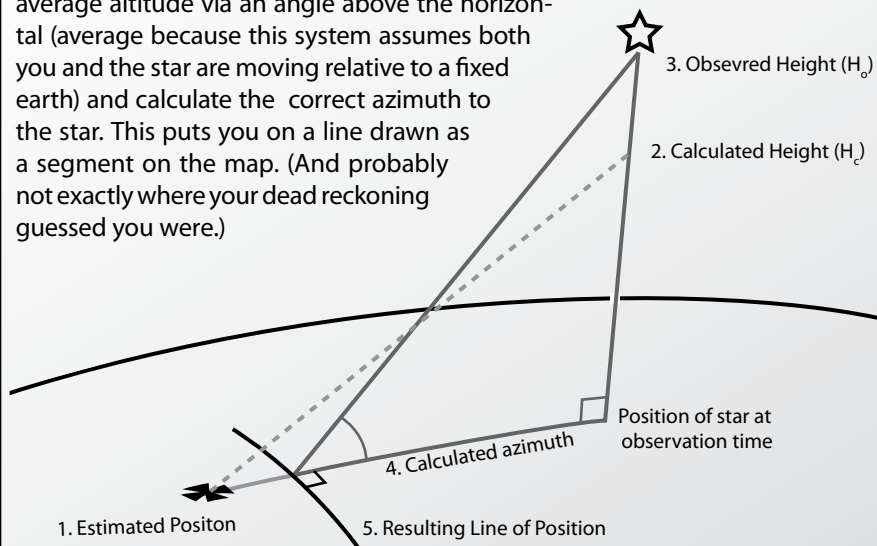


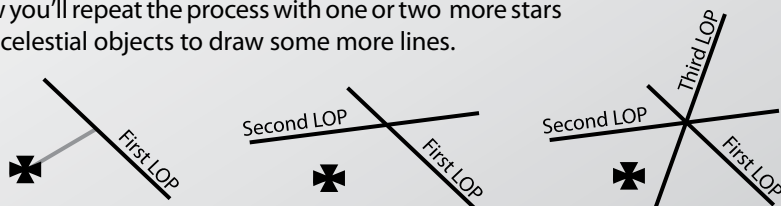
# NAVIGATION BY (NATURAL) SATELLITES

If you really want to understand the finer points of celestial navigation, you'll need to look it up in a good book. But here it is in a nutshell.

Starting with your estimated position, you pick out a visible star whose position directly over the earth at the current time is known. Then you measure its average altitude via an angle above the horizontal (average because this system assumes both you and the star are moving relative to a fixed earth) and calculate the correct azimuth to the star. This puts you on a line drawn as a segment on the map. (And probably not exactly where your dead reckoning guessed you were.)



Now you'll repeat the process with one or two more stars or other celestial objects to draw some more lines.



If you're lucky, the three lines will converge on a single point on the chart—which is really a single point on the earth—and you can compare that with your estimated position before the star shot to calculate winds aloft, groundspeed and a new heading for the pilot to fly.

If you're not so lucky, the lines don't match up so well and you've got some more figuring to do before the rest of the crew decides your value as a navigator isn't worth the extra fuel required to haul your useless weight around as they search out the windshield for the west coast of Europe.

