

LEARN TO SAIL HANDBOOK

AN INTRODUCTION TO SMALL BOAT SAILING



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RULES AND
MANDATORY SAFETY REQUIREMENTS
FOR ALL ESA PROGRAMS

1. Youth students are not allowed on the beach or in the water without adult supervision.
2. Life jackets must be worn at all times on docks, beach, boats, or in the water (by students, instructors, and coaches).
3. All students and on-water staff are required to pass a swim check.
4. Closed toe and heel footwear must be worn at all times.
5. No running, hitting, or pushing in the park.
6. No swimming (except with the permission of the instructors).
7. No jumping off boats (except with the permission of the instructors).
8. Respect one another – no hitting, pushing, or rough-housing.
9. Use respectful language – no swearing, foul, or rude language.
10. No littering on land or water.
11. Stay with the class unless you have permission from an instructor to leave.
12. No destruction of club or private property.
13. No smoking, drugs or alcohol.
14. No playing on boat racks.
15. Watch fingers and feet between boats, docks, and moving parts.
16. Club owned boats must be properly returned and put away after use.
17. Sailors must make every effort to avoid collisions.
18. All injuries, no matter how small, must be reported to staff.
19. All youth students must be escorted to bathroom facilities by an adult.
20. All volunteers that work with students must have a background check.
21. During special events all non-members going on the water must sign a release waiver. Youths must have parents' consent.
22. All safety boat personnel must have a Florida Safe Boating Card and be approved by Safety Officer prior to operating power boats.

DISCIPLINARY ACTION
THREE WARNINGS WILL BE ISSUED AFTER WHICH FURTHER ABUSE OF THE RULES WILL
RESULT IN EXPULSION FROM THE PROGRAM.

WHAT TO BRING WITH YOU

The following items are recommended to enhance your safety and enjoyment.

Sunscreen

Sunglasses (with strap)

Hat

Towel

Change of clothes

Gloves

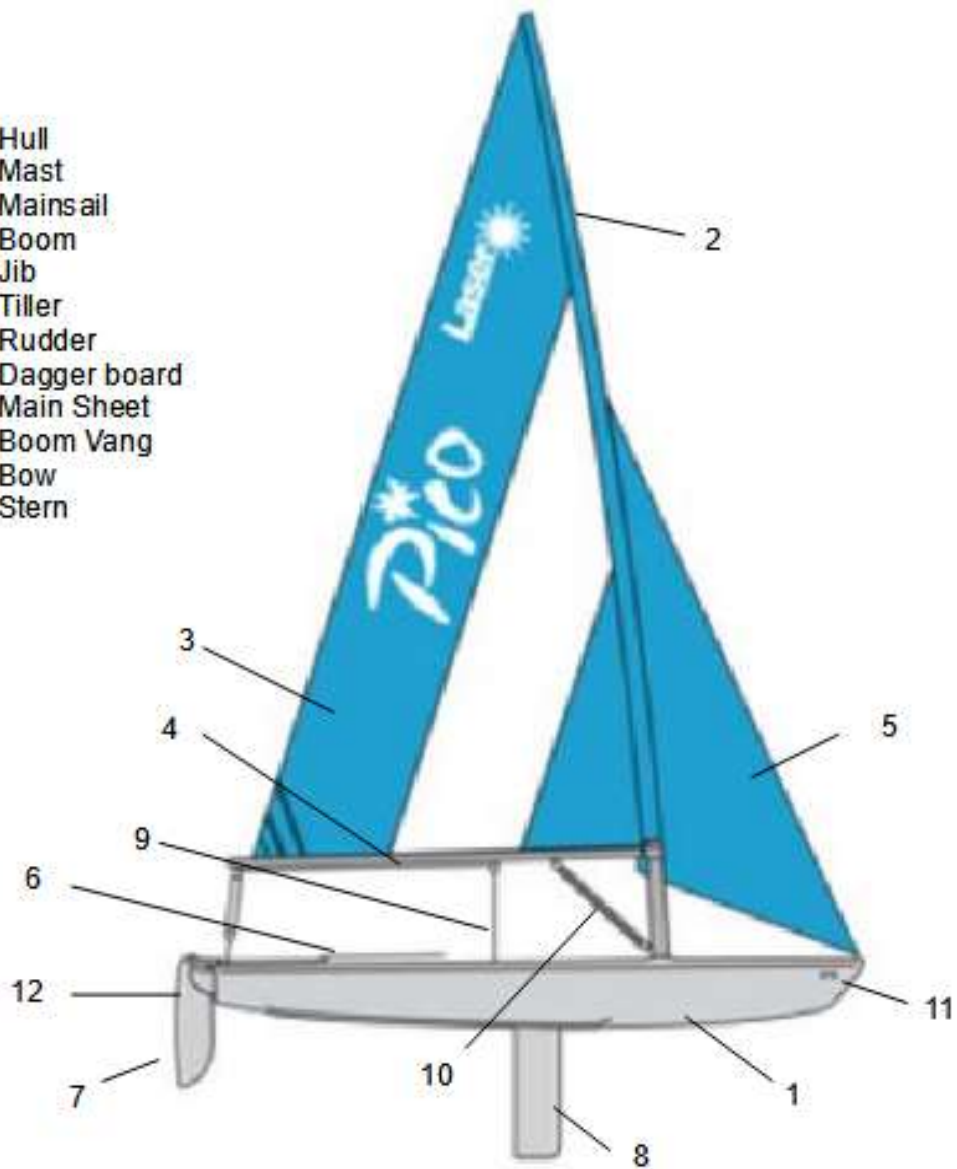
Knee Pads

Plenty of liquids

Snacks

Laser Pico

- 1 Hull
- 2 Mast
- 3 Mainsail
- 4 Boom
- 5 Jib
- 6 Tiller
- 7 Rudder
- 8 Dagger board
- 9 Main Sheet
- 10 Boom Vang
- 11 Bow
- 12 Stern



RS Quest

- 1 Hull
- 2 Mast
- 3 Mainsail
- 4 Boom
- 5 Jib
- 6 Tiller
- 7 Rudder
- 8 Centerboard
- 9 Main Sheet
- 10 Jib Sheet
- 11 Batten
- 12 Bow
- 13 Stern



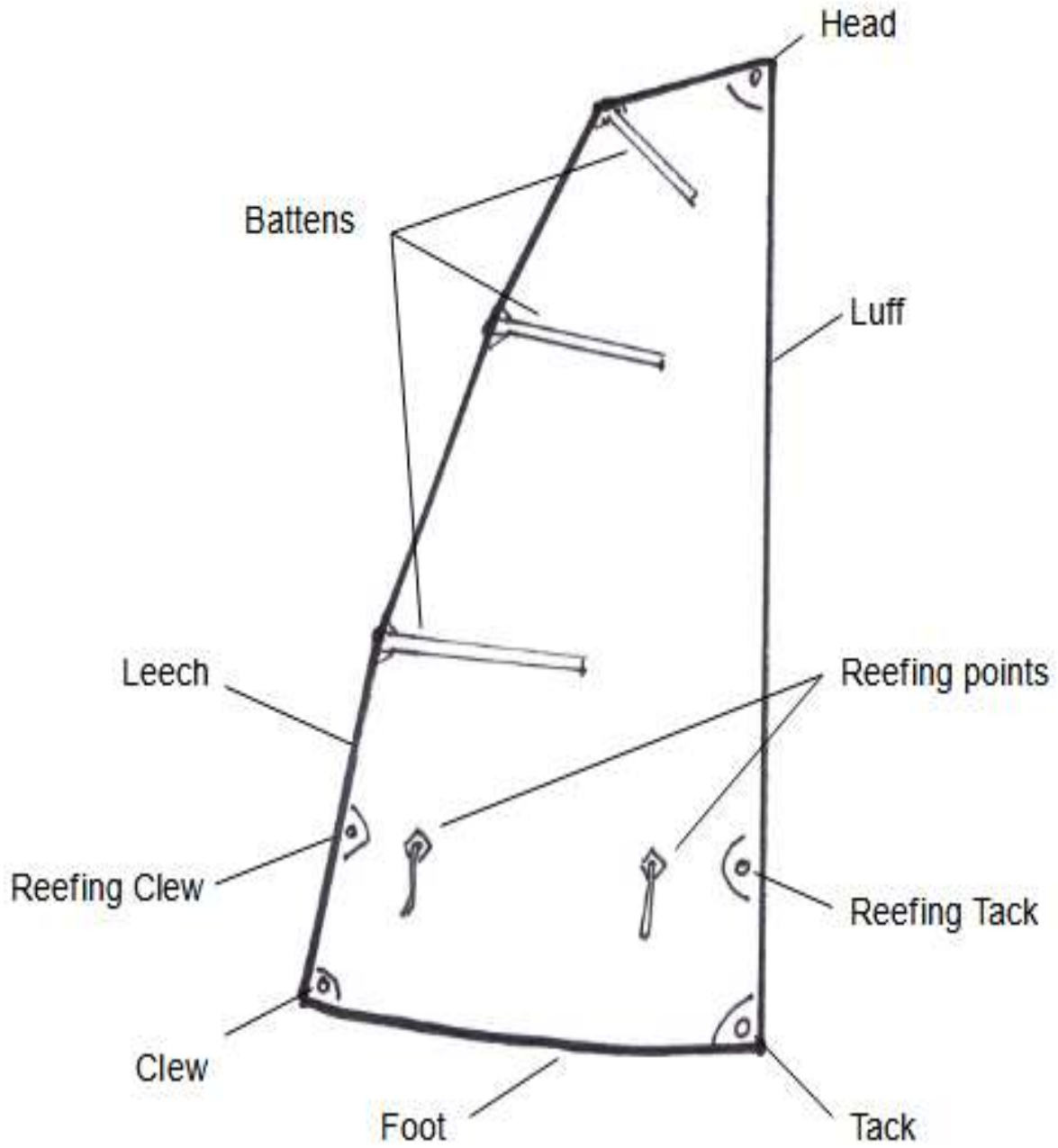
A PARTIAL LIST OF SAILING (Nautical) TERMS

BATTEN - thin rigid strip used to control the shape of the sail .
BEAM - width of a boat at the widest point, also the direction across the boat.
BOBBLE – a small ball that is used to provide temporary attachment of a line to an eye such as a halyard to the head of a sail
BOOM - horizontal spar which holds the foot of the main sail.
CENTERBOARD - vertical fin used to keep boat from drifting to leeward, pivots up and down. (see DAGGERBOARD and KEEL)
CLEAT - fitting to which a line may be secured.
CLEW - corner of the sail at the after end of boom, or the after corner of jib.
CLOSE-HAULED - point of sail closest to the wind
COCKPIT - open space in deck to accommodate the crew.
COME ABOUT - (as when tacking) to steer the bow of the boat through the eye of the wind.
CUNNINGHAM - line that controls tension in the luff of the sail (see DOWNHAUL)
DAGGERBOARD – vertical fin used to keep the boat from drifting to leeward, inserted straight through the boat, like a dagger. (see CENTERBOARD and KEEL)
DOWNHAUL - line that controls tension in the luff of the sail (see CUNNINGHAM)
DOWNWIND - the direction the wind is blowing *to* (see RUN and LEEWARD).
DRAFT - the depth of water needed to float the boat, including the crew (deeper when the centerboard is down).
FALL OFF - to steer the boat away from the wind (see BEAR OFF, HEAD UP, and JIBE)
FOOT - the bottom edge of sail
FORESTAY – a part of the standing rigging that prevents the mast from falling backward, usually attached from the bow to the top of the mast or partway up the mast, usually made from wire rope
GUDGEONS - fittings attached to transom for securing rudder to the boat. (see PINTLES)
HEAD - the top most corner of the sail, where the halyard is usually attached.
HEAD UP – to steer the bow of the boat toward the wind (see BEAR OFF)
HALYARD - line, usually attached to the head of the sail, that raises and lowers it.
HANK – a fitting that is used to attach the luff of a jib to the forestay
HULL - body of the boat.
JIB - small sail forward of mast.
JIBE - to steer the stern of the boat through the eye of the wind, causing the boom and sail to flop over (see TACK and COME ABOUT).
KEEL – a fixed, non removable vertical fin used to keep the boat from drifting leeward. (see CENTERBOARD and DAGGERBOARD)
LEECH - trailing edge of sail.
LEEWARD - the direction the wind is blowing *to*. (see downwind)
LINE - general term used for rope on board boat.
LUFF - 1) the leading edge of a sail. 2) flapping motion of a sail when it is pointed into the wind
MARK – a buoy or float that is used to define the course.
MAST - large vertical pole that supports the sails.
MAIN SAIL - large sail aft of mast.
OUTHHAUL - holds clew of main to after end of boom, controls tension in the foot of the sail.

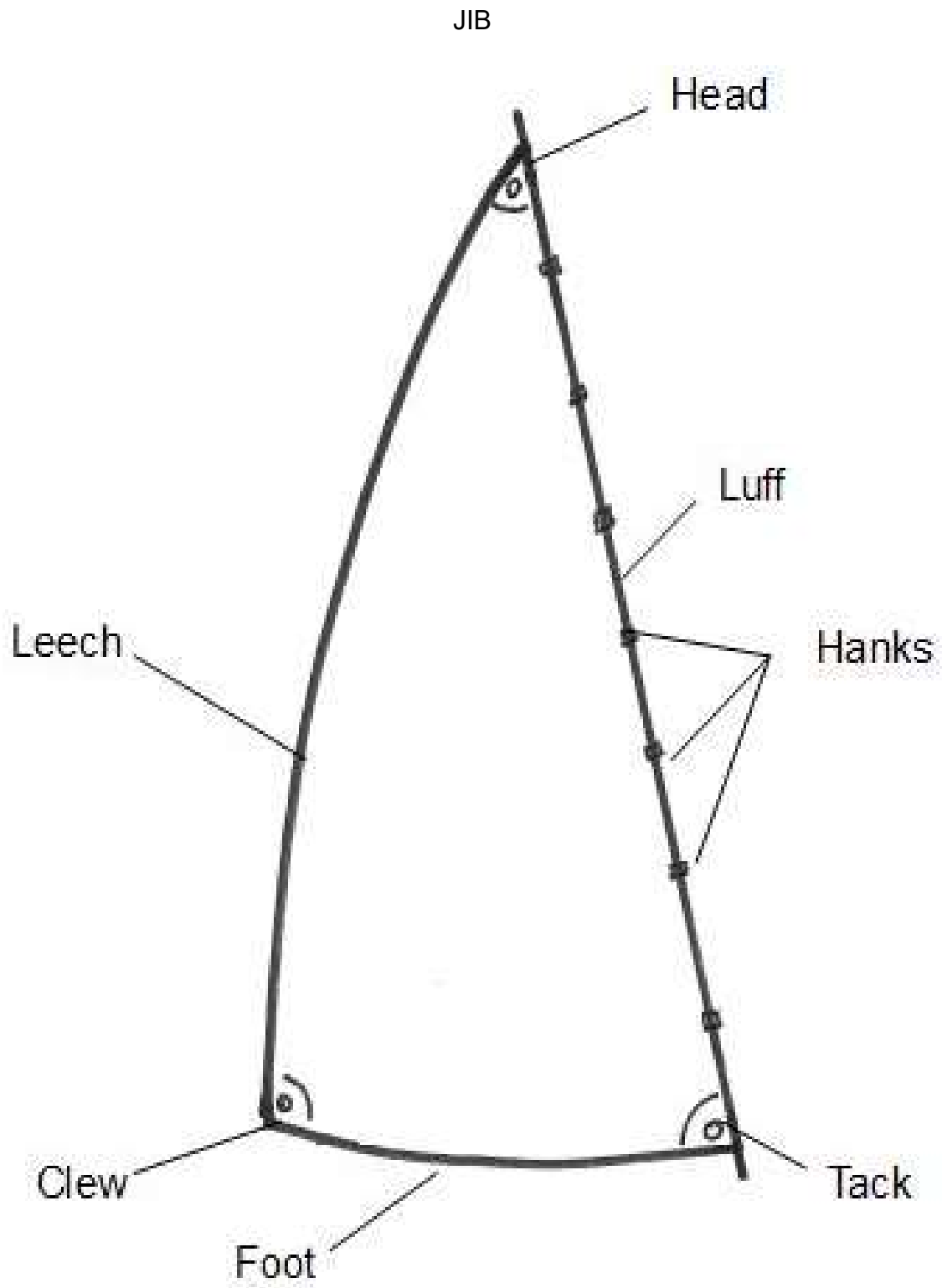
PADEYE – a metal fitting that line runs through or provides an attachment point
PORT - the left side of a boat looking forward.
PORT TACK - when the wind is coming over the portside of the boat.
PINTLE - metal pins passed through gudgeons to secure the rudder. (see GUDGEONS)
REACH - any point of sail between “close-hauled” and “running”.
RUDDER - movable fin on stern used to steer boat.
RUN - a point of sail directly downwind.
SHACKLE – a U-shaped metal fitting with a pin or bolt across its opening used to connect parts of a rigging system
SHEET - lines used to control sails, jib sheet & main sheet.
SHROUD – part of the standing rigging that provides lateral support to the mast, usually made from wire rope.
STANDING RIGGING – lines, usually made from wire rope, that provide support to the mast. Standing rigging usually comprises the forestay and shrouds, however some small boats have no standing rigging at all, and others may have more elaborate systems.
STARBOARD - the right side of a boat looking forward.
STARBOARD TACK - sailing with the wind coming over the starboard rail.
STERN - the after (or rear) end of the boat.
TACK - 1) to come about 2) the lower forward corner of the sail.
TELL TALE - an indicator attached to the sail, shroud or mast to show wind direction.
TILLER - handle that moves rudder.
TRANSOM - stern end of the boat.
TRAVELER – line or mechanism that attaches the mainsheet to the hull and allows it to move or be adjusted laterally.
WINDWARD - the direction from which the wind is blowing (upwind)

PARTS OF A SAIL

MAIN SAIL



PARTS OF A SAIL



RIGGING YOUR BOAT

Getting your boat put together correctly is the first step in a successful day on the water. Follow these steps to rig and derig your boat.

Notes:

- Always be careful to avoid hitting someone when handling long items like masts.
- Be cautious of sails flapping in the wind – the metal grommet can hit with some force.
- Do not hesitate to ask for help raising or lowering masts, etc., especially in windy conditions

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Rigging:

- Point the boat into the wind.
- Put the mast sections together, aligning the fitting on the top section of the mast to the cleat with the pulley on the bottom section.
- Slide the sail onto the assembled mast.
- Step the mast, close the collar, insert the locking pin, and set the fitting to closed. Get help with stepping the mast if you need it.
- Rig the downhaul and pull it tight. Finish it with a figure-eight knot.
- If it's windy and we're taking wraps to make the sail smaller, now's the time to do so.
- Attach the boom to the mast.
- Attach the outhaul to the clew of the sail. Pull it tight and cleat it.
- Attach and adjust the boom vang.
- Put the boat in the water.
- Attach the rudder to the transom, ensuring the tiller is under the traveler.
- Get the daggerboard started in its slot.

Derigging:

- While still in the water, uncleat the outhaul and disconnect it from the clew of the sail. Remove the daggerboard and rudder and stow them in the bottom of the boat.
- Pull the boat on shore and point it into the wind.
- Detach the boom vang, remove the boom, and stow it in the bottom of the boat.
- Ensure the sail is completely unfurled.
- If you capsized, rinse the sail now and wait for it to dry.
- Derig the downhaul.
- Remove the mast collar locking pin, open the collar, and unstep the mast. Get help if you need it.
- Remove the sail from the mast and fold it.
- Separate the mast sections and stow them in the bottom of the boat.
- Rinse the boat and dolly thoroughly, paying special attention to the mast collar area.

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Rigging:

- Point the boat into the wind.
- Remove the cover, folding it from the starboard side to the port side then loosely rolling it from the bow to the stern.
- Remove the working end of the main halyard from the end of the boom (you may need to uncleat the boom vang and remove a stopper knot from the mainsheet to get slack in the boom).
- Attach the working end of the main halyard to the head of the mainsail using the bobble.
- Feed the boltrope and slugs into the track on the aft side of the mast. Pull on the halyard to raise the mainsail all the way to the top of the mast.
- Wrap the Velcro strap at the tack of the mainsail around the mast, going under all lines except halyards.
- Slide the slug at the clew of the mainsail into the track on the boom, then rig and tension the outhaul.
- Rig, tension, and cleat the cunningham.
- Use the tensioning lever to tension the forestay.
- Be sure the jib furling line is wrapped in the drum.
- Undo the shackle from the working end of the jib halyard and attach the head of the jib using that shackle. Tighten the shackle firmly.
- Raise the jib, attaching the hanks to the forestay as you go.
- Put the hook at the furler through the grommet on the tack of the jib, then tension the jib halyard. Close the Velcro flap around the tack of the jib.
- Run the jib sheets inside of the shrouds and through the pad eyes. Either tie the sheets together or put figure-eight knots in each.
- Put the boat in the water.
- Attach the rudder to the transom.

Derigging:

- While still in the water, uncleat the outhaul and slide the slug at the clew of the mainsail off of the boom. Remove the rudder and stow it in the bottom of the boat.
- Pull the boat on shore and point it into the wind.
- Unfurl the jib.
- If you capsized, rinse the sails now and wait for them to dry.
- Untie the jib sheets.
- Open the Velcro flap at the tack of the jib. Uncleat the jib halyard, remove the grommet from the hook, then lower the jib, removing the hanks from the forestay as you go.
- Remove the shackle from the head of the sail and attach it to the working end of the jib halyard.
- Use the lever to remove tension from the forestay. Loop the jib halyard around the hook on the furler, then tension and cleat the jib halyard.
- Unrig the cunningham and remove the Velcro strip from around the mast.
- Uncleat the main halyard and lower the mainsail.

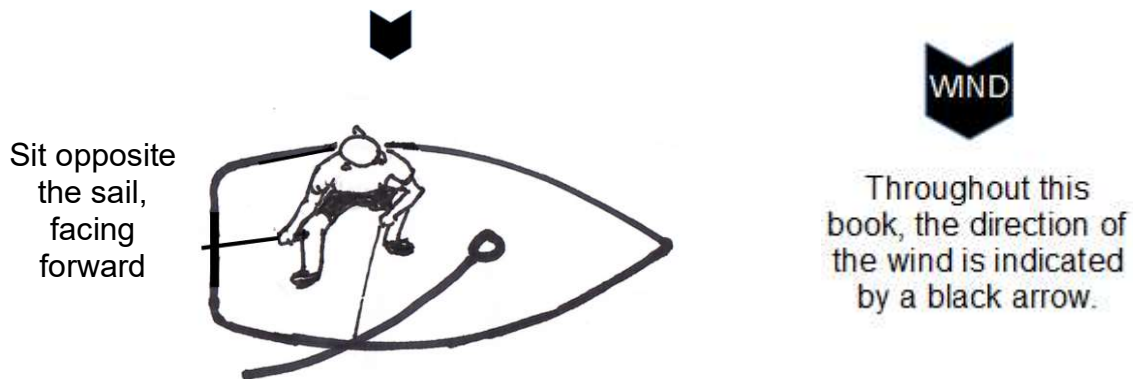
- Detach the working end of the main halyard from the head of the mainsail, then reattach it to the end of the boom. Trim the main halyard until the boom is level. Trim the mainsheet in and tie a stopper knot so it holds the boom centered.
- Roll the mainsail and jib from the foot to the head and stow them in their bags, leech first.
- Rinse the boat and dolly thoroughly.
- Put the cover back on the boat, unrolling it on the port side of the boat from stern to bow then unfolding it to starboard. The straps go between the boat and the dolly.

SAILING FUNDAMENTALS

Balance

Balancing the boat is the first thing to learn! We use our weight to balance the boat against the force of the wind on the sail and the force of the water on the hull to keep the boat upright and avoid capsizing. The balance changes constantly, and the only way to learn how to react properly is to practice.

An important part of balance is learning how and where to sit in the boat. You should always sit opposite the sail, forward of the tiller so it has room to swing and it is out of your way. If you sit too far aft, it will be difficult to move around.



Steering

Small boats are steered with a TILLER, which is connected to the RUDDER. If you push the tiller toward the PORT side of the boat, the boat will turn to STARBOARD and vice versa. Always maintain a grip on the tiller. If you let go of the tiller, you lose all control of the boat. If you have to let go of something, let go of the sheet, not the tiller!

When first learning, it is common to steer too much so the boat zig zags over the water. To sail a steady course, it is helpful to look at an object on shore to keep the boat headed toward.

The boat must be moving for the rudder to turn it. If the boat is stopped, moving the tiller back and forth does not help and is harmful to the boat. (There are methods to get the boat moving again we will discuss later.)

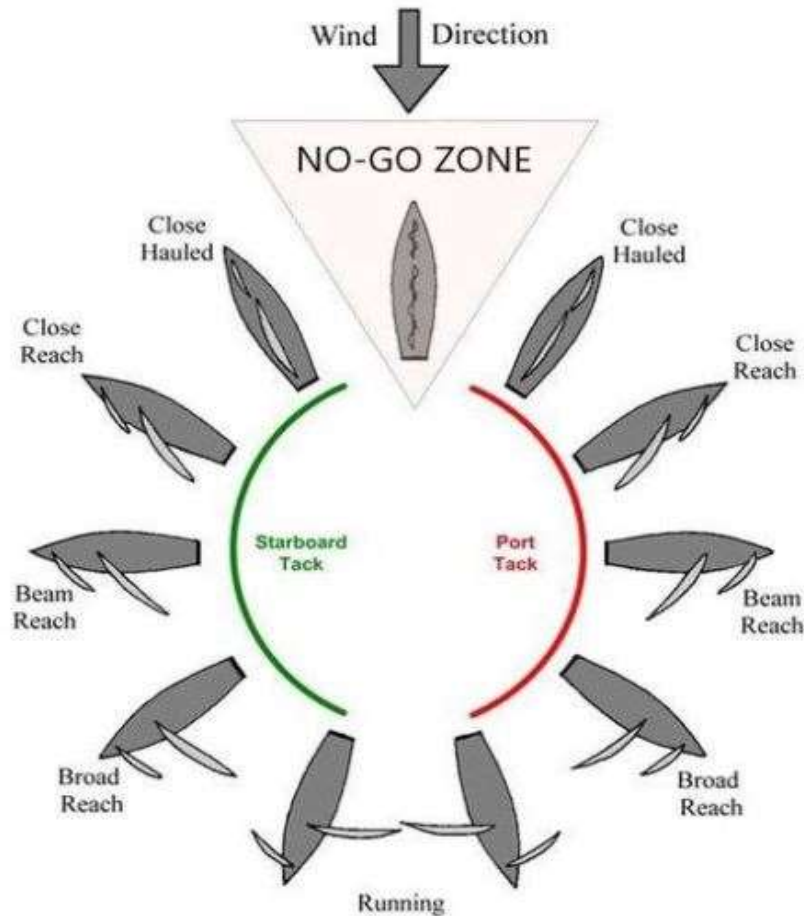
To avoid collision, think "TILLER TOWARDS TROUBLE". This means you push the tiller TOWARD the thing you want to avoid hitting. The boat will steer away.

Always face forward

It is important to always face forward in the boat. There are many reasons for this. It helps you see where you are going and avoid collisions. It makes switching sides easier. It is important to learn to pass the tiller behind your back as you switch sides so that you maintain control. This seems complicated when you first learn it, but it becomes second nature with practice.

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POINTS OF SAIL



No Go Zone – the zone pointing directly into the wind and extending roughly 45 degrees to either side of the wind. A sailboat cannot make progress when in the no go zone. A sailboat that is stopped in the no go zone is called “in irons.”

Head to wind – the position of a boat pointing straight into the wind (“In Irons”).

Close Hauled – sailing as close to the wind as possible, along the edge of the no go zone. The sail is sheeted in as closely as possible

Close reach – sailing with the wind just forward of the beam, between close hauled and beam reach

Reach (or Beam Reach) – sailing with the wind on the beam

Broad Reach – sailing with the wind aft of the beam

Running – Sailing directly downwind

CHANGING TACKS & COMMANDS

HOW TO TACK (turn into the direction of the wind):

Check new course for other boats, obstacles and hazards. Call to crew "PREPARE TO TACK." Crew responds "READY." Call "TACKING." Push the tiller toward the boom. As the boat turns to windward, the boom will move across the boat. ALWAYS FACING FORWARD, move to the other side of the boat and transfer the sheet and tiller to the other hands. Straighten tiller on new course as wind fills sails, sheet in as needed.

When tacking, make sure you turn enough to get through the "No Go Zone". When you finish the turn and sheet in, the sail should fill and not luff. If you don't turn enough, you will lose speed and end up facing into the wind, "in irons".

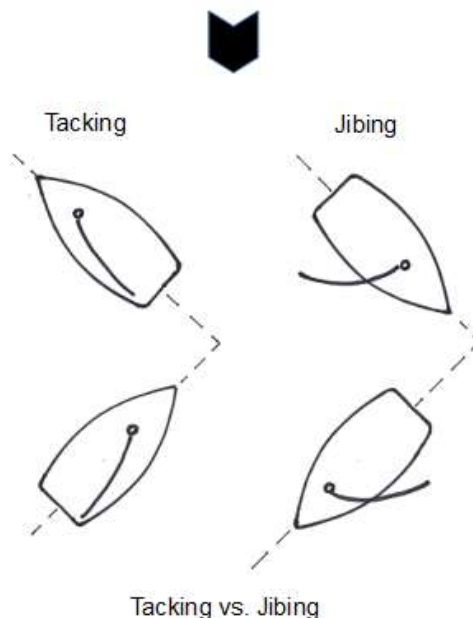
HOW TO JIBE (turn away from the direction of the wind):

Check new course for other boats, obstacles and hazards. Call "PREPARE TO JIBE." Crew responds "READY." Call "JIBING," pull tiller away from boom to bear away from the wind while sheeting in. When sail fills with wind on other side, let the sheet out and move to the windward side of the boat. Make sure to ALWAYS FACE FORWARD. Transfer the sheet and tiller to the other hands and straighten tiller on new course. In high winds the boom will cross the boat forcefully, so take care to control it with the sheet and watch your head!

Take care not to turn too much when tacking or jibing. Before you turn, look to see what your new heading will be and finish your turn on that heading. It helps to pick a landmark on shore or a course mark to point to.

Note:

The crew should only call "READY" when they are truly ready. They should be in position to switch sides, have released the sheet from the cleat and have checked for other boats or obstacles.



UPWIND SAILING (Beating to Windward)

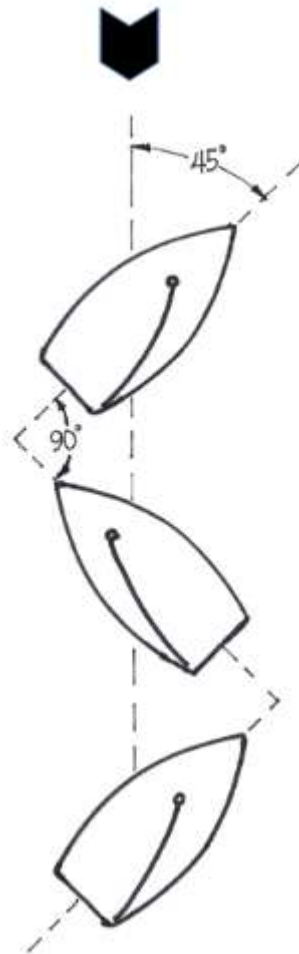
Beating to windward involves performing a series of tacks to make progress upwind. It is very important to make sure your boat is close hauled so that you will be sailing as close to the wind as possible. This will let you take the shortest possible route.

Sheet the sail in as far as it will go.

Gradually steer into the wind until the sail begins to luff.

Bear away from the wind just enough to stop luffing.

Keep checking continuously, especially after making a tack.



VERBAL COMMANDS USED BY COACHES

Sheet in: Pull the sheet to bring the boom closer to the center of the boat

Sheet out: Loosen the sheet to move the boom farther from the center of the boat

Head up: adjust your course to steer a little more toward the wind

Fall off: adjust your course to sail a little more downwind

Marks to port: Sail around the course with the marks on the port side of the boat (i.e., making left turns)

Marks to starboard: Sail around the course with the marks on the starboard side of the boat (i.e. making right turns)

MANAGING A CAPSIZE

Remember – capsizing is part of sailing. It doesn't mean you are a bad sailor!
Right the boat and keep going!

STAY WITH YOUR BOAT. Do not swim to shore. It's usually farther than you think.
As soon as possible, signal to safety boat that you're OK with a thumbs up.
Take a few seconds to relax and think about where the wind is blowing and what you need to do.

Do not swim under sails or hulls.

Release all sheet lines. A cleated sail can hold water and make it too heavy to right the boat, or it can fill with wind once it turns upright and cause the boat to capsize again or sail away.
Check that the daggerboard or centerboard is fully down.

Point the bow of the boat into the wind.

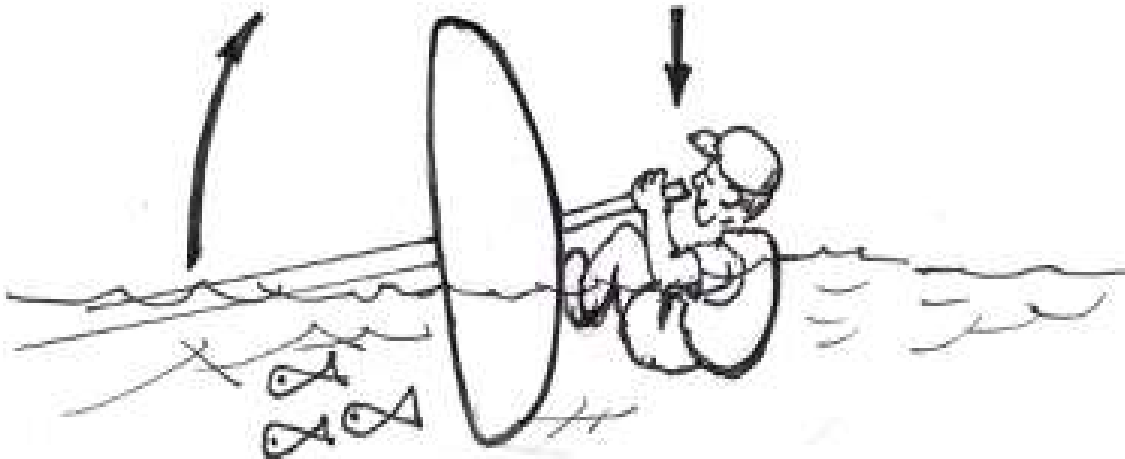
Swim around to the daggerboard

Grab the end of the daggerboard and put your weight on it. Your weight will eventually right the boat. Be patient – it takes a few seconds to get it started.

If you don't manage to right the boat, take a few moments to rest before trying again.

Upon entering the boat after righting it, be sure to duck to avoid the swinging boom.

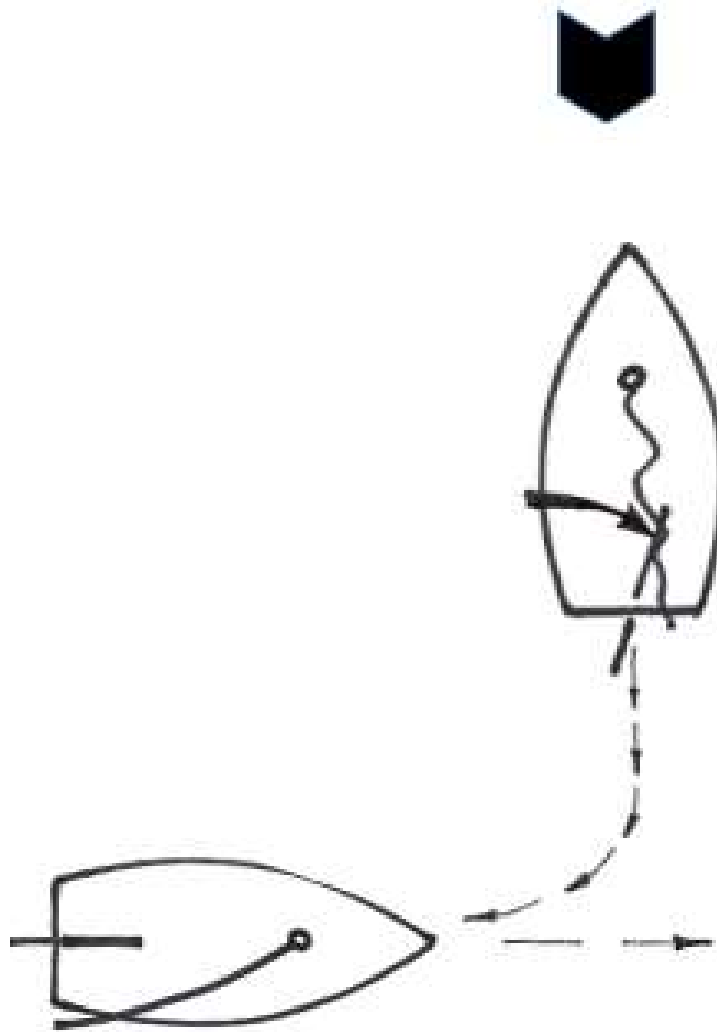
Be prepared to "get out of irons" and haul in sheet lines to sail away.



HOW TO GET OUT OF IRONS

When your bow is pointed directly into the wind you are “In Irons”. Your sail will be luffing and your boat will be stopped. Follow these steps to get out of Irons and back to sailing:

- Push the tiller toward the direction you want to go
- Hold the tiller in that position. The wind will cause your boat to drift backwards and the rudder will turn your boat in the direction you want to go.
- Be patient. It will take a few seconds, but your boat has to turn about 45 degrees before the sail will fill again
- Sheet in, straighten the tiller and sail away!



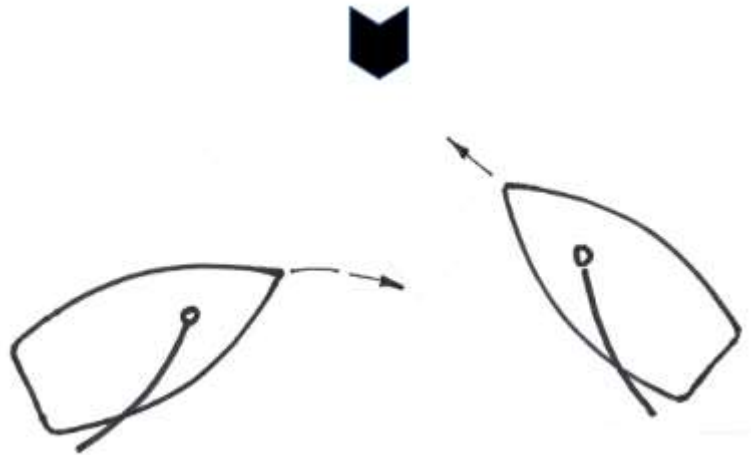
RULES OF THE ROAD

ALWAYS AVOID COLLISIONS, EVEN IF YOU HAVE THE RIGHT OF WAY!

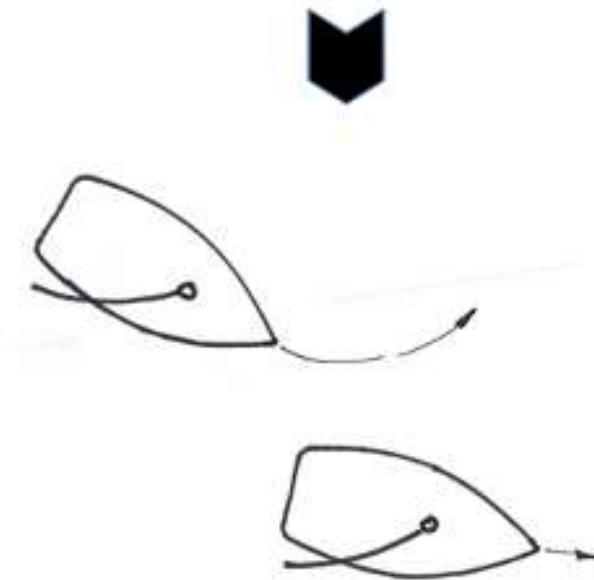
Maintain a proper lookout and appraisal of the risk of collision

SAILBOAT VS. SAILBOAT:

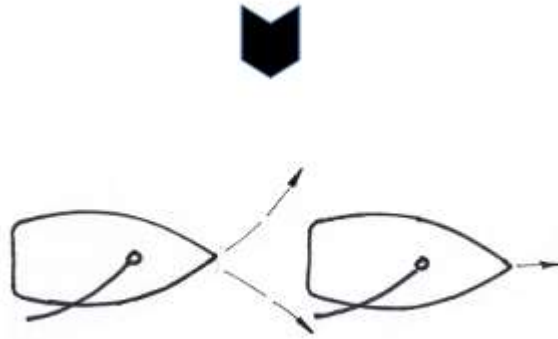
A boat on a port tack shall keep clear of a boat on a starboard tack.



A windward boat shall keep clear of a leeward boat



A boat clear astern shall keep clear of a boat clear ahead.



When boats are overlapped, the outside boat shall give the inside boat room to clear mark or obstruction.

SAILBOAT VS. POWERBOAT

A powerboat shall keep out of the way of a sailboat.

A sailboat shall keep clear of traffic lanes in channels.

A sailboat shall keep clear of commercial fishing boats, tugboats, or other working boats.

IN GENERAL

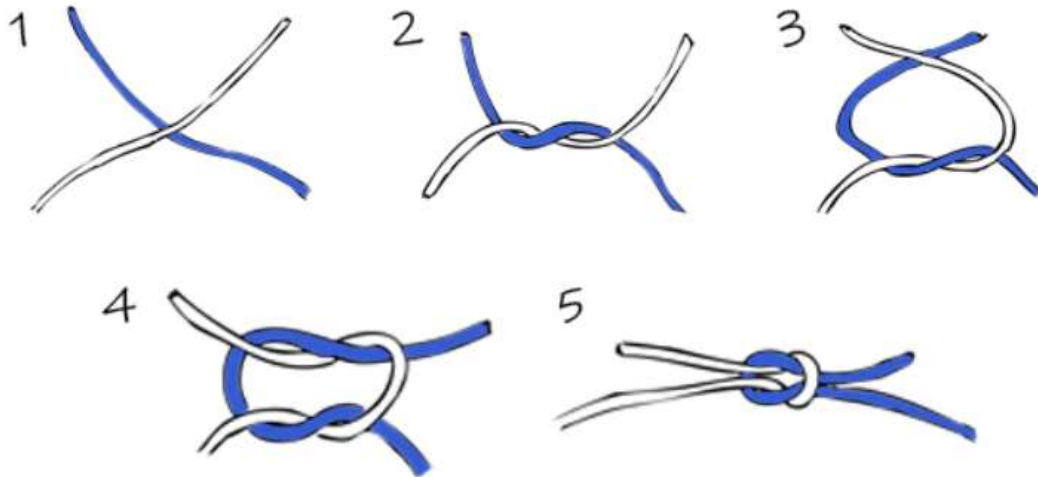
- Never assume that the other boat will know you have right of way or is paying attention.
- Always be prepared to take evasive action. (Remember – TILLER TOWARDS TROUBLE)
- If you have to cross traffic lanes, do so at right angle to the traffic flow to get across as quickly as possible.
- Every vessel shall maintain a proper look-out and make full appraisal of risk of collision.

BASIC KNOTS AND THEIR USES

There are only a few knots that every sailor should learn how to tie without thinking. Practice is important. Get a piece of thin rope, about 2 feet long, and practice these knots while watching TV.

A good knot is easy to tie, holds securely, and is easy to untie.

Square Knot (or Reef Knot) - used to tie ends of rope together, to secure a bundle, or to reef sails



Bowline - used to create a slip-proof loop in the end of a line

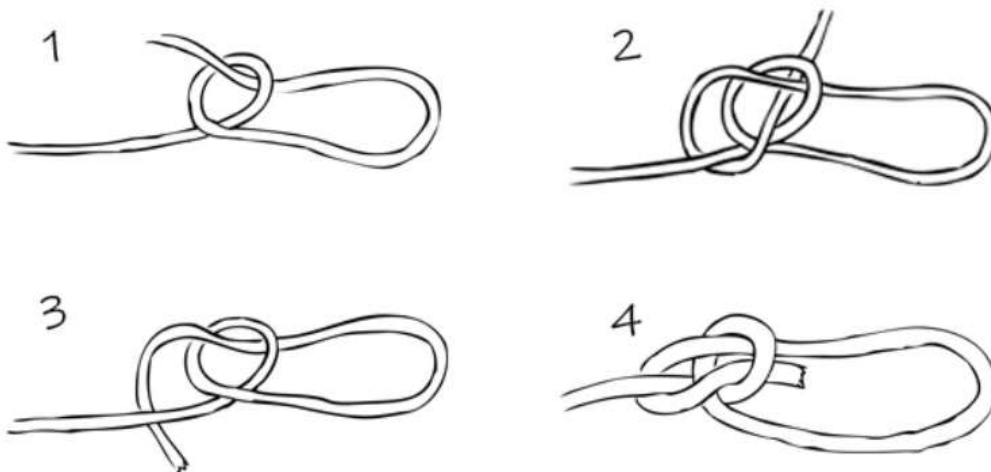
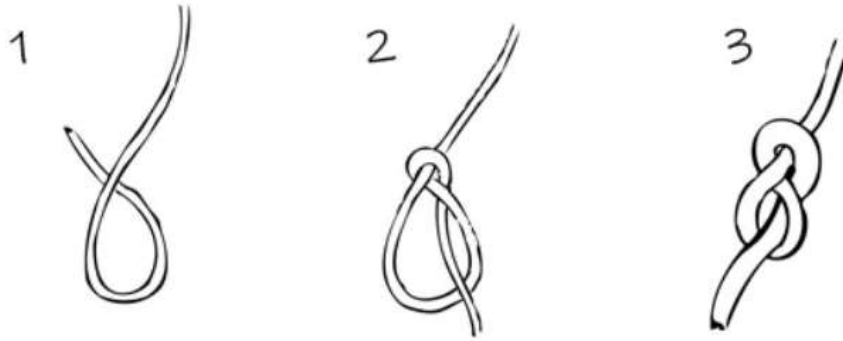
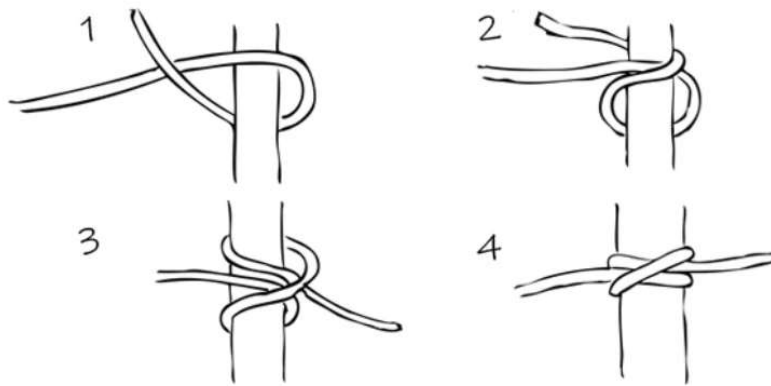


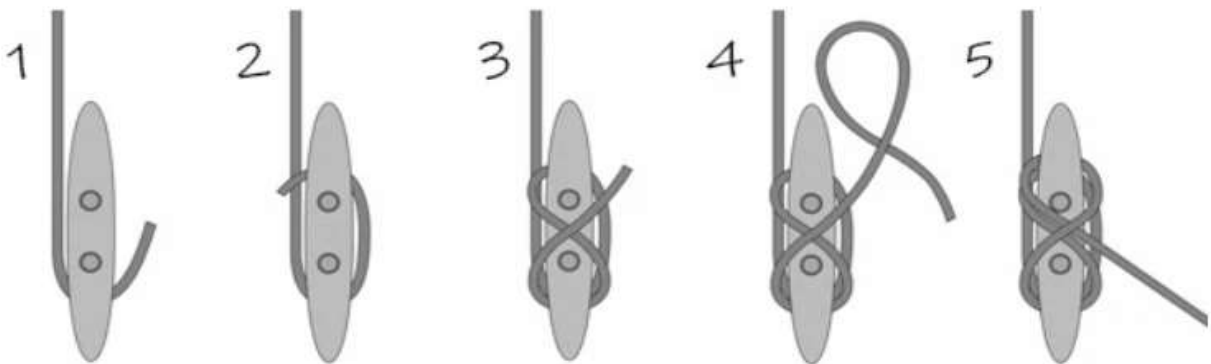
Figure Eight (Stopper Knot) – used to prevent a line from slipping through a fitting



Clove Hitch – used to secure a line to a round object such as a post

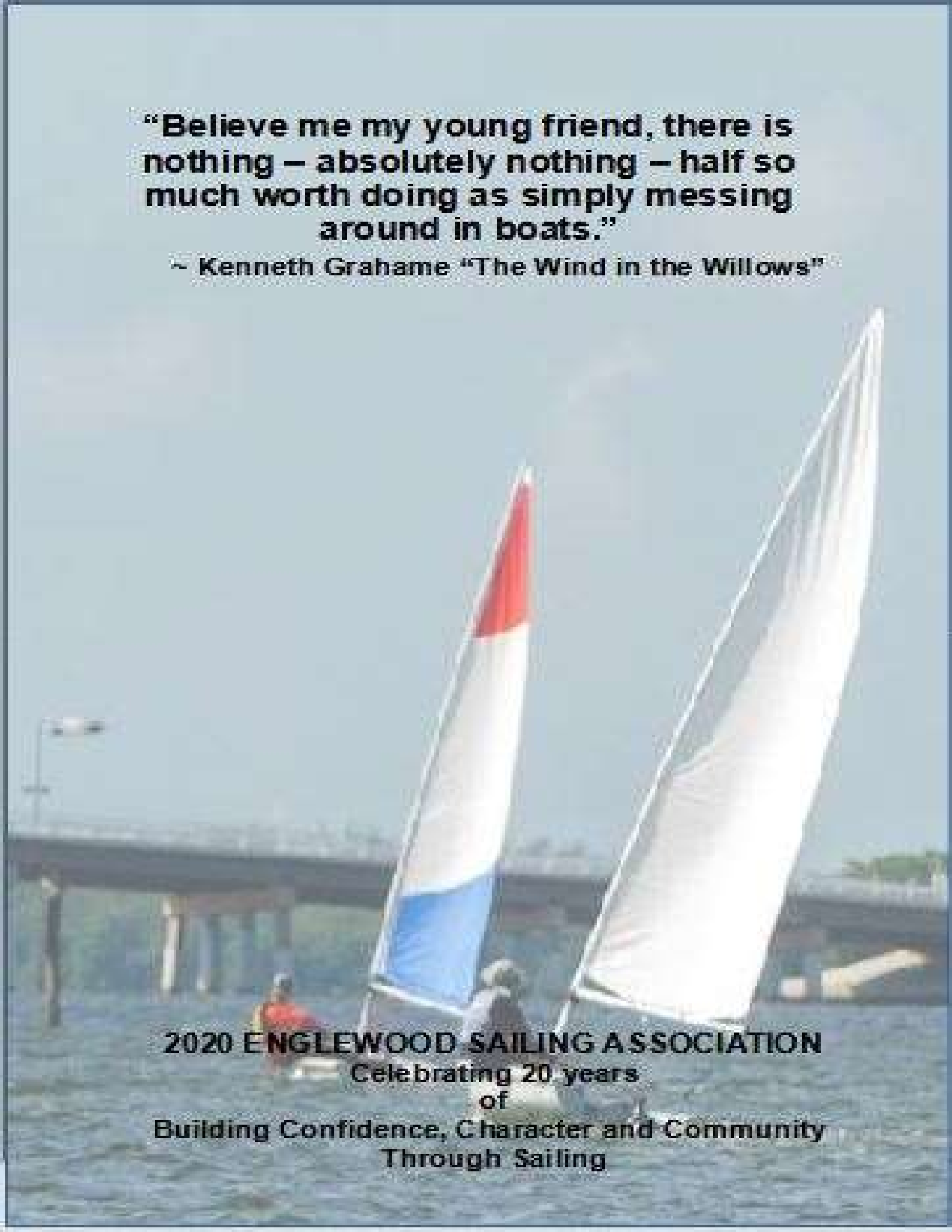


Cleat Hitch – used to secure a line to a horn cleat



“Believe me my young friend, there is nothing – absolutely nothing – half so much worth doing as simply messing around in boats.”

~ Kenneth Grahame “The Wind in the Willows”



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Celebrating 20 years
of
Building Confidence, Character and Community
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