Learn to Sail

Please read this before the next class and practice your knots: the bowline and the stunsail tack bend.

Rigging

Check with the dock staff to see if there are any restrictions. Grab the appropriate sail, check the number and put your sailing card up on the board, find a lifejacket and get a rudder – now you are ready to rig your boat.

- Place the rudder in the bottom of the boat
- Life jacket on and zipped
- Sail on mast, (stunsail tack bend & cleating)
    - Head of sail in the mast, tie on the halyard (stunsail tack bend)
    - Foot of sail in boom, slug in track and attach the outhaul S hook
- Check that plugs are in
- Water on dock
- Hold onto bow line/painter
- Lift bow and push, slide boat into the water
- Tie boat to dock (bowline)
- Remember: Don't step on anything red as you get into the boat
- Leash off/Centerboard down
- Rudder in, underneath the traveller, put safety catch on, tighten traveller
- Sail up, downhaul and outhaul set

Unrigging

- Downhaul off
- Sail down (leave the head and foot attached)
- Rudder out (remember safety catch and loosen traveller)
- Centerboard up/leash on
- Bail out boat
- Pull boat out
- Coil mainsheet
- Roll sail
- Put rudder & lifejacket away
- Remove card from board

Getting into and out of the boat

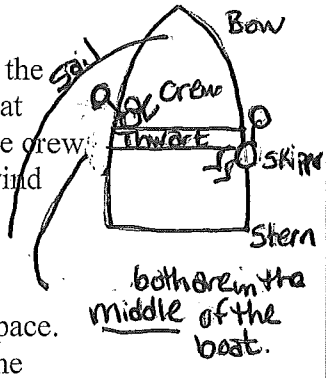
- Grab on to the shroud (the metal wire attaching the mast to the boat) and pull the boat into the dock.
- Step into the middle of the boat, close to the centerboard, with one foot and follow up with the other foot.
- DO NOT stand with one foot on the dock and one in the boat. Splits are never comfortable.
- Get out of the boat from the same location.

How to shove off from the dock

2 people: the skipper should crouch down in the back and middle of the boat so that they can balance the boat easily. The crew unties the boat, grabs the shroud, looks for traffic, steps in with one foot and pushes off with the other foot and their arms, aiming the boat towards the Boston shore. 1 person: the skipper does what the crew would do. Once they climb in, they move towards the back of the boat and grab the tiller. They then sit, pick up the main sheet and start trimming the sail while also steering the boat.

Position of Skipper & Crew

The person steering (the skipper) sits on the seat (thwart), with both of their feet on the floor behind the thwart, facing the sail and looking forward. The crew sits on the seat facing forward across from the skipper, under the sail. In light to moderate wind, the crew should sit down under the sail or in the middle of the thwart. In medium to heavy wind the crew sits up close to the skipper to keep the boat from tipping (heeling).



Landing

Check the wind direction. Always land into the wind. Be sure you have sufficient space. As you approach the dock let the sail out completely. To slow down, head up into the wind. Push the side of the boat up against the dock.

Steering

In the beginning you will have a lot of demands on your attention. Steering the boat and adjusting (trimming) the sail are best practiced separately at first.

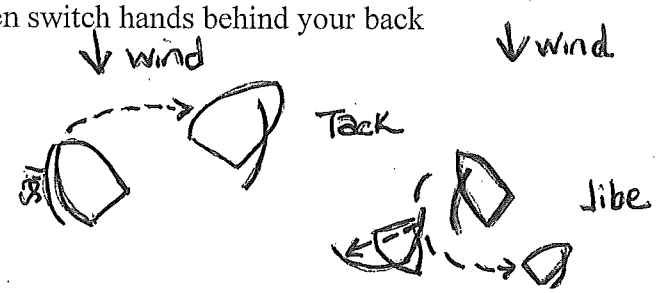
The skipper will steer the boat with the tiller; the crew will trim the sail (pulling it in or letting it out) from the block, which is behind them when they sit on the thwart. Trade tasks and positions in the boat frequently. Pick an objective, some point on the shore or a buoy on the course, and try to sail directly towards it. Once in awhile, during class, try to bump into the rubber course buoys as you pass by them. When you feel comfortable steering, try trimming the sail at the same time.

Whenever your boat turns, the wind direction relative to your boat will change. Try not to allow yourself to lose track of the direction your boat is pointing relative to the wind and never let go of the tiller.

In the beginning the skipper may want to use the wood tiller only, with the tiller extension folded back and held in place with the loop of bungee cord attached to the tiller. As you become an experienced sailor or sail in more wind, you'll want to try steering with the tiller extension which gives you a wider range of control.

Two types of turns: Tacks & Jibes

Turning so that the front (bow) of the boat crosses the wind (tacking) is fairly easy. Start with some speed and momentum. Turn the boat, pushing the tiller towards the sail until your hand is over the red gunwale. You will, briefly lose the force of the wind in your sails. The sail will change sides, and you and your crew will need to do so as well. Lead yourself across the boat with your aft foot first. Then switch hands behind your back



while facing the front of the boat. Straighten the tiller out as soon as the sail fills on the new side. Remember to never let go of the tiller.

Turning the back (stern) of the boat across the wind until the sail changes sides (jibing) is more difficult. A jibe made through inattention or carelessness can be scary (or even dangerous if you don't duck!) Pull the tiller away from the sail and switch hands behind your back before the sail switches sides. Lead yourself across the boat with your aft foot first. As the sail begins to move across, duck your head and straighten out the tiller. The crew should be ready to adjust their weight throughout the maneuver to keep the boat level and not let it heel too far one way or the other.

During a tack the skipper determines how fast the boat turns through the tack and how close up on the wind the boat will stay, the crew determines (by trimming the main sail) the fill of the wind in the sail. Therefore, between them they determine the boats' speed. During a jibe, the wind gets behind the sail and moves the sail and boom across the boat. In light wind, the skipper or crew may pull the boom across the boat during the jibe. In moderate to strong breeze the wind can sweep the sail and boom across the boat with a lot of force. During a jibe, there is more opportunity to get hit in the head by the quickly moving boom or to capsize or death roll due to the winds strong force on the sail. Practice jibing after learning to tack and initially in light wind, with a crew.

The Wind
The wind on the Charles River is shifty, changing often both in direction and in strength. This can cause difficulty to the beginner, as well as to the experienced sailor. Being aware of the wind's direction relative to your boat is of primary importance. Look for the flags on shore, the telltales on your boat and the waves on the water to give yourself an idea of where the wind is coming from.

Balance
Try to keep the boat flat – heeling just slightly away from where the wind is coming. If the wind increases suddenly, let the sail out quickly to lessen the pressure on the sail and keep the boat from capsizing. Also allow the boat to turn towards the wind, pushing the tiller into the sail. With experience, you will also learn to shift your weight to assist in keeping the boat flat.

Sail Trim
Once you have your boats' direction under control, trim the sail. When the wind direction changes, or you turn the boat, you should re-adjust the sail to compensate. Look at the front edge of the sail where it feeds into the mast. If it is flapping or bubbling (luffing) – even gently – pull it in until the luffing stops. If the sail is not luffing, let it out until it luffs a bit, then pull it back in a little. Proper sail trim is essential. Expert sailors alter and experiment with their sail's trim almost continuously.

The Course
The course that we are going to start with is the easiest possible, a reaching course (see pg. 8, Points of Sail). Take a look at the picture of the course that is attached to this

handout. Buoys or marks will be set up perpendicular to the wind. You will sail a figure 8 course, tacking around each buoy.

Concentrate on steering a straight course, learning how to steer with the tiller and tiller extension. Also concentrate on trimming the sail (pulling it in and letting it out), and keeping the boat flat. If the boat is heeling a lot, let the sail out until it flattens out and drive the boat closer to the wind. Do this by pushing the tiller into the sail a little so the bow of the boat moves closer to the wind. When you get to a mark, the skipper will push the tiller towards the sail, the bow of the boat will cross the eye of the wind. Then straighten out the tiller so that the boat knows to stop turning. Both the skipper and crew cross the boat and sit down on the other side. The crew can trim the sail in slightly as the boat moves through the wind and loosen it once the boat is on its new tack.

Other people will be sailing on this course so you must watch out for other boats. If you feel you might hit another boat – point the tiller at the other boat and your boat will turn away. (See pg. 12, Rules of the Road).

The second course will also have two buoys set perpendicular to the wind. This course will require one tack and one jibe. You will sail around this course in a circle. Sail out and jibe around the farthest buoy, pull the tiller away from the sail, stand up, switch hands, the stern of the boat will cross the wind, straighten out the tiller, sit on the new side. Head towards the next buoy for a tack.

A third course may be used in the 3rd class. This course has three buoys and will allow you to practice sailing close-hauled.

Sailing Close-hauled

Sailing close-hauled is a different strategy that is used when you want to get upwind. You cannot use the wind to keep your boat moving forward when pointing 45 degrees into the wind. To sail to an objective in that sector you should pull the sail in until the boom is over the back corner of the boat. Keeping the sail there – except when you must save yourself from strong gusts – point the boat as close to the wind as possible without letting the sail luff. Steering close hauled requires concentration. You will be pointing about 45 degrees away from the wind. This is sailing "on the wind" or close-hauled. Since the wind often shifts direction, you must continuously make subtle changes in your course. You will need to make one or more tacks, until you close in on your objective.

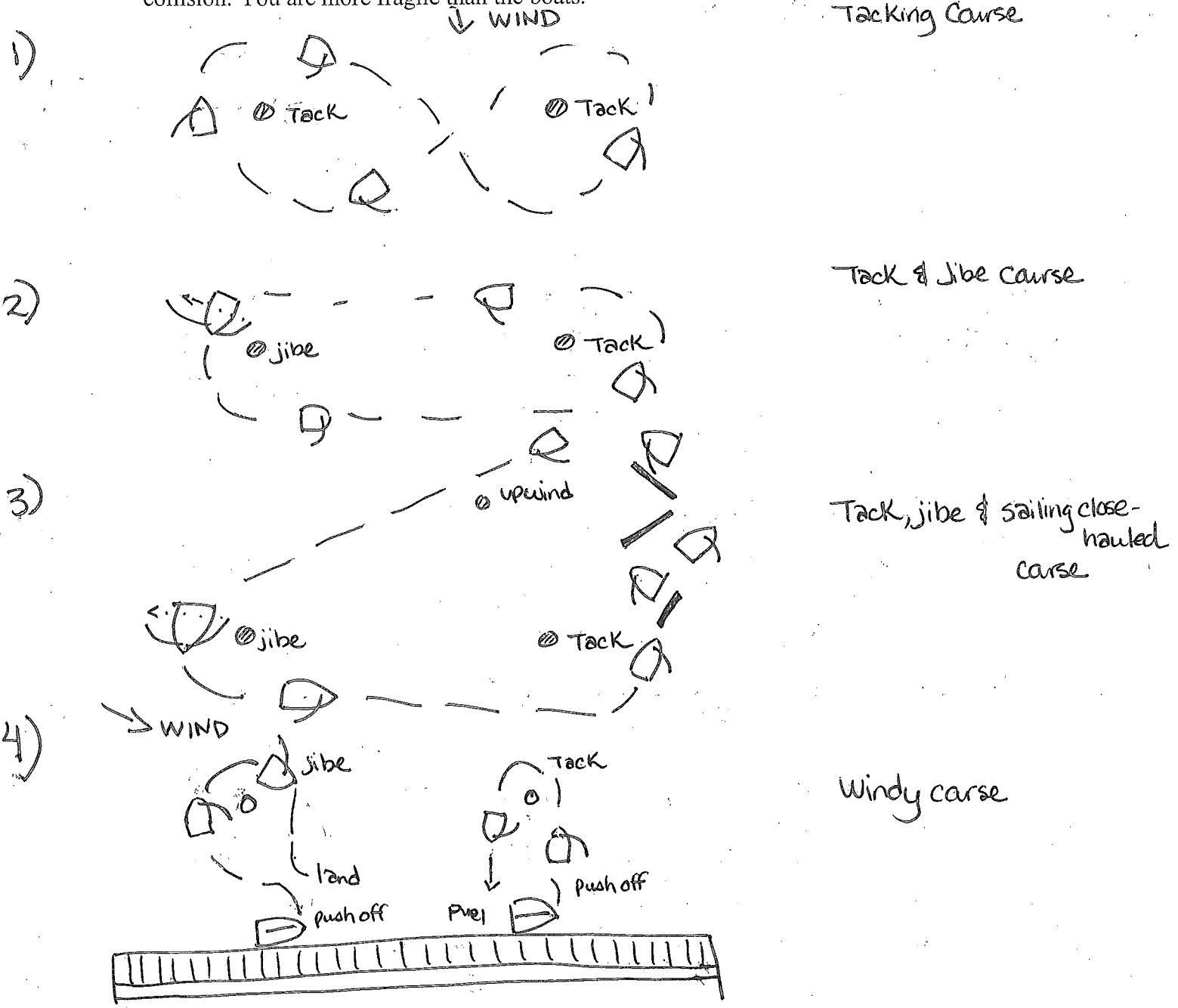
Courses:

1) Tacking. Two buoys perpendicular to the wind. Tack around the buoys in a figure eight.
2) Tacking & jibing. Two buoys perpendicular to the wind. Tack around the first mark, jibe around the next going around the buoys in a circle.
3) Tacking, jibing and sailing close-hauled. Two buoys perpendicular to the wind and one buoy slightly upwind and in the middle of both of them. Jibe around buoy, head towards the next one and tack around it. Head up and sail close-hauled (close up to the wind)

towards the next buoy. You will probably have to tack several times before you are able to tack around the buoy and then sail down wind towards the buoy you are jibing around.

4) For days when there is too much wind. Two buoys are placed off the dock. Push off from the dock, sail out to the buoy, tack, and sail back to the dock and land. Change positions (skipper & crew) and head back out. Repeat.

***Collision Avoidance:**
Avoid collisions. If you are concerned that you may run into another boat, point the tiller at the other boat and your boat will turn away. Do not put your hands or feet out to stop a collision. You are more fragile than the boats.



MIT NAUTICAL ASSOCIATION RULES AND REGULATIONS

Check-off for Provisional or Helmsman

PROVISIONAL

The purpose of the Provisional check-off is to assure the Staff that all members can safely and competently take care of themselves, their guests, and the Tech Dinghy while sailing on the Charles River. Every member is expected to take the check-off as soon as they are ready. Anyone taking out a Tech with only a swim rating may be asked to use a small sail or not be allowed to sail based on the wind conditions. Completion of the Provisional allows the member to sail Lasers and Rhodes 19's in light wind conditions.

HELMSMAN

The Helmsman check-off consists of successfully sailing (tacking upwind, jibing, use of the tiller extension, and the man-overboard drill) the Tech Dinghy singlehandedly in strong winds (18+ knots). The Provisional and Crew ratings must be completed before receiving the Helmsman.
The purpose of the Helmsman rating is to show that the sailor is capable of safely handling the Tech Dinghy in challenging wind conditions. Achieving the Helmsman rating also shows that the sailor is prepared to sail some of the more advanced boats available at the Pavilion.

Sailing Card Number:_____ Name:_____
Date:_____ Approved by: _____

✓ = what is covered in class

Sailing and Maneuvering
Explain and Demonstrate:

Leaving the dock	✓
Beat, reach, run, jibe, and tack	✓
Getting out of irons	Somewhat
Proper trim of sail	Some
Proper trim of boat	Some
Use of centerboard	no
Man overboard procedure	no
Landing at dock	✓

Precautions and Safety

Restricted sailing areas	✓
Maximum number of people in boats	✓
Procedure after capsize	✓
Explain recall signals (Rule 16)	✓
Number of lifejackets required	✓

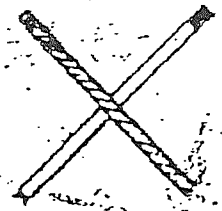
Rules of the Road

Avoid all confrontations when possible	✓
Three basic sailing rules	Somewhat, please read up on or ask the deck staff
Right of way between powerboats, sailboats and Row boats	✓

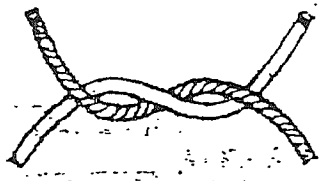
Rigging the Tech Dinghy

Knots: bowline, figure eight, stunsail tack bend, clove hitch	✓
Step mast, rig boom and sail	Depends
Launch the boat	✓
Care of boat at dock	✓
Set sail and make boat ready	✓
Haul, unrig and stow boat inside	Depends
Haul, unrig and leave boat on dock	✓
Roll sail	✓
Furl sail on boom	ask dock staff
Rig a small sail	Depends on the wind
Proper method of cleating the halyard	✓

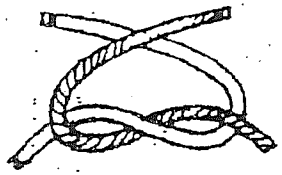
THE SQUARE OR REEF KNOT TIES TOGETHER TWO LINES OF THE SAME DIAMETER ONLY.
(NOTE: LINES OF DIFFERENT SIZES MAY BE JOINED BY TWO BOWLINES LINKED TOGETHER.)



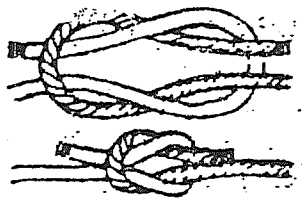
1. CROSS ENDS RIGHT OVER LEFT



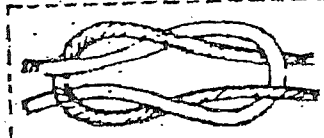
2. TWIST ENDS TOGETHER AS ABOVE.



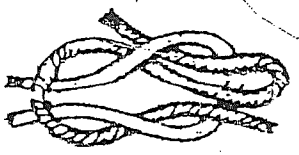
3. AGAIN CROSS ENDS LEFT OVER RIGHT.



4. TWIST ENDS TOGETHER. PULL TIGHT.

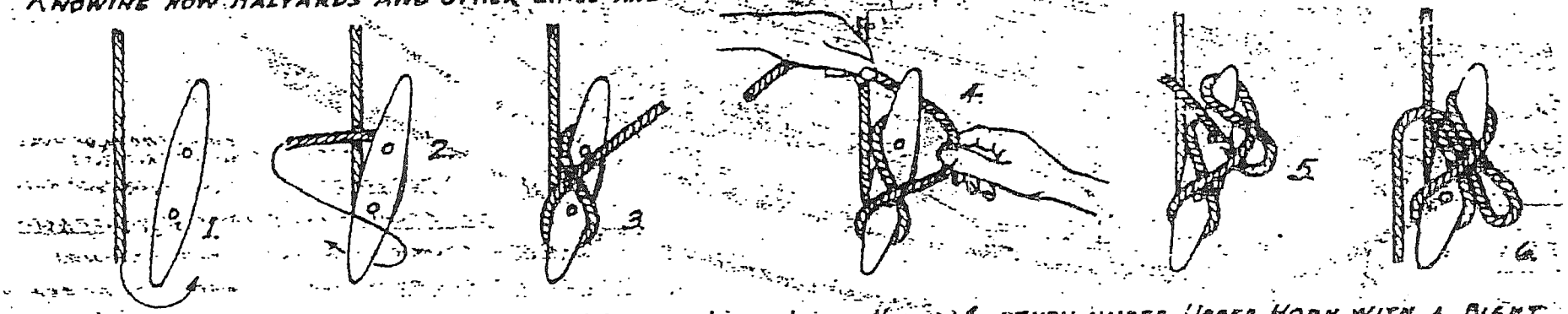


A "GRANNY"
RESULT OF CROSSING THE ENDS WRONG IN 3.
IT WON'T HOLD!



FOR DEEPING OR FURLI...
SQUARE KNOT WITH A...
END LOOPED UNDER C...
BE QUICKLY UNTIED.

KNOWING HOW HALYARDS AND OTHER LINES ARE MADE FAST TO SMALL CLEATS IS A MUST



1 & 2. MAKE A TURN AROUND BASE OF CLEAT; 3-A TURN AROUND LOWER HORN; 4-A TURN UNDER UPPER HORN WITH A BIGHT HELD OPEN. 5. TUCK A LOOP OF WORKING END UNDER BIGHT. 6. PULL LOOP DOWNWARD, MAKING ALL TIGHT. TO RELEASE, PULL LOOSE END AND UNWIND.

STUNSAIL TACK BEND

Makes the loop in the end of a line which will slip closed, making a neat, tight knot.