

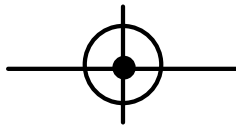


# Aquatic Consulting Services

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## Boating Tip #11: Obtaining a Visual Fix

A fix is a known position determined from the intersection of at least 2, and preferably 3 lines of position (LOPs). Mark a visual fix on your track line as a point inside a circle



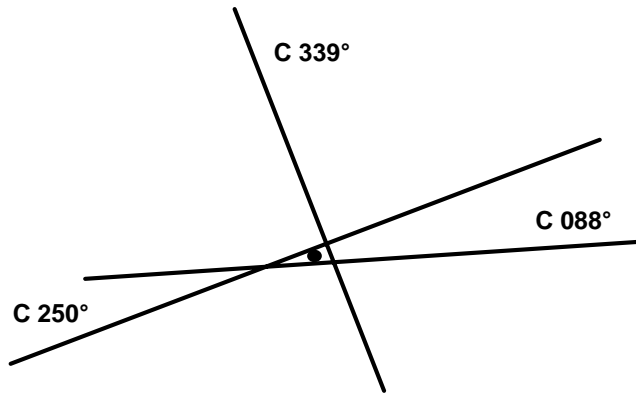
### 3 Line of Position Fix

You can find where you are (get a fix) by using visual bearings and lines of position. Use points of land, navigational aids or landmarks identifiable on a chart and which can be easily seen. If necessary, a fix by sounding can be obtained using a depthfinder by noting when you pass charted bottom contour lines and using them as lines of position.

Use a hand bearing compass to obtain 3 bearings from your position on objects on shore that are widely spaced. Ideally the 3 objects should be equally spaced about 120° apart from each other. A 3 LOP fix will be more accurate if you are not moving and dead in the water. If you are moving, take the reading off the beam first.

Correct the 3 compass bearings to true using the CDMVT memory aid. Assume the deviation of a hand bearing compass is zero since it can be moved about the vessel. Since all 3 bearings are taken from the same geographic location, they will all have the same variation.

Plot the true bearings, now called lines of position (LOPs) from the vessel on the chart. The center of the small triangle (cocked hat) where the 3 LOPs converge (or if very accurate, at the point where they intersect) is the fix.



## Running Fix

A running fix can be used when only one object is available using bow and beam bearings. Take the first bearing using a hand bearing compass when the object is  $45^\circ$  from the bow of your vessel. Take the second bearing when the object is  $90^\circ$  abeam. Use elapsed time, speed and 60 D ST to find distance. The distance the boat travels (distance run) in the time between the bow and beam bearings is equal to your distance from the object.