

# Learn to Sail in 3 Days

This practical on-the-water course will help teach you the fundamentals of sailing, build your sense of confidence, and let you experience the first joys of becoming one with wind and waves.

UPPER SPAR

HALYARD

BOOM (LOWER SPAR)

MAST

MAINSHEET

EXTENSION

CENTERBOARD

HOOK

TILLER

RUDDER

## BE OBSERVANT

The pictures in this booklet are very instructive. Let's start with the one above.

## Swimming Qualification

All beginning sailors must be able to swim and stay afloat for 10 minutes.

## BALANCE AND POSITIONING

Sit on the side which allows you to watch the sail. By being on the side opposite the sail, your body can move in and out to naturally counteract the wind's pressure on the sail. Always keep the boat as flat as possible. Sit well out when there's wind, hooking your toes under the lip of the footwell (cockpit). Sit well ahead of the tiller to control the sail.

Your front hand will hold the mainsheet line after the line goes under the small hook . . . for added leverage. Your other hand will be on the tiller extension for steering. Positioned so, it is easy to remember that by pushing the tiller *toward* the sail (see dotted lines), the boat sails *toward* the wind, and by pulling the tiller away from the sail, the boat sails away from the wind. Except for "coming about", or turning through the wind, your tiller movements should be small. Moderate 5° - 10° adjustments are the rule, not 45° - 90° swings.



# FIRST DAY...

## THE OBJECTIVE

The objective of the first day is to overcome any concerns you have about steering, being stranded with no wind, or capsizing. By clearing the mind of such concerns, sailing skills will be acquired more easily on the second and third days.

### No wind, shallow water

Pick a time when there is *no wind*—near a dock or at a beach in waist deep water. Launch your **Sunfish** sailboat with just the centerboard and rudder installed per instructions. No mast or sails. Take a small paddle along and a Coast Guard approved life jacket. Spend a half hour experimenting in shallow water.

### 1 Steering

You will find that sailboats steer like an outboard motorboat (using the handle on the outboard), like a canoe, or like a rowboat with an oar over the back. The end of the tiller is pushed or pulled in the opposite direction from where you want the boat to go. Use the tiller extension.

### 2 Paddling

Practice paddling your **Sunfish** sailboat three different ways: (1) lying down on the bow surfboard style, (2) using a regular paddle, and (3) using the centerboard as a paddle.

These techniques will get you home if the wind dies or becomes fickle and confusing.





# FIRST DAY (continued)

## Raising and lowering the sail

When you've mastered steering and paddling, proceed to set up the sails per instructions which come with your boat.



This picture shows halyard cleated, coiled, and properly secured for sailing.



### 3 Raise the sail

Raise the sail, securing the halyard which pulls it up (See inset top of page). Put a large knot in the free end of the halyard, so when you let it down, the end can't pass through the deck eye. Make sure the mainsheet is attached properly and that the steering tiller is under the wire bridle on the back deck.



### 4 Practice lowering sail

Practice lowering sail once or twice. Let the two spars and sail fall on the deck, while leaving the mast up.

Roll the sail into the spars and lash sail and spars together with the excess mainsheet left over after pulling it in all the way. This pulls the ends of the spars onto the rear deck and secures the sail.

### 5 Tipping over

Now with sails up, and life jacket on, move into waist deep water and push the centerboard all the way down. Climb up on the deck, grab the mast and tip the boat over so that it is on its side with sails in the water.



This lowering sail capability is both a convenience and safety feature of the **Sunfish** sailboat. This is how the boat is secured "seamanlike" on the beach, dock or mooring while having lunch. It is also a precaution you can take if a storm approaches and you want to drift without effort until help comes or the storm passes on.





# Up and away in 15 seconds

6 Follow this sequence to right the boat in under 15 seconds



a. Immediately check to see that the centerboard is pushed into the slot all the way and the mainsheet is running free.



b. Swim to the bottom side of the boat.



c. Lean on, then pull down on the centerboard, while pushing the underwater deck rim with one foot.



d. As the boat comes up, grab the deck,



e. and, continue to pull until the boat is upright.



f. Scramble aboard.

Not too difficult, was it?



This maneuver is easier with a **Sunfish** than with many other boats because of the low sail design which comes up out of the water easily. Its spars help too because they are sealed at both ends for flotation. Eight year olds weighing less than 100 lbs. have done it in 15 seconds.

You will also notice that very little if any water gets into the cockpit. The **Sunfish** sailboat is designed to be unsinkable and unswampable. That means you can rescue yourself without outside help after a capsize even if the footwell does fill up with water. That's one reason the cockpit is small and has a drain.

If the water is on the cold side (under 70°), wear a wet suit top for the next session. It is better to wear a wet suit which provides added flotation than to wear heavy sweaters or bulky foul weather gear which become heavy when wet or restrict movement.

## A BOATING SAFETY RULE IS :

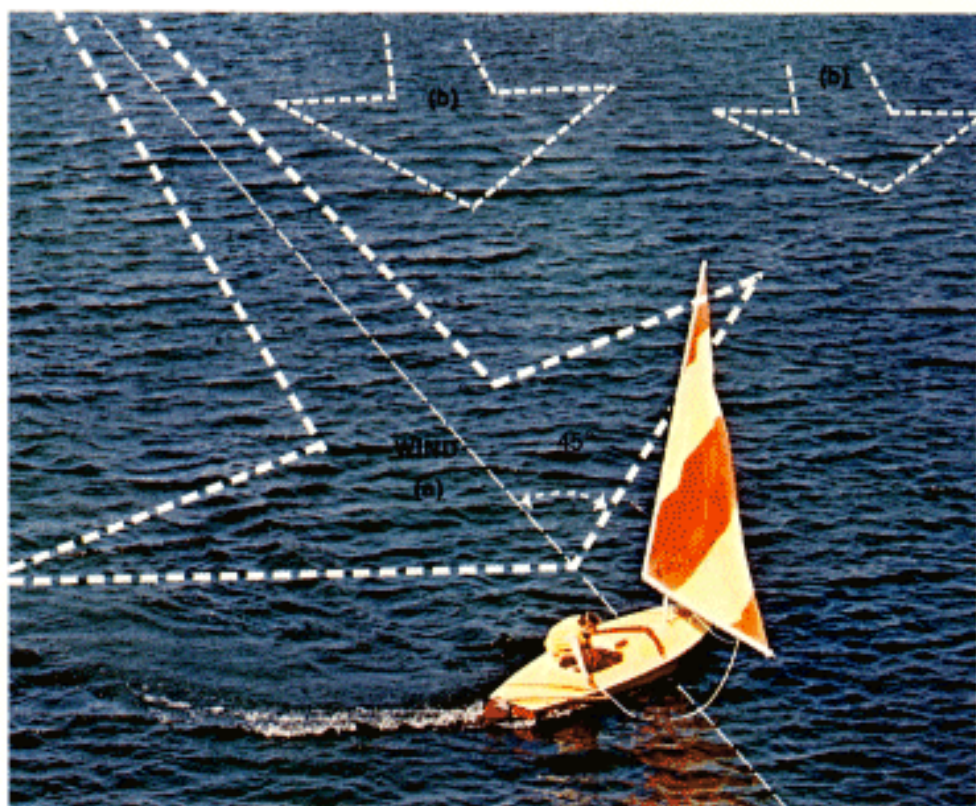
Never leave the boat to strike out for shore unless you can wade in, towing the boat.



# Wind and weather

You can get a head start on your second day by improving your wind awareness on land. It comes from different directions of the compass depending on weather systems. For given periods of hours it will come from one general direction, shifting anywhere from 10-30 degrees and varying in strength as much as 5-10 mph.

There are some land based ways of determining strength and direction by looking at flags, smoke, low flying clouds, and leaves or trees. One of the most accurate ways is to face the wind, then balance its feel on both ears. You are then looking at where the wind is coming from.



On the water, your **Sunfish** sailboat's spars and sails can act as a large windvane pointing at the source of the wind. All you have to do is let out the sail all the way and/or push the tiller toward the sail until the sail flaps freely.

Sailors learn to sense the wind with their face, ears, neck and arms. They anticipate and sense the smallest shifts in wind direction. A sailboat sails in the local

wind of the moment. It is always shifting, even if by small degrees. Generally, the waves roll from the point the wind is coming from. See (a) in the above diagram.

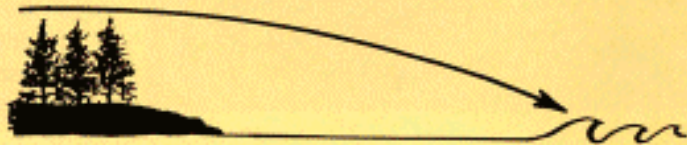
You can also anticipate wind shifts by looking at the water. In the upper right, the darker water indicates a 5-10 mph increase in wind velocity and a shift in direction to the right. See (b) above.

## WEATHER FORECASTS

Good sailors always try to anticipate what the general wind direction and velocity will be by checking the VHF marine weather band, local Coast Guard forecasts and evening T.V. weather forecasts . . . just as a good airline pilot will check weather readings on the plane's flight path.

Just before sailing, ask local sailors what their forecast is or how they determine direction and velocity when standing along the water's edge. Ask them to point out indicators of small shifts and velocity changes.

Be particularly wary of offshore breezes, wind blowing away from shore. It may be blowing at 25 mph, looking calm and peaceful near shore. But, because it is blowing so hard, the wind doesn't drop down on the water for a quarter of a mile out. One really can't see how rough it is out there.





# How a sailboat works

Except when being pushed from behind by the wind, a sail must have a curved airfoil shape to propel the boat forward. Consequently, a sailboat can't sail directly into the wind. The sail would flap without shape or power.

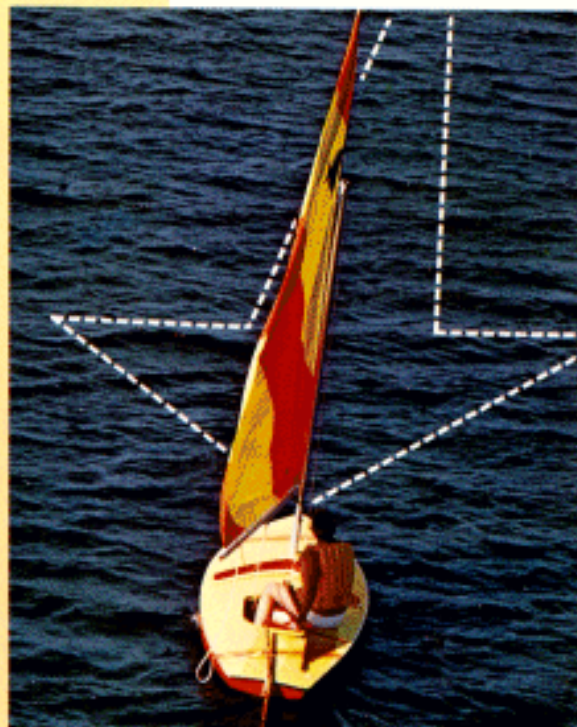


Even with the sail pulled in tight, a sailboat will not sail much closer than 45 degrees on either side of the wind. To visualize this while sailing, imagine that the wind is a big arrow lying on the water. The point is always where you are. The edges of the arrowhead angle back on either side of the wind at 45 degree angles. The closest you can sail to the wind is along either edge of the arrowhead. You will learn that the way to reach an upwind objective is by zig-zagging or beating.



When sailing away from the wind, the sail is pushed and is no longer functioning as an airfoil. So, the sail is positioned more at right angles to the centerline of the wind arrow. Also, less centerboard is needed to prevent sideslip, so it can be pulled up.

The most difficult angle of sailing is beating upwind because of the need for good balance and steering. The easiest course is running down with the wind. Since what goes down must go back up, you don't want to start with the easiest route. Let's practice sailing technique by first reaching back and forth in straight lines across the wind and back home again. When you feel comfortable doing this you will then learn to beat upwind, then lastly go downwind.



These pictures show that the sail is pulled in when sailing toward the wind, and let out when sailing away from the wind. When sailing to the left of the wind, the sail lines up with the left edge of the arrowhead. When going right, the opposite occurs. The sail is functioning as an airfoil. Instead of the lift of a horizontal glider wing, its vertical position creates forward thrust to move the boat. The centerboard keeps the boat from slipping sideways.





# SECOND DAY

## THE OBJECTIVE

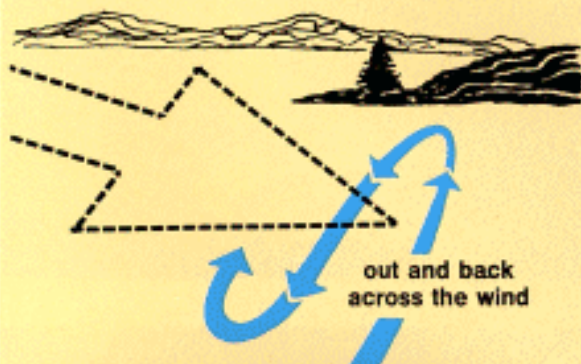
The objective for the second day is to learn how the wind and boat interact, how to position oneself in a sailboat, how to balance wind forces with your body, how to sail across the wind toward an objective, "come about", return to where you started, and stop.

This will be your first sailing day, so pick the location and weather conditions carefully:

- (1) Wind under 10 mph so you can learn balance easily.
- (2) Wind direction "on shore" or blowing toward a nearby shore. Since everything that floats, including confused beginners, blow with the wind, it's best to start out in an area where the wind blows you home, no matter how many mistakes you make.

## PLANNING

After the sail is raised, walk the boat out in water above your knees. Aim the bow of the boat 90 degrees from the wind and sight an object (like a moored boat or a house or distinctive tree on the shore) that you can sail toward. If starting from a dock, aim the boat the same way before getting in. The sail should be flapping with no tension on the mainsheet.



## 1 Start

You get in the boat and slowly pull in the sail just enough to eliminate the fluttering. The boat begins to move forward, you move your body to balance the boat, and aim the boat at your objective.

Pulling the sail in too much when sailing across the wind will cause the sail to stall out. The boat will tip more and slow down. If the boat tips too much hold course and let the sail part way out, even if the forward half of it is flapping. Or, let it all the way out so the boat stops.

Try it. It's reassuring to know *WHEN IN DOUBT LET IT OUT*.



## 5 Docking, landing and beaching

Leaving the dock or beach is sometimes easier than returning. The most common mistake is to attempt a landing with sails full rather than flapping. Whenever you make a landing, it should be planned so when completed, the boat is almost stopped in the water and the sails are flapping powerlessly . . . that's called an "eggshell" landing.

## ... Reaching

### 4 Repeat

Before arriving at the launching site, come about and proceed once again toward the initial objective.

Practice sailing between the objective and the launching site. When you can sail between these two points comfortably, you have learned to handle your boat on a reach. A reaching course is one where you are sailing across the wind.



# across the wind



## 2 Sail trim

When reaching across the wind, *adjust the sail. ADJUST THE SAIL TO REACH.* Correct sail trim is monitored at the front edge of the sail. If the front edge is fluttering, the sail should be pulled in slightly until it stops shaking. Try the following maneuver several times while keeping the boat aimed at your objective.

- Ease the sail out slowly until the front edge starts fluttering.
- Pull it in just a fraction to iron out the shakes . . . that's perfect.

Play the sail constantly on a "reach" to insure correct sail trim. Beginners usually pull it in too far. *A SMALL FLUTTER IS FASTER AND (the boat stays) FLATTER.*

This is especially critical for docking. One of the best methods of docking is to land on a side of the dock that the wind isn't blowing onto.

Approach on a reach. Control your approach speed by alternately trimming and easing the sail. As you near the dock, steer the boat into the wind and let the sail out at the same time and coast to a stop. Remember to allow for the turn and coast in your approach. It is far better to coast short than long. If you are short, there is nothing lost, you will be in irons. Merely back into a sailing position to try again. You can practice approaching a buoy which has clear water around it. Once you can pick up the buoy you should be able to dock safely.

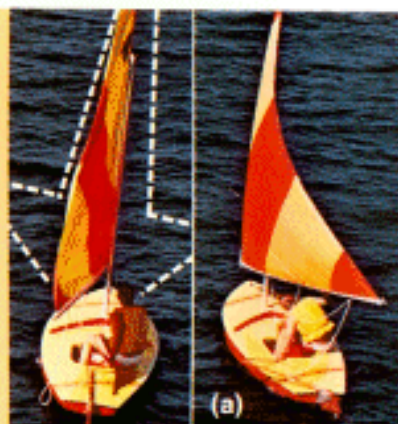
## 3 Turn

Before you've gone too far "come about" and head for home. In this maneuver, the boat is steered into the wind (push tiller toward sail) and then beyond it so the wind hits the sail from the opposite side. To avoid stopping completely, make the turn quickly by keeping the tiller pushed over until the wind is filling the sail on the other side. (If you don't make it, see below). Be prepared to duck under the boom and move your weight to the opposite side, while switching mainsheet and tiller hands. Steer toward home and adjust sail trim.

## GETTING OUT OF IRONS

If you "come about" too slowly, the boat may stop pointed into the wind with the sail flapping over your head. No amount of tiller or sail adjustment will start you sailing. You are caught in *irons*. The solution: You sail backwards for a moment (a) Push the tiller and the sail using the boom in opposite directions. (b) The boat will back around the rudder.

Let the sail go, keeping the tiller over until the sail is out over the side of the boat. (c) Slowly trim it in and straighten the tiller. The boat will gain forward speed. And, you are in control again. Don't rush this procedure or you may find yourself back in irons.





# THIRD DAY...

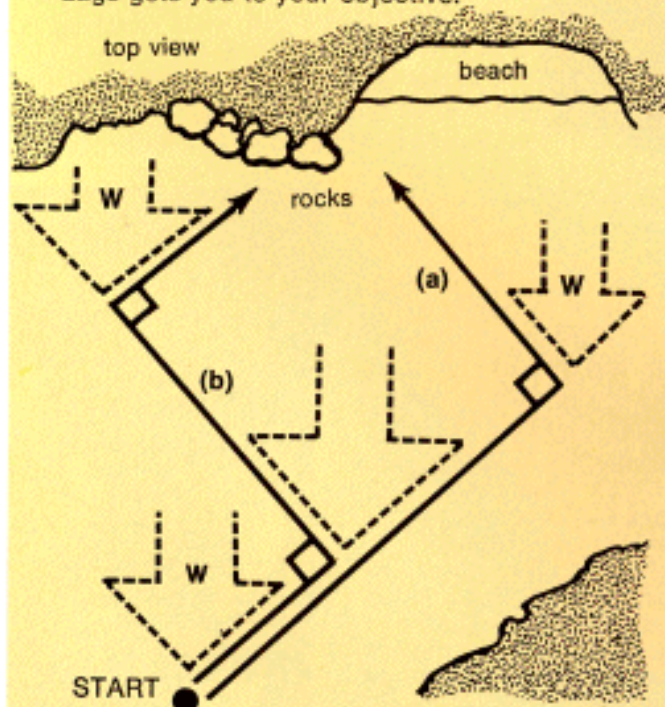
## THE OBJECTIVE

The objective of this lesson is to learn how to sail toward an object which is directly upwind from you and return sailing downwind, making a gybe, or turn with the wind behind you.

This lesson should *only* be attempted in winds less than 10 m.p.h. because balance becomes more important when beating upwind or when making a gybe turn with the wind behind you.

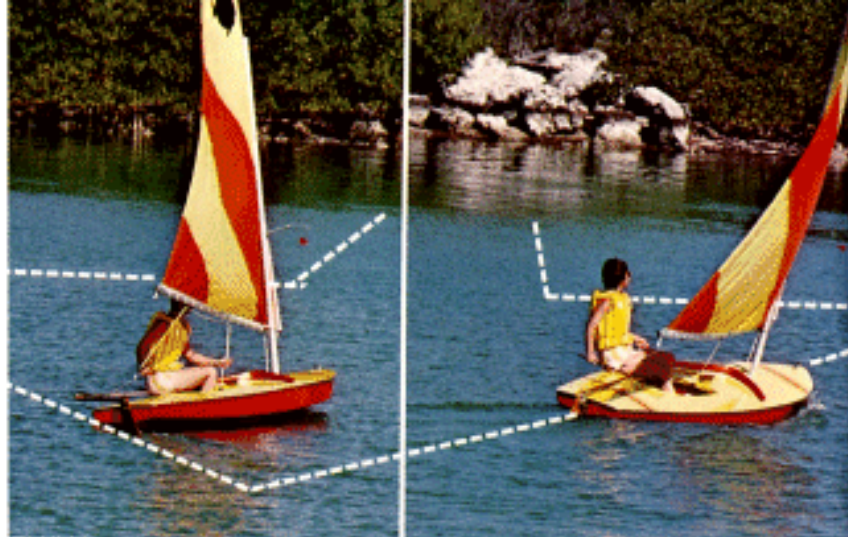
## PLANNING

To sail against the wind, you must use a zig-zag pattern called "beating". You sail as close to the wind (edge of the arrowhead) as possible. You then come about and hold as close to the wind as possible on the new course. Since you go through two 45 degree sectors, the new course is 90 degrees from the old. A combination of 90 degree zigs and zags gets you to your objective.



There are two ways to get to your ultimate objective: A pile of rocks on the shore in this case.

- (a) *Two long legs.* When the rocks are at a right angle, 90 degrees to the boat's first heading, come about and sail for them, or
- (b) *Numerous shorter legs.* You take several zig-zags up the middle.



## 3 Coming about

This 90° come about differs from the 180° version going from reach to reach in the second lesson. Keep the sail trimmed in and proceed as normal. Push the boat through the wind, shift weight and hands. (If you let the mainsheet run out during the hand shift, pull it back in.) *Then be ready.*

As the sail starts to fill on the new course, catch the wind by straightening the tiller rapidly and leaning out. Then check your boat trim to the wind . . . up a little, luff, off, up, etc.



## 1 Start

Pull in the mainsheet until there are 18-24 inches left between the bridle and end pulley (block) of the boom. Use the hook on the front edge of the cockpit for leverage. Then, *slowly* turn the boat closer to the wind. Stop the turn when the sail begins to luff — or shake — along its front edge.

At the moment the sail starts to luff, you are sailing on an optimum course about 45 degrees to the wind, along the edge of the arrowhead.

Now, since you passed the optimum course you must inch back. Turn the boat slightly away from the wind so the small luff stops and hold it there. To turn the boat *away from the wind*, pull the tiller away from the sail. Make small 5-10° changes with the tiller.

When "reaching", you learned to continually adjust the sail to keep it just on the verge of luffing, while keeping the boat on a steady course. "Beating" requires the opposite approach.



# Beating upwind and running downwind

## 4 Congratulations

You made it. It's all downhill from here.

To begin your run downwind do two things at the same time: (1) pull the tiller slowly away from the sail so the boat aims almost directly away from the wind, but no further. (2), ease the sail out until the boom is nearly perpendicular to the boat and the wind is pushing the sail in the same manner it pushes a kite.

A caution is in order when starting your run downwind. If you should continue steering away from the wind, you could go too far and be steering toward it again on the other side, causing an accidental gybe . . . a turn which is best made in a controlled fashion. In a gybe, the wind catches the back side of the sail and blows it across to the other side of the boat.



## 5 Gybe turn

Turn the boat slowly away from the wind by pulling the tiller away from the sail. Give the mainsheet a quick jerk pull as you direct the boat a bit farther around. When you feel the sail start to catch wind on the other side, duck the swinging boom, move to the center of the boat, let the mainsheet run out unimpeded, then steer back quickly (tiller away from the sail on the new course, momentarily to counteract the tendency of the boat to keep going into the wind). Aim the boat at your intended objective and *adjust the sail as on a reach . . . or run*. Gybing should be practiced often and done with caution in heavy winds. If ever in doubt about controlling a gybe, even the best sailors will elect the longer loop route . . . coming about when running downwind toward their objective. It may not be the shortest way around, but this loop gets you where you want to go — with less risk.



## 2 Adjust boat

You continually adjust the course of the boat to keep the sail on the verge of luffing while the sail remains trimmed over the aft corner of the boat, which is about as much as the sail should ever be trimmed. **ADJUST THE BOAT TO BEAT.**

Check your course frequently by bringing the boat closer to the wind until the sail just barely starts to luff. Then turn the boat away from the wind just until it stops. Hold it, then check again. Check your optimum course often when beating . . . a gradual, scalloping course results.

For general secondary reference, you can also line up an object on the water or shore once you've determined the optimum heading. But, remember that the wind is always shifting and those objects aren't.



**THAT'S IT! YOU'VE NOW LEARNED TO SAIL. WELCOME TO THE WORLD'S GREATEST SPORT!**