

# CHARTS AND PUBLICATIONS



# CHARTS AND PUBLICATIONS

## NAUTICAL CHARTS

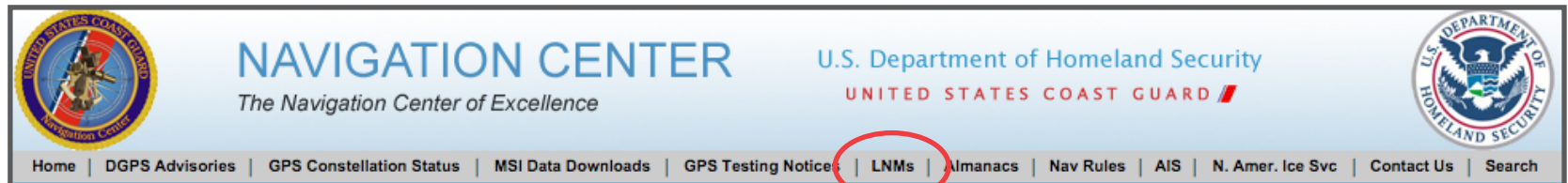
- Chart projections
- What is on a chart
- Symbols
- Abbreviations
- Terms



# CHARTS AND PUBLICATIONS

## CHARTS

- Ordered and produced by DMA
- Corrections published weekly by USCG's **Notice to Mariners**
- New editions issued when there are extensive corrections



Local Notice to Mariners

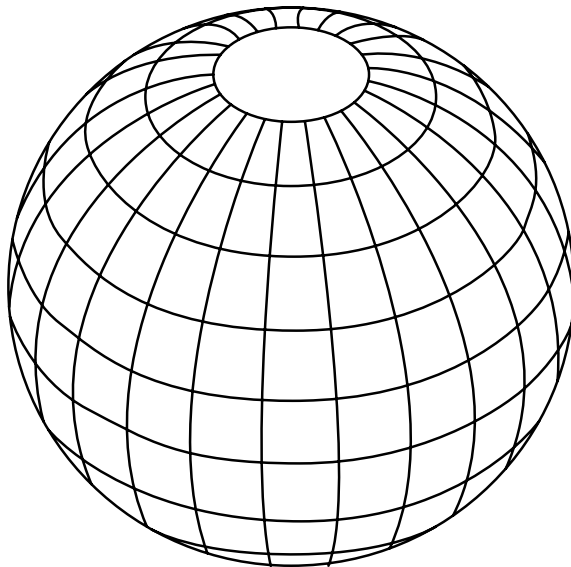


## SHAPE OF THE EARTH

- Oblate spheroid
- Bulge around equator

For this course assume the earth is a sphere.

- More spherical than a billiard ball



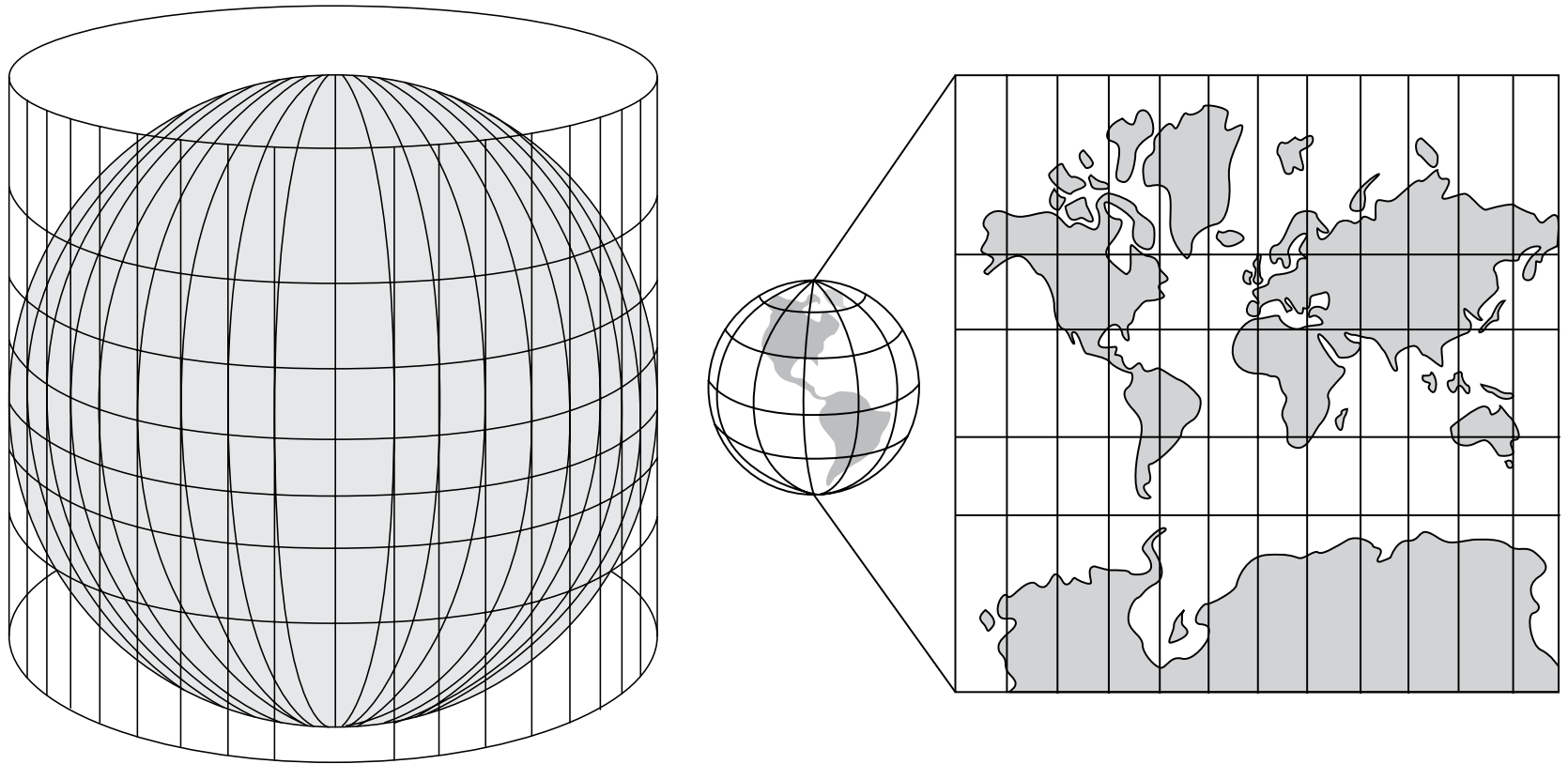


## PROJECTIONS

- Mercator
  - cylindrical projection
- Gnostic
  - plane projection
- Lambert Conformal
  - conic projection



## MERCATOR PROJECTION



## MERCATOR PROJECTION

Wrapping a cylinder around the equator and then laying it flat as a two-dimensional projection.

Small distortions

- tolerable as charts usually cover small areas
- useful limit about 80° degrees of latitude

Course line plots as straight (rhumb) line

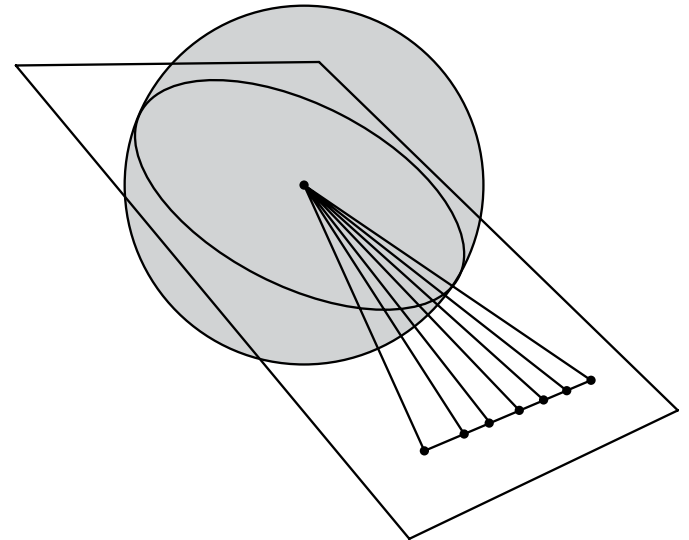
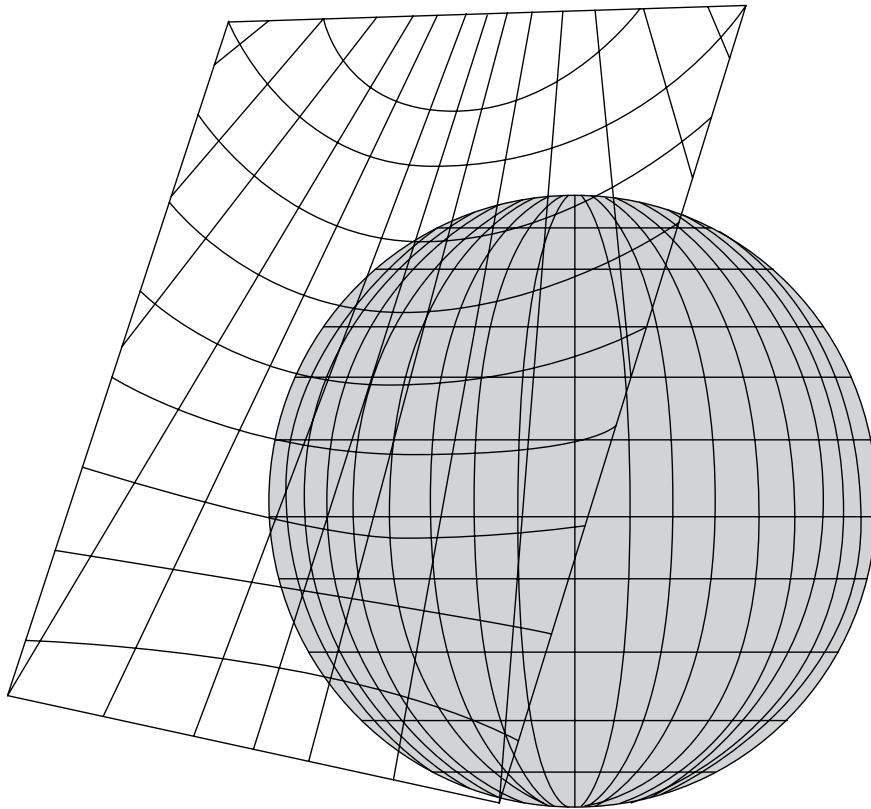
- unless long distance, then the rhumbline is not the shortest

1nm = 1 minute latitude

- use closest



## GNOMIC PROJECTION



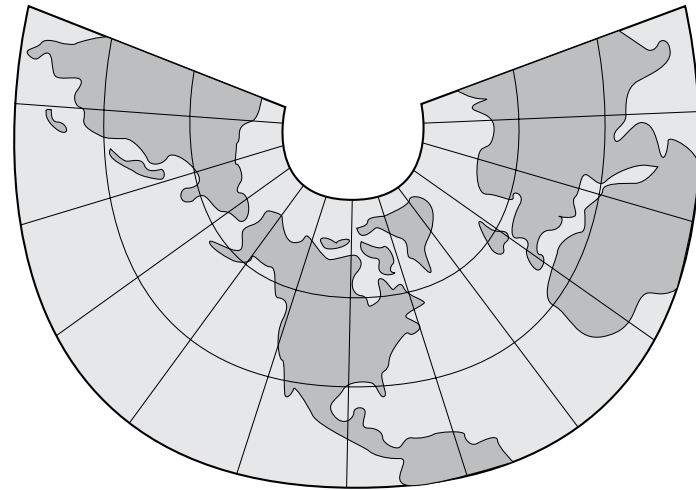
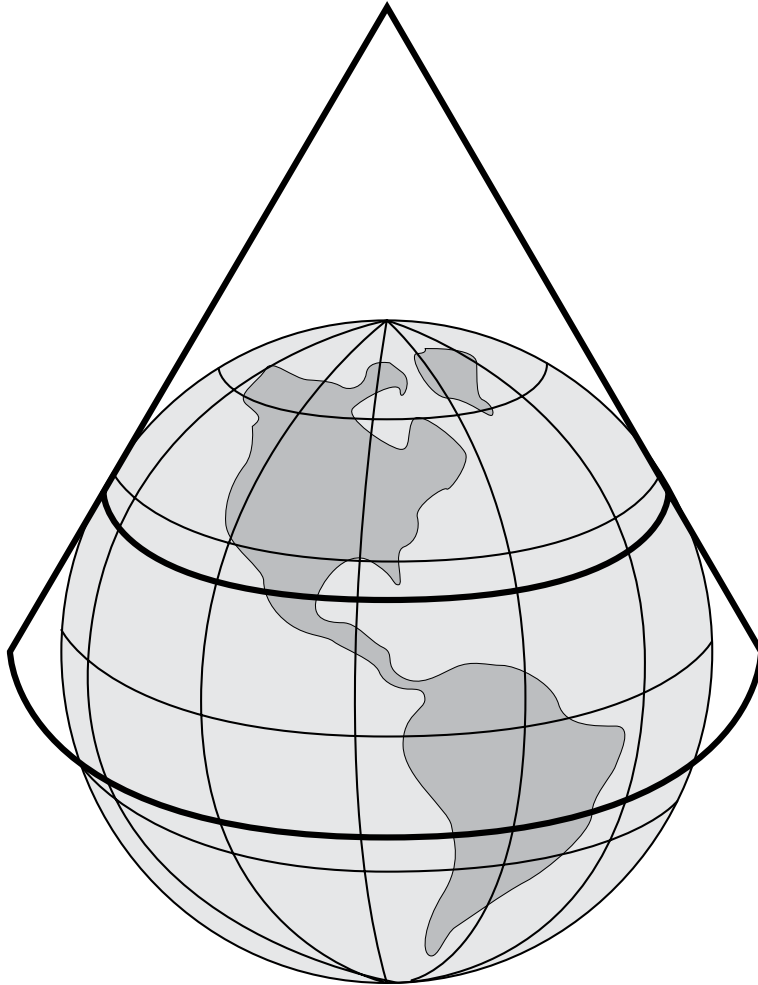
## GNOMIC PROJECTION

Projects earth's surface from the center onto a tangent plane.

Projects great circles (meridian and equator) as straight lines.

- Straight line does not cross all meridians at the same angles.
  - Great circle is a curve
  - Slow and continuous course change

## LAMBERT CONFORMAL PROJECTION





## LAMBERT CONFORMAL PROJECTION

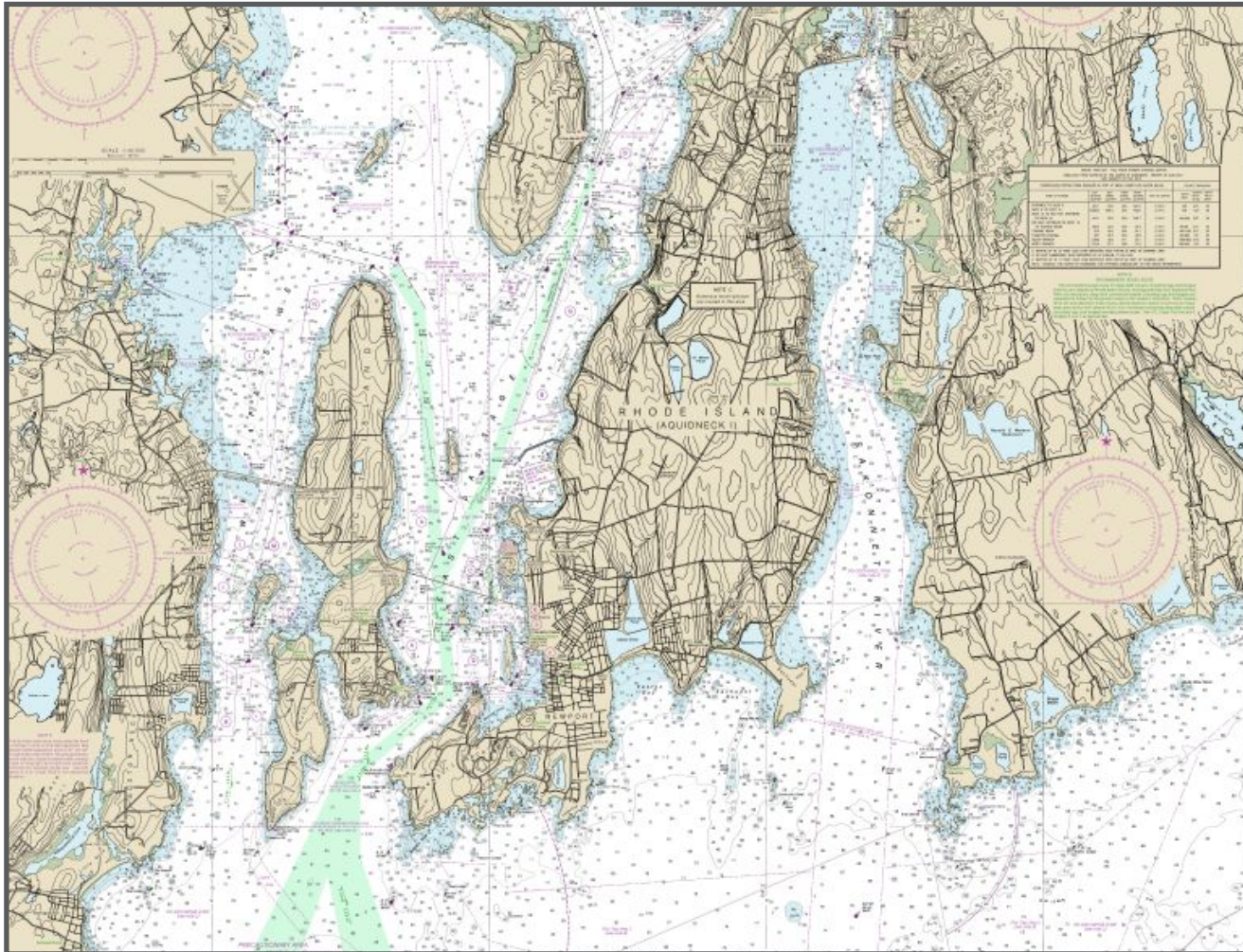
Transferring points from surface to a cone, or series of cones. Cone is then cut along meridian and spread flat.

Single Tangent Cone:

- Simple conic projections. Only parallel of latitude to which the cone tangent is correct in scale, all others are magnified.

Most often used for aeronautical charts.

## WHAT IS ON A CHART



[illegible]

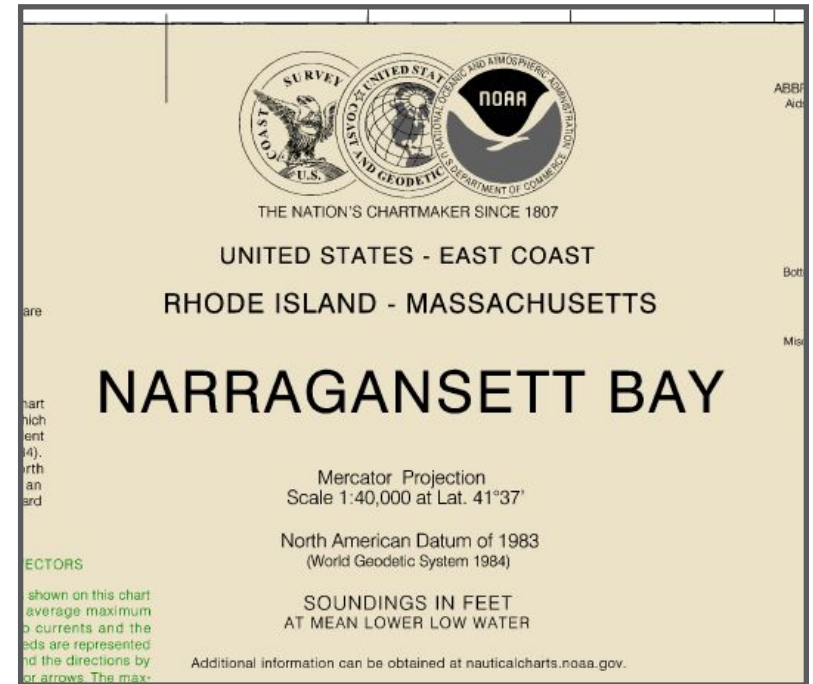
## Lower left hand corner



# CHARTS AND PUBLICATIONS

## TITLE

- Area covered
- Unit of measurement for soundings
- Scale
- Projection
- Datum
- Publisher



## CHART DATUM

Charted Depth: vertical distance from chart sounding datum to the ocean bottom.

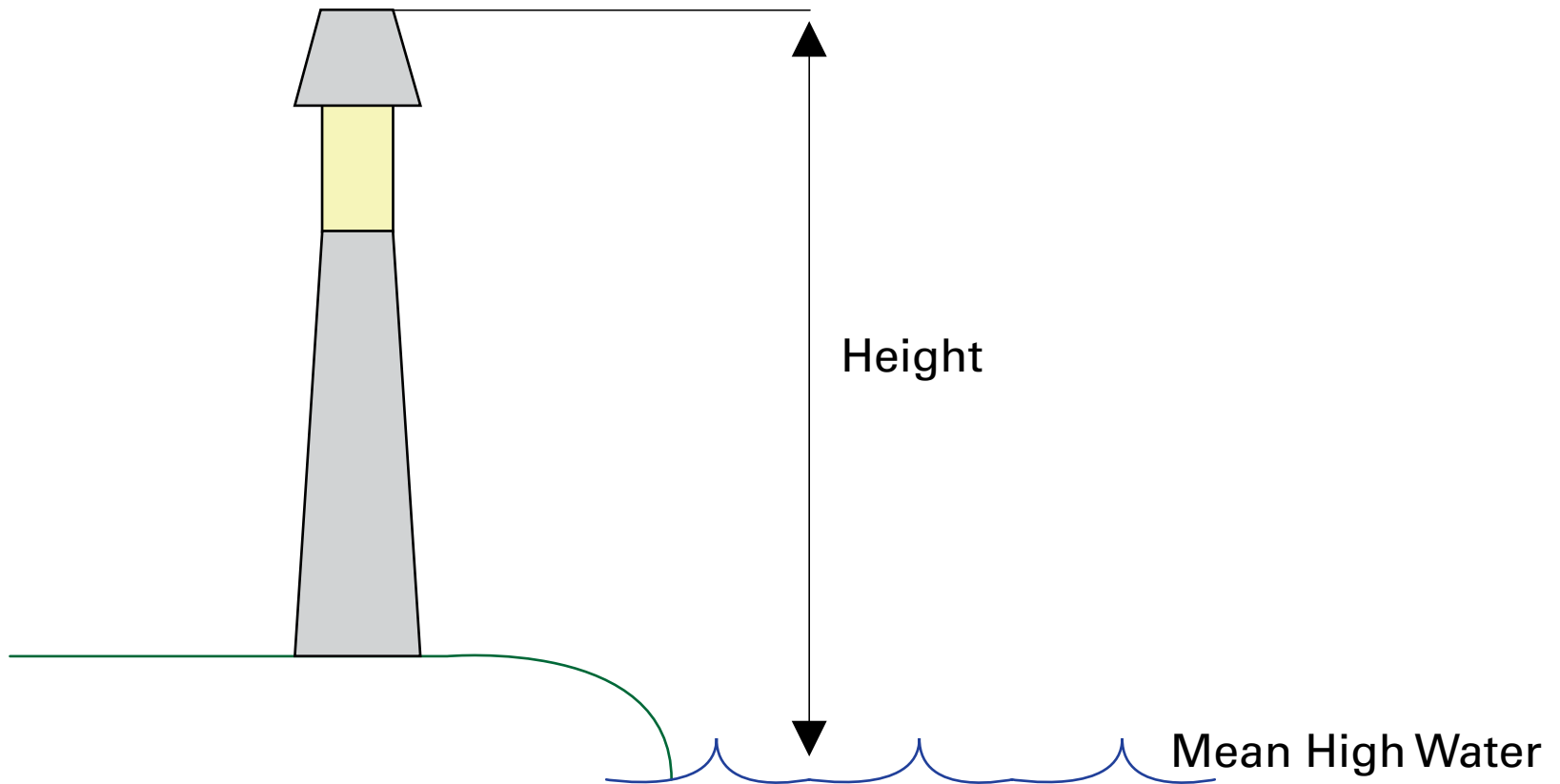
In the USA: mean low water is the reference (MLLW)  
- over 19 years

In the UK: Lowest Astronomical Tide (LAT)

1 Fathom = 6 feet

## LAND FEATURES

Height of topographical features:  
reference datum is Mean High Water (MHW)











## LANDMARKS FOR PLOTTING

- Radio towers  TOWER  Tr

- Spires  SPIRE  Spire

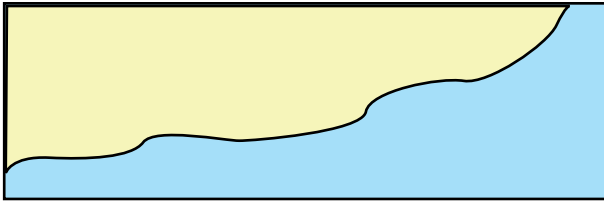
- Cupolas  CUPOLA  Cup

- Tanks  TANK   
 Tk 

- Standpipes  STANDPIPE  
 Spipe

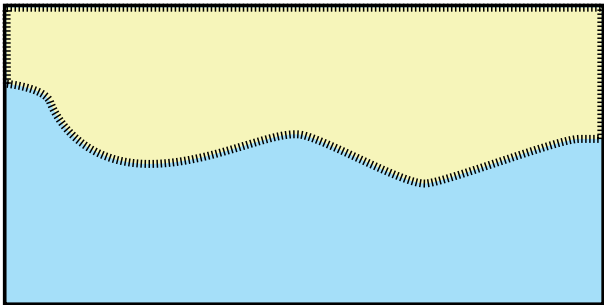
## SHORELINE

Solid line indicates land and water boundary at Mean High Water.



Dotted line may indicate low water mark.

Hatching indicates areas uncovered at chart datum.

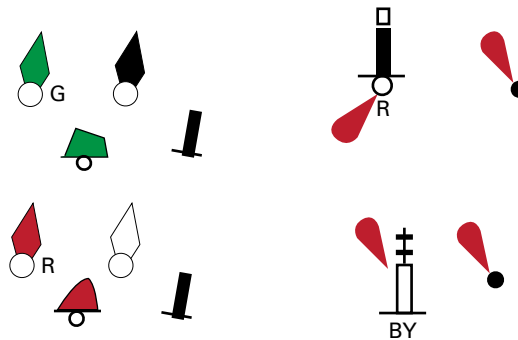


## NAVIGATIONAL AIDS

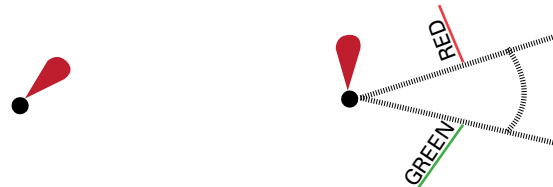
### - Lighthouses



### - Beacons



### - Ranges



# CHARTS AND PUBLICATIONS

## CHART #1

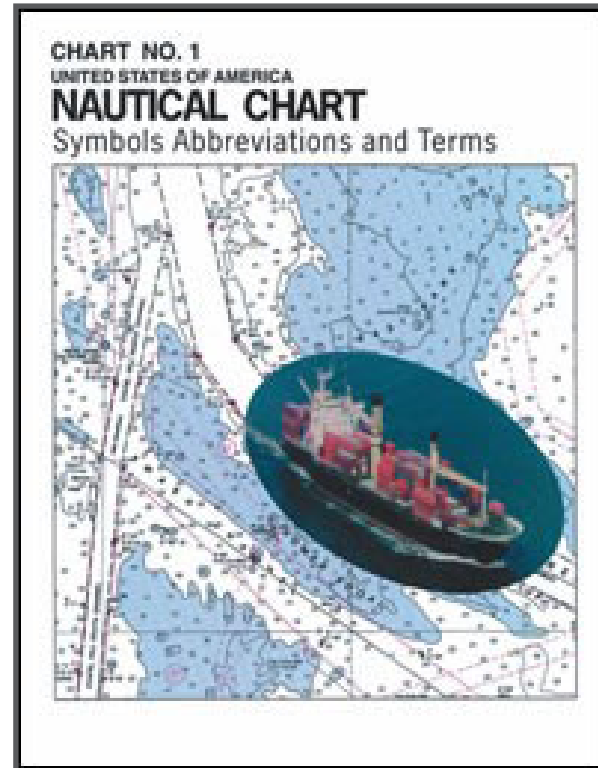
### Nautical Chart Symbols, Abbreviations and Terms

This is a master list of all of the symbols and terms that you may find on a NOAA Chart, arranged by category.

Chart #1 is a great resource that you should have on your vessel.

### Free PDF Version of Chart No. 1

<http://www.nauticalcharts.noaa.gov/mcd/chart1/ChartNo1.pdf>



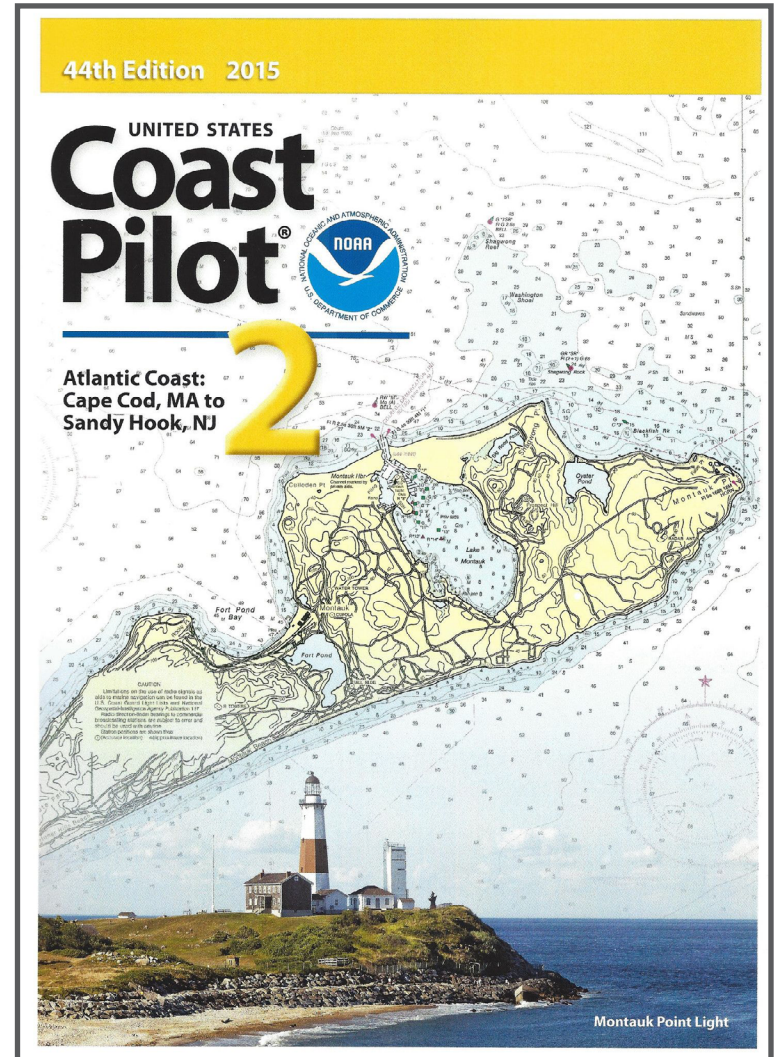
- weather, currents, storms, ice...



# CHARTS AND PUBLICATIONS

## US COAST PILOT

- Port information
- Dangers and alert instructions
- Local weather
- Useful conversion information
- Distance table
- Geographic range table
- Downloadable Coast Pilot PDF:  
<http://www.nauticalcharts.noaa.gov/nsd/cpdownload.htm>





# CHARTS AND PUBLICATIONS

## LIGHT LIST

- Published in 7 volumes
- Contains additional information on lights and other aids to navigation in specific areas
- Downloadable Light List PDF:
- <http://www.navcen.uscg.gov/?pageName=lightlists>

U.S. Department of  
Homeland Security  
United States  
Coast Guard



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## LIGHT LIST

**Volume III**

**ATLANTIC and  
GULF COASTS**

**2016**

Little River, South Carolina to  
Econfina River, Florida  
(Includes Puerto Rico and the U.S. Virgin Islands)

## TIDE TABLES

- Published in 4 annual volumes and contain information on the height and times of tides

Downloadable Tide Tables:

[http://tidesandcurrents.noaa.gov/tide\\_predictions.html](http://tidesandcurrents.noaa.gov/tide_predictions.html)

