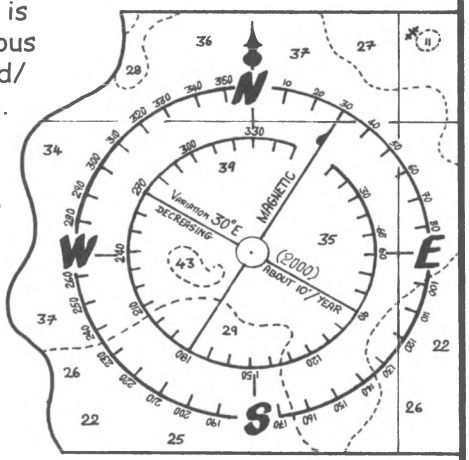
A SAILOR'S BASIC NAVIGATION REMINDERS

.... Find Your Way Across Planet Earth

WHY IS IT THAT, the more experienced the navigator, the more suspicious of the apparently obvious they appear to become?

COMPASS ERRORS

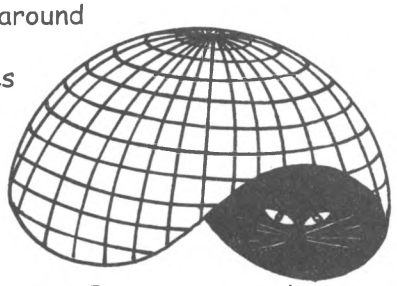
- **MAGNETIC** variations are caused by the earth's magnetic field.
- **DEVIATION** is caused by ferrous objects onboard/ near the vessel.
- **ONE OR BOTH** of the above can mean that the compass you look at is probably not showing a true reading.



- **IN THE EXAMPLE** at right, the magnetic var. is 30 degrees E - In other words if you want to go True North - Then you must steer 330 degrees on the compass.
- **CONVERSELY** if the variation was say 20 degrees W - Then the compass course for True North would be 020 degrees.
- **MEMORIZE** this rhyme:**"Error west compass best (more), Error east compass least (less)."**

LATITUDE & LONGITUDE

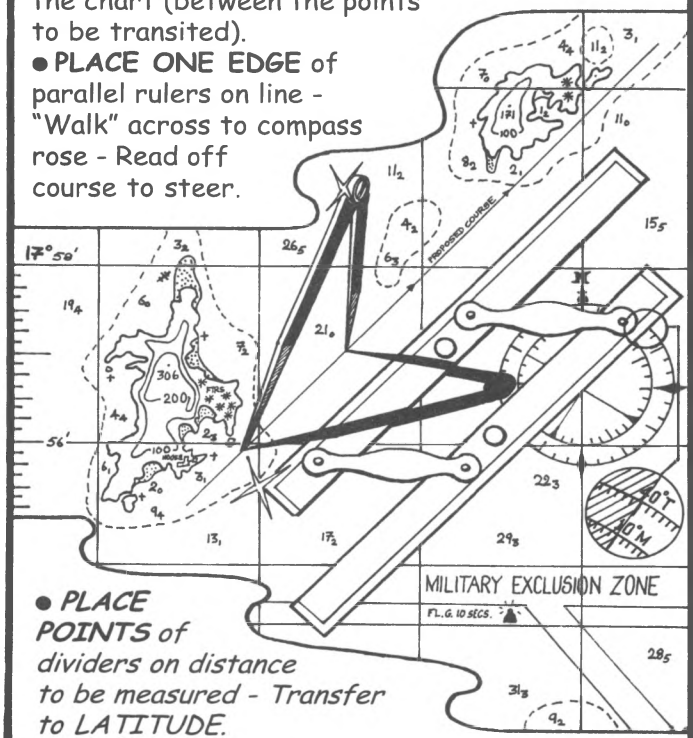
- **LATITUDE** goes around (E to W).
- **LONGITUDE** goes up & down (N to S).
- **LINES OF LATITUDE** run parallel to each other.



- **LINES OF LONGITUDE** converge at the poles.
- **ZERO DEGREES OF LONGITUDE** runs thru Greenwich, England.
- **ONE MINUTE (1') OF LATITUDE** = 1 nautical mile - One degree of latitude = 60 nautical miles (60' = 1 degree).
- **AT THE EQUATOR** (0 degrees of latitude), 1 degree of latitude = 1 degree of longitude - BUT north or south longitude decreases to nothing at poles.
- **1 DEGREE OF LONGITUDE** = 4 minutes of time (irrespective of the latitude) - And 15 degrees of longitude = 1 hour of time (irrespective of latitude).
- **CONFUSING?** - ONLY AT FIRST!

PLOT COURSE & DISTANCE

- **DRAW A LIGHT LINE** with a soft pencil on the chart (between the points to be transited).
- **PLACE ONE EDGE** of parallel rulers on line - "Walk" across to compass rose - Read off course to steer.

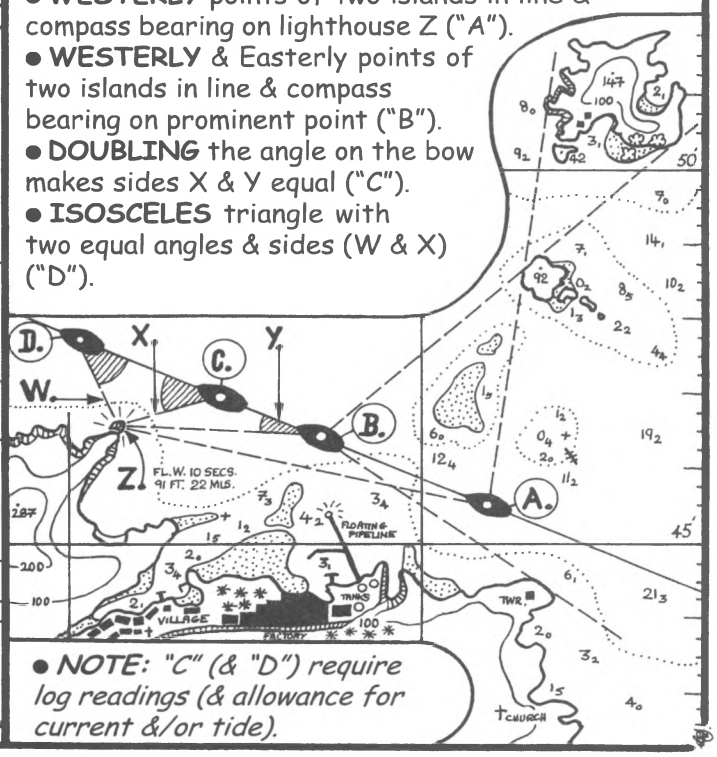


- ***PLACE POINTS** of dividers on distance to be measured - Transfer to LATITUDE.*

COASTAL POSITION FINDING

(Examples of common techniques)

- **WESTERLY** points of two islands in line & compass bearing on lighthouse Z ("A").
- **WESTERLY** & Easterly points of two islands in line & compass bearing on prominent point ("B").
- **DOUBLING** the angle on the bow makes sides X & Y equal ("C").
- **ISOSCELES** triangle with two equal angles & sides (W & X) ("D").



- ***NOTE:** "C" (& "D") require log readings (& allowance for current &/or tide).*