BANANA WIND

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The single commandment of anchoring is 'thou shalt create scope.'
- Reese Pailey

Anchoring

People should not let their boats wander around without a chaperone. When I anchor a boat and head to shore, I never truly relax until I return and find her right where I left her.

What to look for when anchoring

Shelter

Room to swing

Good holding ground

Sufficient water depth

Usually best in the lee of an island

Type & Weight of Anchors

Yachtsman - Traditional anchor design used for rock and matted weeds.

Danforth - An all purpose anchor used for hard mud, sand, and soft clay.

Plow or CQR - An anchor design for rock and weeds.

Weight of the anchor in pounds should be approximately the length of the boat in feet.

Bottom Surfaces

Sand, mud and clay are the most suitable for anchoring. They are represented on charts as S, M, & C.

Ooze and rock are basically unusable for anchoring. They are represented on charts as Oz and R.

Dropping and Setting an Anchor Under Power

1. Choose a spot where you wish to anchor.

2. Determine the greatest area of swing your boat will cover if anchored in the area.

3. Motor 360 degrees around the swing area to check the water depths.

4. Determine the method of anchoring you will use. The first boat in an anchorage usually determines the anchoring method, and the other boats should follow suit unless the first boat has chosen a totally inappropriate method.

5. Be aware that larger, heavier boats do not respond to wind shifts as quickly as smaller, lighter boats, so pay attention to your neighbors and allow them sufficient swing room. Also be aware that boats tend to drift in haphazard directions when the wind dies completely.

6. Approach your anchoring spot from a down wind position. Motor slowly upwind, and allow the wind to slow and stop the boat.

7. When the forward motion of the boat has stopped, release the anchor while maintaining control over the amount of chain and/or rode that is let out. Do not allow all the chain/rode to form a pile on top of the anchor.

8. Pay out sufficient chain/rode to match the motion of the boat as the wind pushes it backwards. Do not allow the chain/rode to become too taut, and do not motor backwards. Be patient and allow the wind to push the boat.

9. The wind will tend to move the bow faster than the stern, and the boat may try to turn sideways. Use tension on the chain/rode to straighten the boat and keep the boat straight and pointing into the wind.

10. When you have about a 3:1 ratio of rode to water depth, cleat the chain/rode and give the anchor a slight tug by reversing power on the boat. This will cause the anchor to bite into the bottom.

11. Uncleat the chain/rode and allow the wind to push the boat back farther as you let out more chain/rode.

12. When sufficient chain/rode has been let out--usually a 7:1 ratio for overnight and 5:1 ratio for a temporary stay--cleat the chain/rode, and motor in reverse to set the anchor. Start with 1000 rpm and increase slowly to 2000 rpm. (1000 rpm will hold a boat in 20 knot winds; 1500 rpm in 30 knot winds; and 2000 rpm in 40 knot winds.)

13. Find two aligned objects on the shore and watch them while motoring in reverse. If the anchor is set and the boat is not moving, the objects should remain in alignment. If the objects move apart, the anchor is dragging. You can also feel the anchor dragging by placing your foot on the chain/rode near the windlass and feel it bouncing or jumping as the anchor is dragged over the sea bottom.

14. If the anchor drags, you can try to let out more chain/rode and then repeat steps 12 and 13. If the anchor still drags, you will have to raise it and start the anchoring process over again. If the water is clear and warm, you can swim out and see what the problem is. (I always like to swim out and look at the anchor before I determine that it is set properly regardless of whether or not I've encountered a problem anchoring.) To be properly set, the anchor must have its flukes dug into the bottom. If it is lying on its side, pull it up and re-anchor.

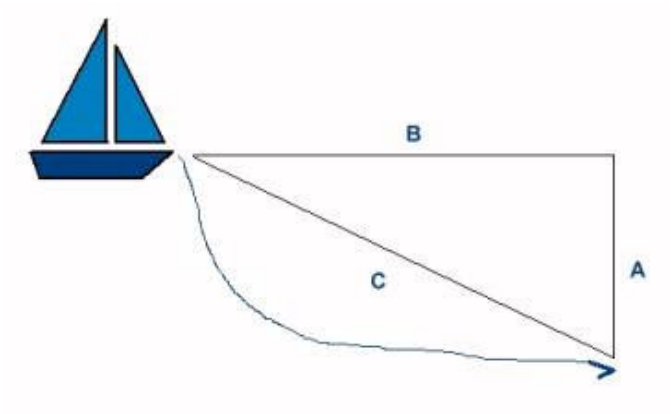
15. If you have determined that the anchor is set, cleat the chain/rode and attach a snubber line to take the strain and pressure off the windlass.

16. It is also a good idea to set an anchor watch for the first hour, but not many recreational sailors do this. To carry out an anchor watch, you would use a handbearing compass to site and record bearings of various objects on shore. (Preferably the objects should be located between 10 to 2 o'clock or 4 to 8 o'clock using the bow of the boat as 12 o'clock.) Then during the hour, you would take additional bearings of the same objects. Although the bearings would change because the boat would swing slightly at anchor, the number of degrees between the objects would remain constant if the boat is not moving backwards. If the number of degrees between the objects changes drastically, there is a good chance the anchor is dragging and you would need to re-anchor.

Calculating Scope

One of the problems I have when sailing a chartered boat is judging how much anchor rode I've let out when the anchor rode has not been calibrated and marked by the charter company. I came up with this solution one day while swimming laps at my local YMCA.

Since I always charter in warm climates, I'm in the habit of swimming out with goggles so I can look down through the water to confirm that the anchor has bit securely into the bottom. Since I already know the depth above the anchor (courtesy of the depth sounder), all I need to do is calculate the distance of my swim from the bow of the boat to the spot directly above the anchor. Since those two distances form two sides of a right triangle, the diagonal distance from the bow of the boat to the anchor forms the hypotenuse.



I only then need to use the formula A squared + B squared = C squared where A = depth, B = horizontal distance from boat to spot directly above the anchor, and C = diagonal distance from boat to the anchor. By ensuring that C and A form a 7:1 ratio, I have more anchor rode let out than needed because the anchor rode actually forms a curved line and not a straight line like C.

While in the YMCA pool I discovered that the distance I covered with each swimming stroke is the same as the distance covered by each walking stride. Both turned out to be two feet when swimming and walking in a relaxed manner. I had other individuals try the same experiment with the same results. Larger people who have longer strides also covered a greater distance with each swimming stroke. I realize that it is anecdotal evidence, but it seems to hold true for most individuals. By measuring your normal walking stride, you can calculate the distance of your normal swimming stroke and use that information to measure the distance you have swum.

By counting the number of strokes when I swim out to check the anchor, I know the distance B. The depth sounder tells me the distance A, so I can calculate the distance C. Actually, what I do is determine the scope I want (C) in the depth of water I am anchoring (A) and then solve for B, the distance the boat needs to be away from the anchor spot. Then, when I swim out, I already know what the distance needs to be, and I can determine what I need to do based on whether or not the actual distance is shorter or longer than it has to be.

For example: If I've anchored a boat in 15 feet of water, and I want to know if I've let out enough rode for a 7:1 ratio, it should take me 52 strokes (104 feet) to swim out to the anchor. If it takes fewer strokes, I know I need to let out more anchor rode. If it takes more, I'm secure in knowing that I have enough rode out so that my anchor should not drag.

Here's a chart of what the distances should be for a 7:1 anchoring ratio:

A (Depth)	B (Lineal Distance)	C (Diagonal Distance)
10 feet	69 feet	70 feet
15 feet	104 feet	105 feet
20 feet	138 feet	140 feet
25 feet	173 feet	175 feet
30 feet	207 feet	210 feet

If you don't want to swim out to measure the distance B, you can do so visually by dividing B in the chart above by the length of your boat to determine the number of boat lengths you need to equal B, which is the required distance from the boat to the spot directly above the anchor. You then use your seaman's eye to determine how many boat lengths you've drifted back from the spot where you dropped the anchor.

A temporary stop with a 5:1 anchoring ratio would have the following distances:

A (Depth)	B (Lineal Distance)	C (Diagonal Distance)
10 feet	49 feet	50 feet
15 feet	73 feet	75 feet
20 feet	98 feet	100 feet
25 feet	122 feet	125 feet
30 feet	147 feet	150 feet

Anchoring Methods

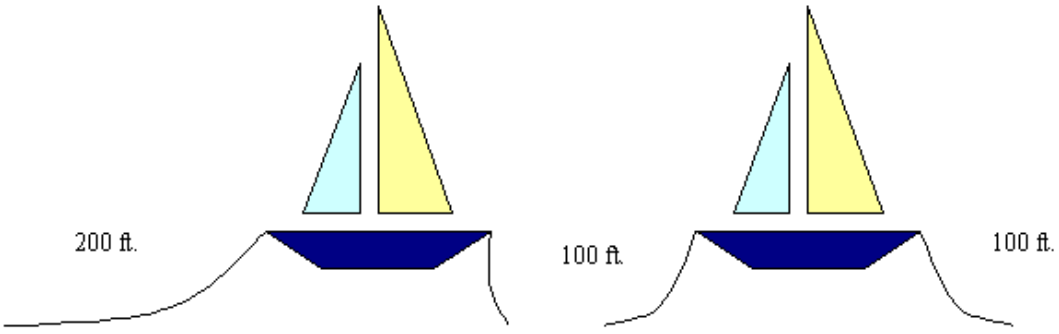


Figure 1 Figure 2

Bow & Stern

Use when: 1) wind/current are constant; 2) wind shifts are 180 degrees; and 3) the wind dies.

Set the bow anchor.

Let out double the rode plus and additional amount to equal the water depth plus the freeboard of the boat. (Fig. 1)

Set the stern anchor and take in the bow rode while letting out the stern rode until the lengths are equal. (Fig. 2)

Bahamian Mooring

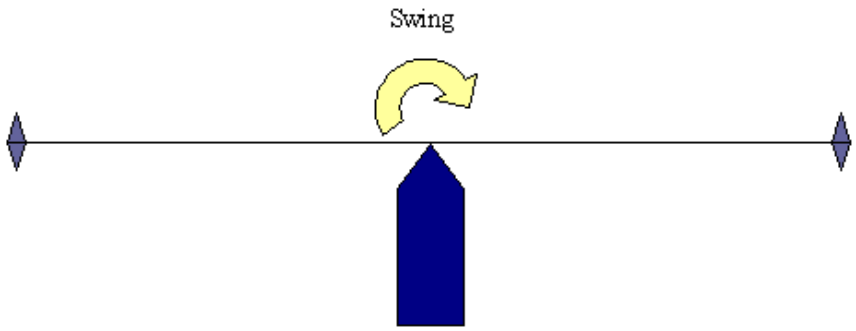
Use in situations where there are shifting winds.

Set two anchors off the bow, 180

degrees apart.

The rode must be deep so as to not foul the rudder and keel.

Results in a very limited swing area.

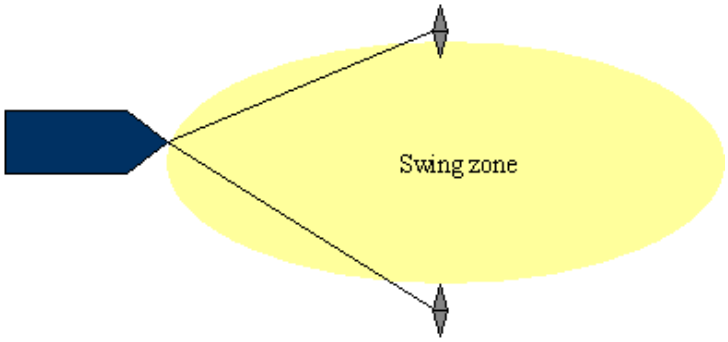


45 Degrees Off Bow

Used in situations of shifting winds and where there are obstructions that must be avoided.

Set two anchors off the bow, 45 degrees apart.

Results in a smaller swing area.



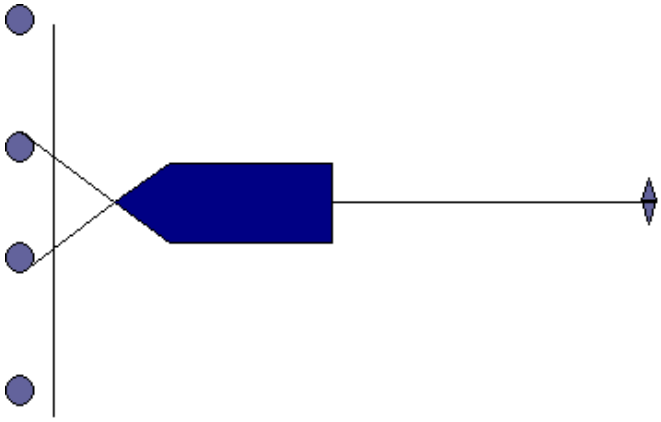
Mediterranean Mooring

Used to moor along side a sea wall.

Commonly used in European ports.

Set the anchor off the stern.

Motor up to the sea wall and tie off.

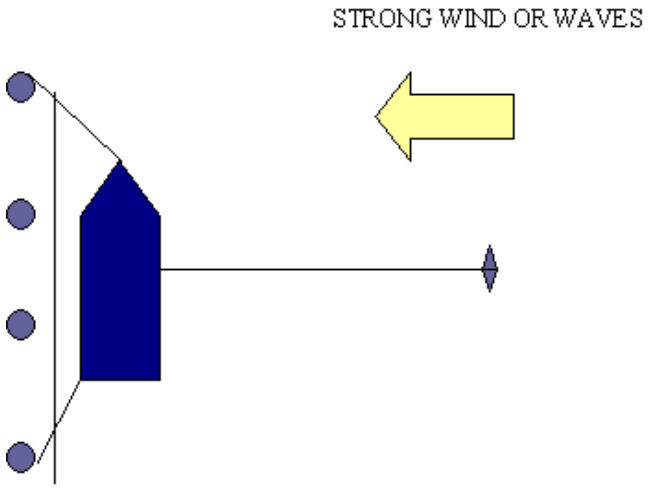


Breast Line

Set a breast line in a quay with strong surge or wind driven waves.

Set the anchor and back off it to the sea wall/dock.

Tie off on the sea wall/dock.



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