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He is the best sailor who can steer within fewest points of wind, and exact a motive power out of the greatest obstacles.

- Henry David Thoreau

Boat Handling

Most boating accidents occur while departing or returning to a dock. Ports and harbors offer more opportunities to bump into things, but you still need to know how to handle a boat in open water as well as in a congested harbor.

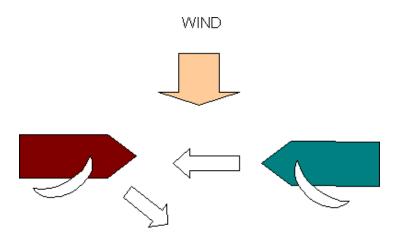
Rights of Way

General Rules 1. The Rule of General Responsibility: Regardless of the Rights of Way, don't run into other people or things.			
	General Rules		
2. Anchored, stopped, or moored boats must be avoided by other vessels.			
3. Overtaken boats have the right of way over boats overtaking them regardless of whether the overtaken boat is power or sail.			
4. Boats with restricted maneuverability, whether due to commercial fishing, draft, length, tonnage, towing, etc., have the right of way over unrestricted vessels.			
5. Man-powered boats (e.g. canoes, rowboats, etc.) have the right of way over sailboats, powerboats, and seaplanes			
6. Sailboats have the right of way over powerboats and seaplanes.			
7. Powerboats have the right of way over seaplanes.			
Here lies the body of Jonathan Jay,			
Who died defending his right of way,			
He was right, dead right, as he sped along,			

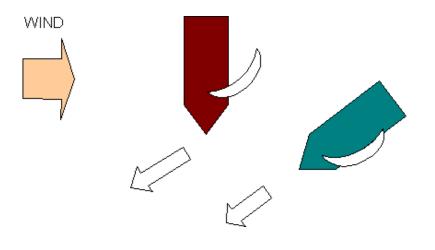
But he's just as dead as if he'd been wrong.

--Anonymous

Sailboat vs. Sailboat

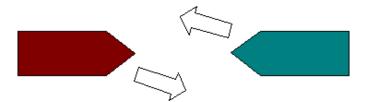


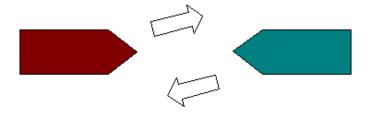
When two sailboats approach each other on opposite tacks, the sailboat on the starboard tack (i.e. wind coming across the starboard rail) has the right of way.



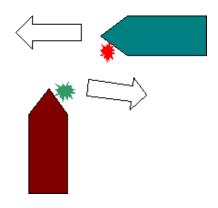
When two sailboats approach each other on the same tack, the leeward boat (i.e. boat farthest from the wind) has the right of way.

Powerboat vs. Powerboat

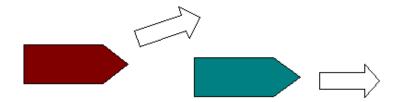




When two powerboats approach each other head on, they normally pass to the right of one another (port to port); however, they can pass starboard to starboard, but they should signal their intentions (see Signals & Communications).



When two powerboats approach each other at an angle, the boat to starboard has the right of way. At night, the boat with the right of way would see the green running light of the other boat (indicating "go") and the other boat would see the red running light of the boat with the right of way (indicating "stop").



An overtaken vessel--whether it be sail, power, or a combination--has right of way over the vessel overtaking it.

Prop Walk

Prop walk is the tendency of the propeller to kick the stern of the boat in a particular direction depending on which way the propeller spins.

Right hand propeller turns clockwise.

Left hand propeller turns counterclockwise.

Prop walk is more noticeable in reverse and when first starting out in forward.

Right Hand Propeller

Forward - kicks stern right

Reverse - kicks stern left

Left Hand Propeller

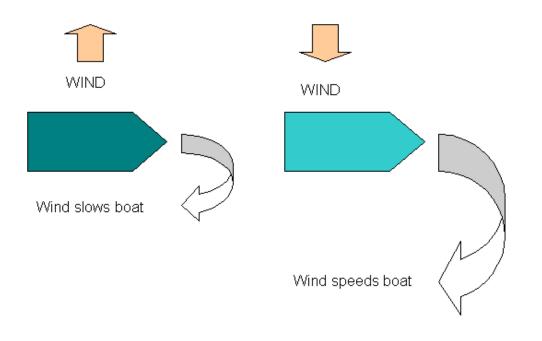
Forward - kicks stern left

Reverse - kicks stern right

Warning: When reversing a boat under power, pay careful attention never to let go of the wheel or tiller. The backward motion of the boat will slam the rudder hard over and can damage the rudder or steering mechanism.

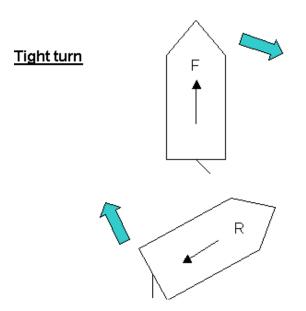
Turning under Power

Turning under power



Tighter turns can be made against the wind because the wind slows the boat.

Turning with the wind causes wider turns because the wind speeds the boat.



Backing and Filling

(using a right hand prop)

1. Start turn in forward with the wheel hard over.

2. Shift into reverse and use prop walk to turn stern (keep wheel hard over).

3. Shift into forward.

4. Shift into reverse.

5. Shift into forward and center wheel.

Leaving a Slip

Landing at an Upwind Dock

1. Lower sails

2. Rig a dock line to the beam of the boat so the boat can be pulled to the dock without pulling the bow into the dock.

3. Approach the dock and make a pass to survey it.

4. The crew sets fenders and keeps a spare to position in an emergency.

1. Release spring lines.

2. Release bow and stern lines.

3. Reverse slowly. (Be aware of prop walk.)

4. Crew on the dock walk bow and stern lines as they follow boat back. They also carry fenders to protect the

boat from the dock.

5. As the beam passes the end of the dock, the crew step onto the boat. (The boat should always be boarded at its widest point.)

6. Back out until clear of the dock. (Drift in neutral once the boat is moving.)

7. Shift into forward once clear of the slip.

 ${\it 8.}$ Don't turn helm until the boat is moving forward. (Be aware of prop walk when first starting out.)

5. Two members of the crew ready themselves at the shrouds with dock lines in hand.

6. Approach the dock. Shift into neutral 3 to 6 boat lengths away.

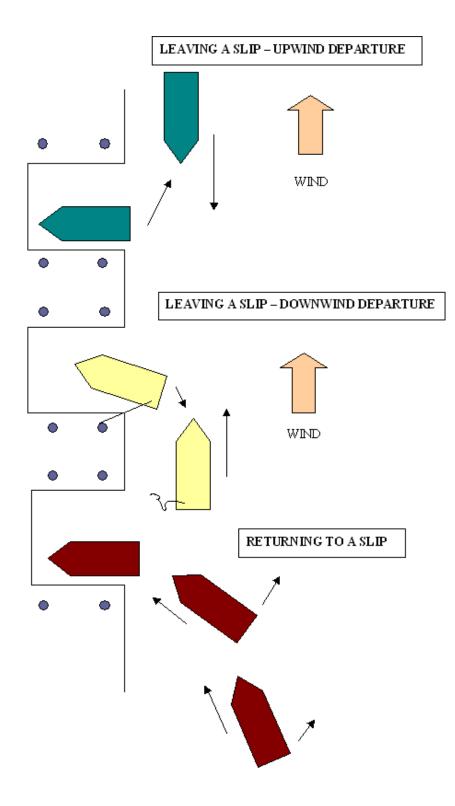
7. Steer to within 1 foot of the dock when 1 boat length away.

8. Shift into reverse at low rpm.

9. The crew steps onto the dock and stops the boat with the aft spring line.

10. Shift into neutral, center the boat, and secure it with the bow, stern and spring lines.

Leaving and Returning to a Slip



Leaving a Slip - Upwind Departure

1. Assess the wind and current before leaving the slip. Wind and current will have the greatest effect when the boat is broad side.

- 2. Pull the boat to the side of the slip closest to the wind.
- 3. Reverse out of the slip and then motor forward.

Leaving a Slip - Downwind Departure

1. Assess the wind and current before leaving the slip. Wind and current will have the greatest effect when the boat is broad side.

2. Pull the boat to the side of the slip closest to the wind.

- 3. Use a stern spring line to help swing the stern of the boat upwind.
- 4. Reverse out of the slip, and then motor forward.

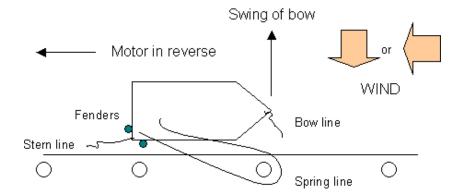
Returning to a Slip

1. Glide in neutral to feel the wind and current.

2. When 1 1/2 slips away, point to the far corner of the slip, then turn into the slip to swing the stern around. Repeat until you are positioned properly to pull into the slip.

Leaving a Dock under Power

Leaving a dock



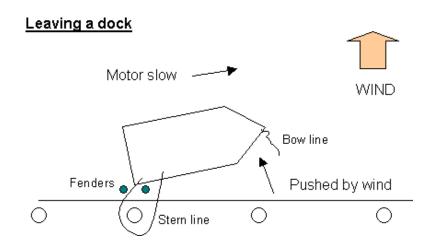
Upwind & Crosswind Departures

1. Double the stern spring line and cast off the bow and stern lines. (Note: Always rig the spring line from the stern, NOT at midship.)

2. Use the wind and reverse to turn the bow. (Note: The wind will always turn the bow before the stern.)

3. Release the spring line and motor forward.

Note: Always snug the dinghy to the outside aft quarter.



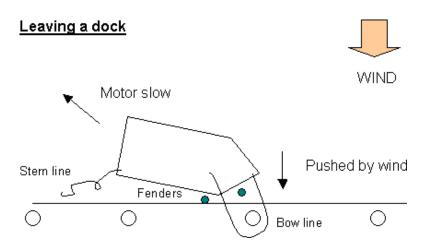
Crosswind Departure

1. Double the stern line and cast off the bow and spring lines.

2. Use the wind to turn bow. (Note: The wind will always turn the bow before the stern.) You can also throttle in reverse to turn the bow away from the dock if the wind is not sufficient to turn it.

3. Release the stern line and motor forward.

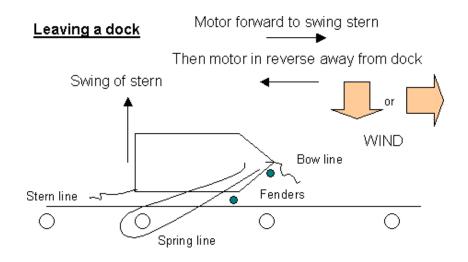
Note: Always snug the dinghy to the outside aft quarter.



Crosswind Departure

- 1. Double the bow line and cast off the stern and spring lines.
- 2. Use wind to turn the bow. (Note: The wind will always turn the bow before the stern.)
- 3. Release the bow line and reverse slowly away from the dock.

Note: Always snug the dinghy to the outside aft quarter.



Downwind & Crosswind Departures

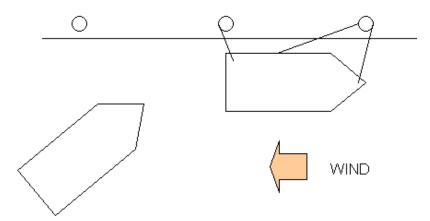
1. Double the bow spring line and cast off the bow and stern lines. (Note: Always rig the spring line from the bow, NOT at amidships.)

- 2. Throttle forward to turn the stern away from the dock.
- 3. Shift into reverse and back away from the dock as you release the spring line.

Note: Always snug the dinghy to the outside aft quarter.

Docking under Power

Upwind docking

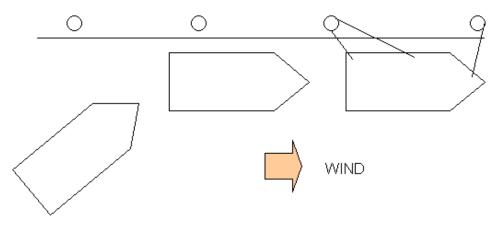


Upwind Docking

- 1. Approach at a 45 degree angle.
- 2. Make a smooth turn into the wind.
 - 3. Reverse engine.
- 4. Secure fore midship spring line.
 - 5. Secure bow and stern lines.

Note: Always snug the dinghy to the outside aft quarter before approaching the dock.

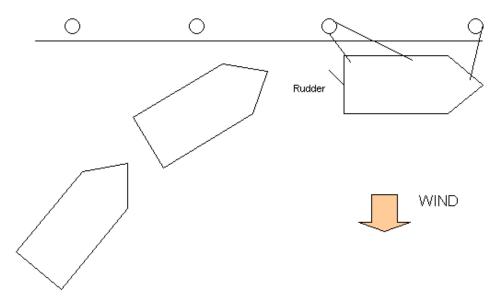
Downwind docking



Downwind Docking

- 1. Approach at a 45 degree angle.
- 2. Put engine in neutral and turn slowly downwind, parallel to the dock.
 - 3. Shift into reverse to stop the boat.
 - 4. Secure aft midship spring line.
 - 5. Secure bow and stern lines.
- Note: Always snug the dinghy to the outside aft quarter before approaching the dock.

Crosswind docking (Leeward side)



Crosswind Docking

- 1. At low speed, turn boat into the wind until 1/2 boat lengths from the dock.
 - 2. Make a tight turn to bring the boat parallel to the dock.
 - 3. Reverse the engine to stop.
 - 4. Secure the aft mid-ship spring line.
- 5. Shift into forward and turn the wheel to hold the boat against the dock.
 - 6. Secure the bow and stern lines.
- Note: Always snug the dinghy to the outside aft quarter before approaching the dock.

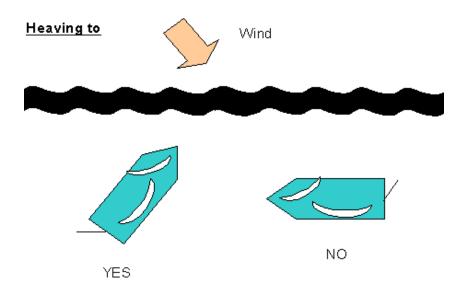
Crosswind docking (Windward side)

Crosswind Docking

- 1. Approach at a 45 degree angle.
- 2. When the boat is 1/2 boat length away, turn the boat parallel to the dock but with the bow cocked toward the wind.
- 3. Reverse the engine to stop the boat as it drifts to the dock.
- 4. Secure the aft midship spring.
- 5. Secure the bow and stern lines.

Note: Always snug the dinghy to the outside aft quarter before approaching the dock.

Heaving-to



Always heave-to on a tack that keeps the bow closest to oncoming waves. Otherwise the waves will strike the beam of the boat making it more difficult to remain hove-to. It could also put the boat in jeopardy of being swamped in heavy weather.

If the bow falls off:	If the bow heads up:
1. Reduce sail forward	1. Add sail forward.
2. Add sail aft.	2. Reduce sail aft.
3. Increase lee helm.	3. Increase windward helm.

Every sailor should know how to heave-to if just for safety's sake. It can be used to ride out a storm, effect repairs, or just to stop and have lunch.

When hove-to, the boat lay across the wind and makes no forward progress; however, it will slide sideways downwind, the progress and speed dependent on the size and weight of the boat.

Heave-to by tacking through the wind without releasing the jib. With the jib sail backwinded, the tiller/wheel is then brought over hard in the opposite direction and made fast.

The effect is that the wind on the backwinded jib tries to turn the bow in one direction while the rudder tries to turn the boat in the opposite direction. Both forces cancel each other out, and the boat makes no forward progress.

Running Aground

Every sailor will, at one time or another, run aground. It is inevitable. The best thing you can do is to be on your toes to avoid it. But if you should run aground, there are some things you can do to help free yourself.

"Only two sailors, in my experience, never ran aground. One never left port, and the other was an atrocious liar.

- Don Bamford

How to un-ground a boat

- 1. Ease the sheets.
- 2. Jibe immediately.
- 3. Motor in reverse.
- 4. Shift weight to the bow or to one side.

5. Heel the boat (by attaching weight to the boom).

- 6. Kedge off with an anchor.
- 7. Accept a tow.

Sail Trim

Line Selection

Nylon

Bottom telltale flutters up while mid and top telltale flow back:

- move car astern

Top telltale flutters up:

- move car forward

Car is usually back when beating upwind and forward when running downwind.

Most people over-trim downwind and undertrim upwind.

When moving downwind, remember the saying, "When in doubt, let it out."

- used for anchor and mooring lines

Dacron

- used for sheets, halyards & running rigging

Polyethylene

- used for ski ropes & dinghy painter

Polypropylene

- used for ski ropes

Cotton

- used for flag halyards & lanyards

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