

## Compass Skills Review (Dead Reckoning)

Blue Ridge Mountain Search & Rescue Group

Think of your compass as a backup tool - like a parachute for a pilot. A SAR groundpounder who spends more time reading their compass than their map is like a pilot who practices bailing out more than she practices flying. Still, a little compass-work is essential. Here is an example of the basic idea of compass - declination.

You arrive at a search, park at the cul-de-sac of Azalea Drive at T2914 and get a mission. Your team must walk to hilltop x586 in T2218. Your team leader asks you to plot a course on the map to the hilltop, and then figure the compass bearing for your team to follow in the field. The declination for this map is  $8^\circ$  West. What compass bearing should you follow to hilltop x586?

Here's how to do it.

1) Plot a line - Since you're headed from the cul-de-sac to the hilltop, the first things to do are to clearly mark your two points on the map and line up the edge of your compass base between the two points. Draw a line connecting the two points if it helps.

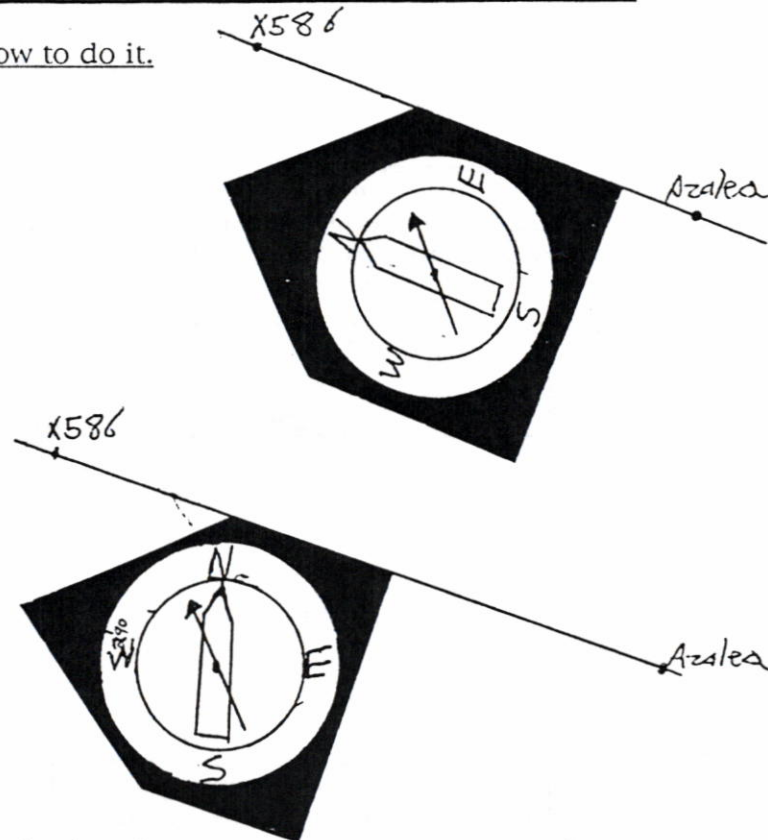
2) Rotate the bezel - Now, holding the base of the compass tightly onto the map, rotate the bezel of the compass until the north arrow printed onto the bezel is pointing north as shown on the map. It is irrelevant where the compass needle itself is pointing now.

3) Adjust for declination - Read the bearing now on your compass. It should be about  $290^\circ$ . To adjust for declination in our area, we:

Add declination ( $8^\circ$ ) when going from map to compass (MCA), or  
Subtract declination ( $8^\circ$ ) when going from compass to map (CMS).

Since we started plotting a point on the map and will finish by walking to a real location in the woods, we add ( $8^\circ$ ) for a result of about 298 degrees.

4) Walk it out - Pick up the compass, being careful not to disturb the bezel. Then hold the compass flat in front of you and rotate yourself (not the compass) until the red side of the needle is in the red side of the box painted on the bezel. As long as your needle stays "boxed" like this, your compass base will point precisely towards the hilltop you wish to reach. Start walking. That's it.



We just converted a map bearing into a field bearing. Remember, if you want to convert from field bearing into a map bearing, you need to subtract the declination. Try these . . .

A) If you wanted to walk through the woods from BM 586 in T2218 to the "b" in Stribling Ave. at about T 2628, what would your compass bearing be?

(Should be about 22 degrees before declination and about 30 degrees after declination).

B) You know that you're standing on hilltop x757 in T0509. You use your compass to shoot a bearing to the large hilltop about 600m in front of you. After you aim the base of the compass directly towards the hill and "box the needle" the compass reads  $72^{\circ}$ . What would this bearing read on the map and what hill ~~you~~<sup>are</sup> looking at?

(Should be about  $64^{\circ}$ , and the hilltop is x741).

B) You are lost somewhere in grid T 14. You can see the top of Lewis mountain at a compass bearing of 70 degrees and the top of O-hill at a compass bearing of 138 degrees. Find thyself.

(You should be somewhere around T 4544).