Compass Basics

ESRM 304

Compass

- Looking from point to point, deviation from north is measured
- May include correction for magnetic declination (polar north and magnetic north may vary)
- Mirror allows the user to sight the target and adjust the dial simultaneously
- May need to step away from ferrous metallic objects to avoid magnetic effects
Compass Scale: Azimuths & Bearings

Compass directions are circular

**Azimuths** are shown here

Azimuths run clockwise from N (0 - 360°)

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Compass Scale: Azimuths & Bearings

Compass directions are circular

**Bearings** are shown here

Bearings consist of a latitudinal hemisphere (N or S) followed by 0 - 90° toward either longitudinal direction (E or W)
As expected, can convert from azimuths to bearings and back again.

Bearings shown in red with azimuths in ()

The Compass: Magnetic Declination

Magnetic North does NOT coincide w/ True North

Declinations are constantly moving

2013: Seattle / Kenmore decl. 16° 20’ E (moving 10.8’ W each year)

Declinations as of 2000 C.E.
Magnetic Declination Affects Your Compass Reading

Compass Parts

- Needle “Red”
- Base arrow “Shed”
- Screw to set declination: No further declination corrections needed!

Always read compass here: “Fred”
A Compass Adjusted for E Declination

Following a given direction …

1. Dial in given direction
2. Turn your body 'round until “Red” (needle) …
3.  is in the “Shed” (base arrow) …
4.  then follow “Fred” …
Determining a direction … (to an object, landmark, etc.)

1. Point “Fred” at object
2. Turn compass dial until…
3. “Red” is in the “Shed”
4. Read direction to “Fred”

Summary – Compass Basics

- Compass parts
  - Mirror (cover), base, dial, needle, declination set screw (some models)
- Uses
  - Determine a direction to travel
  - Determine direction to known object
  - Triangulating your position from or onto a scaled map