

# Adult Learn to Sail

## *Students' Guide*



Welcome to the Mariner Sailing School. Our formula for your sailing success is simple; we focus on practical on-the-boat experience under the guidance of skilled instructors who are chosen for their patience, teaching ability and love of sailing. The Flying Scot is the best daysailer on the water and is ideal for challenging all levels of sailing ability.

This manual follows the four water sessions format that has made this course so successful. It is important to read now and review after you sail, to reinforce your water time. Similar to riding a bike, once the theory becomes second nature, you'll be able to sail with confidence the rest of your life.

This course will be the most challenging aspect of your sailing resume. Once you master these skills, it is a very easy transition to larger boats. Generally speaking, the larger the boat, the easier they are to sail. For those of you wishing to charter in the future, we offer two day Cruising Courses both here and on the Chesapeake Bay.

The Mariner Sailing School is an authorized US Sailing provider meaning that you will leave us with a Basic Sailing certificate or the optional US Sailing certificate. Either way, you will have no problem renting a boat here or while on vacation. Total cost for US Sailing Certification is \$38.00. This includes the **Learn Sailing Right** textbook and US Sailing logbook and US Sailing membership.

Enjoy the course and practice!

A handwritten signature in cursive that reads "George Stevens".

George Stevens      President



Before we begin with sailing theory, here are some tips on making your lessons more enjoyable.

- Parking** Park anywhere in the marina or the adjacent picnic area parking lot. Parking is always crowded on weekends, so plan to arrive early. Do not park on the entrance road reserved for trailer parking.
- Check-in** Plan to arrive twenty minutes prior to the start of your class. The office staff will help you get oriented, collect any outstanding balances, and have you sign a boat rental agreement (required).
- Restrooms** There are two National Park Service comfort stations located in the Park. One is a short walk from the office near the ramp, and the other is located near the picnic area parking lot.
- Food** As the marina sells only sodas, water and juices in machines; you are advised to pack your lunch each day. This allows a relaxing break in the picnic area between lessons, and you also avoid the pleasure of finding a parking space again. There are several restaurants and grocery stores close by.
- Weather** No attempt is made to sail in dangerous or miserable conditions and lessons will be rescheduled, if necessary. We recommend calling the office if threatening weather is forecasted. We have sophisticated radar access and will make every attempt to call you before you leave home. We will sail, however, when conditions permit instructive sailing, including light rain. In the summer, wear light color clothes and a hat or visor. Good sunglasses with straps and sunscreen are also important.
- Shoes** While nonskid boat shoes are best, any rubber soled shoe (tennis shoes) will provide safe footing. Sandals and flip flops do not provide foot protection.
- Beverages** The Flying Scots are large comfortable boats. Feel free to bring a jug of water or juice out on your class, you'll be happy you did on a summer day. Alcoholic beverages are not permitted on the boats.
- Free practice** This is offered Monday thru Friday excluding holidays between 9am and 8pm, the week following the completion of your course.
- Rentals** After your week of free time, take your friends and family out any day Mon.-Fri. between 9am and 5pm excluding holidays at half price. We will have the boats rigged and ready to sail.

If you have additional concerns not addressed, please feel free to check with the office.

# Safety Afloat

Here are a few important safety precautions before setting foot on your boat.

- Listen to the local weather forecast. WTOP FM 103.5 or WMAL FM 105.9
- Bad weather and high seas can be very hazardous even for the experienced sailor.
- Know the waters you are sailing on.
- Ask questions concerning local regulation rules, navigational aids
- Ask an experienced local sailor about conditions or hazards you should know before venturing out.
- Leave a float plan. Let someone know where you're going and when you'll be back.

The following is a list of safety items you will need to take with you. Some are required by law and others are things you might need.

## Life jackets.

You are required by law to carry one personal flotation device (PFD) for each person on board. It's a good idea to wear PFD's at all times. Also carry a throwable cushion or life ring. On a windy day, everyone in the boat should be wearing a life jacket.



## Water and food.

The sun and water cause the body to need more water. Fill a plastic jug and freeze it. When the ice melts you'll enjoy a cool drink.

## Bailer.

You should have a way to empty water from your boat. A one gallon milk bottle with the bottom cut out makes a great bailer. Secure the bailer with a light line so you won't lose it overboard.

## Whistle or air horn.

All boats must have some effective means of making noise such as a whistle or air horn.

## Sun and eye protection.

Waterproof SPF 30 and greater should be applied frequently. Sunglasses should be effective in blocking both ultraviolet A & B. Also bring a neck strap to protect your eyes from the sun and the reflection off the water

## Paddle.

If the wind dies, the paddle will help you return to shore. We'll also send our chase boats out to help you.

## Marine clothing.

Wear light colors in the summer! It is usually cooler on the water than on land. In the Spring and Fall, bring adequate layers for protection.

Our Learn to Sail course is a ten hour program divided up into four 2 ½ hour sessions. This manual will follow that format as well. **We expect every student after completing the course to be able to rig a Scot, know the points of sail, read channel markers, know the right-of-way rules, perform man overboard drills and safely dock the boats.**

# Session I (Rigging & Sailing Upwind)

Prior to going down to the boats, a ten to fifteen minute flip chart orientation will be given near the office. The presentation is given to the entire starting class at one time. You do not need to take notes as you will hear this information repeated throughout the course. After completion, your group of three will team up with your Instructor. Now is the time for any last minute stops to the car and restrooms.

The School dock is located at the end of the marina on the right side. From this dock you will either be shuttled out to a Scot on a mooring or rig a boat on the dock. The dockmaster will advise your Instructor. The dock crew are skilled sailors and can be most helpful today and when you return to practice.



**The Flying Scot** - The Scot is both a pleasure to sail, and an excellent instructional boat. As the Scot is a 19' centerboard boat, you can easily apply your newfound skills to other centerboarders (which most people buy initially) and will find that sailing larger boats is quite easy. The Flying Scots are stable, fast and comfortable. You can step anywhere on

the deck without fear of capsizing.

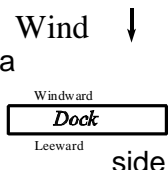
## Wind Direction

Before we can rig, we need to know the current forecast and the direction and speed of the wind. There are several ways to determine this before going to the dock.

Look at flags, smoke stacks, trees and waves on the water.  
The mooring boats always point into the wind.  
Seagulls and birds rest pointing into the wind.

The reason for this is to always have your bow pointed into the wind when rigging and raising your sails so that you do not start sailing until everything is ready. If you rig from a mooring, you are into the wind, It would be impossible, to hold the bow of the boat into

the wind if your boat is on the windward side of the dock. If your boat is on the leeward side however, and tied only at the bow, you are in great shape. The proper procedure, therefore, is to keep all boats to the leeward side of the dock when raising sails.



## The Centerboard

The rigging of the Scot is similar to most other daysailors, as well as most cruising boats with a single mast. While the Scot is exceptionally stable, it is important to lower the center of gravity. This is done by lowering the centerboard. The centerboard allows the skipper to sail a course by preventing the boat from sliding across the water. Whenever we leave the dock or return, the centerboard must be all the way down.

# Rigging the Scot -

<https://www.youtube.com/watch?v=vZ6O8IB0clI&width=640&height=480>

<http://www.youtube.com/watch?v=-24efHbeL7U&width=640&height=480>

The phrase “a picture is worth a thousand words” is very appropriate when trying to rig a sailboat the first time. Your Instructor will go over the boat and rigging in great detail on the first lesson. It is nice to have two people rig the main while the third person rigs the jib sail. Rotate rigging positions each time you sail so you are comfortable with the two sails.



Beginning with the mainsail, one student pulls the clew out to the end of the boom while another feeds the foot down the boom. Once out, the tack pin is secured and the outhaul is tied and tensioned to current conditions. Another student can clear the luff edge and raise the sail about a foot up the mast. After the battens are inserted, the mainsail is finished. Do not raise the main until the boat is fully rigged and your plan for leaving the area is thought out. Before going up to the bow, release the jib halyard tension, attach the tack, luff edge to the forestay and finally, halyard to the head. Jib sheets are run inside the shrouds, through the fairleads and hexratchets

and are then secured with a figure 8 knot. Prior to raising the sails, lower the centerboard and check for all required safety equipment. The main is raised first, followed by the jib. This sequence helps hold the bow into the wind.



## Local waters (Potomac River)

The **Potomac River** flows into the Chesapeake Bay, located along the mid-Atlantic coast of the United States. The river (main stem and North Branch) is approximately 382 miles long, with a drainage area of about 14,700 square miles (38,000 km<sup>2</sup>). In terms of area, this makes the **Potomac River** the fourth largest **river** along the Atlantic coast of the United States and the 21st largest in the United States.

The Potomac River in the Northern Virginia area is a shallow body of water. The vessels requiring more than 6 feet of water are restricted to the deep channel or they risk running aground. We have great respect for anyone coming into the office to ask about our local waters before launching their boat.



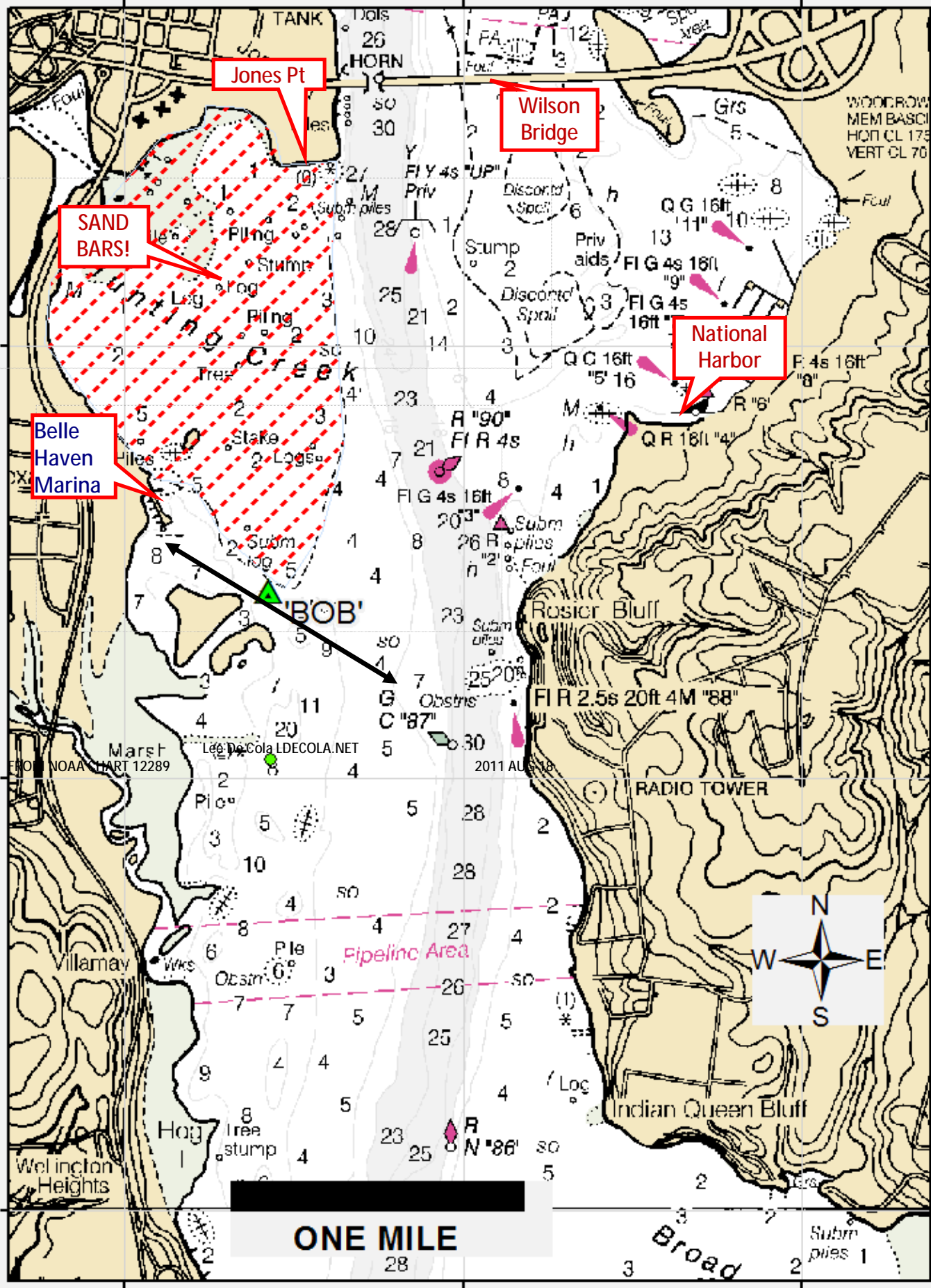
Whether you leave from a mooring or from the school dock, you will need to sail out toward the white channel marker (BOB). As you can see from the attached map, there is a long sandbar running directly in front of the marina. By sailing to the south of the white marker, you will stay in deep water. Draw an imaginary line from our marker to the Jones Point lighthouse and stay east of this line. The shadow areas represent shallow water. Our geographic boundaries are from the Woodrow Wilson Bridge, south to Ft. Washington. If you are sailing between these limits, we can see you if it becomes necessary to call in the boats.

The attached map of our sailing waters indicates the government buoys between Broad Creek, Md. and the Woodrow Wilson Bridge.

77°3'W

77°2'W

77°1'W



Jones Pt

Wilson Bridge

SAND BARS!

National Harbor

Belle Haven Marina

'BOB'

Pipeline Area

ONE MILE

38°47'N

38°46'N

38°45'N

Broad

# Port or Starboard, Windward or Leeward?

The following are terms you will use when sailing:

**Windward:** The side of the boat that the wind is coming from.

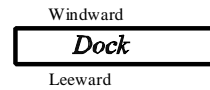
**Leeward:** The side of the boat away from the wind.

**Starboard tack:** When the wind comes from the right side of the boat, it blows over the starboard side of the boat.

**Port tack:** When the wind comes from the left side, you are on a port tack.

The reason you need to know the tack you are sailing on is because **starboard tack boats** have right of way over **port tack boats**.

Wind ↓

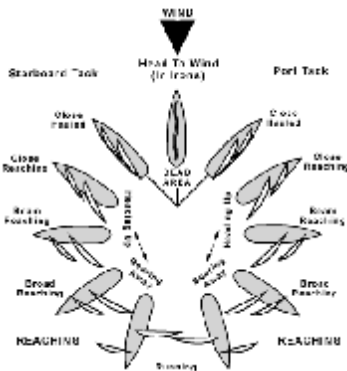


## Getting Underway

Because a sailboat can not sail directly into the wind, the sailor needs to know all points of sail that a sailboat can sail. As we continue through the lesson, please take note of the wind diagrams

provided.

When the wind is blowing over the bow, your boat is in “irons” or the no sail zone - the boat will not move, except drifting backwards. It is in this zone that you raise and lower your sails. Another term used when heading into the wind is luffing. Luffing is an excellent way to reduce speed to stop at a dock or mooring by using the sails as a brake. When you luff, the sails will flap noisily in the breeze just like a flag on a windy day.



day.

With the sails raised, you are now ready to fall off the wind (to move the bow away from the wind). Once you have turned the bow so that the wind can blow on just one side of the sails, you are underway. Fall off typically about 45 degrees or more from where the wind is coming. Look at the wind diagram - in any of the sail zone areas shown other than the no sail zone, your boat will move. As the boat turns away from the no sail zone, or falls off, the sails will fill with wind and you will sail away. Before you untie or cast off, check out the wind, other boats, and figure out a path that will let you leave without banging into anything.



**The Points of Sail - <https://www.youtube.com/watch?v=tYo5tvojU0I&width=640&height=480>**

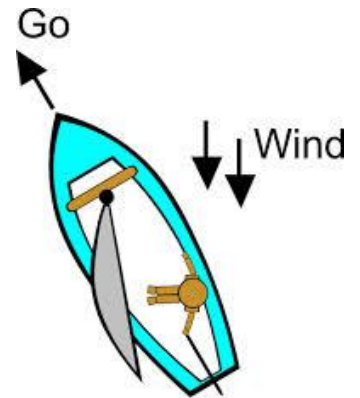
As we already know, sailboats can sail 45 degrees (close hauled) on either side of the wind and any angle across (reaching) and down wind (running).

You will find that close hauled sailing is the most difficult point of sail to learn and for that reason, we start with this first.

- Close Hauled- approximately 45 degrees from the wind.
- Beam Reach- approximately 90 degrees across the wind.
- Running- approximately 180 degrees from the wind.

### Close Hauled sailing.

You are leaving the dock and decide you want to sail to Fort Washington (downriver). The wind is blowing from the south (upriver). How are we going to get there? We know that we can't sail directly into the wind, and remember our Instructor said something about sailing 45 degrees to the wind.

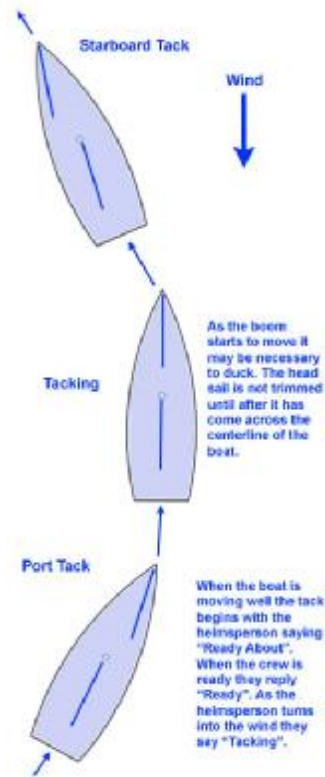


Close Hauled

Assuming that we are on a starboard tack headed across the river in a 10-15 mph breeze, the jib sheet is brought in fairly tightly on the port side and cleated off. The jib is our directional sail and the main

provides the power. The main sheet is then trimmed in to get the boat moving. The goal of the skipper is to keep the boat at a constant 45 degree course to the wind. This is easy if the

wind is steady. But as the wind shifts direction, our course must also shift comparably if we are to maintain the 45 line. The skipper steers the boat by watching the leading edge (luff) of the jib sail. If the course is too high, the sails start luffing and the boat slows down. If the skipper sails past 45 degrees,



A Flying Scot should be heeled no more than 17 degrees. The side decks are sloped to 17 degrees so when the windward deck is parallel with the water, you are heeled over to 17 degrees. In light air, the skipper and crew should sit on the leeward side to help the boat reach 17 degrees. Heeling any further than 17 causes the boat to slow down. As we will learn later, on the reaches keep the boat flat.

we end up sailing a longer course than necessary. Close hauled sailing is a balancing act. We point up till

we cause the jib to luff and then we fall off to the point that the sail stops luffing. As you can see, the jib sheet needs to be cleated so that the skipper knows that if the sail starts to luff, it is because the wind direction has changed and not that the crew has let out the sail accidentally. Sooner or later we will run out of water and have to turn the bow of the boat through the wind and onto a port tack. **This process is called tacking or coming about.** This is going to be a 90 degree turn if we are planning to sail close hauled on the port tack.

**The skipper does the following;**

1. Look for a landmark that is 90 degrees from the current close hauled heading.
2. Announce to the crew to “Prepare to come about or tack”
3. When the crew is ready, give the command “tiller to the sail” and turn the bow through the wind until the boat is on course to the new landmark.

The speed of the turn depends on the strength of the wind and the ability of the crew. In light breezes the turn is slow and smooth thereby preserving the boats momentum. In stronger breezes the turn should be done quickly so the sails can fill and get the boat going.

**The crew does the following;**

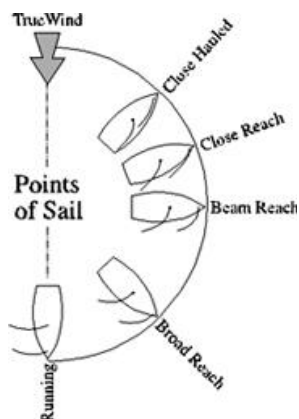
1. Let the skipper know you are ready.
2. Uncleat the jib sheet and hold it.
3. As the bow turns into the wind, release the sheet, and pull in the other sheet once the jib sail passes past the mast.
4. Cleat the jib sheet as you move to the windward side of the boat.

Close hauled sailing is fun and exciting. The boat heels more at this angle than at any other. On a breezy day one of the crew should be responsible for handling the main sheet. There needs to be communication between the skipper and crew as to easing the main. The Scot tends to turn up into the wind on a gust (called weather helm) so the power of the main must be weakened by easing out on the main until the gust goes by.

**Summary: When sailing close hauled, the boat is kept at a 45 degree angle to the wind. If the wind shifts, the skipper must shift the course as well.**

## Session II (Review upwind sailing and focus on the reaches, runs & jibing)

Prior to going down to the boats, feel free to ask your Instructor to go over any of the pages on the flip charts that need clarification. You should be able to rig the Scot without the Instructor. There is only one way the parts fit so work as a team. The second class concentrates on the reaches, run and downwind turns.



Sailing on a reach is easy. Simply put, aim at a landmark off the wind- let both sails out until they luff and then trim in to stop the luff and keep the boat flat.

Assume you wish to turn from a close hauled course to a beam reach heading. Ask yourself, am I turning into the wind or **away** from the wind? If we are turning **away** from the wind, the tiller is moved **away** from the sails and the sails go **away** from the boat. How far do we let the sails out? Answer - **till they luff**.

Assume now that you would like to sail from a broad reach heading to a close reach. Again the same question.

Are we turning **into** the wind or away from the wind? In this case we are turning **into** the wind. The tiller is moved **into** the sails, the boat turns **into** the wind and the sails come **into** the boat **until they stop luffing**.



Main jibes over, helmsman eases boom out.



In general, the closer you sail to the wind, the closer the sails are pulled or **trimmed** to the midline of the boat. As you sail away from the wind, the sails are progressively eased out.



Shift jib to other side.



Always remember to change sail trim as you change course, according to this rule: **First trim the jib, then trim the main.**

Helmsman pulls mainsheet to bring boom in.



"Ready"

"Prepare to Jibe"

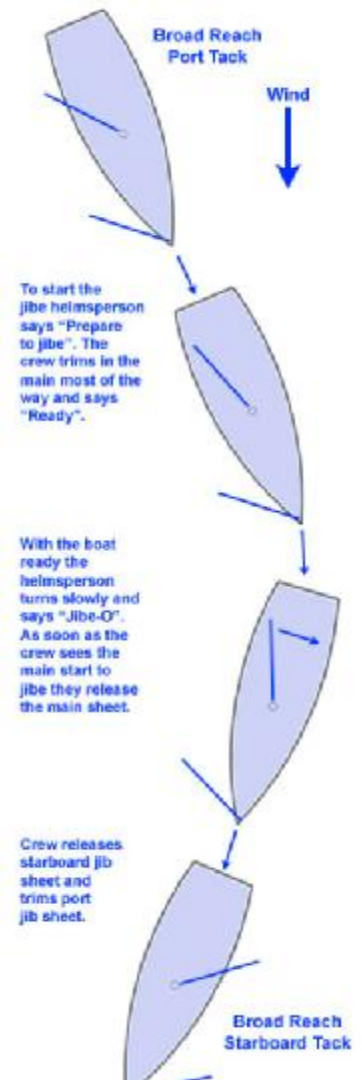


As you can see from the diagram above, we can sail from a close hauled course to a run and vice versa, without changing the tack we are sailing on. When you sail your boat with the wind coming directly from behind, your jib will not fill if left to the leeward side behind the main sail. You can fill the sail with wind if you wing it out opposite the main. In the figure at the left, we have changed the direction of the wind to illustrate the

downwind turn or the jibe. Jibing is a turn that needs to be planned in advance with the crew ready. Be aware that sailing dead downwind can be dangerous. If the wind changes direction, or the wake from a large powerboat running too close, or a large wave slues your boat around, the wind may get behind the mainsail. The sail will swing abruptly, and sometimes violently, to the other side. **This is called an accidental jibe.** A boom swinging at full speed can damage fittings and the boom itself, or even break a shroud and cause a dismasting. Furthermore, it can seriously injure you or a member of your crew.

There are two ways to safely jibe. On a Flying Scot or another centerboard dinghy, you can safely do a “**flying jibe**”. The boom is let all the way out as you turn to a run. The skipper announces to the crew to “Standby to jibe”. When the crew is ready, the skipper says loudly “jibe ho” and moves the tiller away from the mainsail. The jib sheet is released and the crew shifts to the other side ducking under the flying boom. The course is set and the sail adjusted till they are on the verge of luffing. Always remember that you do not have to jibe. You can always point up to close hauled, come about (tack) and then fall off to your desired course. When in doubt, come about!

If you are sailing on our C&C 34, however, the last thing in the world you would want to do is a flying jibe. On any larger vessel, you need to control the swing of the boom by executing a **controlled jibe**. As the boat turns on a run, the mainsheet is trimmed thereby centering the boom. The skipper gives the same commands and the boom jibes over and immediately the mainsheet is let out until the sail begins to luff. There is very little swing by the boom causing little wear and tear on the rigging. On a breezy day, the mainsheet has to be let out immediately.



## Summary of the points of sail

**Close hauled**- 45 degrees to the wind allowing you to sail to an upwind destination. When the wind shifts direction, the skipper must shift the boats direction as well.

**Reaching** - any point of sail between close hauled and the run. The skipper steers a course and the sails are let out until they luff and then trimmed till they stop. If the wind shifts, the sails shift, while the course remains steady.

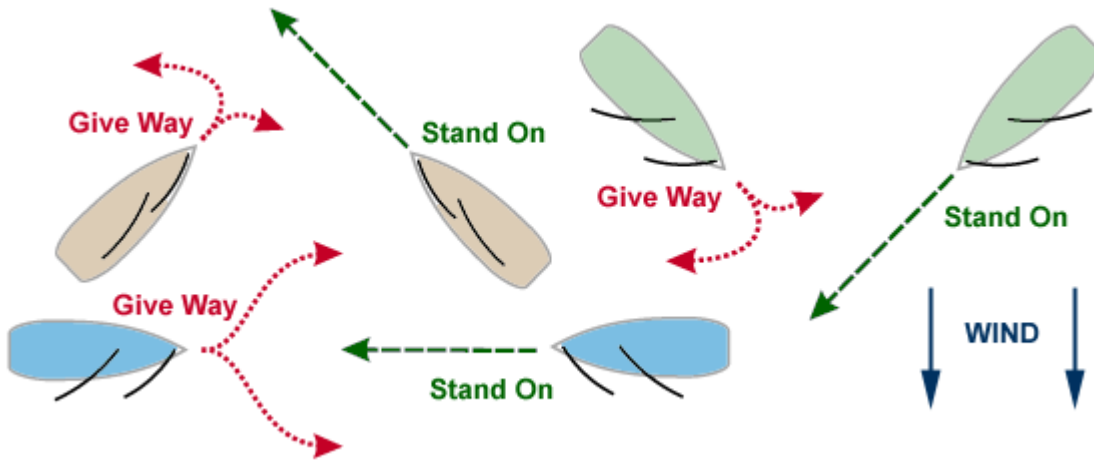
**Running** -sailing with the wind coming over the stern of the boat. The sails are all the way out. The skipper must pay attention to his course to prevent an accidental jibe.

## Session III

### Rules of the road, channel markers, man overboard drills.

Vessels that must stay in the channel to avoid running aground have right of way over vessels that do not. You will see commercial ships, barges and large yachts on the Potomac.

You must yield way to these vessels regardless of whether they are sail or power.



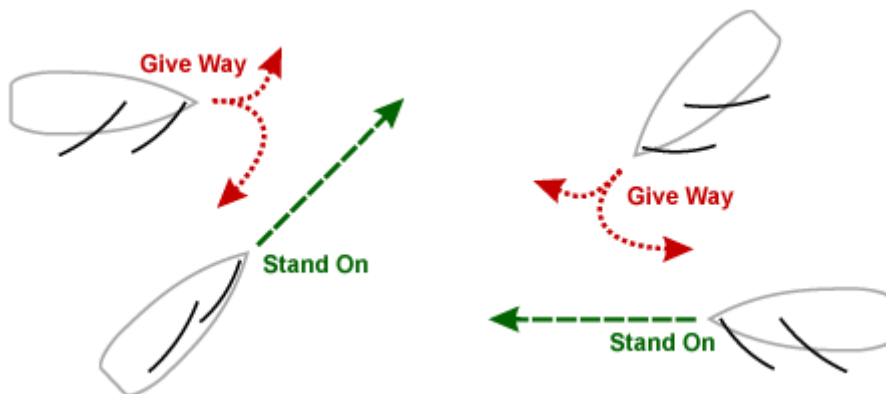
Right of way rules are used to prevent collisions at sea. For your purposes, there are only a few that you need to know. However, if you continue on to racing sailboats, the rule book becomes suggested daily reading.

**Opposite Tack** - When boats are on opposite tacks, a port-tack boat shall keep clear of a starboard-tack boat.

**Same tack** - When boats are on the same tack, the windward boat shall keep clear of the leeward boat

**Overtaking** - A vessel overtaking another on the same tack shall keep clear of that vessel.

**Avoiding collision** - A skipper must try to avoid a collision at all cost.



**Channel Markers** are maintained by the United States Coast Guard to aid vessels restricted to deep water. Remember that if a large ship uses these markers, they do not get too close to any marker, nor should we as this is where shoaling can occur.

The basic rule to remember is **Red-Right-Returning**. Think of the red markers as indicating the right edge of deep water. If you were to draw an imaginary line between two red



markers, it would be similar to the right edge of a road in driving a car.

Therefore, we leave all red markers on our right side as we return to the head of the body of water (in our case, D.C.). **Green markers indicate the**



**left side** of the channel. On our local waters map, see if you can draw in the channel that a ship would have to navigate to reach Alexandria. As you return to the port, the numbers on the markers increase and vice-versa.

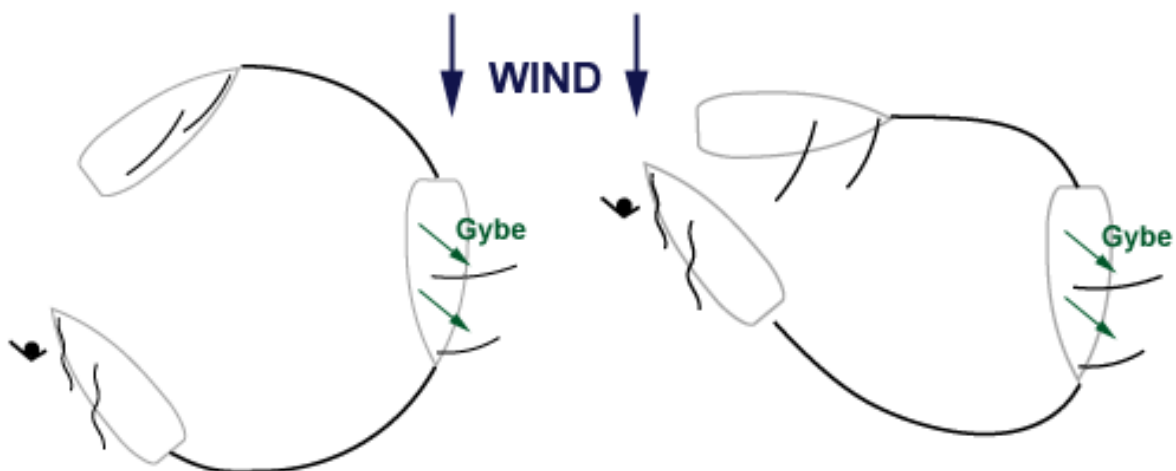
When you are heading down the Potomac toward the Bay, **Red-Left-Leaving**.

## When a person falls in the water. (PIW)

The man overboard drill is one of the most important procedures you will learn. By the way, the drill is correctly named since according to the Coast Guard and U.S. Navy statistics, 94% of overboard situations occur with men. This exercise should be mastered by all students on the boat.

Lets start with some of the reasons why people fall off a boat.

1. Alcohol
2. Rough seas
3. Accidental jibes
4. Children not safely secured to the boat.
5. Unfamiliar boat



If someone falls in the water, here is what you do.

- 1) **Remain calm.** It won't do anybody any good if you panic.
- 2) **Throw** the person a cushion or a life ring.
- 3) **Assign** a crew member to continually watch the person.
- 4) Sail a **beam reach** course 2-3 boat lengths away from the person
- 5) **Jibe** the boat and return **downwind** of the person while on a beam reach.
- 6) **Release the jib sheet** and use the sail as a wind indicator. When the luffing jib point towards the person, **make a sharp turn directly into the wind** and come to a stop **along side** the person.

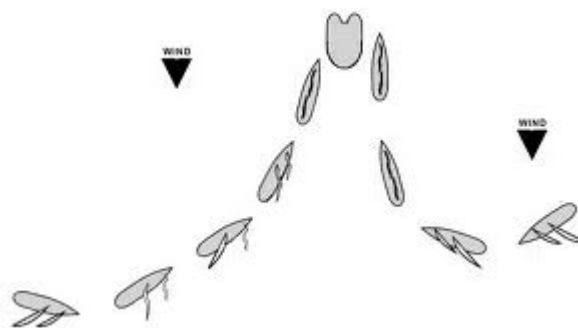
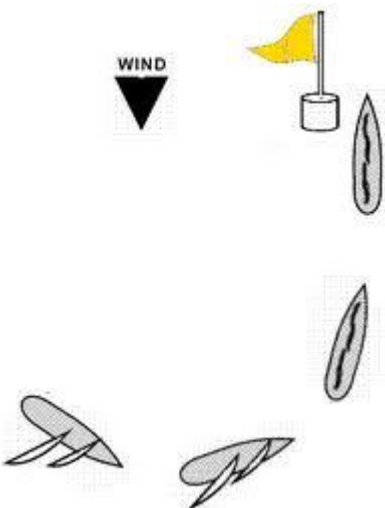
The drill is not hard to execute and applies most of the points of sail you have already learned. If you go sailing with friends after the course, explain before you leave the dock what will be done if someone should fall in. Fortunately, it is usually a hat or cup that falls

overboard, but the drill is the same.

Illustrated here is the quick stop MOB drill for keelboats.

## Session IV (Docking & mooring practice, general review)

The man overboard drill leads nicely into dockings and mooring. We approach a mooring or dock in the same manner, from a down wind position. You will probably spend more time approaching moorings since our dock is often crowded. The key to successfully docking is to **always have a back up plan** if things aren't happening as you had hoped. **There is never an excuse for crashing into the dock.**



### Checklist for the docking

- Will this be a windward or leeward docking? All moorings are leeward.
- Is your centerboard all the way down?
- Is someone ready to attach the bow line to the mooring or to the dock?
- Is the wind steady or gusty?
- Are the sails uncleated as you begin your turn?
- Do you have a backup plan ready if you are coming in too fast or too slowly?

There are two ways to dock your boat, windward side and leeward side. Most common is the leeward side approach. You have to know the momentum your boat will carry so you can judge how far to be downwind before you turn into the wind and approach the dock. Ideally the boat comes to a stop one foot from the dock or mooring

ball. If you need to dock on the windward side of a dock, you can only do this with your sail down. Sail to a point directly upwind of your dock and turn into irons. Drop your mainsail completely and backwind your jib to turn the bow towards the dock. Finally drop you jib and allow the wind to push the boat gently to the dock.

### **Knots that every sailor should know**

There are several knots commonly used in sailing. You won't use every one each day however, they all serve a purpose and each one will prove invaluable at some point in a week long voyage. Most of these are quite easy to tie and with a bit of practice you'll be amazed at your new found skills in rope tying. The knots are listed in their approximate order of usefulness.

**Bowline** – The bowline almost defines sailing because of its versatility, usefulness, and strength. Since it's a popular knot there are many ways to tie it but you only need to know one.

**Figure 8** – This is the knot to tie in the end of a sheet or other line as a stopper. This prevents the line from running out through a block or line locker and escaping from you.



**Cleat Hitch.** this knot has one and only purpose but that is a mighty one; Securing a line to a cleat. Usually best to wrap at further end of cleat first then finish knot with bitter end on your side of the cleat.





## What's the next step?

Becoming a proficient sailor takes time. You need to start experiencing as many different sailing conditions and types of boats as possible. Start your practice when the wind is less than 12 mph.

**When in doubt, don't go out.** There is no reason to shake up your confidence by going out on a gusty day too soon. Sailing should be a lifetime sport. The office maintains a list of former students that are interested in sharing rentals. If you don't have someone to sail with, get a copy.

As your abilities and confidence improve, you might want to transfer your skills to larger cruising boats. **The larger the boat, the easier they are to sail!** The Mariner Sailing School offers Learn to Cruise courses in Alexandria and Annapolis. The course builds on your sailing skills and concentrates on navigation, docking skills and anchoring techniques.



A common mistake is rushing out and buying a sailboat before you are knowledgeable about different boats on the market. Rent different boats and find out what you like or dislike about each. Boat shows are a great resource to see the amenities that each type of boat

offers. We would be happy to give you our thoughts on which boats are sound investments.

**PRACTICE AND HAVE FUN!**