

NAVIGATION

By Richard Sorokin

NAVIGATION is the art of knowing where you are, where you have been and where you are going.

The earth is a sphere. It is 26 miles wider around the Equator than from around the poles.
This number is ignored.

GREAT CIRCLES. Any line that is drawn on the earth that splits the earth in two. All lines going from the poles are great circles. The only line going east and west that is a great circle is the Equator.

The earth is 21,600 miles around. Divide this by 360 degrees and you get 60 miles. So one degree on a great circle = 60 miles. Since all longitude lines {going north and south} are great circles, we measure distances on these lines only.

A great circle has 360 degrees of arc, as do all circles
1 degree = 60 minutes, 1 minute = 60 seconds.
Degree=* minute=' second=' '26*15'10"

The lines going north and south are called Medians or lines of longitude, on them we measure how far we are, north or south.

The lines going east and west are called parallels or latitude lines. Each circle as you go up becomes smaller and smaller. The degrees on these lines represent less and less mileage and cannot be used to measure distances.

So, we measure how far north and south we are on line longitude lines of and how far east and west we are on lines of latitude. All distances are carried to lines of longitude (great circles) to be measured.

Rhomb lines. There are other great circles that can be drawn on the globe. Take a string or rubber band and connect any two points on a globe and you have a great circle route. A great circle route is the shortest distance between any two points on the earth. The rhomb route intersects the lines of longitude and latitude at different angles as you travel. On our charts it is a curved line. Ships and planes must make constant course changes to follow a great circle route, say ever 200 miles or so.