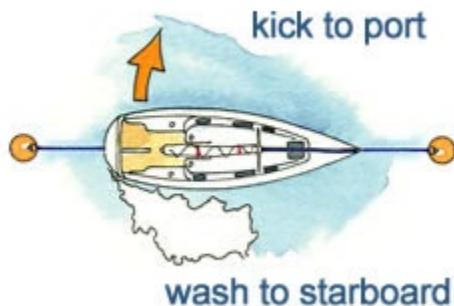
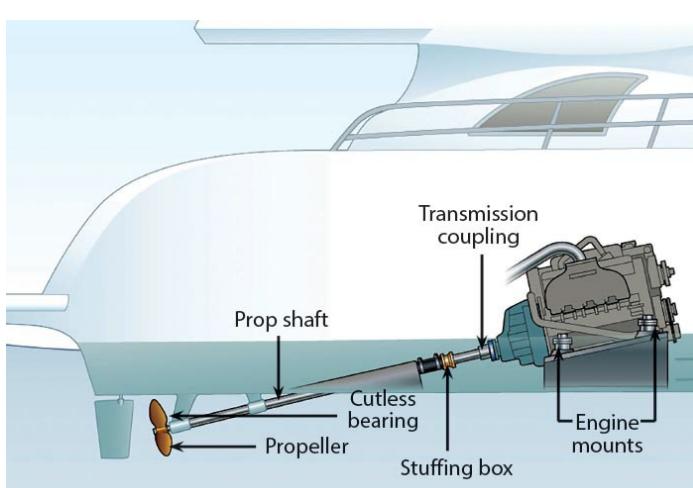


# Big Boat Motoring

- Forces that turn a boat
  - Wind, Current, Rudder (only when water is passing over it)
  - Prop wash - (transmission in forward) propeller forces water over rudder. Dual rudders have little prop wash as propeller wash does not flow directly over rudders.
  - Prop walk
    - (1) (drive shaft, right hand prop, transmission in reverse) stern walks to port due to propeller torque. In reverse, wash to starboard indicate port prop walk.
    - (2) (sail drive, left hand prop, transmission in reverse) very little if any prop walk to starboard.



- Engine Types



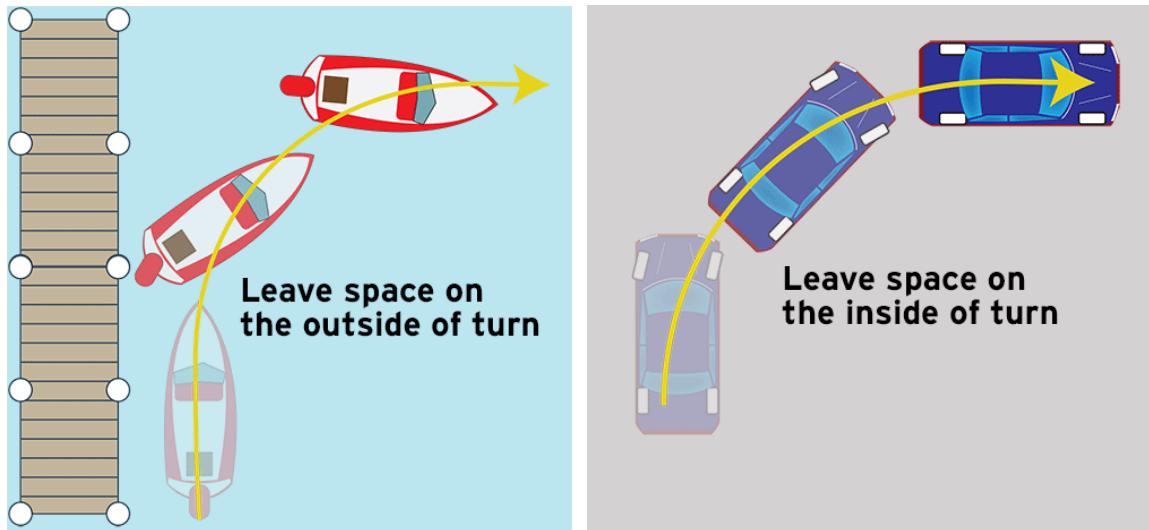
Drive Shaft



Sail Drive

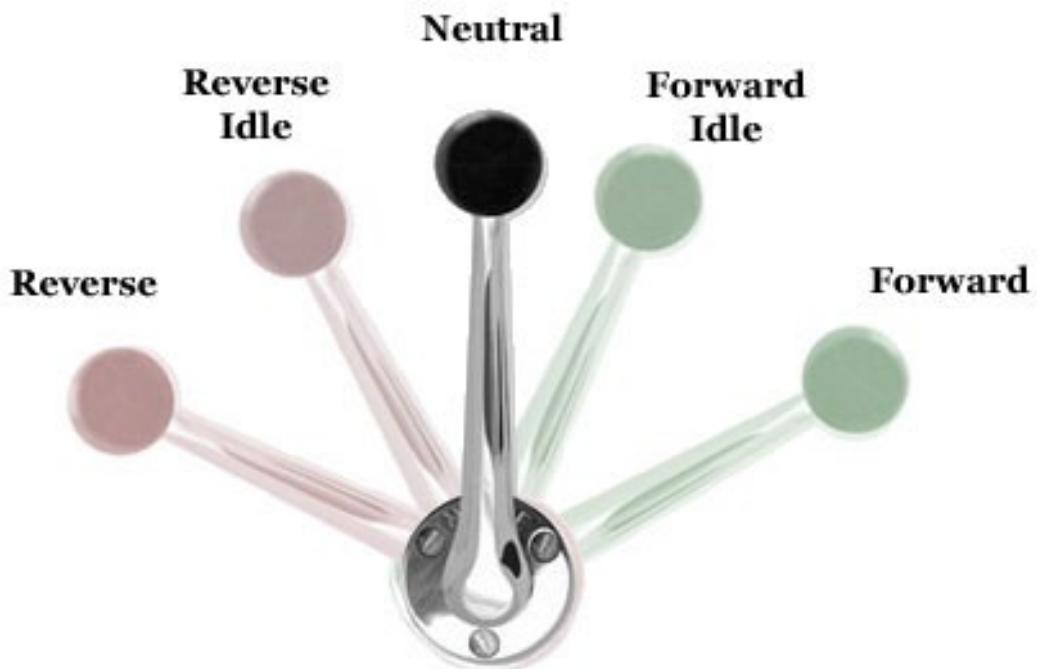
- **Pivot Points**

- A boat does not steer like a car but pivots on its axis.
- Moving forward the pivot point is 1/3 from bow.
- Moving backward the pivot point is 1/3 from the stern

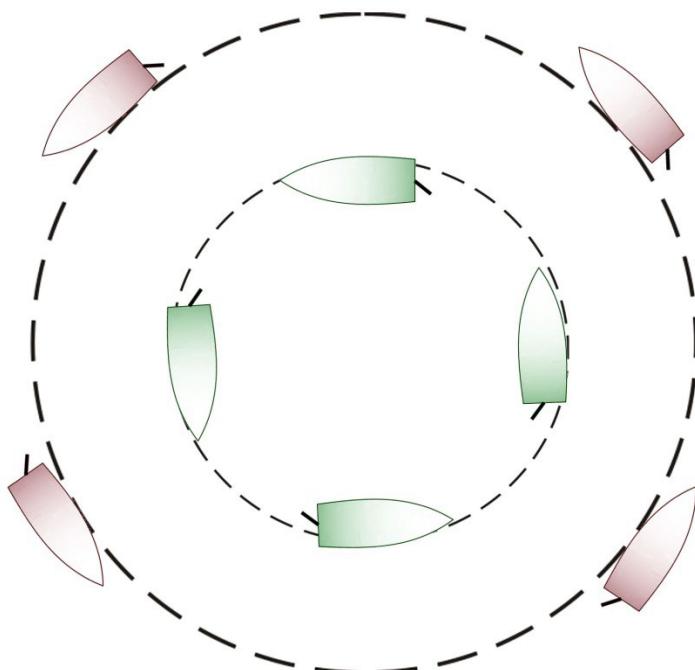


- **Throttle positions**

- reverse, reverse idle, Neutral, forward idle, forward

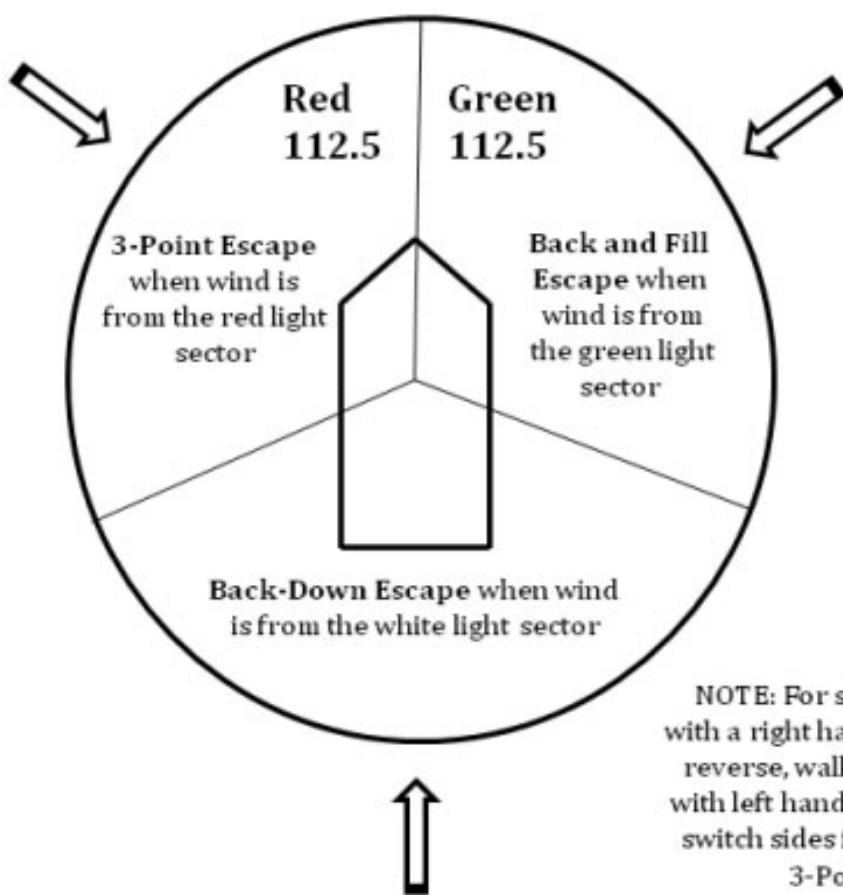


- Use bursts of prop wash to decrease turning radius. (Set throttle to neutral, advance throttle to max forward for ~3 seconds than return throttle back to neutral)
  - Helm hard over
  - Red boat has constant throttle speed – large radius
  - Green boat bursts throttle – smaller radius



- **Three Escapes (right hand prop)**

- Back and fill – wind from starboard sector
- Three point turn – wind from port sector
- Back down – wind from astern
  - Slow boat by using reverse idle
  - Set boat up with 20-30 degree port offset
  - Center wheel, hold onto king spoke
  - Reverse quickly to obtain way and steerage
  - Don't fixate, alternate watching bow & stern

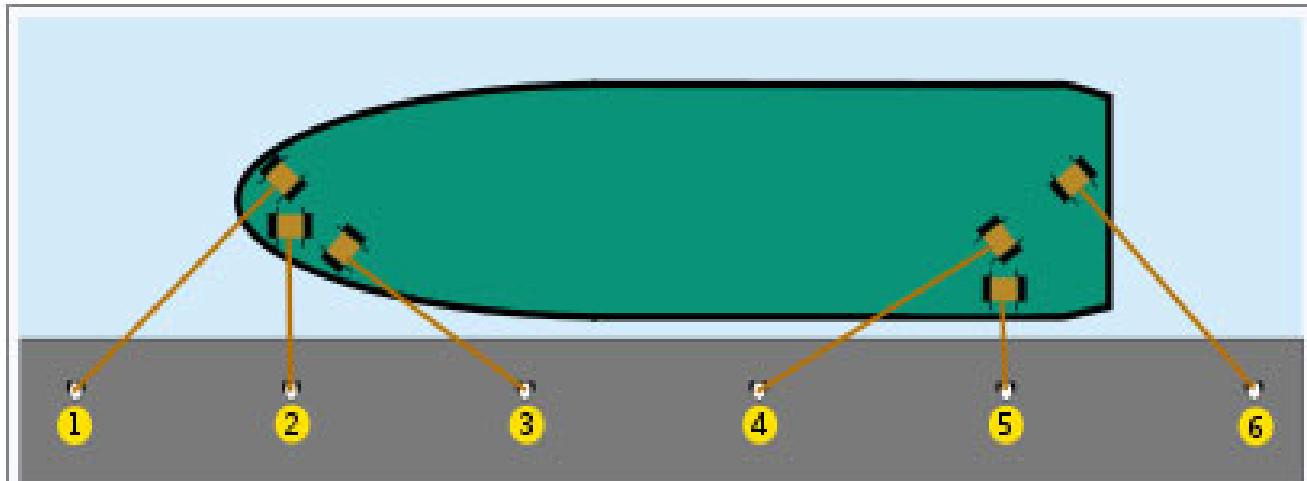


NOTE: For single screw vessels with a right hand prop and, when in reverse, walk to port. For vessels with left hand props you'll need to switch sides for back and fill and 3-Point Escapes.

- **Spring Lines**

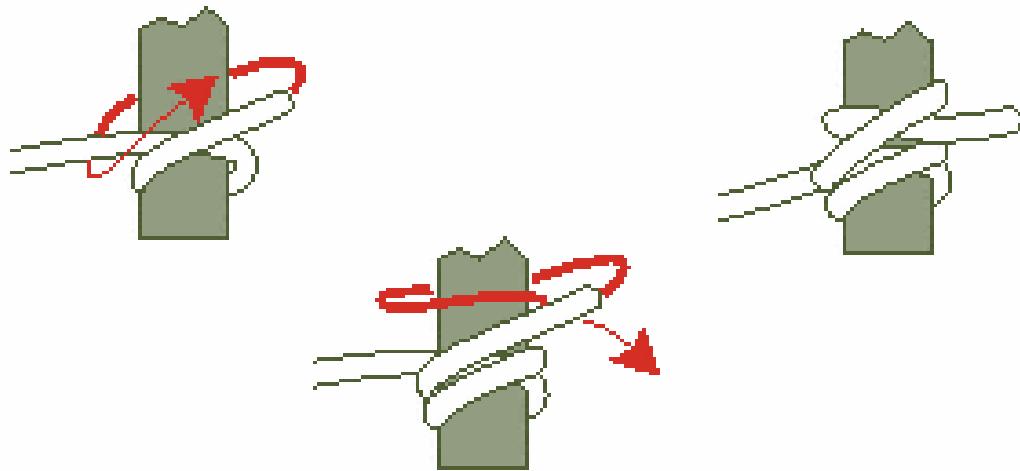
- **Nomenclature – (direction/source FROM boat)**

- **direction from boat - forward, aft (or after)**
- **source from boat - bow, amidships (mid), quarter (stern)**



Number	Name	Purpose
1	Bow line	Prevent backwards movement
2	Forward Breast line	Keep close to pier
3	After Bow Spring line	Prevent from advancing
4	Forward Quarter Spring line	Prevent from moving back
5	Quarter Breast line	Keep close to pier
6	Stern line	Prevent forwards movement

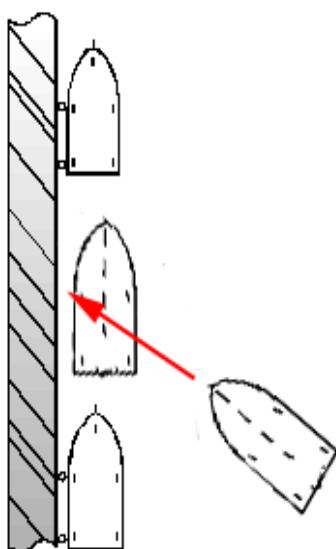
- **Rolling hitch – good knot to combine dock lines to create a long adjustable length spring line**



- **Side Tie**

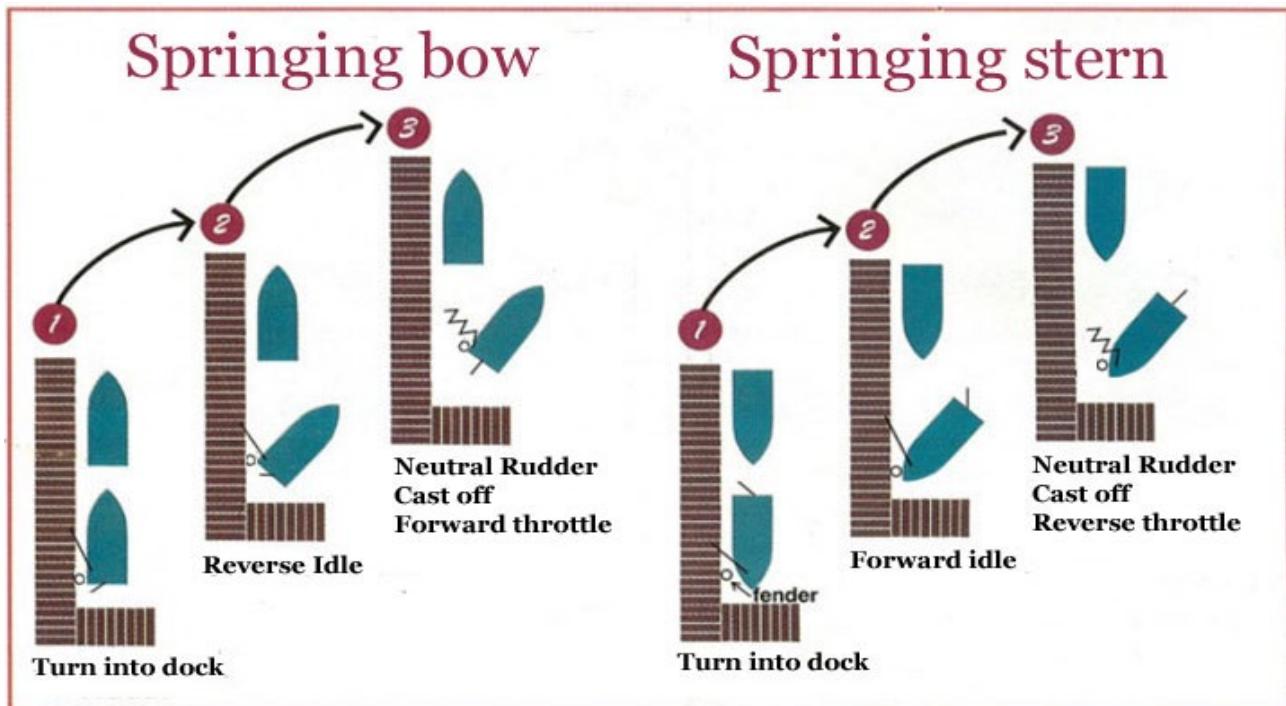
- **Arriving**

- **Aim bow at dock location where you want the boats beam (midship) to come to rest**



- **Springing Off A Dock**

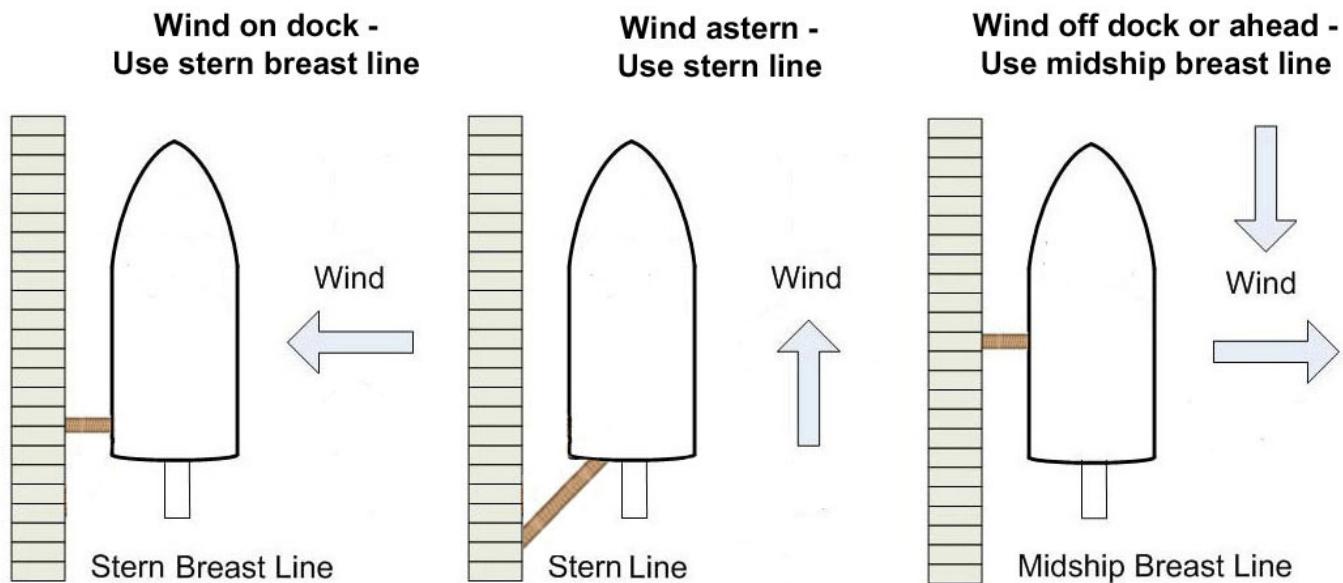
- **Spring bow away from dock**
  - use forward quarter spring line
  - use fender(s) between dock and boats stern hull
  - turn helm to dock, reverse idle, cast off bow line
  - when clear, release spring line, forward throttle
- **Spring stern away from dock**
  - use aft (or after) bow spring line
  - use fender(s) between dock and boats bow hull
  - turn helm to dock, forward idle, cast off stern line
  - when clear, release spring line, reverse throttle



- **Single Line Docking**

- Use forward throttle (if needed) to keep boat against dock.

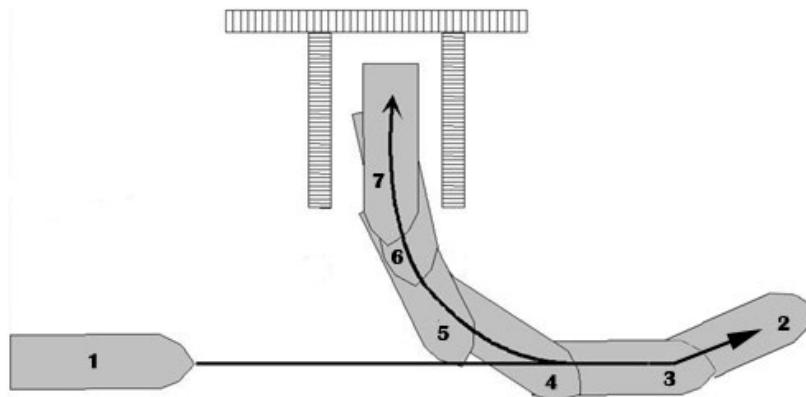
# Single Line Docking



- **Backing Into A Slip (stern to)**

1. **Pivot method (utilize port prop walk (right hand prop) if needed)**

- Offset bow 20-30 degrees to port before reversing**



2. **Back and fill (slide) method**

- **works best with wind directly astern**
- **don't let the boats bow pass center line of the slip**

