive part of your body). If

you let go of the boom, there is nothing to keep you from directly meeting your equipment. If you hold on to the rig with your front hand you may cushion the blow.

For now, it is important to keep your knees bent and your feet on the centerline. Keeping your feet near the centerline of the board is especially important with today's wider boards. As the wind gets stronger, you will have to move back on the board to keep the front of the board from going underwater. Eventually, you will move your feet into the footstraps on the windward side of the board. To counteract the force of the sail, your body will be "hiked" way out to windward and your legs will be straight, that is, when you advance to high winds, your knees will not be bent. For now, however, your knees should be bent and feet on the centerline of the board.

For now, your centerboard should always be down. You only need to raise it when you reach high speeds at which point the centerboard causes instability. When the wind is high, and you feel this instability, first try raising the centerboard 1/2 up, then all the way up. Sometimes in high wind, your board may tend to "round up" into the wind. Raising the centerboard 1/2 up will help with the problem (as explained in the Steering section).

A History Lesson

Windsurfer, Sailboard, Baja Board? Where did this stuff start? Two Southern California aeronautical engineers, Hoyle Schweitzer and Jim Drake, started experimenting with a personal sailing craft around 1961. Both were avid Hobie Cat sailors, surfers, and general water sports enthusiasts. The pair of inventors built many complete prototypes, including some that would be considered bizarre today. The "personal sailing craft" that we have today incorporates all of their design breakthroughs: freely articulated mast, wishbone rig, centerboard, and skeg. The first production run were made like surfboards, glass over foam, and were called Baja Boards. A Seattle distributor suggested the name Windsurfer.

Drake and Schweitzer were awarded a patent in 1971. A few months later, Drake sold his share in the company for a reported $30,000.

Schweitzer couldn't get anyone interested in mass producing windsurfers in the United States. Finally, he got Ten Cate, a Dutch textile manufacturer, to produce boards in Europe. The sport caught on in Europe, with little interest in the U.S. The next decade of the sport was marked by acrimonious patent fights between Schweitzer and a host of European competitors. "Windsurfer" was the name of Schweitzer's company and board so the term "sailboard" applied to everyone else's product. More recently, the original "Windsurfer" went out of production, and the term has been claimed for sailboards in general. (You use to have to say "Windsurfer**(TM)**".) Now the term "windsurfer" is being used in the generic sense, as is the word "sailboard."

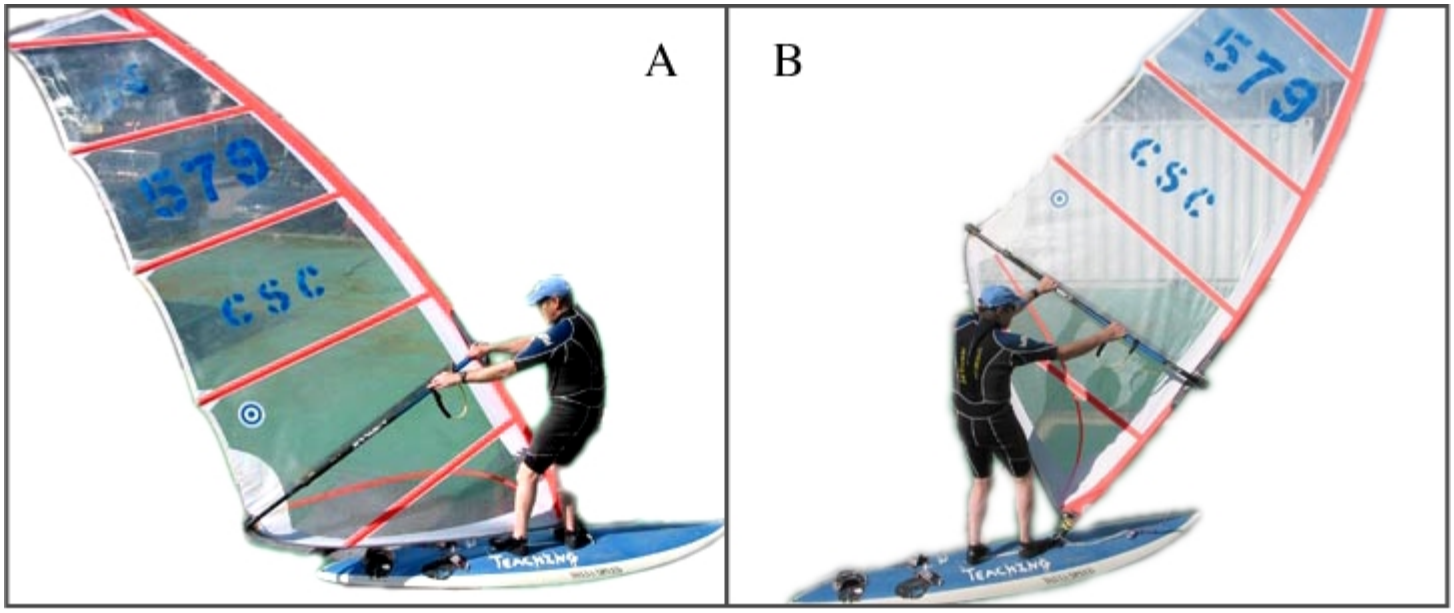
In 1996, Jim Drake was elected to the Sailing Hall of Fame for developing the windsurfer.

If you are interested in the early days of windsurfing, I recommend a DVD called "Wind Legends."

Steering

Did you ever notice that there is no rudder on these darn things, let alone a tiller or wheel. A brilliant insight of Drake and Schweitzer was that a rudder wasn't needed!

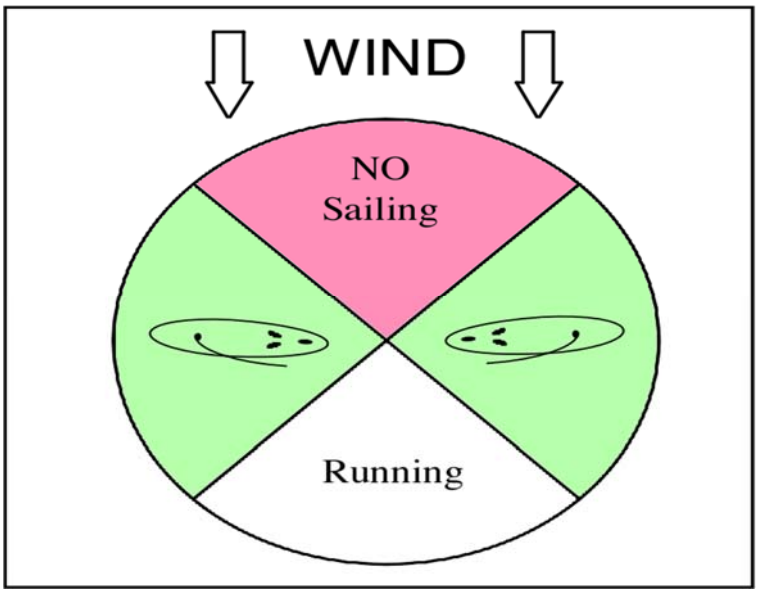
Steering upwind is easy. Move the sail back *and over the rear of the board* (see Figure A). The foot of the sail may actually touch the deck of the board. Hold this position until the board changes direction: then move the sail back to the neutral position (see sailing stance). If you are having trouble making the board head upwind, you are not moving the sail far enough back and far enough over the board. The lighter the wind, the more you have to exaggerate this move. Be careful that you do not head up into the wind too much and get caught in the NO sailing zone (see below and Sailing Terms, Points of Sail).



Many sailors have more trouble turning off the wind (away from the wind). The maneuver is just the opposite of the above: move the sail forward *and across the front of the board* (see Figure B). Be sure to sheet in, because if you do not have power in the sail, you will not turn. After you change direction, move the sail back to the neutral position. If the wind is light, you must exaggerate leaning the sail forward and to windward. In order to move the sail far enough forward, it may be necessary to move your hands back on the boom.

If you have trouble turning the board off the wind, you are doing one of two things wrong: (1) You do not have the sail leaning far enough forward and across the front of the board. Lean the sail as much as the figure B above; (2) You are not sheeting in and therefore do not have power in the sail.

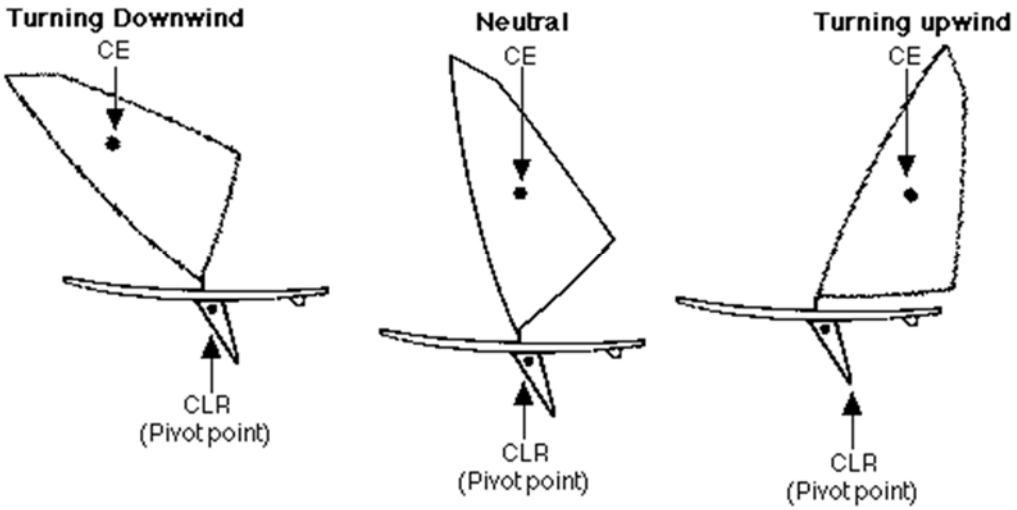
Where should you steer? To the next Whiskey Bar? For now, you should orient yourself to the wind, and sail in the green areas in the figure below. You will learn how to sail downwind (running) later. Avoid the NO sailing area. If you find yourself drifting sideways, or not moving much despite plenty of wind, you might be in the NO Sailing area. (Yes, the Bermuda Triangle exists.)



Now would be a good time to review stance: Are your knees bent? Is your butt in? Is your sail straight up and down or is it leaning out to leeward?

The theory of steering without a rudder

The sailboard is turned by moving the Center of Effort (CE) either in front or behind the Center of Lateral Resistance (CLR, see figure below). The CE is the center of the force of the wind on the sail. The CLR is the center of all the side-ways forces on the board. The CLR is located about approximately at the center of the centerboard. Think of the forces acting on the sail and board like a child on a teeter-totter. The CLR is the pivot point, the CE is the force (i.e. it is a child on one end of the teeter-totter or the other). If there is more wind force at the front of the board, the board will pivot and the bow of the board will swing downwind. If there is more wind force at the rear of the board, the board will pivot and point upwind.

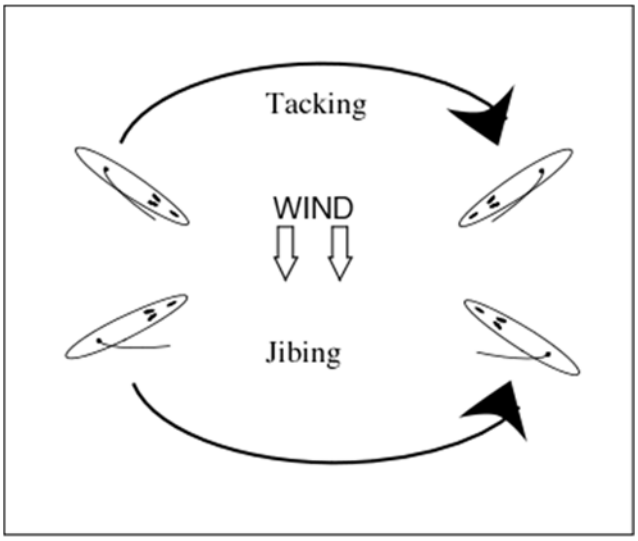


The location of the CLR is determined mostly by the location of the centerboard. In high wind, you may have a tendency to point upwind. One way to counteract this is to move the CLR back by moving the centerboard partway up. When you raise the centerboard part way up, it will swing back, moving the CLR. (This trick also works with sailboats.)

The location of the CE is determined mostly by where you place the sail. If the board seems to have a slight tendency to head up or downwind, you can change the CE forward or back by moving your hands on the boom. For example, if you have a tendency to turn upwind, moving your hands back on the boom will have the effect of moving the sail (and CE) forward. Moving your hands forward on the boom has the opposite effect. Also, you can move the CE by moving the mast in the mast track forward or back. For example, in high wind if you continually tend to head upwind, move your hands back on the boom. If that doesn't do the trick, raise the centerboard about halfway up. Finally, you can move the mast forward in the mast track. (Move the mast back if you have a tendency to head downwind.)

Tacking

In both tacking and jibing, you change direction so the wind comes from the opposite side of the board. In tacking, you turn toward the wind; in jibing, you turn away from the wind. Hence, tack when you want to move in the direction toward the wind. Jibe when you want to move away from the wind. Tacking will move you toward the wind, jibing away from the wind. Since beginners often have problems staying up wind, it's best to learn how to tack before leaning how to jibe.



There are several different ways to tack. This is a method similar to one taught at ABK Windsurfing clinics. It works well where the water is rough.

 Before starting to tack, you must do three things. (1) Look over your shoulder. Are you about to turn into someone’s path? (2) Drop your front hand to the mast just below the boom. (3) Move your front foot to just in front of the mast (A).

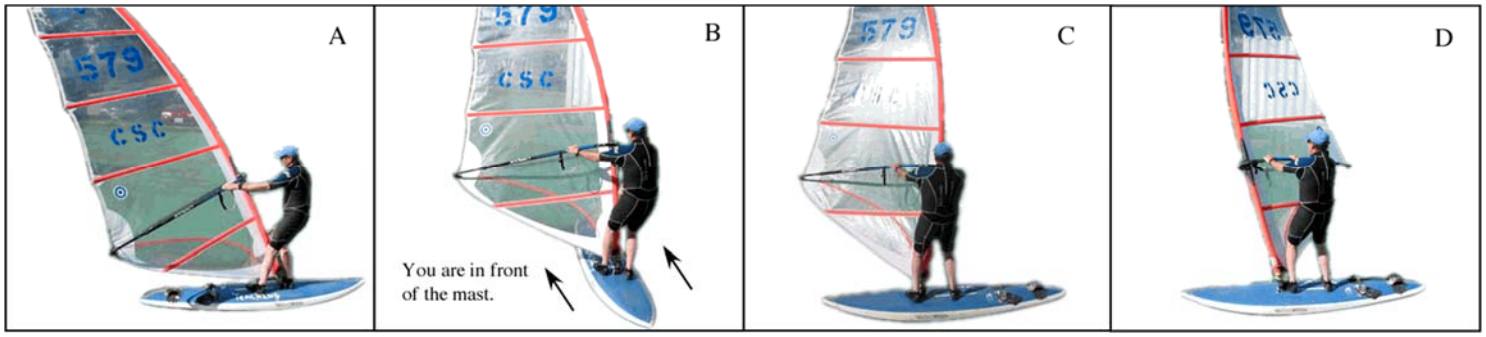
 Now begin to turn into the wind by moving the sail to the back of the board and across the board, just as in the "Steering Step" above. (Figure A) Keep your arms straight, knees bent, and take a lot of little steps. If you don't move your feet from the beginning of the turn, you will find it difficult to move them at all.

Keep force in the sail; that force is what turns you. (May the force be with you.) As the board points into the wind, swing your body in front of the mast (B). Keep pushing the board around with your feet, and keep pulling on the sail with your rear hand. Keep force in the sail. Note that the sail is “backed” until you are all the way around (C).

When the board has turned all the way around (180°), move to the new basic position (C and D) and start up as usual.

Finally, you will probably want or need to turn further off the wind, so aggressively move the sail forward and across the board (just as in the "Steering" section).

Keep your arms straight, knees bent, and butt tucked in while tacking. The important principle in the tack described above is that you keep pulling the sail against the wind for as much of the turn as possible (Figure C). This gives you something to lean against, and will help you avoid falling in. You can speed your tack by doing the following. Before beginning the tack, when you move your front foot just before the mast, also move your back foot a few inches back on the board (so that you have a wider stance). Having a wider stance will give your back foot more pushing power.



Fast tack

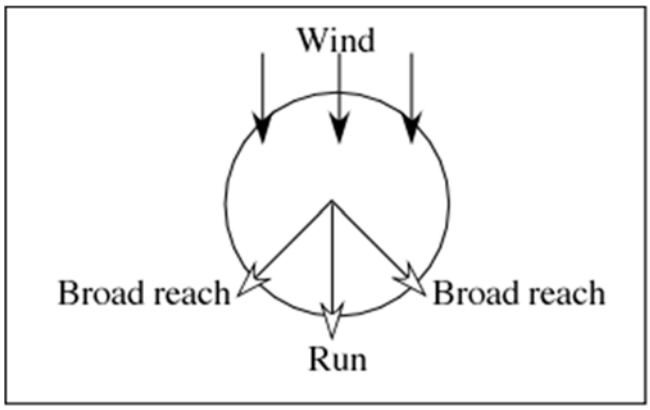
It is interesting to watch racers tack. One moment they are on one tack, and in the blink of an eye they are on the other tack. The tack described above will be slow and deliberate. One thing that you can do to speed the tack is before beginning, when you move your front foot just before the mast, also move your back foot a few inches back on the board (so that you have a wider stance). Having a wider stance will give your back foot a bit more pushing power.

When racers tack, they literally jump from one side of the mast to the other, cutting to a split second the time they are in front of the mast. Two factors allow them to move so quickly. First, they may change position while "head to wind" (Position B). However, then they aggressively throw there rig forward and across the board so that they head downwind on the new tack. Like its slower cousin tack that I recommend above, there is power in the sail for nearly the entire turn. Second, racers are going very fast going into the turn and their momentum helps them complete the turn. As you get better, you will realize that in all things, *speed is your friend*. There are many things that you can "pull off" when you are going fast that you can not do when going slow. Always sail as fast as you can.

Sailing downwind

By downwind sailing, I mean sailing on a "dead run." Sailing on a run requires having the sail in a different position than in normal sailing and it takes some concentration. On the plus side, it looks cool, it will get you home, and after mastering sailing on a run, a nonplaning jibe will be literally "a snap." Of course, before sailing downwind, you must be able to steer and tack so that you can get upwind.

 Before taking the downwind (running) sail position, you must be on a broad reach. Now is a good time to reread the Steering section. Do not attempt to turn on to a run directly from a beam reach or higher. Head off the wind in the usual manner until you are sailing on a broad reach. Sail in that position for a bit.



 To go into the running position, first move your hands back on the boom, and swing the sail across the front of your board as you did when you turned downwind (see Steering). The only difference between steering from a broad reach to a run is that the sail is moved more across the board and less forward. As you start to turn further downwind, move your front foot back so that it is even with your back foot, heels together. If you were successful in turning the board, you will be in the position shown below. If you did not turn the board downwind you (1) did not move your hands far enough back on the boom; (2) you did not lean the sail far enough across the front of the board.

In the downwind (running) position (1) the sail should be square in front of you (at a 90 degree angle to the board, (2) your knees should be bent, (3) you should press down on the boom.

 In the downwind position, the board will seem very "tipsy," one rail will want to sink and the board then will want to turn in the opposite direction. To avoid sinking one rail or the other, you must be light on your feet. There are two ways to become light on your feet: (1) Go on a diet. (2) Bend your knees and aggressively press down on the boom. Pressing down on the boom will transfer your weight from your feet to the boom and mast. The first method of becoming light on our feet has never worked very well for us.

To steer in the downwind position, move the sail back and forth along the line (with arrows) indicated in the picture. Try to steer directly downwind by making steering corrections with the sail. When you are finished sailing downwind, steer off to one side or the other (on to a broad reach), and move one foot forward (i.e., resume the normal sailing position).

Now for the fun part. Practice sailing straight downwind 5 or 6 times. Each time, have your feet further back of the board. This will necessitate bending your knees and aggressively pressing down on boom. At the end of this exercise, you should be so far back on your board that if you were to let up on the boom, the tail of the board would sink (you would do a "wheelie"). Only after you can get that far back on your board are you ready to tackle the next step, a nonplaning jibe.

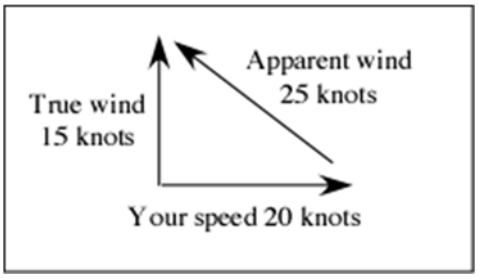
If you can sail downwind fine when the wind is light, but in strong winds, the sail gets blown out of your hand, get further back on the board. If you are far back on your board, the sail will be tilted toward the wind. Therefore, you can hang your weight down on to the boom.

Faster than the wind - More geek talk

How could a sailor go faster than the wind? Windsurfers do it all the time. The true wind speed might be 15 MPH, but windsurfers are screaming along going 20 to 25 MPH. *Part* of the answer to this (and other) mysteries is blowing in the (apparent) wind: Sailors make their own wind.

The apparent wind is the wind you feel as you move. For example, on a windless day if you are going north on an Interstate Highway at 55 MPH and stick your head out the window of your car, the apparent wind will be 55 MPH. In the other hand, if the wind is blowing 55 MPH in the same direction you are going, the apparent wind would be 0 MPH. In other words, the apparent wind is a combination of the true

wind and your speed. The apparent wind can be greater than the true wind, and it is the speed of the apparent wind that matters for the sailor. The speed of the apparent wind can be illustrated with a "vector diagram" where the length of the lines indicates speed (in knots or MPH).



If a windsurfer is going fast, he or she is creating additional apparent wind. Going faster than the wind is one of the pure joys of windsurfing. The diagram also illustrates another mystery: When windsurfers are going fast, they always seem to be sailing against the wind (i.e., close hauled, with the sail sheeted in). The reason for this position is that the apparent wind is always forward of the true wind.

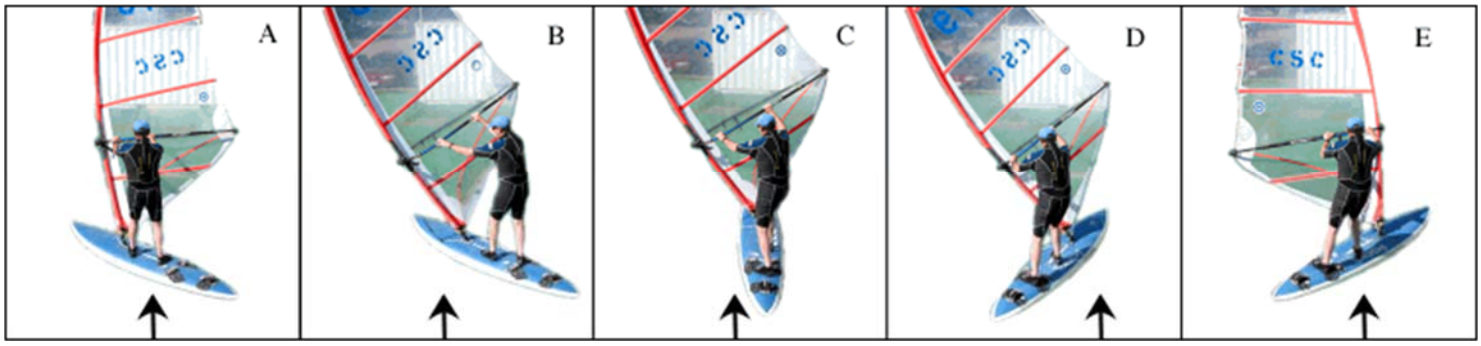
Next time an advanced windsurfer blasts by you, remember that she actually has more wind than you do. Somehow, it doesn't seem fair.

But then, it is rather magical.

Nonplaning Jibe

There are several different kinds of jibes. This is one kind nonplaning jibe. You are sailing along (not in the footstraps, not planing) and you want to go the other way. Instead of tacking (turning toward the wind) you want to jibe: turn away from the wind.

In the figure below, the arrows represent the direction of the wind.



To prepare for jibing do the following (Figure A): (1) head off on a **broad reach;** (2) move your hands back on the boom. The lighter the wind, the further back on the boom you will need to move your hands. In addition, prepare to jibe by moving your back foot further back on the board. The further back on the board you are, the snappier your jibes will be. Keep those knees bent! Finally, look before you initiate the turn so that you do not turn into the path of an oncoming sailor. Just as when you tacked, the first step is always, check the traffic!

 To initiate the turn swing the sail to windward across the front of the board (Figure B). Keep this position until you turn past a dead run (Figure C). The wind will be blowing directly from behind. This is the time to switch your feet so that your front foot becomes your back foot and your back foot becomes your front foot.

 When you are on a broad reach on the new tack, flip the sail (Figure E). To flip the sail, first slide your front hand forward on the boom all the way to the mast. Then let go with your back hand and the sail will flip itself. Grasp the boom on the new side step forward to a normal sailing position, and sail off. You might have to move the sail to the back of the board to head up higher.

Note that to get the board to turn downwind, you had to move both of your hands back on the boom. But just before you flip the sail for the jibe, you must slide your front hand forward all the way to the mast. Note where my front (left) hand is in figure D.

 In the sequence above, you flip the sail after you are well onto the new tack (a broad reach or higher). The only exception to this method is if the wind is very light, your turn will stop when you are pointed directly down wind. If this happens, flip the sail and muscle it onto the correct side and to the back of the board to finish the turn.

 You can do several things to make your jibe snappier. First, after you move your front foot back, put more weight on the windward rail than the leeward rail (only if the centerboard is down). Second, step further back on the board. Finally, these two strategies can be combined in the following way. Move your old front foot even further back and put most of your weight on it. Do this earlier in the turn than the figure above. Most boards have a "sweet spot" way in the back of the board. If you move your old front foot *way* back to that spot and put your weight on it, you can turn on a dime (with the centerboard down).

Variations on the Jibe

There are many different variations on the jibe. The variations can be divided into two broad categories: nonplaning jibes and planing jibes. Different versions of the nonplaning jibe are called the snap jibe, scissor jibe, and power jibe. These are all slight variations of the jibe described above. In all nonplaning jibes, your weight is moved to the back of the board, and most of the turning power comes from the sail. Nonplaning jibes can be used with beginner boards (with centerboards) and short board (e.g., 9 foot boards without centerboards). The nonplaning jibe is a skill that will always be useful. The nonplaning jibe is fairly easy to master.

The planing jibe requires one to be sailing very fast on a plane. Do not worry about learning the planing jibe until after you can use a harness, waterstart, and sail fast in high winds. In several ways the planing jibe is the opposite of a nonplaning jibe: Your weight is forward in the board, you sink the leeward rail, and most of the turning power comes from carving the leeward rail through the water (like skiing or snow boarding). The planing jibe is considerably more difficult than the nonplaning jibe. Whereas each of the steps in this guide can be broken into at most 4 components, there are approximately 17 things to think about when making a good planing jibe. When an advanced windsurfer is talking about jibing, they are most likely talking about planing jibes. Variations on the planing jibe include the lay-down jibe and the duck jibe.

High wind sailing (>12 MPH)

You've had many great days sailing. You can steer, tack, and jibe. One day the winds appears a little stronger, there are a few white caps on the water. No problem, you're cool. Then, wap! Every time you start up you seem to get slammed. Welcome to the ***12 knot barrier.*** There are two parts to moving to higher wind. The first, covered here, is what you do with your stance, sail, and board. The second part is using a harness, which is covered in the next section. You should be using a harness at this stage of your sailing (see next section).

 There are a few tricks to sailing in higher winds. The first and most important trick is to do everything you've been taught so far, but more so. Follow the instructions for up hauling, start-up procedure, and stance exactly. Do not skip any steps. For example, on flat water, it doesn't matter too much if your knees are bent, but in bumpy water if your knees aren't bent when you are starting, you will surely fall. The word in higher wind is think, think, think.

The stance you should adopt is one with the fewest bends in your body. Review the stance section. You should first move toward the pelvic thrust stance, where the only bend in your body is at your knees. Then you should move to the high wind stance, where you body is straight from foot to neck (D is the Stance figure).

 When you do the start-up procedure in higher wind, there is a natural tendency for the board to round upwind. If the board rounds up head-to-wind you will fall. To avoid rounding up, when you do your start-up, be sure that you are bringing the mast across the front of the board. This action will help the nose of the board off the wind. If you are still rounding up when you startup, try the following. Have the front of the board pointing slightly downwind (broad reach) before you start. To point the front of the board slightly downwind from the basic position (see Uphaul), hold the mast forward (not at right angles to the board).

 When you first sheet in, you will feel a strong pull in your arms. When you first feel the pull, resist the temptation to let go of the rig. Lean back and hold on. The force will dissipate as your board starts moving forward. **Do not let go with your front hand**. If you are overpowered, ease off with your back hand.

Lean back with your arms straight. You do not have to hold the force of the sail with the strength of your arms. Rather, your arms should be straight and you should hang your body weight from the boom. If your arms are getting tired, it might be because you are trying to hold the sail with your arms bent at the elbow.

The pull on your arms should be the same. If your front arm is getting tired, but your back arm is not, then move both your hands forward on the boom. If your back arm is getting tired, but your front arm is not, move both hands back on the boom.

 If while sailing you have a tendency to head upwind or downwind, use the strategies in the steering section to move the CE relative to the CLR. (See the Steering section of this guide.) As you move faster through the water, you will have to move further back on the board to keep the board level.

 As you gain speed, the centerboard will generate so much lift that you will feel the board rock from side to side. It is as if the centerboard wants to pop out of the water. Now is the time to raise the centerboard. You can move it part way up. If the centerboard still wants to pop out of the water, you can move it all of the way up.

 It is important to watch the water in front of you to be prepared for gusts and lulls. In particular, when you see a gust of wind approaching, prepare to put your weight on your back foot and lean back.

If you have done all of the above, and the wind is still too strong, there are several addition things you can do.

 Get a smaller sail. Remember, sail size depends on your weight and the wind speed. A sail that is too big for the wind will actually go slower than a sail that is the correct size (no matter what your skill level). One of the reasons that advanced windsurfers like high winds is that they can use smaller (and easier to handle) sails. Also, you can rig your sail flatter by giving it considerably more downhaul and a little more outhaul.

 Heel (or lean) the sail to windward. In high winds, **sailboats** naturally reduce their sail area by heeling to **leeward**. **Sailboards** can do the same thing by heeling the sail over to **windward** (*never leeward*). Leaning the sail to windward does two things. First, it reduces the area of the sail exposed to the wind. Second, when you heel your sail to windward, the weight of your body can hang from the boom, holding the sail in.

 In hugely overpowering conditions, partly sheet out the sail. You always want some power in the sail so that you have forward momentum. When you are not moving forward, you will have a tendency to fall. However, you can spill much of the wind from the sail by sheeting out.

Get used to higher winds in stages. Don't go from an 8 knot day to a 25 knot day. If you get used to higher winds in stages, you will feel more comfortable on the water. Remember, however, higher wind requires the tricks that I have listed above. Soon, you too will be hit by the high wind bug: When you hear that the wind is blowing 25 knots, your heart will race.

The Law of the Sea

When you first started to windsurf, you were probably overwhelmed your own well-being. Now that you are no longer a beginner, you should be concerned with the safety of others on the water. Be aware of everyone on the water. If you see a sailboat that stays capsized for 10 minutes or more, you might sail by and ask if they need help. Alternatively, alert someone in another boat, or the appropriate authority (e.g., life guard, coast guard, sheriff). Is that fishing boat drifting too close to the rocks? You might ask if you can get someone to give them a tow. If you see a windsurfer struggling in the water for more that a few minutes, check out the situation. The jet skier you help might be the jet skier who assists you or another windsurfer. Windsurfers, kayakers, boat sailors, fishermen, jet skiers: we need to help each other. The first law of the sea is to help each other.

Harness

You can not windsurf well without a harness. Period. If you want to know why, see the For Nerds box at the end of this section. You need a harness. You need to know how to set it up, and how to use it.

There are two kinds of harnesses: Seat harness and waist harness. For your first harness, I recommend a seat harness. The reason is that a seat harness promotes a better high wind stance, at least while learning. With a seat harness, you are less likely to bend at the waist. You do not want to bend at the waist. Later, after you have a good high wind stance, you might want to try a waist harness, particularly if you get into freestyle or wave sailing. When you purchase a harness, you will also have to purchase a spreader bar with hook. And of course harness lines (discussed below). Some seat harness are integrated into board shorts, some waist harnesses are integrated into PDF (life jacket). Those are fine if they fit well.

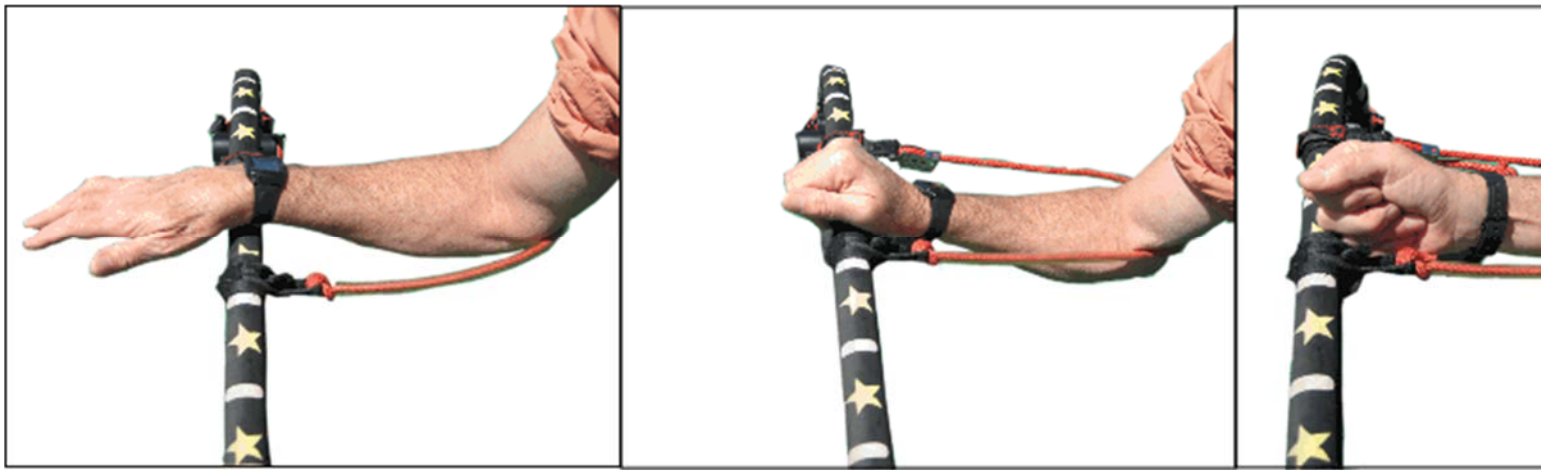
When you put your harness on, all the straps must be tight. This is particularly important for waist harnesses. Very tight. You do not want your harness to move up your body while sailing. If it creeps up your body, or the straps that hold the spreader bar/ hook become loose, the hook will be in the wrong place.

There are several things you need to adjust before you hit the water: Boom height, harness line length, harness line placement on the boom. Boom height and harness line length, together, determine determine how low the harness lines hang. The way to think about it is that the bottom of the harness line loop of your harness lines must be low enough so that it's near the hook to make it easily hook in. However, if the lines are too long, you will not be able to get downward pressure on the boom, and the harness lines will not be effective (might as well have saved your money and not bought the harness). Where the loop of the lines are located is determined by the harness line length and your boom height. In the pictures below, the harness lines are the same length, but the boom is in a different position. For me, on the left, the harness line loop is too high and on the right it's too low.

Boom Height? Styles change, like women's skirts, boom heights go up and down over the decades. You have to establish where you like to have your booms. Here is one guideline: shoulder height (or a bit higher) when you are comfortably sailing (not standing on the beach). This is the one position where you can comfortable lean back against the force of the sail without using your triceps or shoulder muscles. Experiment a bit. When you find a height that you like, come back to the beach and measure it! Measure it from the base of the mast with a tape measure or use your body as a measuring device. I find that if I hook my arm over the boom, and stretch until my finger tips are 1/4" from the bottom of the mast, I am a happy camper:

Harness line length. Fixed length harness lines come in lengths from 16 to 26 inches. Here is where adjustable harness lines might help you, since you do not know exactly how long you want your harness lines, yet. If you do not want to spring for adjustable lines, try a 1/4 inch rope, and carefully tie it on to your boom. Again, you want to be able to hook in, so the loop in the line cannot be too high. However, you need to put your weight on the lines, so the loop of the lines can not be too low.

Again, when you find a line length that you like, come back to the beach and measure the length. If you have a tape measure, use that. I have adjustable lines, and I measure with my arm. All of the lengths below are acceptable, depending on your sailing style. The one on the left has my elbow in the loop and my boom just above my watch. This is a moderately short setting (for a for someone not planing). On the right, my whole fist fits inside the loop. This is pretty long. When you first start to use a harness, you will might want to have your lines on the long end of the spectrum.



You have to be precise. Variation of more than 1/2 inch will throw you off. The goal of all this fuss is so that you know precisely and intuitively where your harness lines are, so you can hook in easily without looking. After you hook in, you want your harness line to take almost all of the pressure off your arms, and provide lots of Mast Base Pressure (MBP, see section at the bottom of this page).

Placement of boom. There are two aspects to this. First, the two harness lines should straddle the sail's "balance point." There is one place on the boom where the force of the wind from the front of the sail exactly matches the force from the back of the sail. Here is how to approximately find that location. Stand you sail up in a windy spot. (Be sure no one is downwind of you). There is one spot where you can hold your boom with one hand. That is the balance spot. Unfortunately, that might be slightly different on the water, where the wind is stronger so after you start to sail, you may have to make further adjustments to have perfect sailing (harness lines on the balance point). Here is the rule: If you front arm is tired, it needs help, so move the lines forward a bit (toward the mast). If you back arm is tired, move the lines back a notch to assist the back arm. If you are perfectly balances, windsurfing takes no upper body strength.

How far apart should your harness lines be? Here is the general rule. The closer the are together, the more accurately you will be able to feel if you are on the balance point. However, if they are very close together and they are not on the balance point, it will be hard to sail and you will need to adjust them more frequently. Here is a compromise. Start with the two harness lines no further apart than the width of two fists holding the boom. As you get more use to the harness lines, move them closer and closer together. In most conditions, I have my harness lines touching, but that might be a bit extreme for the neophyte harness user.

Using your harness lines. Hooking in is not hard if you have the lines the right length and your boom the right height. Head off the to a beam reach before hooking in. After you hook in, either sit-down or lean back. You want to make the harness take all the force from the sail, not your arms. If your harness lines are around the balance point, you should be able to let go with one arm or the other. Your grip on the boom should be light, and you should be able to "play the piano" on your boom.

The first few times you hook in, you may be "launched." A gust of wind comes along and you are not ready for it. To avoid getting launch, put more weight on your back foot. Also watch the surface of the water ahead of you for gusts and lulls in the wind. That way, you will be prepared for what is coming.

I found this link on harness line use had some very good advice.

If you have the right stance, and you are using your harness correctly, you should be hanging all of your weight on the harness, have a light grip on your booms, be nicely balanced in your harness lines, and have a smile on your face face like the lovely windsurfer shown here:

For Nerds, the secret of Mast Base Pressure (MBP)

How is it that windsurfers are able to sail so fast? On most days, I leave my boating friends in the dust (spray). The harness plays a large part in the speed. Note this happy sailor. Most of her board is out of the water so there is little friction with the water. The last few feet barely kiss the water. Sailors call this "reduced wetted surface."

She is in the footstraps, the footstraps are on the back of the board. Why doesn't the back of the board just sink? If you move to that position, you will just sink the back of the board and fall in the water. There are

two reasons she is able to be in the back of the board. (1) Speed: She is getting lift just a water ski boat gets lift. It's called "planing," and it's the goal of a happy, healthy life. (2) Harness lines and MBP (mast base pressure): She is hanging her weight off her harness lines. This is transferring her weight to her boom, mast, and down to the mast base (hence "MBP"). So she is standing in the back of the board, but she has transferred her weight to the front of the board by hanging her weight on her harness lines. You can look like this too if you hand your weight off your harness lines and think MBP.

Water Starting and Footstraps

Water starting is an indispensable trick if you want to sail in higher winds or move to a "short board." Short boards do not have enough floatation to easily stand on uphaul the sail. Water starting is kind of magically. You are swimming around, and the hand of God picks you up, and she places you on your board. No more back breaking uphauling, doesn't that sound good?

For learning water starting I highly recommend the DVD "**ABC's of Waterstarting**" by Dasher. You can buy it at many shops or on line at many places (here is one). (While you are at it you might get Dasher's "The 12 Step Jibe with Dasher"). Because this DVD is so complete, I will not go through waterstarting in detail (get the DVD!) but just add a few points. (But get the DVD.)

Some places are make it easier to learn to waterstart than others. The wind needs to be pretty strong (~15 to 17 MPH is ideal), and chest high water is ideal. With water that deep, you have to try to waterstart (not beach start) but you can rest between attempts. Since you need it to be windy, you should have mastered the harness before trying.

It's easier to lean if you are wearing a PFD (life jacket). You will float higher out of the water and that will help you get up. The PFD should be a snug fit so that it does not ride up. Kayak PFDs work pretty well and they are high waisted and will not interfere with a seat harness.

I think that knowing how to beach start help waterstarting. Waterstarting is beach starting, but in deeper water. You need a beach. The wind should be approximately 90° to the board (beam reach) and you are standing on the upwind side of the board, behind the mast. You will have to have the centerboard partway up, because the water is shallow. Your hands should be on the boom in the normal sailing position and you should feel the power in the wind in the sail. You are sailing in place. Your hands are around the balance point of the sail.

Put your rear foot on the centerline of the board. The gently step on the board. Do not let the wind out of the sail. You want it to propel you forward and give you something to lean against. After getting shallow water beach starts, try is slightly deeper water.

Finally, I find that it is helpful if you have your booms a bit on the low side while working on waterstarting. Now, get the ABC's of Waterstarting and get wet.

Footstraps

Before getting into the footstraps, review the advanced safety page. It is important that you adjust your footstraps to be safe.

Getting into the footstraps is not about getting into the footstraps, it's about achieving a good high wind stance (such as the one shown here from an ABK advertisement). This is the end product: The sailor is well out from the board, with nothing under him but water. His body is straight (red line). Most of his weight is hanging from the boom (MBP: black arrow). The sail is sheeted in (almost over the board) and his hips are facing the board, not forward. His hands are only lightly on the boom, and he is in the footstraps. But how do you get there?

You have to go through the gears! First gear, you just waterstarted (or uphauled) and you are standing near the mast. Pick up a little speed and hook in (second gear). As you gain speed, slowly start to move toward the back of the board, sheet in (bring the sail in) and start getting your body over the water (as in the picture). To sheet in, you move your hip so they are facing the sail, not forward. In other words, you bring the sail in with your hips, not your arms. Now you are in the total stance (right) and you have moved back so that your rear foot in just in the middle of the board in front of the rear strap, and your front foot is just beside the front footstrap. You are hanging your weight from the harness so there is little weight on your feet. You are going fast. You look like the sailor on the right (fourth gear).

You put your front foot in the front footstrap. Since you are hanging from the harness (black arrow), you have little weight on your feet. Do not look at your foot as you put it in the footstrap. Instead, glance at your foot, look where you are going, regain speed and then put your foot in the front strap.

Get more speed before putting you back foot in the rear strap. You are going to have to learn forward hanging from your harness lines to get the weight off your rear foot. Put that in, sail away.

Check your stance: body straight, hanging from the harness, arms straight, hips facing the sail, light grip on the boom (no white knuckles), arms only shoulder width apart, relaxed, and are you smiling? Ain't life grand?

Free Style

In 1976 at the North American Championships, sailors had heard that a 13 year old kid from Oahu could sail pretty well. However, this skinny kid blew everyone away in the free style by calmly flipping his board on its side, standing on the rail, and sailing away. The kid was Robby Naish, the place was Berkeley, California. The sport has never been the same since.

Here are some tricks to get started (from easy to difficult):

Sail Clew First. The easiest way to get into this position is to not flip the sail after jibing. A more interesting way is as follows: While sailing on a reach, first move both hands back on the boom. Reach your front hand back across your back hand to the end of the boom. Flip the back of the boom forward and reach over on the other side of the boom. This maneuver will help you learn how to duck jibe.

Sail Downwind Tail First. Come head to wind as if you are tacking. Move in front of the mast and pull the sail perpendicular to the board (in the downwind position). Move out to the bow of the board in the sailing downwind position. The trick is to move far out on the bow of the board so that the skeg is out of the water. This maneuver is great practice that will help you do nonplaning jibes going the other way.

Pirouette. Sail on a beam reach in light wind. Move the sail across the board in front of the mast (the same position as when you started up, step 2). There is a position where the sail will almost balance on itself. After you find that position, let go of the boom, pivot on the balls of your feet (spin around 360 degrees), and quickly grab the boom.

Sail behind the mast. Step around the mast, and stand on the wrong side of the sail.

Sail 360deg. Begin as in the pirouette by finding the balance point of the sail, and then do the following: Swing tip of the mast toward the wind. Step forward of the mast on the leeward side of the mast, pushing the clew in front of you. Continue pushing the clew around and follow it until you have circled the mast. You must be quick!

Helitack. Start out as if you are doing a normal tack. When the board is pointing directly into the wind, instead of moving in front of the mast, push the clew forward and through the eye of the wind. In other words, you tack, but you stay behind the mast and the sail goes in front of it.

Head Dip. On a beam reach in strong wind, lean way back with your arms straight. Bend your knees as when you do the limbo and dip your head in the water. Try a leg drag (prequel to a body drag).

Splits (for the Gals). This trick is one even Robby couldn't do. Stretch out on shore. It helps to have your booms rigged lower than usual. Sail on a beam reach in a light wind and go for it.

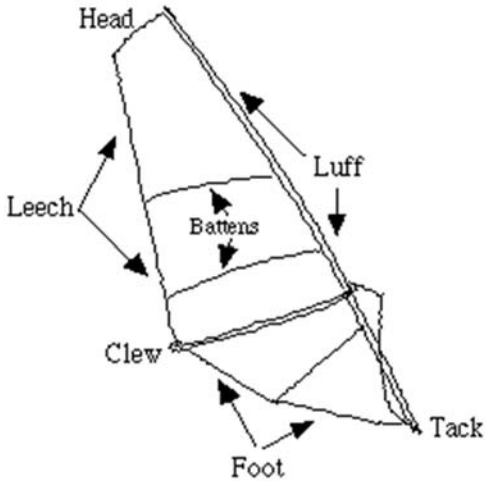
Rail Ride (Robby's trick). While sailing along, reach one foot under the edge of the board and pop the board up on its edge, i.e., rail. (I kid you not!). At first you can sail with one foot on the centerboard, the other shin resting on the edge of the board. Then stand up with both feet on the edge of the board (rail).

Not to be outdone, a few years after Robby invented the rail ride, Rhonda Smith performed the splits while sailing on the rail! Ouch!

Sailing Terms

Sailing is full of terminology. Knowing the terms makes learning to sail easier. For example, if someone frantically yells to you, "fall-off," they do not mean to gracelessly dismount from your board. The following terms are used frequently and all windsurfers should know them.

Terms can be broken into parts of the sail and rig; parts of the board; points of sail; and directions. These sections are followed by a more or less complete glossary of sailboard terms.



Parts of the sail and rig

The long skinny pole that holds the sail up is the **mast**. The **booms** are the two sticks, one on each side of the sail, that hold the sail out from the mast.

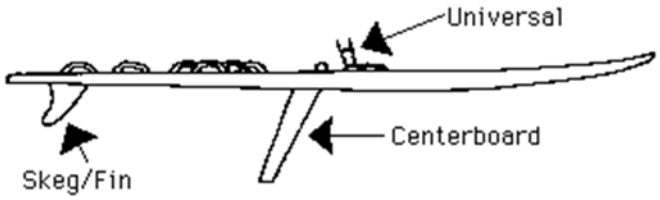
Sails have 3 corners (**head, tack, clew**) and 3 slides (**luff, leech, foot**):

Three ropes (or 'lines') are attached to the sail. The **downhaul** pulls the sail down the mast. It is attached to the tack of the sail. It is the most important rope for adjusting the sail. The **outhaul** pulls the sail out the boom. Finally, your friendly **uphaul** is the rope that you use to pull the sail up out of the water.

The **battens** are flexible plastic strips or tubes that hold the shape in the sail.

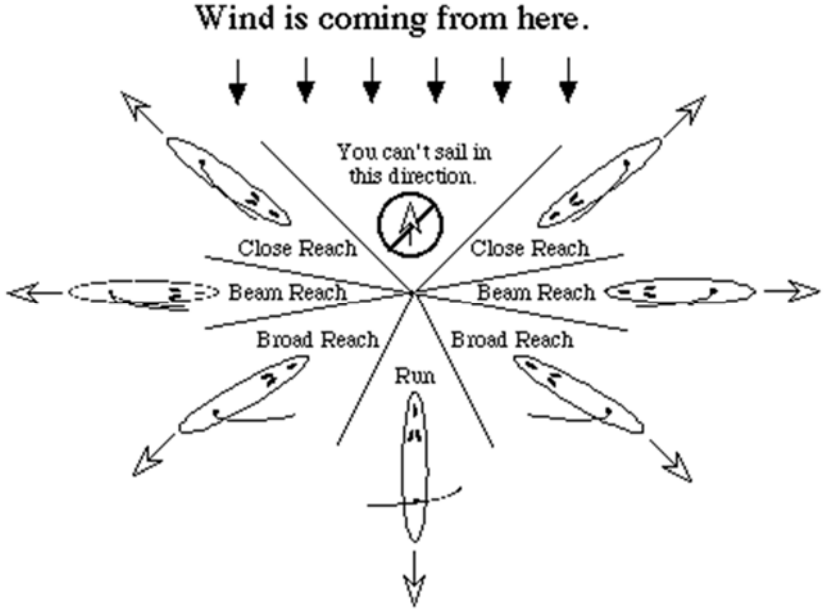
Parts of the board

The **fin (or skeg)** and the **centerboard** provide lateral resistance and keep the board from going sideways. The **universal** is a flexible joint that attaches the mast to the board. The pointy (foreward) end of the board is the **bow**, the other (back) end is the **stern**.



Points of sail

It is necessary to describe the direction a sailboard is travelling, **relative to the wind direction**. When you start up, you will be on a **beam reach**. You will notice in the figure below that you cannot sail directly in the direction that the wind is coming from. To get up wind, you will need to sail on a **close reach** and ziz-zag back and forth (**tack**). Sailing directly downwind on a **run** will give you a tippy ride, but is a necessary skill to learn in order to master



the **jibe**.

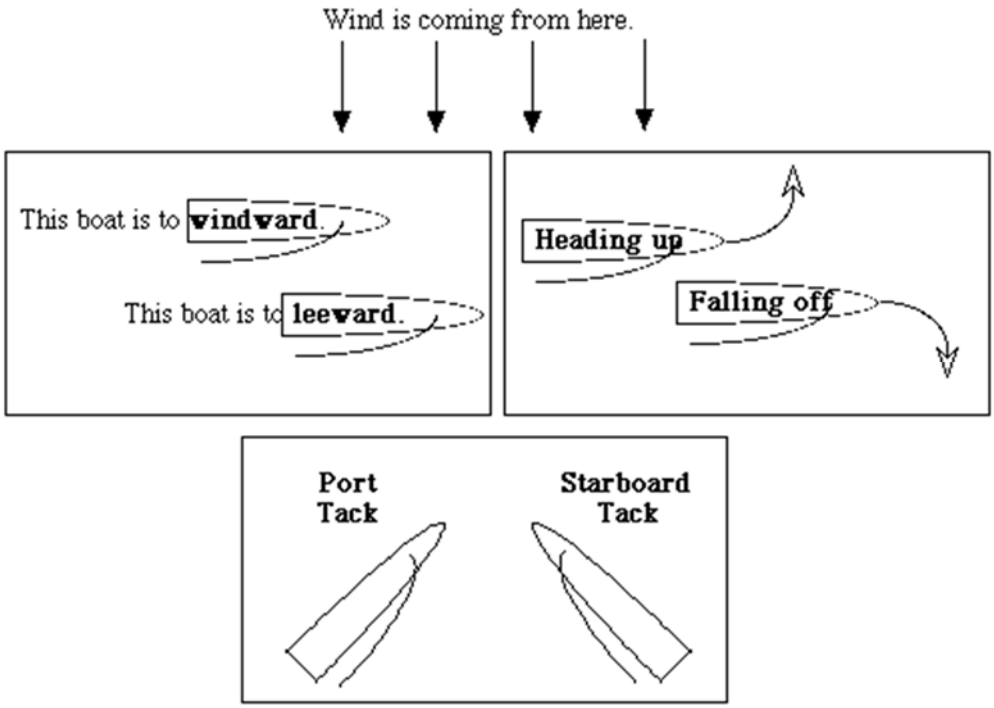
Directions

Directions on the water can be described in terms relative to the wind, or relative to 'left' and 'right.' Since we've always had trouble with the latter, we will begin with terms relative to the wind.

The direction from where the wind is blowing is **windward**. The direction away from where the wind is blowing is **leeward**. To change one's direction to point more toward the wind is to **head-up**. To change one's direction to point more away from the wind is to **fall-off**. Now you know when someone frantically yells at you "fall-off," they do not mean hit the suds.

Now it's time for (ugh) left and right. If the wind is coming over the right side of a sailboard, therefore the sailor' right hand is forward, the sailboard is on **starboard tack**. If the wind is coming over the left side of a sailboard, therefore the sailor' left hand is forward, the sailboard is on **port tack**.

Sailing directions are important for **Rules of the Road** which are covered in the 'Start-Up' section of this guide.>


Wind is coming from here.
This boat is to windward.
This boat is to leeward.
Heading up
Falling off
Port Tack
Starboard Tack

Glossary of Sailing Terms

Apparent wind

The wind that the sailor feels which is the combination of the true wind and the wind caused by the boat's movement through the water.

Battens

Flexible strips or tubes placed in pockets in the sail to hold the sail's shape.

Beam

Widest part of a boat. The point halfway between the bow (front) and stern (rear) of a sailboard.

Beam reach

Sailing at 90 degrees to the wind. Sailing with the wind coming directly over the beam of the board.

Bear off

Same as 'fall off.'

Beat

To sail to windward.

Broad Reach

Sailing with the wind just aft of the beam.

Camber induced sail, Camber inducers

Plastic devices that hold the sail away from the mast so that there is a smooth flow of air across the mast to the sail on both the windward and leeward sides of the sail.

Center of effort (CE)

Point at which all of the force of the wind can be thought to concentrate.

Center of lateral resistance (CLR)

Point at which all of the sideways motion of the board may be thought to be concentrated. On the boards that have centerboards, the CLR is approximately at the centerboard.

Centerboard

A retractable device that, when down, keeps the board from going sideways. Entry-level boards have centerboards. Without a centerboard (in the down position) a novice board will not sail up wind. The centerboard will also steady the board and make balance easier.

Close reach

The point of sail between close-hauled and a beam reach.

Come about, tack

To change direction so that the sail is flown in the opposite side by turning through the eye of the wind.

Downhaul

Line that is used to pull down the mast. On modern sailboards, correct tension in the downhaul is the most critical sail adjustment. See how to rig sails section.

Eye of the wind

Direction from which the wind is blowing.

Fall off

No this does **not** mean jump off your board. It means to change direction so as to point farther away from where the wind is coming from.

Head up

Change direction so as to point closer to where the wind is coming from.

Jibe

To change direction so that the sail is flown on the opposite side by *turning away from the wind*.

Leeward

Direction away from the wind. In the Rules of the Road, the leeward boat is the one farthest from where the wind is coming from.

Outhaul

Line that us used to attach the sail to the end of the boom.

Uphaul

(1) Pull the sail out of the water. (2) The line that sailors use to pull the sail out of the water.

Port tack

In the normal sailing stance, sailing a course with the left hand in front. The wind will be coming from the left (port) side of the board. Port tack boat must stay out of the way of starboard tack boat.

Rotating asymmetrical foil (RAF) sails

Full batten sails without camber inducers. The batten tucks part way behind the mast so that there is a smooth airflow on the leeward side of the sail. Usually less expensive than camber induced sails.

Rules of the road

Rules that govern right-of-way when two boats meet (`boats' includes windsurfers)

Running

Sailing in the same direction as the wind.

Sheet in

Pull the sail in by pulling in with the back hand. On a boat, the sheet is the line (rope) that controls the sail. Boat sailors control the sail by pulling on the sheet. Windsurfers sheet the sail primarily with their back hand.

Sheet out

The opposite of sheet in.

Skeg, fin

The small fluke or appendage in the water at the stern of the board that keeps the board going straight. Do not attempt to sail a board without a skeg.

Starboard tack

In the normal sailing stance, sailing a course with the right hand in front. The wind will be coming from the right (starboard) side of the board. If two sailboats or sailboards meet, the one on starboard tack has the right-of-way.

Windward

Direction toward the wind. The windward boat is the one closest where the wind is coming from.

Universal

The joint that connects the mast to the board. It can rotate in all directions, hence universal.