



Anchoring and Beaching





Learning Objectives

By the end of this unit the participant should be able to:

1. Choose the anchor for the bottom conditions and the type and size of boat.
2. Describe the lines and gear that make up the rode and ground tackle.
3. Calculate scope, given water depth, under both calm and heavy conditions.
4. Describe anchoring procedures.
5. Describe beaching procedures.
6. Describe methods for making fast/holding position while beached.

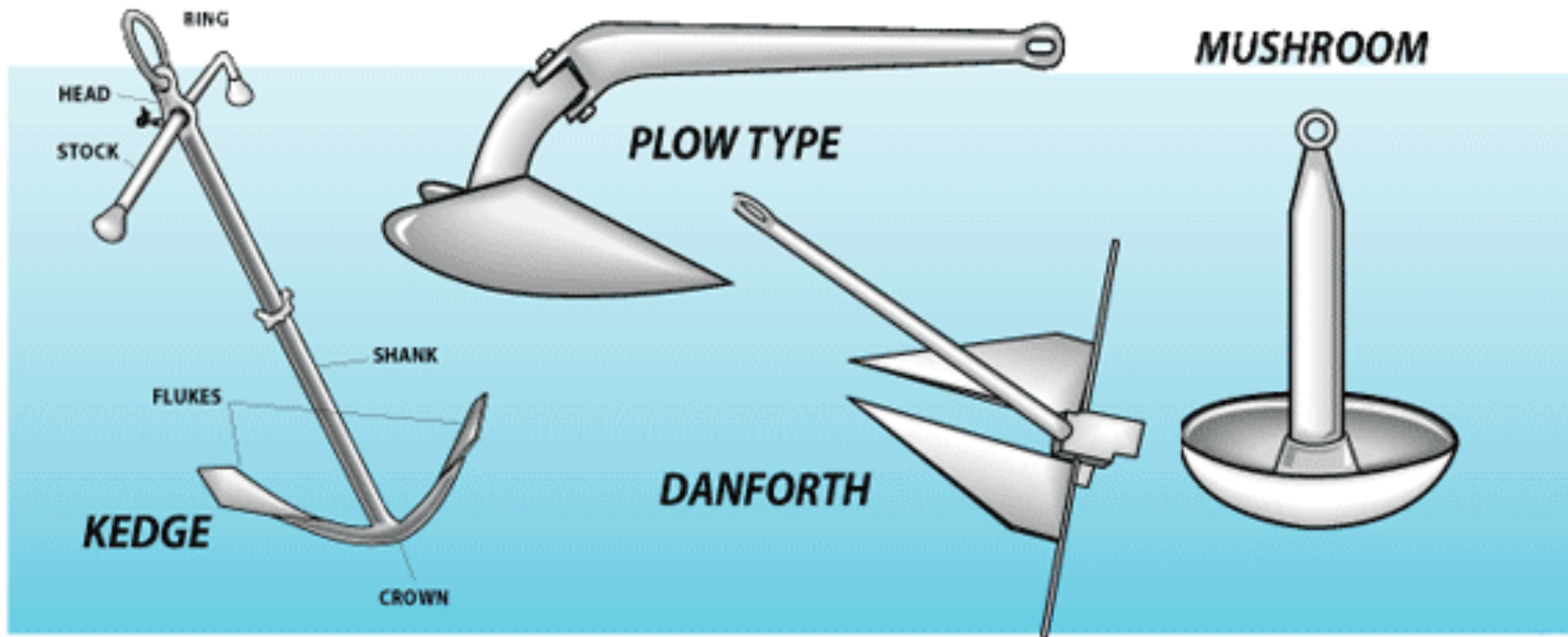
Anchoring

- Anchoring is a critical part of boat operations
- Anchor will need to be readily accessible and properly secured
- Never anchor from stern only

Anchor Considerations

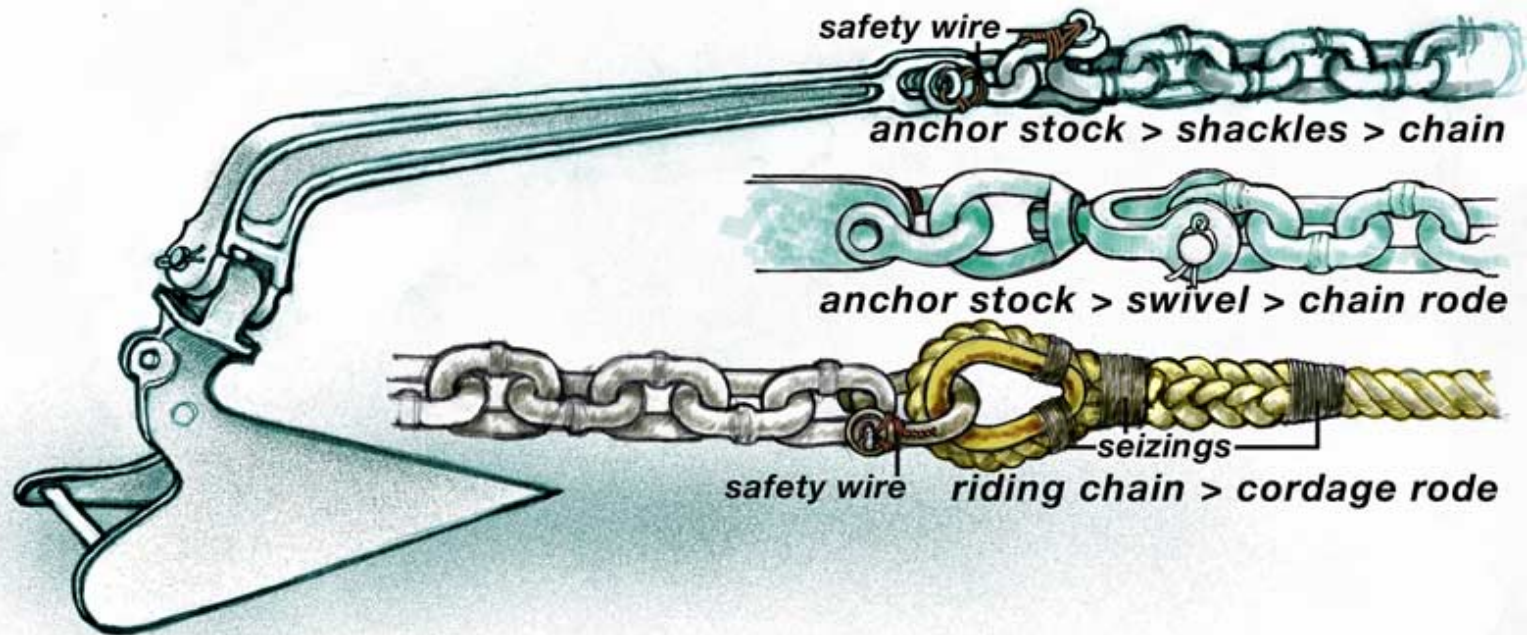
- Type and weight of boat determines anchor size, anchor chain/line diameter, and mooring cleat size
- Character of bottom determines anchor type -
 - **Kedge** - rocks, heavy grasses
 - **Burying** - mud, clay, sand
 - **Mushroom** - for mud bottom, sinks into bottom

Anchor Types



Ground Tackle

- The whole system of gear including anchor, rode, shackles etc. is called ground tackle.



Anchor Line & Chain (Rode)

Nylon works best due to its ability to stretch and absorb surges of heavy seas

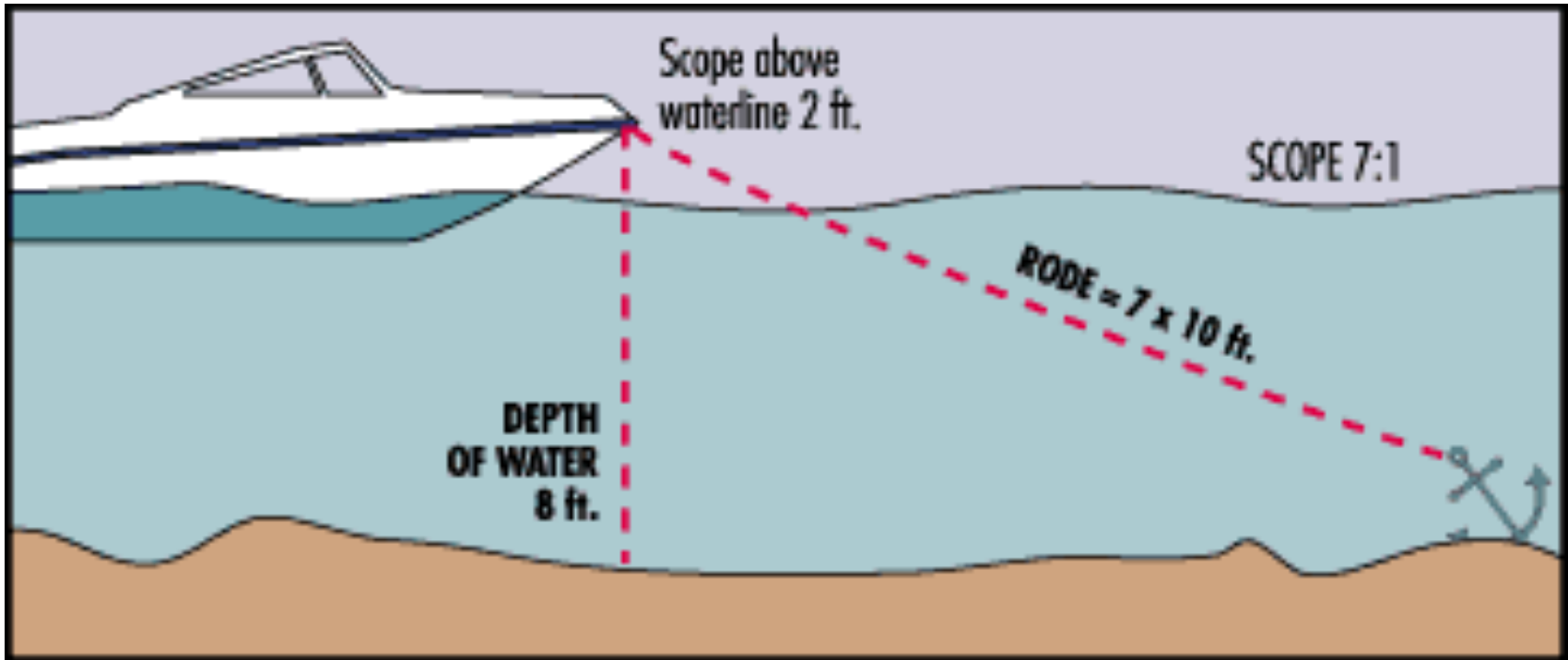
- Three-stranded nylon
- Double-braided nylon
- Diameter of anchor line (must fit the anchor)
- Chain is added for extra weight, to absorb shock, and to keep anchor set
 - Chain length is 1/2' per foot of boat length

Anchor Scope

The length of anchor line needed when anchoring using nylon line

- Average depth of water + freeboard determines anchor scope
- Commonly used 7:1 (amount of rode to depth of water + distance from waterline to point of attachment)
- Strength of wind and/or current- may increase scope to 10:1 (or more) in heavy weather

Anchor Scope

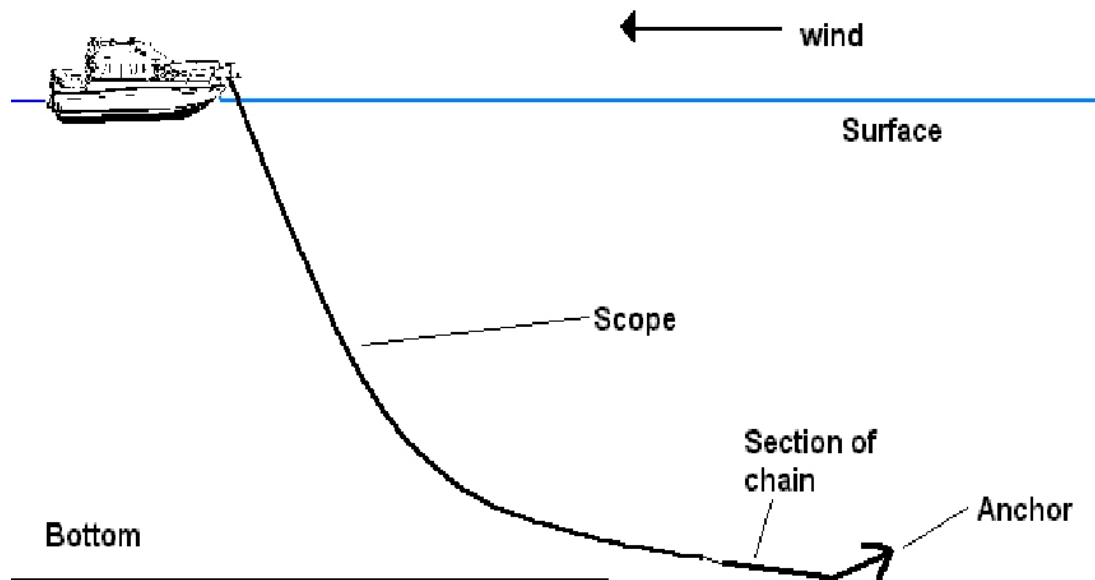


A Scope of 7:1 in this example means 8' water depth, 2' freeboard, and a 70' Rode (anchor line)

Selecting an Anchorage

- Select a protected site (wind, current, other boat traffic)
- Check water depth and bottom type
- Verify water depth at anchorage and within a radius of swing
- Ensure clearance from obstacles in radius of swing

Anchoring



- Prepare/Inspect gear
- Head boat into wind/current
- Lower anchor slowly
- Reverse engine to stop headway
- When full rode is out, set the anchor
- Back slowly to dig anchor in

Getting underway

- Run up the anchor slowly under power
- When anchor line is straight up and down, attempt to break anchor free
- Once free, haul anchor line in
- Clean anchor and line
- Carefully haul anchor and line on board
- Stow anchor and rode immediately, ready for next use

Beaching

Common Considerations:

- Depth of water
- Type of Bottom/beach
- Slope of bottom/beach
- Draft of boat
- Wave action
- Current
- Tide



Beaching

Beach Selection:

- Sandy, clay, mud or gravel bottoms are best.
- Medium to steeply sloped bottoms.
- No obstructions at or below surface, or immediately downriver.
- Area protected from wave/wake action.

Beaching

Approach:

- Scout area slowly
- Raise engine, if necessary
- Verify condition of bottom and determine drift if any.
- Make approach so that bow touches bottom first
- Maintain slowest speed possible to beach
- Have a crew member go ashore and secure boat
- Switch engine off when boat is secure

Beaching

Making Fast/Holding Position:

- Tie bow line or anchor to a solid object (such as a tree)
- Set anchor on beach (bury it)
- With no anchor, make a sand anchor
- Hold position with engine (crew member must remain on board)
- Hold position by having crew member hold the bow line

Beaching

Getting Underway:

- While holding the bow line, push boat to a nearly free-floating position before loading crew and gear
- Lower the engine to minimum working depth, start it, and allow it to warm up
- Load gear and crew
- Position should be held with engine in forward at minimum speed
- Bring bow line and remaining crew on board
- Back down slowly to break bow free from beach

Summary-Anchoring

- Anchoring Considerations
- Types of Anchors
- Ground Tackle
- Anchor Line & Chain (Rode)
- Anchor Scope
- Selecting and Anchorage
- Anchoring
- Getting Underway

Summary-Beaching

- Common Considerations
- Beach Selection
- Approach
- Make Fast/Holding Position
- Getting Underway



Anchoring Demonstration