



U.S. NAVAL ACADEMY SAILING PROGRAM



Offshore



Intercollegiate



CSNTS



P-100

To ensure safety at sea, the best that science can devise and that naval organization can provide must be regarded only as an aide and never as a substitute for good seamanship, self reliance, and a sense of ultimate responsibility which are the first requisites in a seaman and naval officer

Fleet Admiral Chester W. Nimitz
Letter to the Pacific Fleet
1945



The Navy Sailing Program...

What We Teach Midshipmen

- Leadership and Teamwork
- Watchstanding
- Small boat handling
- Knowledge of and appreciation for the forces of wind and sea
- Relative motion
- Marlinspike seamanship
- Meteorology and oceanography
- Forehandedness and vigilance
- Shipboard organization
- Navy preventative and corrective maintenance systems (3M)
- Navigation (open ocean and coastal piloting)
- Damage control



What's The Goal Of The CSNTS Program?

- We teach deck watch officer skills in the open cockpit of a small boat, inshore and offshore, in all weather.
- We don't teach sailing!!!





What Are Deck Watch Officer Skills?

- C - Command Presence
- S - Basic Seamanship
- N - Principles & Practice of Basic Navigation
 - Specific emphasis on piloting & deduced reckoning
 - Introduce electronic aides to navigation
 - Radar, Loran C, GPS (if equipped)
 - Introduce celestial navigation
- T – Train the Mids
- S – Squadron integrity to mitigate risk



Principles & Practice of Basic Navigation

- Fix taking
- Fix evaluation
- “Minimum Cyclic Routine”
 - Plot, Label, DR.. Plot, Label, DR.. Plot, Label, DR...
- Situational Awareness & “Gut Feel”
- Watch Captain involvement
- Midshipman Navigator involvement
- Officer in Charge involvement



Big Misunderstanding...

The OIC/AOIC

The safe and proper navigation of Sail Training Craft (STC) is, at all times, the responsibility of the assigned Officer in Charge (OIC).

The OIC shall delegate navigational authority to the embarked midshipmen whenever possible in order to enhance their training; however, ultimate responsibility will

reside permanently with the OIC



Navigation Related Incident Summary

Summer 2002

- Grounding - Coaster's Harbor
- Grounding – Bermuda
- Grounding - Delaware River
- Grounding - Exit of C&D Canal
- Grounding - Coast of Maine
- Grounding - Eastern Bay
- Grounding - Greenbury Point
- Allision with bridge – Newport
- Allision with buoy – Delaware River (motoring)



Groundings...

Why Such A Big Deal???

- Groundings on the bay
- Groundings in New England
- Congere's Three Bump Rule...
 - First bump - you know you're hosed
 - Second bump the rig comes down
 - Third bump – The keel's in the cabin/boat sinks
- The Navy 44



The Navy 44...



- Designed and built as a “Sail Training Craft”
- Routinely experience very heavy use
- Spartan comfort...
- Underpins program safety & surety



Training Regimen For Prospective Program Participants

The Navigation Curriculum

- Our course teaches the practice of navigation
- It does not teach the analytical underpinnings
- Need to develop proficiency in the classroom so that you can “degrade gracefully” when at sea...
 - What do I mean by that?
- The Flight Instructor Analogy



What We'll cover

- This course teaches the practice of navigation
 - Need to develop proficiency here, in the classroom, so that you can “degrade gracefully” when at sea...
- It doesn't teach tides and currents
- It does not teach the analytical underpinnings
 - That's left to you
 - Read Hobbs, or US Sailing's Coastal Navigation Text



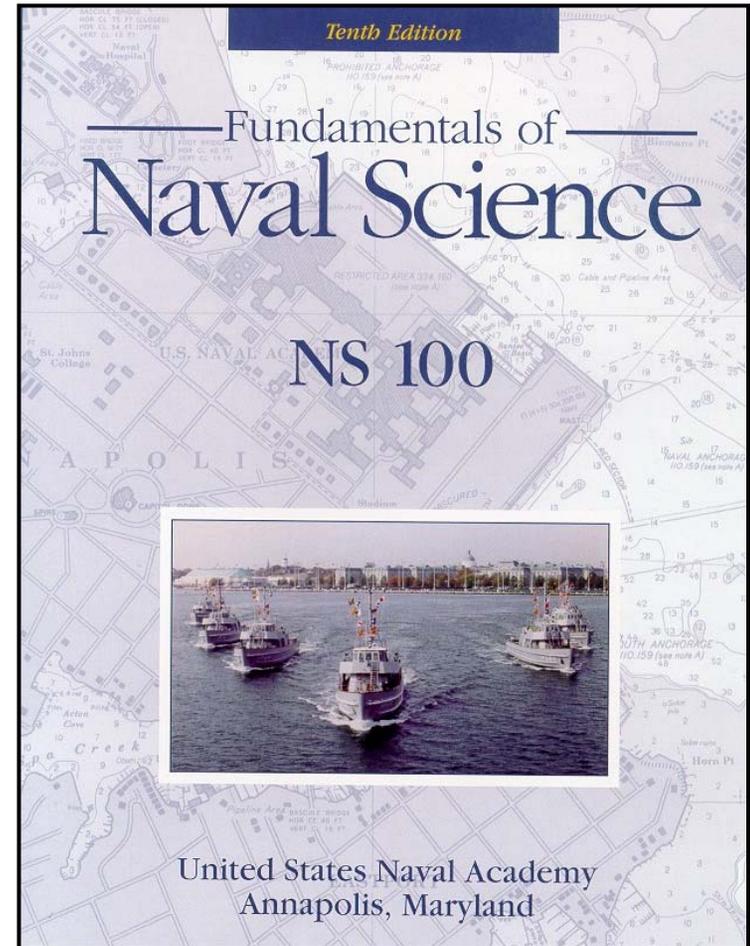
The Text Books...

The Midshipmen's Text

We teach this to our
prospective program
participants

Why?

“Shipmate...
I Read the Book”





Course Overview...

- The Chart
 - Primary emphasis on chart preparation
- The Fix
 - Visual & Electronic
 - Accuracy and errors
- The DR
 - The most important thing on the chart
- Navigation Party
 - Organization, procedures & philosophy
- Making landfall
 - The Navigation Brief



Before We Talk About Charts...





What's In The Average Nav Table?

I Bet These Are The Only Navigation Instruments You Find...



Dividers & Compass



The Other Tools of the Trade...

Nautical Slide Rule



Roller Plotter

What Am I Missing???

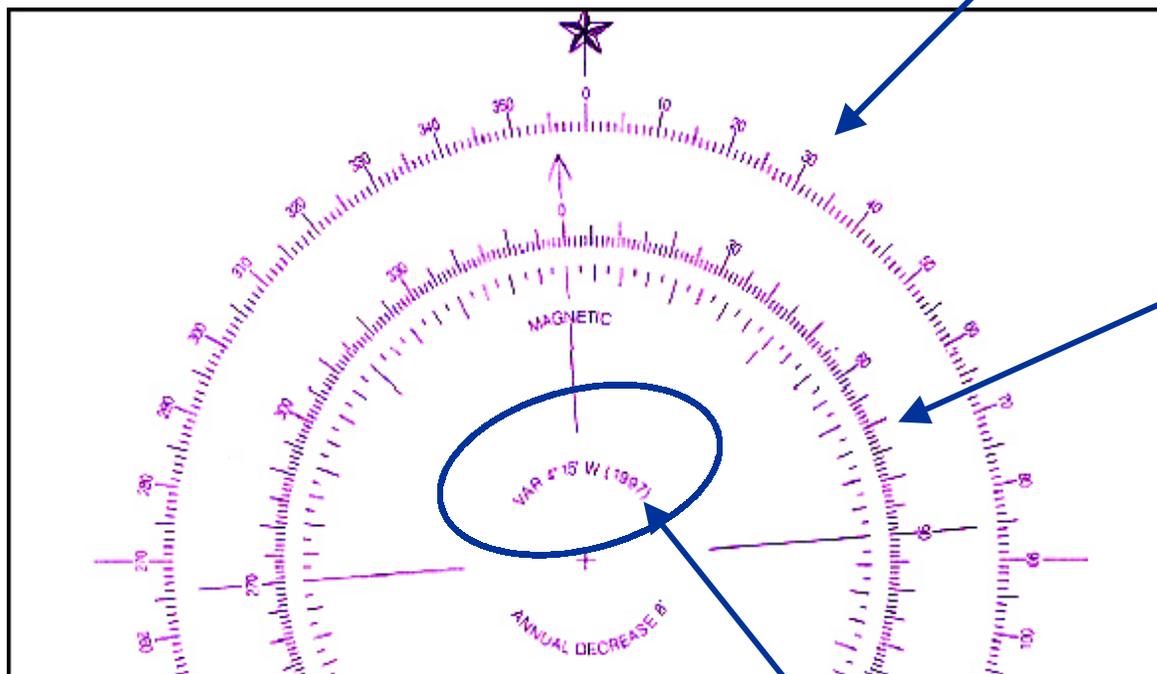




The Compass Rose...

Degrees True

- Don't use this one...



Degrees Magnetic

- Use this one!!!

Variation...

- What do you need to know?



The Steering Compass...



NOTE:
These Are
Not Used For
Navigation!!!





The Hand Bearing Compass...



Key elements:

- Almost Midshipman Proof
- Susceptible to deviation errors
- They come with a Lanyard – Use it!!!

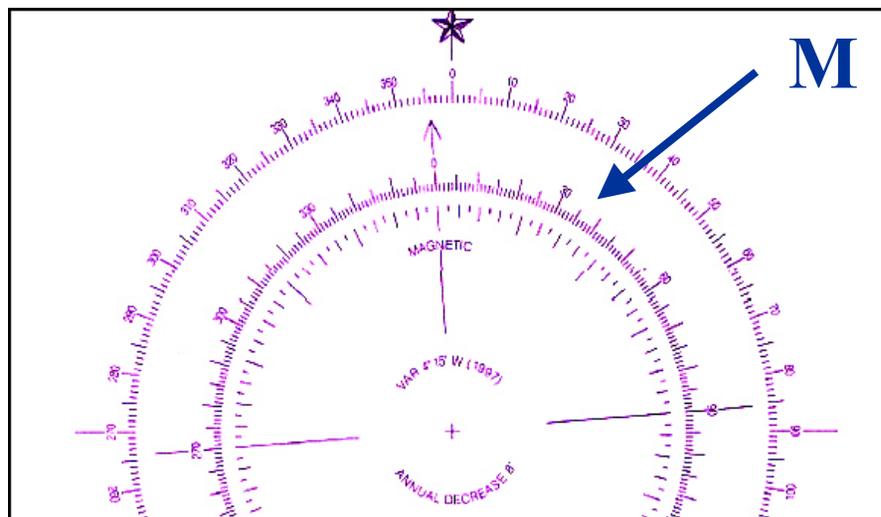




The Bottom Line...



A



B



C

We assume Deviation = 0

$$\underline{A = B = C}$$



Unless...





And Unless...





The Chart...

- What must you know?
 - Latitude & Longitude
 - Sounding datum
 - Nav Aids and Nav Hazards
 - Chart 1
 - Is it current?
 - Notice to Mariners



Latitude & Longitude...

- Two scales
 - Degrees, Minutes & Tenths
 - Degrees, Minutes & Seconds

Note: Many errors occur on the chart shift!!!

- Use latitude for distance measurement



Sounding Datum...

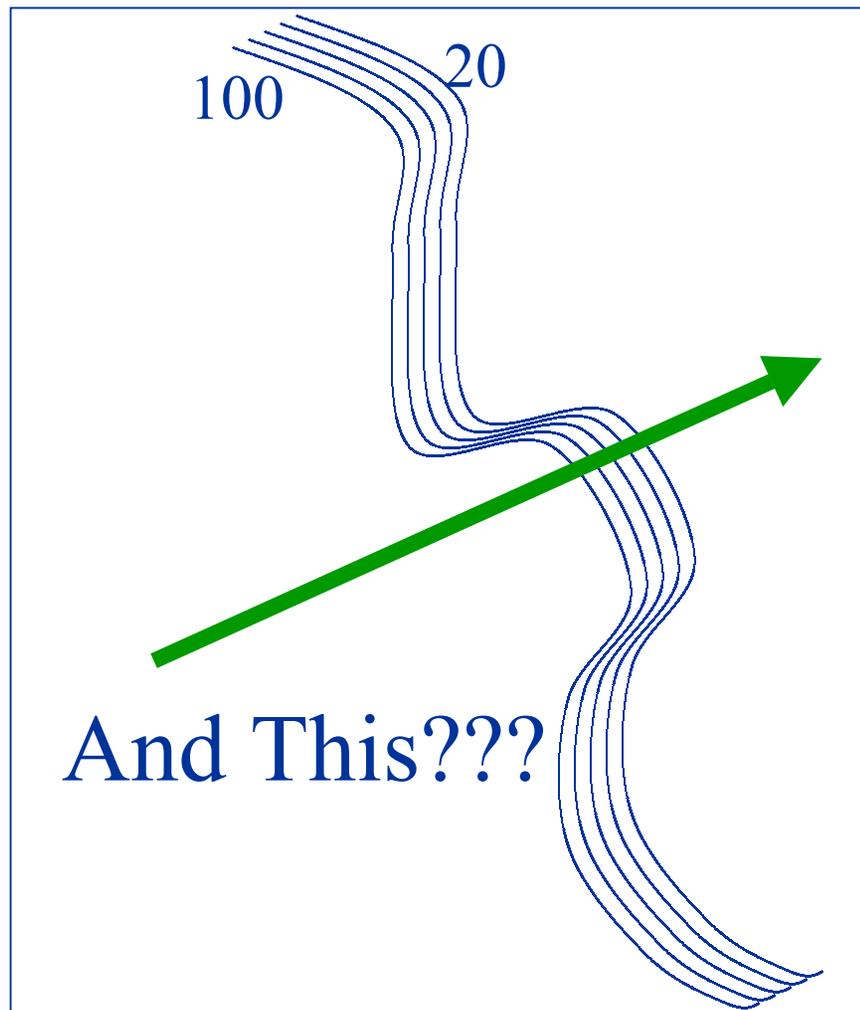
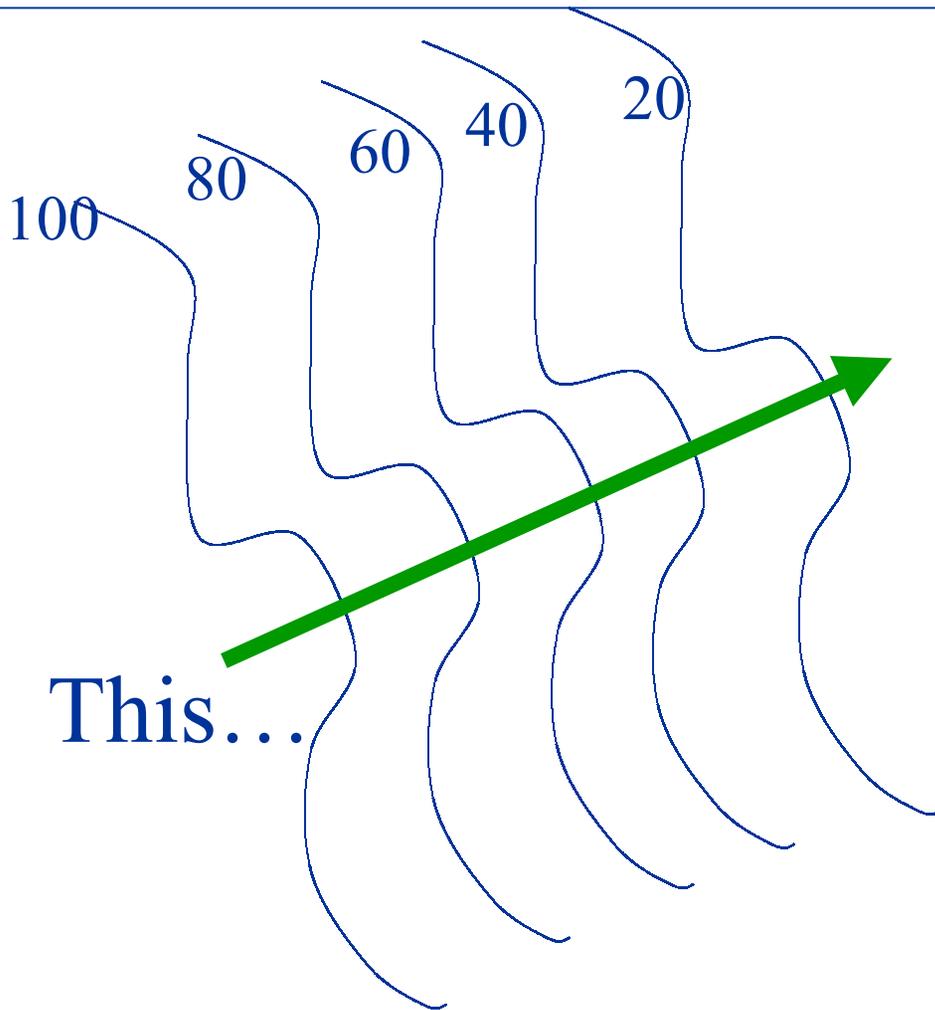
- Fathoms, Feet or Meters???



7' 6"



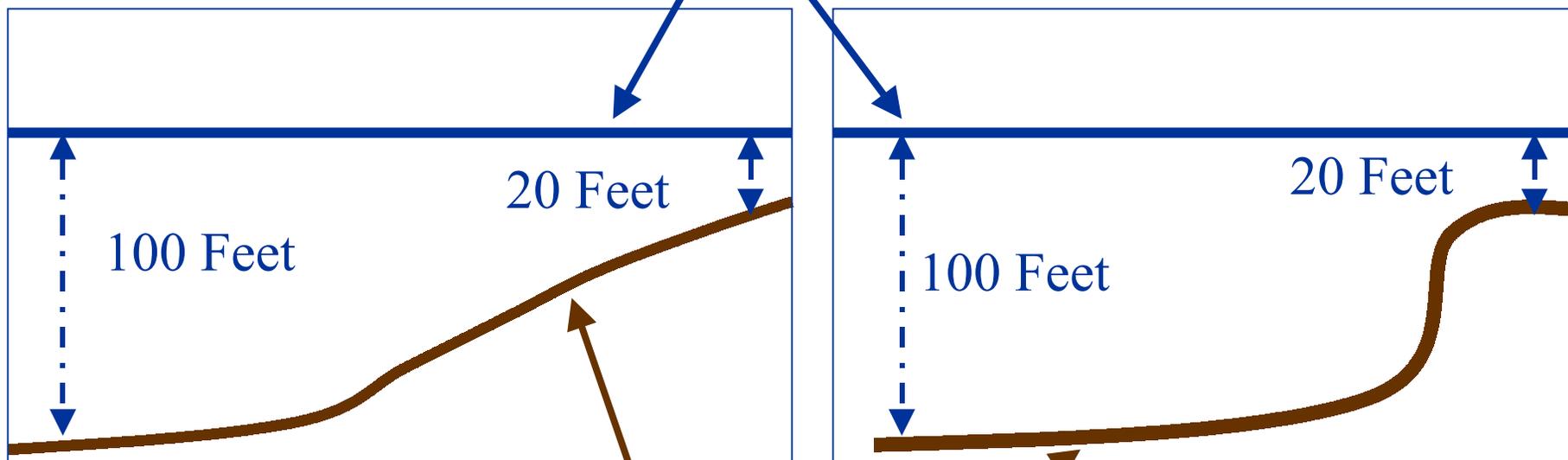
What's The Difference Between...





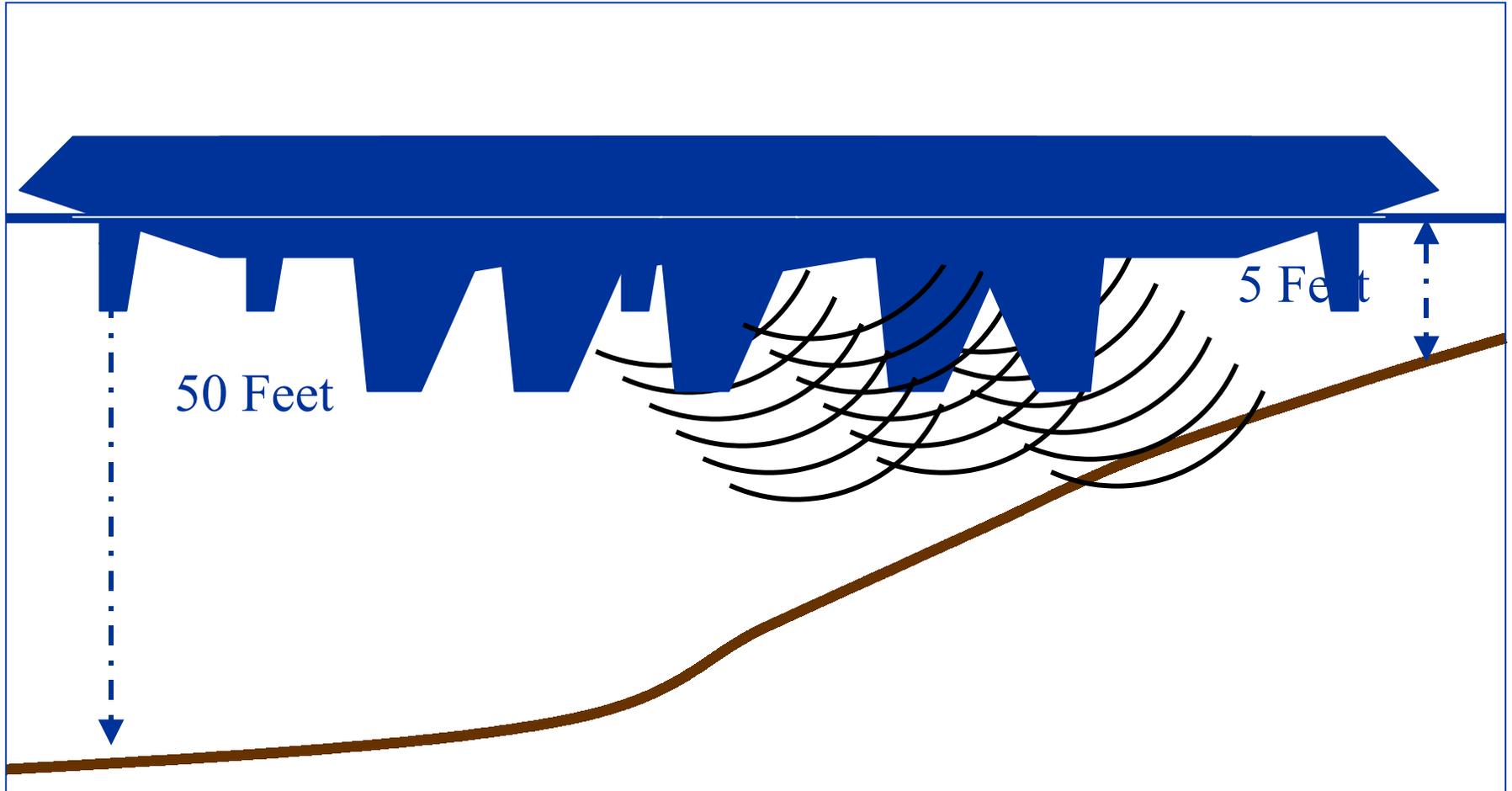
What's The Difference Between...

Water Surface



Bottom Contours

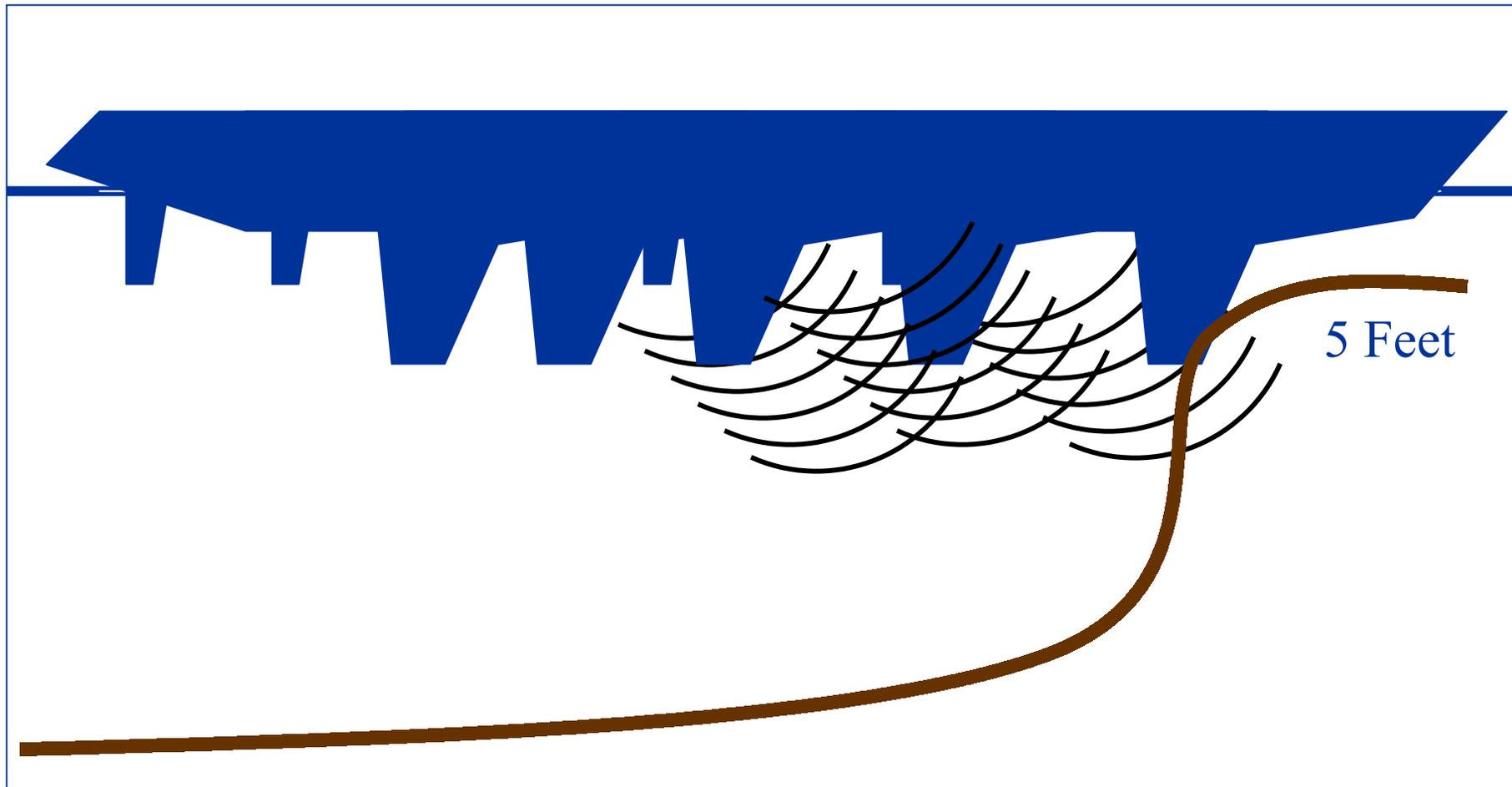
What's The Difference Between...



Time To React...



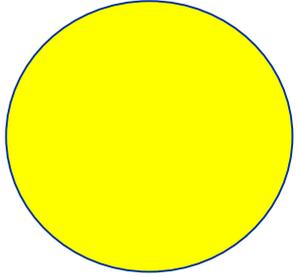
What's The Difference Between...



No Time To React...

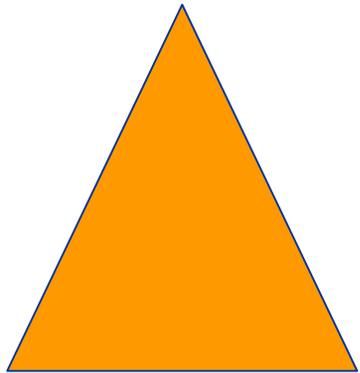


Identifying Nav Aids & Nav Hazards...



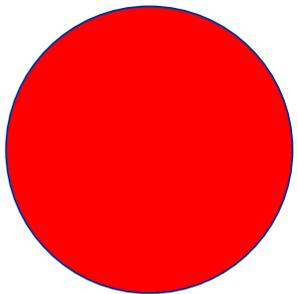
Visual Aids To Navigation

- Highly visible to naked eye, or binoculars
- Lighthouses, towers, etc



Electronic Aids To Navigation

- Highly visible on radar
- Jetty, Bridges, land masses



Hazards To Navigation

- Find these or they will find you!!!



The Chart Prep Checklist...



Should We Label A Track???

- Sailboats don't move in straight lines...
- Previews where are we're going
- It's proof that you thought it through...
- It tells you how much you've deviated from the game plan that was developed while warm, dry and comfortable
- Where are the merchants???



How Do We Label A Track???

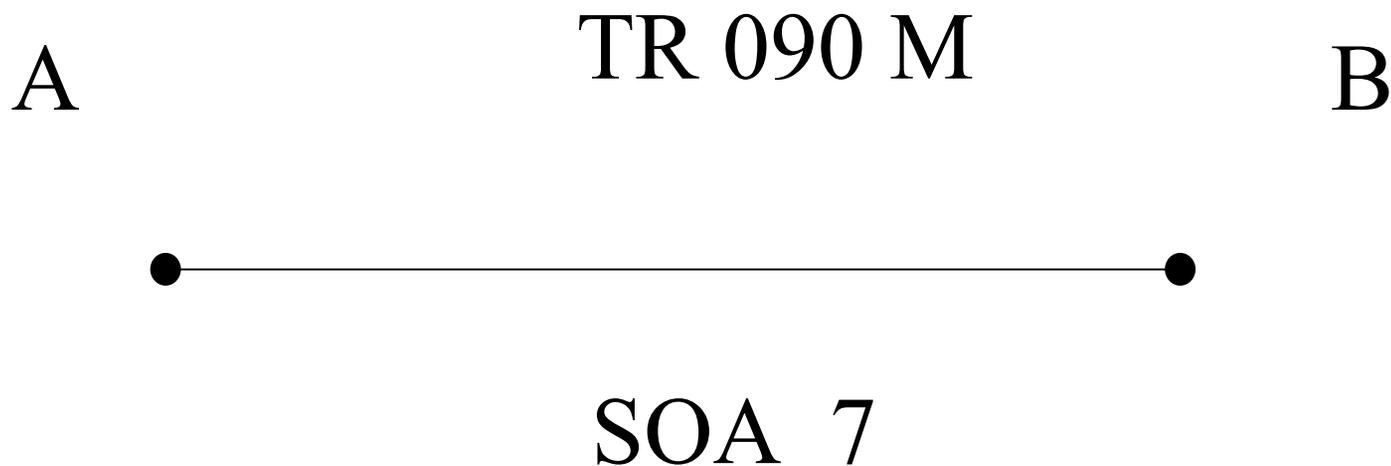




Chart Up To Date???

Query The Notice To Mariners Database

Notice to Mariners - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Netsite: http://pollux.nss.nima.mil/untm/untm_options.html?class_flag=N What's Related

Counties and Re Instant Message Members WebMail Connections BizJournal SmartUpdate Mktplace

UNITED STATES OF AMERICA

Notice to Mariners

Note

The US Notice to Mariners corrects NIMA and NOS charts using information collected from many sources, among them the US Coast Guard Local Notices published by the several Coast Guard districts. From all sources the US Notice to Mariners will contain only those chart corrections of interest to *ocean going vessels*.

View/Download the NTM

Notices to Mariners are available for online review or download, as well as the special paragraphs from the last released NTM 01. For a specific data set, [Query the NTM Database](#) below.

| Notice Number | Notice Date |
|---------------|-------------|
|---------------|-------------|

Document: Done

Start | Exploring... | Microsoft... | Notice... | Microsoft... | NetWare Br... | 11:23 PM



Making The Chart Corrections...

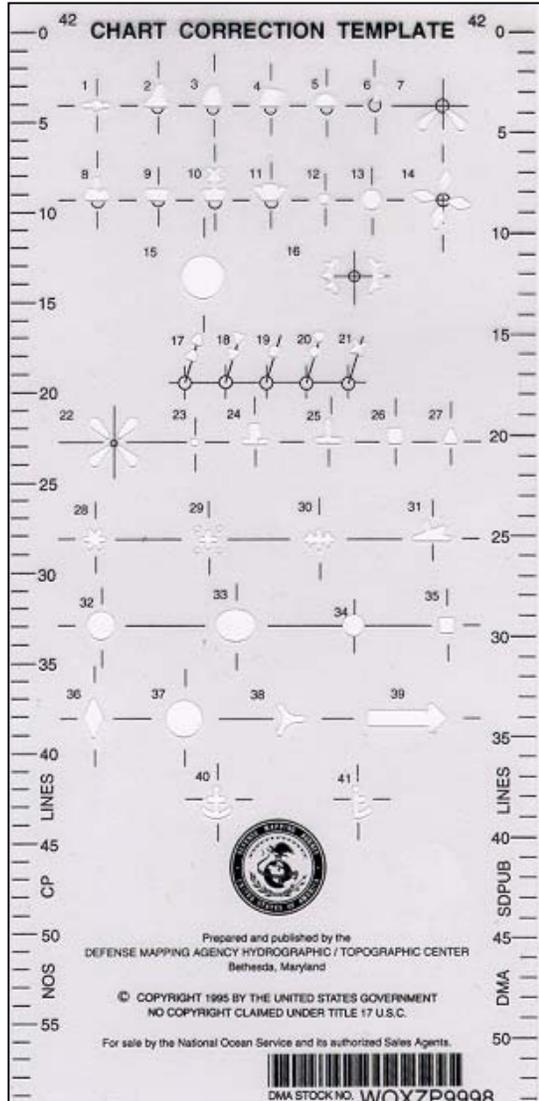
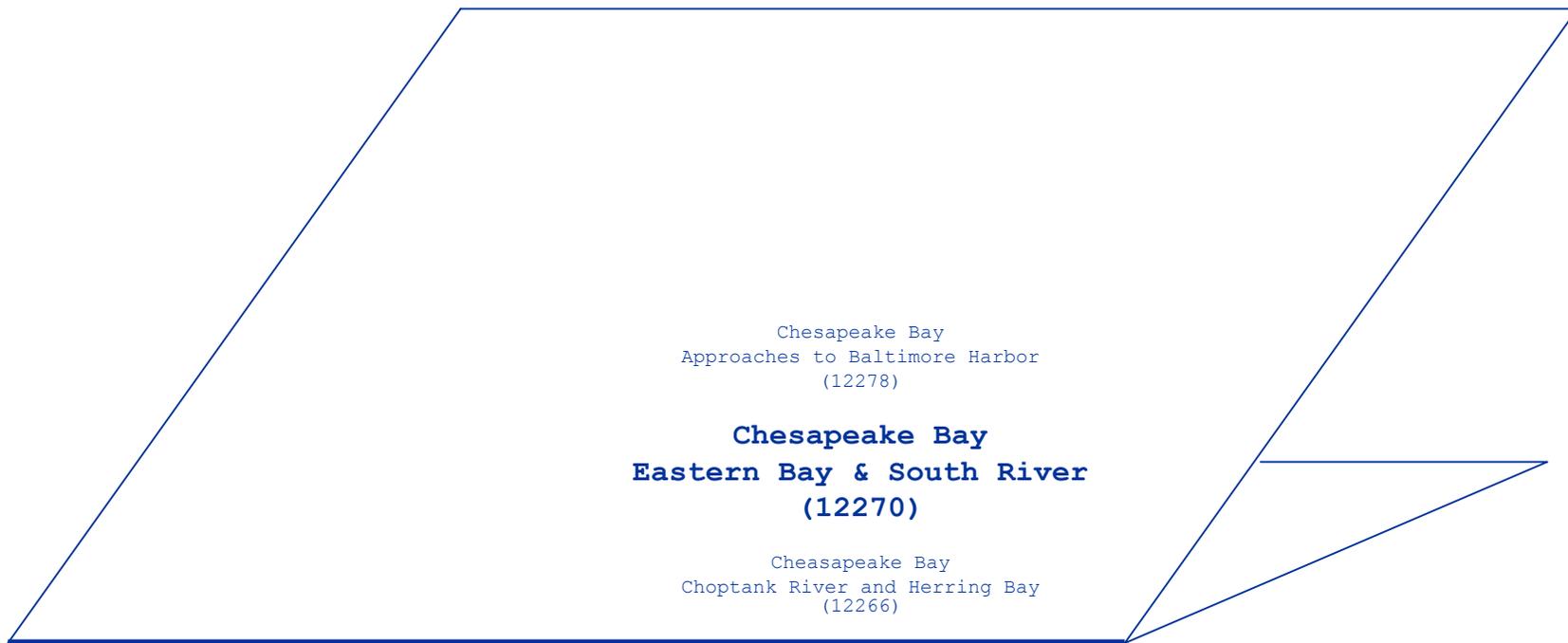


Chart Correction Template



How Do You Fold A Chart?





How's It Labeled?

Chesapeake Bay
Approaches To Baltimore Harbor
(12278)

Chesapeake Bay
Eastern Bay & South River
(12270)

Chesapeake Bay
Choptank River & Herring Bay
(12266)



Next Class...

- For Homework
 - Work on your charts with chart prep checklist
 - Study the two handouts
 - Lines of Position and Fixes
 - Dead Reckoning and Current Sailing



Next Class...

- ✓ The Chart
 - Primary emphasis on chart preparation
- The Fix
 - Visual & Electronic
 - Accuracy and errors
- The DR
 - The most important thing on the chart
- Navigation Party
 - Organization, procedures & philosophy
- Making landfall
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What is available...

OIC/AOIC Navigation Kits

Price:

\$30 (w/o tote)

\$60 (w/ tote)



Roller Plotter

\$8.65

(reg. \$17.30)



NaviTote

\$29.99

(reg. \$59.95)



Speed Wheel

\$8.50

(reg. \$14.50)



Compass & Divider Set

\$9.85

(reg \$19.70)