

# Basic Sailing Manual

California State University, Northridge  
Aquatic Center  
Department of Recreation and  
Tourism Management

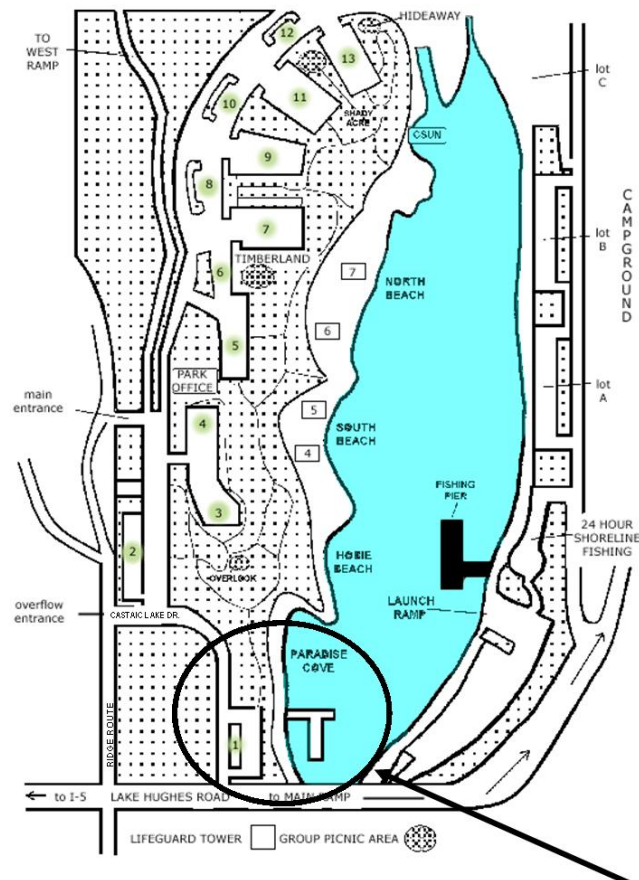
## Forward

Founded in 1976, the California State University, Northridge Aquatic Center has become well known throughout the community- and, in fact, the nation- for its excellence in boating and water safety education. The center, which is located at Castaic Lake Recreation Area in the scenic foothills of the Santa Clarita Valley, is one of the largest boating education centers in the nation, serving in upward of 10,000 individuals through its credit, non-credit and community service programs each year. Approximately one-quarter of those individuals are CSUN students, while three-quarters are members of the community. From students to community groups to at-risk youth, we truly offer something for everyone.

Upon completion of our sailing program, all individuals can receive a Department of Boating and Waterways, State of California, Boating Safety Course Certification and California Community Sailing Certification.

The Center, has been recognized by the California International Sailing Association, as well as received the Excellence Award from the National Safe Boating Council Youth Program.

## Where We Are Located

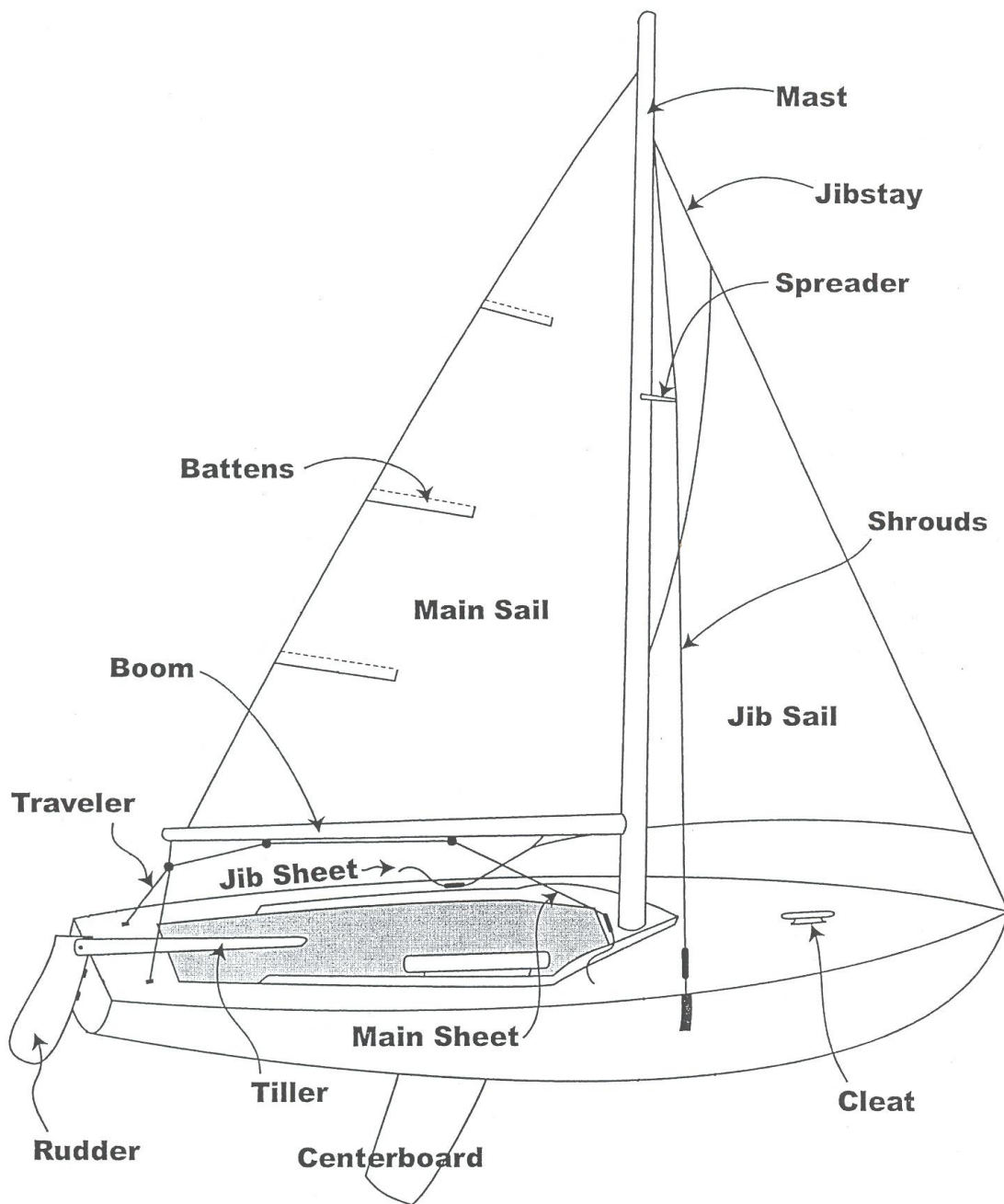


### Directions:

- I-5 to Lake Hughes Road
- Turn Right on Lake Hughes Road
- Turn Left on Ridge Route
- Turn Right on Castaic Lake Drive
- Turn Right at entrance fee booth
- Stop and tell attendant your RSVP'd driver's name for your free parking
- Turn right at "T" and park in lower lake parking lot #1
- Meet at BISC (Classroom Building)
- Call 661-257-0571 for further directions if necessary

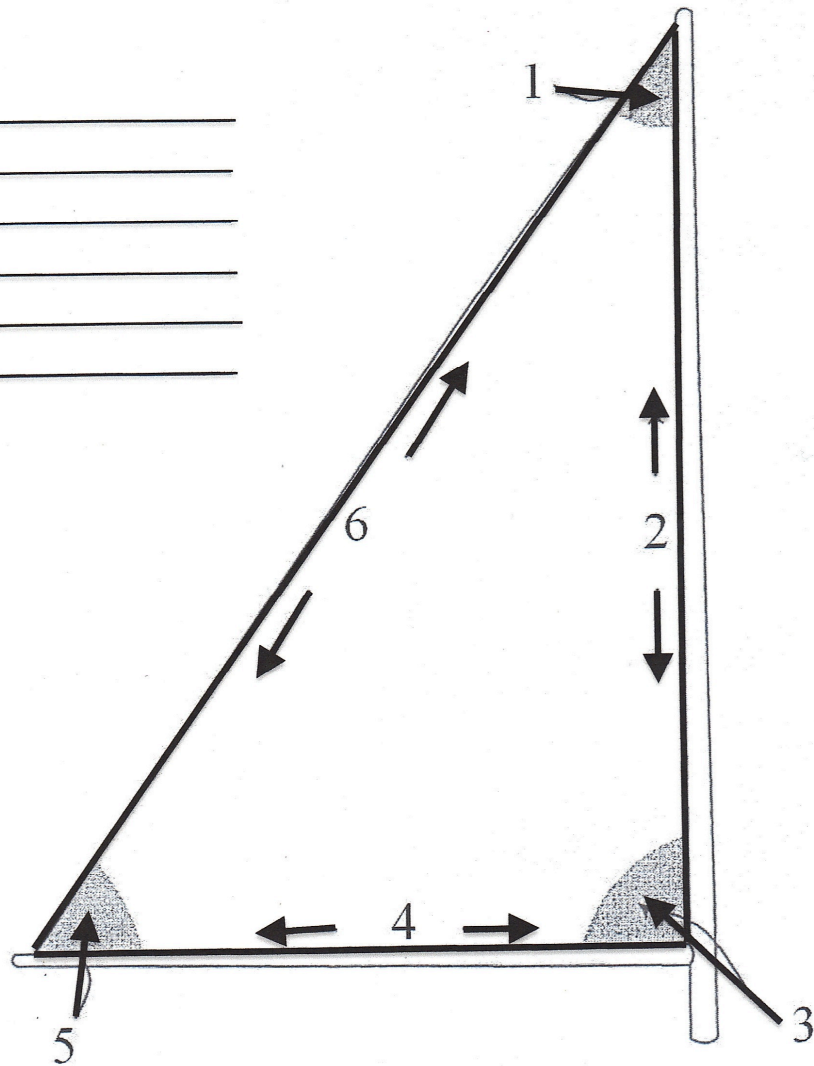
**EVENT HERE**

## PARTS OF A SAILBOAT

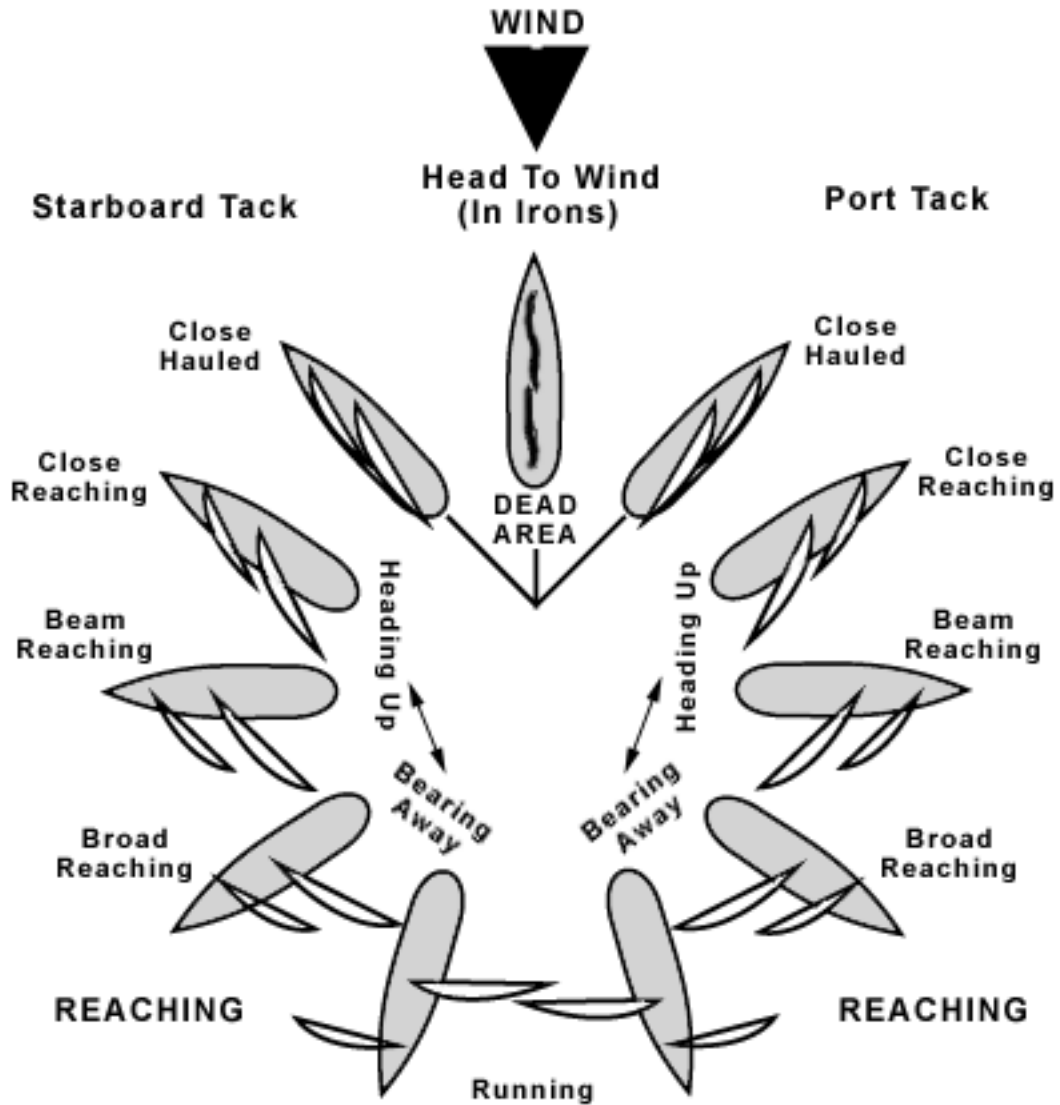


## PARTS OF A SAIL

1. Head
2. Luff
3. Tack
4. Foot
5. Clew
6. Leech



## Sailing and the Wind



Note: Boats on a Starboard tack usually have the right of way since they are on starboard tack; the wind is blowing over their starboard (right) side.

### Close Hauled (Toward the Wind)

The highest degree on which most boats can sail efficiently is an angle approximately 40-45 degrees off the wind. The wind will be coming across the bow of the boat and the tell-tails will point almost straight back. Let the sail out until it luffs, then bring it back in to the point where it *just* stops luffing and.

### Close Reach

A close reach is one of the fastest and most exciting points of sail. There are three types of reaches; the differences depending on which way the wind is coming across the boat. In a close reach, the wind is coming across between the bow and the side of the boat. The tell-tails will be pointing back and slightly towards the sail. Let the sail out until it luffs, then bring it back in to the point where it *just* stops luffing.

### Beam Reach

A beam reach is when the wind is coming *directly* across the side of the boat. Let the sail out until it luffs, then bring it back slowly until it *just* stops luffing.

### Broad Reach

A broad reach is the easiest point of sail. The boat will feel very stable and move very quickly through the water. The wind will be coming between the aft end and side of the boat. The tell-tails will be pointing at the sail. Let the sail all the way out and bring it back in slowly. Be particularly alert to keep your boat level, and to keep the bows from “digging in” –(moving your weight aft will help prevent this) if you’re not careful, you can end up “pitch-polling” (flipping end-over-end).

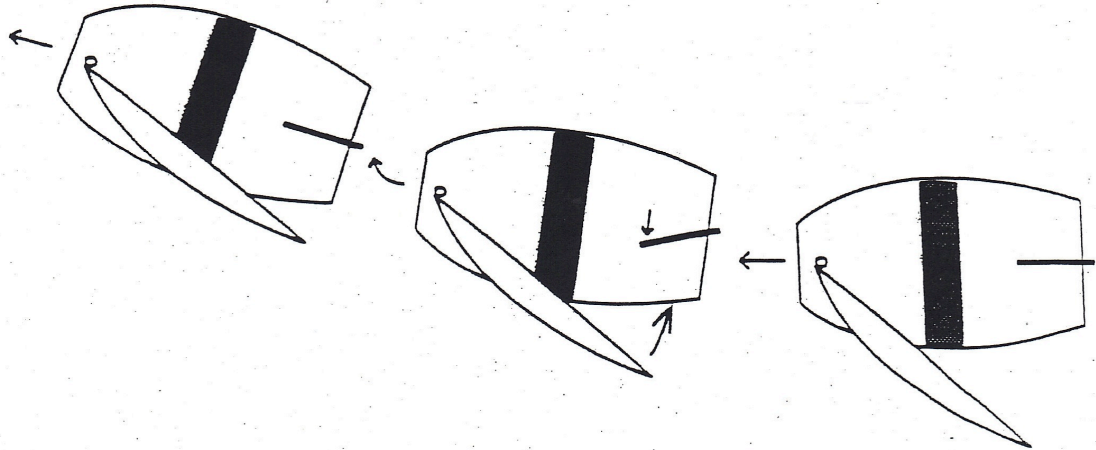
## Downwind

Running downwind is the slowest point of sail. The wind will be coming from directly behind the boat and you will feel very little or no breeze at all. To obtain this point of sail you will let your sail all the way out. The sail tell-tails will *not* be used in this case because all the wind's behind the sail. There's a danger of "jibing" – and that means that the boom will snap across from way out on one side of the boat to way out on the other. Watch for the warning sign – the boom will begin to oscillate and slowly rise. Beware – the next event is going to be the boom snapping across. When you're sailing downwind, your main sail is out at almost a right angle to the boat and you won't feel the wind much at all. If a wave should give you a sudden push from behind, you might stray away from your course enough that the wind can sneak around the other side of your sail, causing an unexpected jibe.



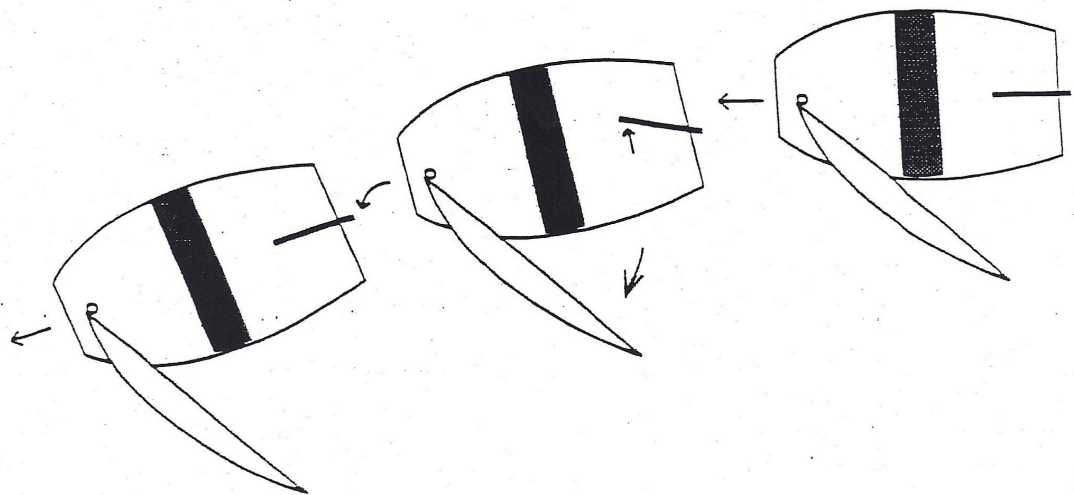
### Heading Up

Heading up is having your boat turn into the wind a few degrees, but not to the point of coming about. To head up you move the tiller towards the sail an inch or two and hold it there until you are headed in the new direction you wish to go, then straighten it out. You head up from a run to a reach and from a reach to a beat. Now that you have your new course, trim your sail (sheet in).



### Falling Off

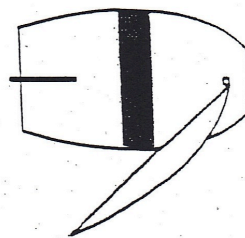
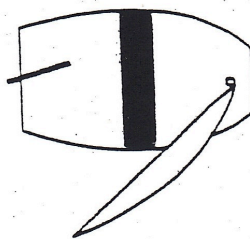
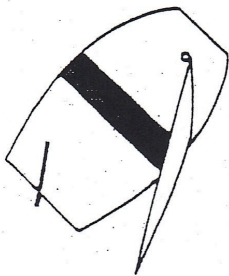
Falling off is having your boat turn a few degrees away from the wind but not to the point of jibing. To fall off you move the tiller away from the sail an inch or two and hold it there until you are headed in the new direction you wish to go, then straighten it out. You fall off from a beat to a reach and from a reach to a run. Since you changed course you should trim your sail (sheet out).



## Coming About

In order to come about you must have one hand on the tiller and the other on the mainsheet.

1. First make sure there is enough room to turn your boat without hitting anything.
2. Have your sail full and your boat moving as fast as possible.



3. Now push your tiller slowly towards the sail.

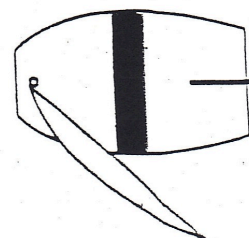
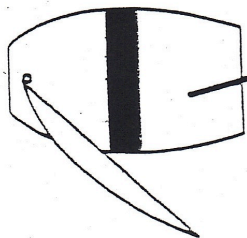
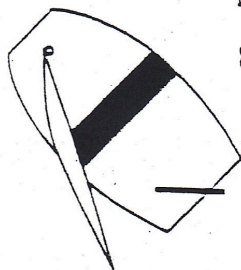
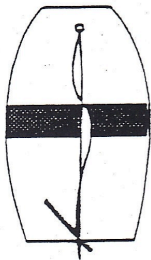
4. Let go of the tiller and grab the mainsheet with both hands. Don't worry the tiller will take care of itself as long as you hurry.

5. When the sail gets to the middle of the boat you should change sides.

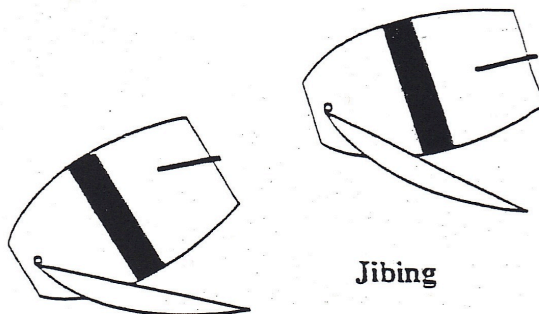
6. Now grab the tiller with the hand you started on the mainsheet and wait for the sail to fill.

7. When the sail is on the new side and is no longer luffing, it is time to straighten out the tiller.

8. You have just finished coming about.



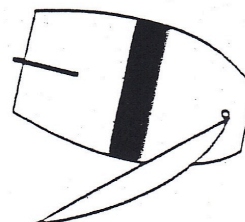
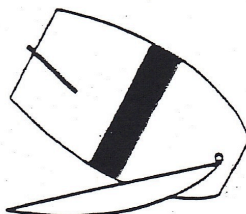
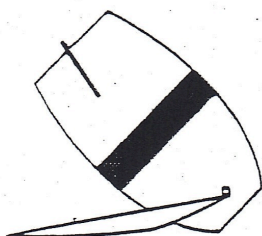
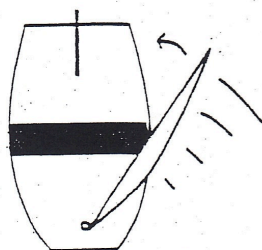
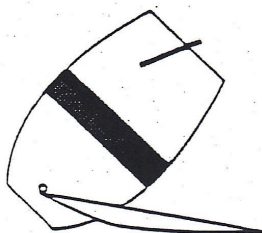
Wind



### Jibing

The sequence of actions for making a smooth, controlled jibe are as follows:

1. The first thing you need to do is roll up onto your knees while facing forward, making sure your weight is centered in the boat.
2. Now switch hands on the tiller behind your back. Bring the mainsheet with you so that as you switch the tiller hand is holding both the mainsheet and the tiller.
3. Now you are ready to jibe.
4. Push the tiller away from the sail, slow down the turn as the stern points into the wind.
5. Pull the sail in to get it moving across the boat. Keep your eye on the boom as it swings across and while facing the sail lower your head to let the boom pass over it.
6. Let the sail almost all the way out and sit down on the new side.
7. Readjust your course, then readjust your sail.
8. You have finished jibing.





### What your sail is trying to tell you (If you would only look at it)

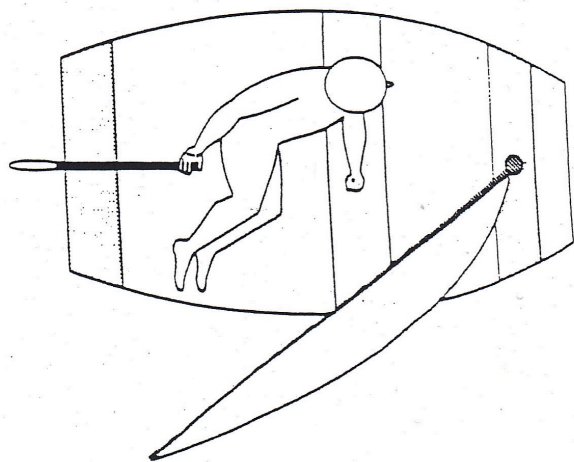
First you have to turn your boat in the direction that you wish to go. Once you have accomplished this you will need to look at your sail. If it is not luffing you need to let it out until it starts to luff, then slowly pull it back in until it stops luffing. Remember, your sail first starts to luff right next to the mast about halfway up. Now look at your boom. you should be able to tell which point of sail and which tack, port or starboard, that you are on.

If you aim your boat the direction that you wish to go and your sail is luffing, you need to pull it in until it stops luffing. Again you should be looking at the sail right next to the mast, about halfway up. As before, to determine which point of sail you are on and which tack, look at which side of the boat the wind is coming across. You are on port tack if the wind is coming over the port side of the boat (the boom will be on the starboard side ).

Here comes the tough one. If you aim your boat the direction you want to go and you pull the sail all the way in but your sail is still luffing, this means you can't sail directly to your desired destination. You will have to sail a zig-zag course to get there. In order to get your boat moving, pull the tiller away from the sail until the sail stops luffing and then straighten your tiller out. You will now be sailing on a beat. Please re-read what to do with your sail and tiller while sailing on a beat.

### Where to sit

You should normally sit on the opposite side of the boat from the sail. Your head should be turned so that you can see where you are going and so you can see your sail in order to make sure your sail isn't luffing. The side of your waist should be touching the back edge of the thwart. Your hand closest to the front (bow) of your boat will be holding the mainsheet and your hand closest to the back (stern) of the boat will be controlling the tiller



## Luffing

When a sail is fluttering, it is said to be luffing. The sail starts luffing at the leading edge (the luff) and travels back towards the leech (rear edge). Luffing the sail can be an effective method of reducing speed and reducing excessive heeling (boat leaning over).

## Reaching

You are reaching when you are not trying to beat or run. You aim your boat the way you want to go and steer a straight course. In order to compensate for the change in wind, you let your sail out until it just starts to luff and then pull it back in until it quits luffing.

## Running

To sail on a run, let your sail out and fall off until the wind is coming over the back of the boat. Note: it can be difficult to tell from what direction and how hard the wind is blowing when it is coming from directly behind the boat.

## Beating

If your destination is toward the direction the wind is coming from, you must sail a zigzag course to get there. This point of sail assumes that you are sailing as close to the wind as you possibly can without your sail luffing and is called beating. When you choose to sail to a point directly upwind, you must pull in your mainsheet until the outer end of your boom is over the far back (leeward, aft) corner of your boat. Then by moving your tiller toward the sail an inch or two and holding it there, let your boat turn slowly into the wind (heading up) until your sail just starts to luff. As your sail starts to luff, bring your tiller back away from the sail. This will turn the boat away from the wind (falling off) and the sail will fill again. The course you will end up steering will weave slightly as you react to the varying wind. In order to sail this course you will constantly have to test the changing wind by slightly heading up into the wind to see if your sail will luff, and when it does, fall off until your sail just fills.

## Using the Tiller

Attached to the tiller is the tiller extension. Make sure you sit in front of the tiller so that you will have full range of motion. Push right to go left, and push left to go right. Always look where you are going, not where you have been, and remember the boat must be moving in order for the tiller to have any effect.

## Getting out of Irons

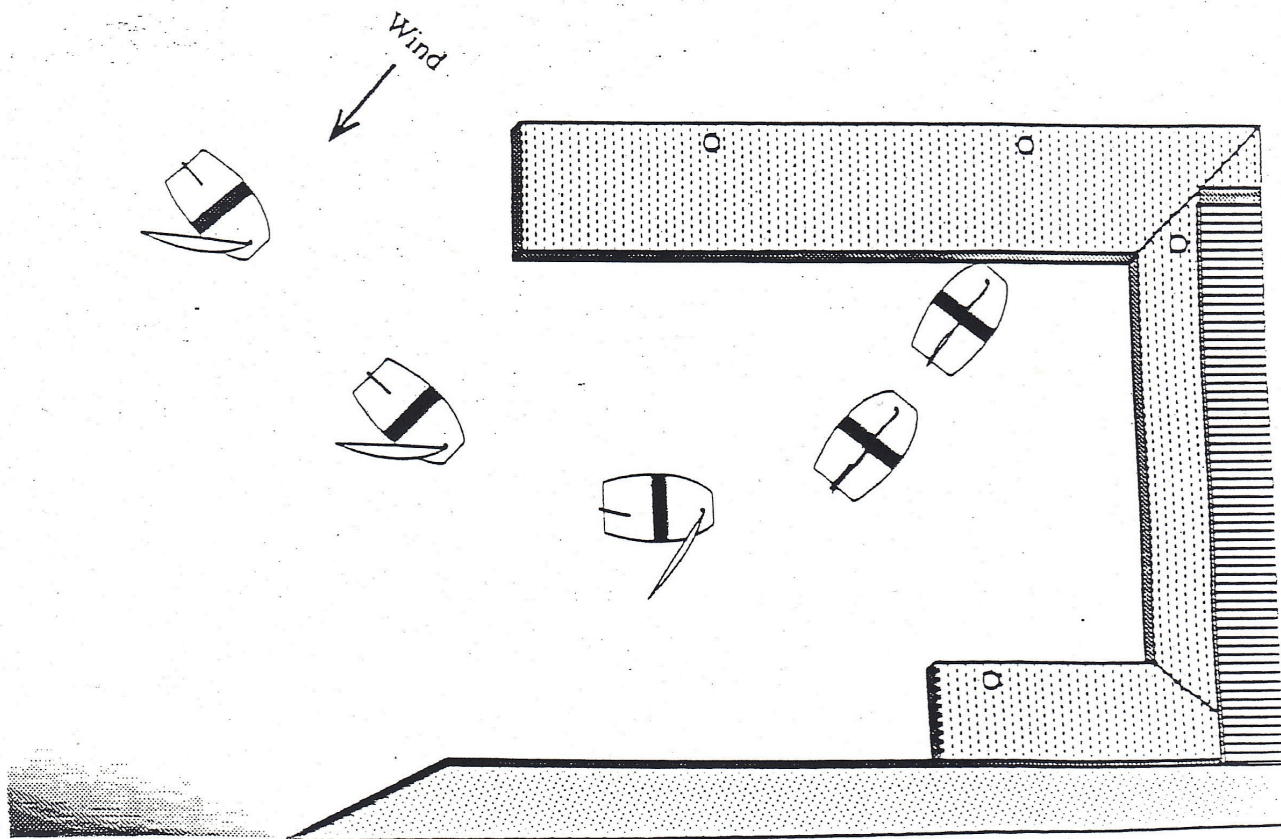
If you stay in the dead zone too long you will go into a condition known as “In Irons”. This is indicated by the sails luffing and the boat stopping and drifting backwards. To get out of irons in a boat with a single sail, move the sail and tiller in the direction you want to sail. The boat will back up and turn. When the wind is coming across the beam, center the tiller, sheet in the sail and you are again sailing.

## Docking

Coming into and leaving the dock can be a smooth and controlled procedure if the sailor pre-plans, takes their time, thinks the action through clearly, and follows these simple steps:

1. Sail towards the dock on a reach noting the open places along the dock where it will be easiest to land your boat. If you are one of the first ones into the dock you should sail closest to the gangway to allow room near the end of the dock for the sailor who returns after you.
2. As you aim your boat toward the general area of the dock that you intend to land, let your sail out until it starts to luff. This will start to slow your boat down.
3. When you are approximately two boat lengths from the dock, let your sail out all the way and aim directly towards the spot you plan on docking.
4. Just before your boat makes contact with the dock, let go of the mainsheet and tiller and move to the bow of the boat. If the boat is moving slowly enough ( if it is going too fast just let it hit so as not to injure yourself) reach out and fend off the dock. Tie the bowline to a cleat, leaving 1 1/2 feet of slack between the boat and the dock.
5. Pull the boat toward the dock and with one hand on the dock and one hand on the boat, pull yourself out of the boat.

Note: You must always approach the dock from downwind. Heading into the wind with your sail luffing acts as a brake and slows you down. If the wind direction changes, you must change the direction of your approach to the dock.



## Getting Started

First, make sure you are ready to cast off: check your drain plugs, that all lines have been properly rigged, and that you know where everything is.

If you are launching from the beach, push the boat out until you are about knee deep in the water, noting the direction of the wind to make sure you are sitting on the windward side of the boat. Push off, climb aboard, put down the centerboard, push down the rudder and take your mainsheet and tiller in hand. You are now on your way.

If you are pushing off from a dock, step aboard carefully, making sure you keep your weight near the boat's center line. If there is no one to shove you off, be sure to untie your bow line before getting aboard (be sure to hold on to your boat until you get aboard). Sit facing the sail, and look around you to make sure you are clear of other boats or obstacles before you start. Drop your rudder and center board.



## Rules of the Road

Just as there are traffic rules for automobiles, there are right-of-way rules for boats. There are general rules involving all boats, and rules of the road for when two or more sailboats are on a collision course. Powerboats give way to sailboats; sailboats give way to man powered vessels (canoes and kayaks).

### Leeward

Direction away from the wind, downwind or lee side.

### Windward

Toward the wind, the opposite of leeward.

### Boats Under Sail

#### 1. Starboard Tack Rule

When two sailboats on different tacks meet, the boat on starboard tack has right-of-way over the boat on port tack.

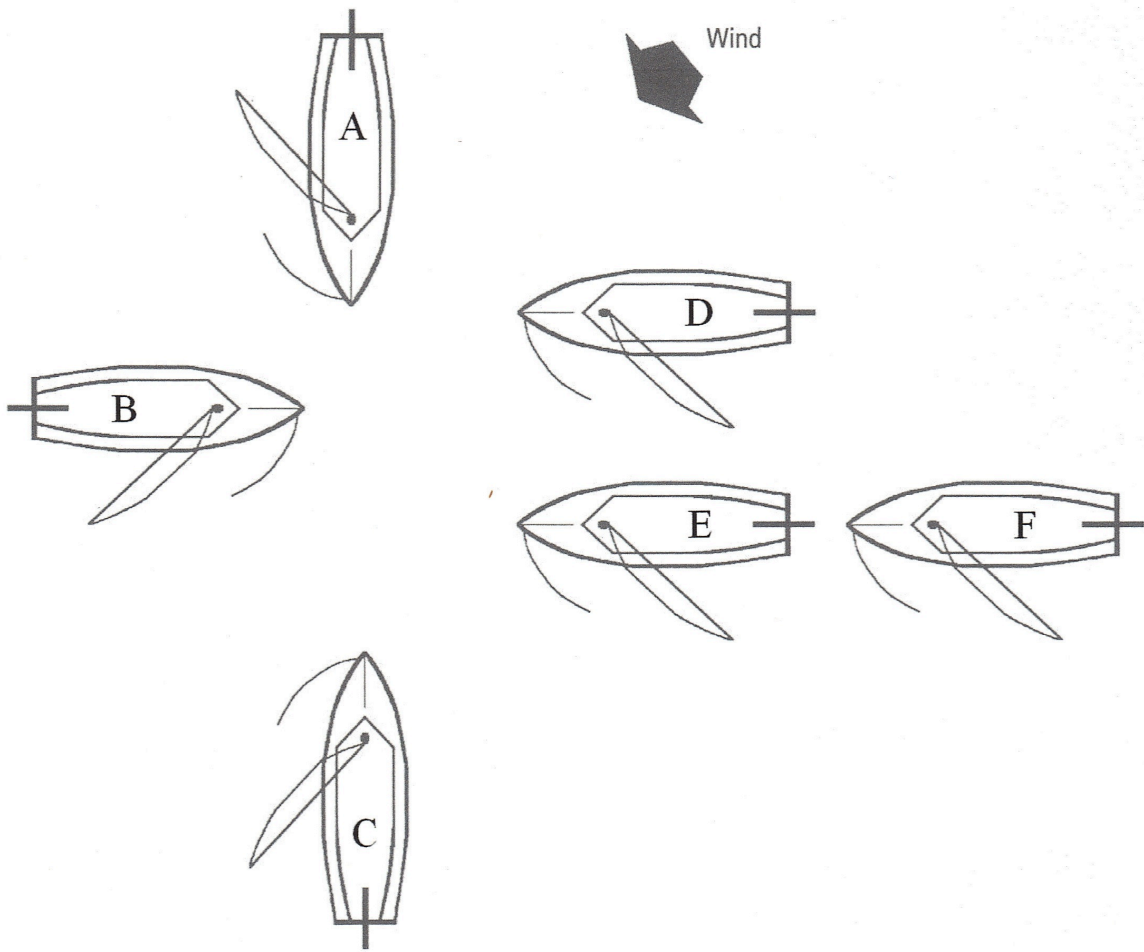
#### 2. Windward-Leeward Rule

When there is more than one boat on the same tack, the leeward boat has the right-of-way.

#### 3. Overtaking Vessel Rule

When two boats are headed in the same direction, the slower moving vessel has the right of way. When the faster moving boat overtakes the slower boat, then rule 1 or 2 applies.

## Right - of - Way



## Right of Way

In the picture on the previous page, who has the right of way?

### **A or B**

Both boats are on a port tack, so we look at the windward versus leeward rule. Boat B is downwind of boat A, so boat B has the right of way.

### **A or C**

Boat A is on a port tack, while boat C is on a starboard tack. Therefore, boat C has the right of way.

### **D or E**

Both boats are on a starboard tack, so we look at the windward versus leeward rule. Boat E is downwind of boat D, so boat E has the right of way.

### **E or F**

Both boats are on a starboard tack, and neither boat is downwind of the other, so we look at the overtaking vessel rule. If boat F is moving faster, then boat E has the right of way until boat F makes a pass. Then the windward-leeward rule applies.

## Appendix

Aboard	On or in a boat.
About	To tack.
Aft	The part of the boat at or near the stern.
Amidship	In the middle of the ship
Apparent Wind	The wind felt on a moving vessel.
Astern	Behind the stern of a boat.
Battens	Thin wooden, metal, or plastic strips placed in a pocket in the leech of a sail to help hold its form.
Beam	The width of a boat at its widest point.
Beam wind	A wind that blows across the boat from side to side.
Beat	To sail to windward close-hauled.
Boom	The spar to which the foot of the sail is attached with lacing, slides, or a groove.
Boom Vang	A line between the boom and the mast used to hold the boom down while on a reach or run.
Bow	Forward part of the boat.
Capsize	To turn a boat over on its side while sailing.
Cast Off	To untie a line and let it go, or remove a line from a cleat and let it go; to ease sheets.
Centerboard	A pivoting, shaped board, which is lowered through the boat's bottom by way of a slot in order to keep the boat from slipping downwind.
Cleat	A fitting used to secure a line under strain.
Clew	Lower after corner of a fore and aft sail.
Dagger Board	Centerboard which moves vertically up and down.
Downhaul	A line or tackle attached to the tack of the sail used to put downward pressure on a sail.
Downwind	To leeward; running before the wind.
Drift	The leeway or movement sideways of a boat.
Ease	To let go of a line or sheet gradually.

Eye of the Wind	The exact point from which the true wind is coming.
Fall Off	When the head or bow of a vessel moves away from the wind.
Foot	The bottom edge of a sail from tack to clew.
Forestay	A support wire connecting the mast to the bow.
Forward	Near or towards the bow of the boat.
Halyard	A line used to raise or lower a sail.
Head	The topmost part of the sail.
Headstay	A forward stay supporting the mast, attached at the top of the mast.
Heel	To lean a boat over, generally away from the wind.
Hiking	When a person leans over the side of the boat to counteract a heel.
Hull	The main body of the boat.
In Irons	Aimed directly into the wind, not moving, unable to turn.
Jib	A triangular sail set forward of the mainmast.
Jib Sheet	Line that controls the set of a jib.
Jibe (Gybe)	To change tacks sailing downwind.
Leech	After-edge of a fore and aft sail.
Leeward	Direction away from the wind, downwind or lee side.
Luff	The forward vertical edge of a sail; To alter course toward the wind until the boat is head to wind; The flapping of a sail caused by the boat being head to wind.
Luffing	Sail fluttering.
Mainsail	The largest regular sail on a modern sailboat set on the mast.
Mainsheet	Sheet (line) used to control the mainsail or the main boom.
Outhaul	The line that pulls the mainsail away from the mast and tightens the foot of the sail along the boom.
Overboard	Over the side, into the water.
Planing	When a boat accelerates enough to brake loose from its bow wave and ride on top of the water.

Port	Left-hand side of the boat facing forward.
Port Tack	When the wind comes from the port side and the boom is on the starboard side. Port tack vessels give way to starboard tack vessels.
Rudder	Used to steer the boat.
Shackle	A U-shaped piece of iron or steel with eyes in the ends, closed by a shackle pin.
Sheet	The line used to control the sail.
Shrouds	Rigging that supports the mast, or vertical wires that hold the mast upright.
Spreader	Holds the shrouds away from the mast.
Starboard	The right side of a boat as one faces forward.
Starboard Tack	A course with the wind coming from the starboard and the sails trimmed on the port side.
Stay	A wire used for supporting a mast fore-and-aft.
Stern	The back part of the boat.
Tack	The forward lower corner of a sail, where the luff and foot meet;  Any course on which the wind comes from either side of the boat;  To change course by passing into the wind.
Tiller	Steering instrument that controls the rudder.
Traveler	A track or bridle that controls sideways movement of the boom and sail.
Trim	To adjust the sails by using the sheets.
True Wind	The wind blowing over a stationary object.
Wake	The waves from a boat.
Weather	The side from which the wind is blowing; windward.
Windward	Toward the wind, the opposite of leeward.

## Acknowledgments

Ventura Sailing Program and Staff; Gary Barth, Jeff Berry, Sheila Forsman, Debby

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Compiled by

John Van Arsdale

Erin Eiholzer

CSUN Aquatic Center Staff

College of Health and Human Development,

Department of Recreation and Tourism Management

California State University, Northridge

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