

SS&S Chapter 14 Instructor Guide

Lines and Knots for Your Boat

The PowerPoints (PPT) slides for this SS&S chapter were copied from the BS&S-13th Ed PPT because they are identical. Only the chapter numbers have been changed. Therefore, the Instructor Guide notes remain in the same format as published for the BS&S which are slightly different from the sailing chapters.

Slide 1: Title Slide

Instructor:

Student:

Slide 2: Lesson Objectives

Instructor:

Student:

(click to show bullets)

Review the objectives

Slide 3: Line vs Rope

Instructor:

Student:

(click to show bullets)

Ask: What is the difference between line and rope?

Start off by noting that when you buy it, it is rope and when you bring it on board a boat it is line.

Describe:

Bell ropes, foot ropes, etc., shrouds, rigging, rode and painter.

Slides 4: Rope Materials

Instructor:

Student:

(click to show bullets)

Discuss bullets:

- Nylon most common...it stretches
- Polyester less stretch...used for sailboats.
- Polypropylene floats. Good for life jackets, ski towlines etc. Deteriorates in the sun. Shock cord stretches up to 2 times its length.
- Wire rope mostly stainless steel. Used in sailboat running rigging.

Slide 5: Rope Construction

Instructor:

(click to show bullets)

Discuss bullets.

Student:

The instructor should bring to class the various types of rope described and explain how they are made and explain how best used.

Slide 6: Best Type to Use

Instructor:

(click to show bullets)

Ask: What would guide your choice about what rope you should use?

Student:

Answers should included:

- Strength
- Elasticity
- Resistance to chafing
- Resistance to sunlight
- Resistance to slipping
- Buoyancy
- Ease in handling
- Storage conditions

Slide 7: Care of Rope

Instructor:

(click to show bullets)

Discuss bullets:

Student:

- Point out that ropes must not be ignored after use. They must be taken care of or their life span will greatly diminish and may lead to dangerous situations when they fail.
- Stow your lines neatly when not in use.

Slide 8: Making Up a Line

Instructor:

(click to show bullets)

Discuss bullets:

Student:

Bring lines to class and demonstrate these 3 techniques.

If possible, bring enough line for students to practice these techniques.

Slide 9: Knots, Bends, and Hitches

Instructor:

(click to show bullets)

Discuss bullets:

Student:

- Knot – formed in the line
- Bend – ties one line to another
- Hitch – joins line to spar, ring, etc.
- Splice – making an eye or joining two lines permanently.

Slide 10: Parts of a Line

Instructor:

(click to show bullets)

Demonstrate all parts of a line.

Student:

Slide 11: Stopper Knot

Instructor:

(click to show bullets)

Have students bring two lines of about two feet and tie the knots in the following slides.

Student:

Discuss the uses of each knot during this activity.

Slide 12: Square/Reef Knot

Instructor:

(click to show bullets)

Explain that this knot is used to tie two lines of equal diameter together.

Student:

Slide 13: Sheet Bend/Becket Bend

Instructor:

(click to show bullets)

Explain:

Student:

The Sheet Bend is used to tie two lines of different diameter.

The Double Sheet Bend offers more security than the Sheet Bend especially when one line has a greater diameter.

The slippery Sheet Bend is less secure but easily untied.

Slide 14: Clove Hitch

Instructor:

(click to show bullets)

Student:

Explain that this hitch is used to tie a line to a piling or fender rail.

Slide 15: Two Half Hitches

Instructor:

(click to show bullets)

Student:

Explain that this hitch is easier to untie under tension than a clove hitch.

Slide 16: Anchor or Fisherman's Bend

Instructor:

(click to show bullets)

Student:

Explain that this knot can be tied to an anchor ring.

Slide 17: Rolling Hitch

Instructor:
(click to show bullets)

Student:

Explain that this hitch ties one line to another. When you pull on the new line, it takes the tension off the original line.

Slide 18: Bowline

Instructor:
(click to show bullets)

Student:

Explain that this knot forms a temporary eye on a line and is one of the most useful knots at sea.

King of Knots

Slide 19: Splices

Instructor:
(click to show bullets)

Student:

Explain that splices are used to permanently join two lines or make an eye. A lot of practice is required to be able to tie them successfully.

A short splice increases the diameter of the line by about 40% while a long splice does not increase the diameter.

An eye splice forms a permanent eye and can be made chafe resistant by using a thimble.

Slide 20: Securing Lines/Cleats

Instructor:

Student:

(click to show bullets)

Emphasize that any device on a vessel that is designed for securing a line must be through-bolted with a backing plate.

Ask: "Where do you think cleats are used?"

- Horned on docks and vessels
- Jam on sailboats
- Cam on small sailboats

Note that on a vessel the line is usually passed through a chock to limit the line's movement and to prevent chafing.

Explain that the pull causes the jaws to tighten further. To release the line, it must be pulled away from the load, relieving some or all of the locking force and jerked upwards.

Slide 21: Securing Lines/Turnbuckles

Instructor:

Student:

(click to show bullets)

Turnbuckles are used primarily on standing rigging. They must occasionally be adjusted to take out unwanted slack. Turn one direction to tighten, the other to loosen

Slide 22: Securing Lines

Instructor:

Student:

(click to show bullets)

Explain that larger boats may have Sampson posts or bow bits to secure lines to the vessel. Sampson posts are also used on docks.

Slide 23: Lead Lines

Instructor:

Student:

(click to show bullets)

Explain that lead lines may be used to determine depth. The lead may have a hollow in the bottom of it filled with tallow to give the user an idea of the bottom type.

Slide 24: Dipping the Eye

Instructor:

Student:

(click to show bullets)

Explain that this is used when you tie up to a piling when someone is already tied up to it. Either of you may leave without disturbing the other's line whether you dip or not, provided the person whose line is on the bottom knows how to release his line. That is how to un-dip. Dipping the eye is so the other line is on top and the person does not need to know the technique for releasing the bottom line.