

Marlinspike





Lesson Objectives

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

1. List common materials used to make rope and advantages and disadvantages.
2. Determine the proper line for specific tasks onboard a vessel
3. Describe proper care, storage, and handling of boat lines.



Performance Objectives

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

1. Given a length of rope, the participant will demonstrate the Bowline, Anchor Bend, Clove Hitch, Square Knot (reef knot), Sheet Bend, Figure 8, Lineman's Loop and Cleat Hitch.
2. Given a length of rope, the participant will demonstrate two methods to coil and stow a line aboard a boat.

Marlinspike Seamanship

When you bring rope on a boat, it is now referred to as LINE.





Ropes, Lines, Knots

Definitions:

- **Line** - a rope on board a vessel
- **Standing part** - the portion of a line not used in making a knot
- **Tag end (bitter end)** - the end of the line you are working with.
- **Bight** - any curved or doubled section of a rope
- **Under load** - under tension
- **Static** - not stretchy
- **Dynamic** - not stretchy & stretchy

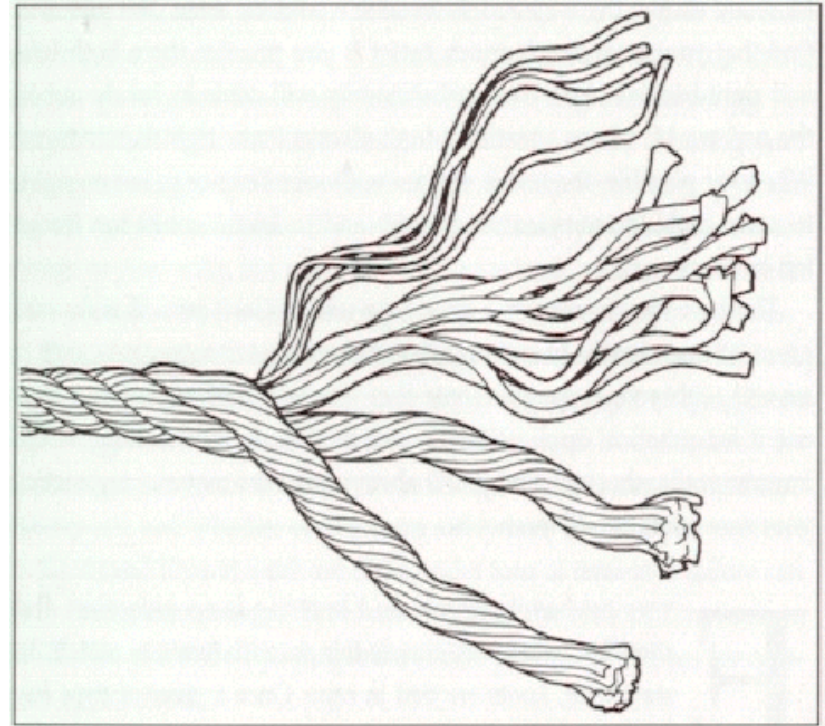
Line Materials

- **Cotton** - weak
- **Hemp** - strong, but deteriorates quickly
- **Polypropylene** - strong, cheap, floats, hard to tie, affected by ultraviolet
- **Nylon** - very strong, elastic
- **Kevlar** - very strong, static, \$\$, brittle
- **High Intensity Fiber (Dacron, Duron, A.C.E.)** - very strong, very static, good for running rigging.

Rope construction

"Twisted" or "Laid"

- Advantages - inexpensive, absorbs shock load well (typically dynamic)
- Disadvantages - ends unravel easily, also kinks easily (harder to coil)



Rope Construction

"Braided"

- Advantages - reasonably priced, easy to handle, coils easily, doesn't kink, lots of styles, resistant to abrasion
- Disadvantages - more expensive than twisted, also more static





Line Selection

Choice of line will depend on a combination of factors:

- Intended use of a line
- Diameter of line - line smaller than 3/8 inch is not recommended
- Strength - should be able to hold 5x the expected load
- Weight of line
- Static or dynamic



Line Selection (cont.)

Choice of line will depend on a combination of factors:

- Floatation
- Impact resistance
- UV exposure
- Abrasion resistance
- Exposure to corrosives



Line Selection

Recommended lines for vessels <26':

- **Bow line** - Double braided nylon (not longer than the distance between the bow eye and propeller/pump)
- **Dock lines** - Double braided nylon. Four lines: 2 the length of boat; 2~1.5 times the boat length
- **Anchor line** - 1/2-inch twisted nylon or larger. Length (rode) should be 7 to 10 times the anticipated depth.
- **Tow line** - 1/2-3/4-inch double braided nylon (75' or greater)

Proper Care of Line

Things to consider:

- Straining a kinked line
- Keeping lines clean
- Chafe and abrasion
- Overloading
- Chemicals, UV, Ozone
- Finishing ends
- Never stand on lines
- Store lines appropriately





Line Storage Examples

Line Storage Examples

Example 1: Quick Turn



Line Storage Examples **Example 2: Larks Head**



Line Storage Examples

Example 3: Gasket Hitch



Line Storage Examples

Example 4: Flaking





Eight Common Knots Used on Boats

Commonly Used Knots

Bowline:

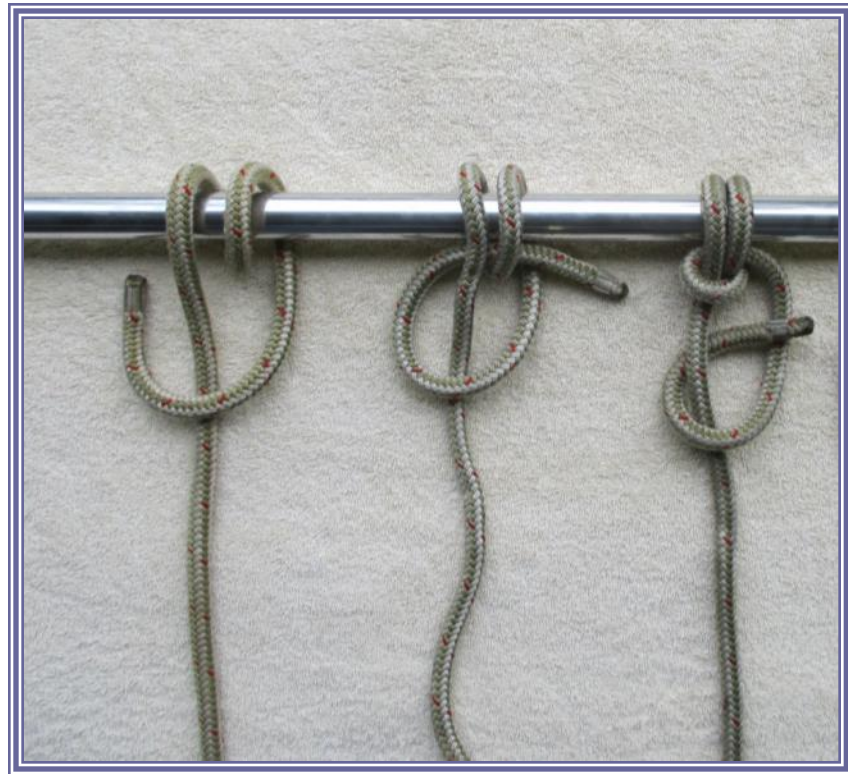
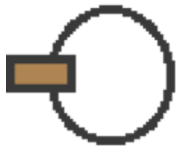
- For tying a loop at the end of a line



Commonly Used Knots

Anchor Bend:

- For tying a line to any ring or rail.



Commonly Used Knots

Anchor Bend: Quick release



Commonly Used Knots

Cleat Hitch:

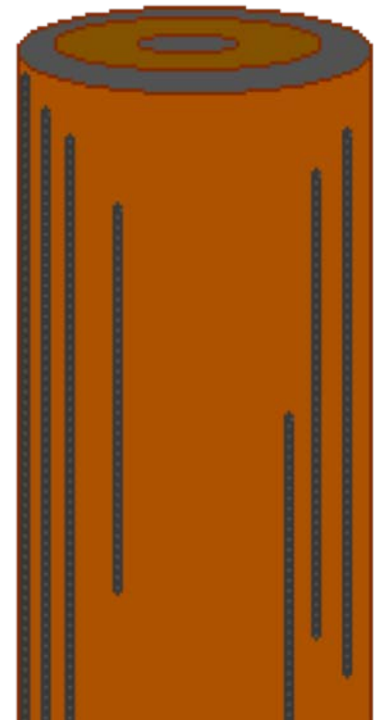
- For tying a line to a cleat



Commonly Used Knots

Clove Hitch:

- For tying a line to a rail or post (must remain under tension)

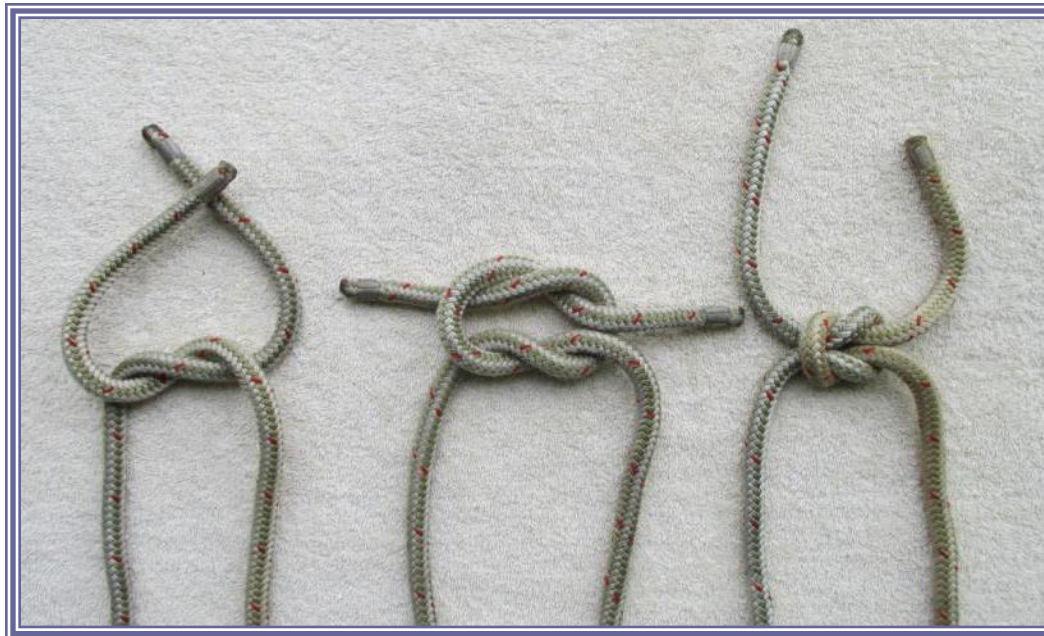


Commonly Used Knots

Square (Reef) Knot:

- For tying together two lines of the same type and diameter.

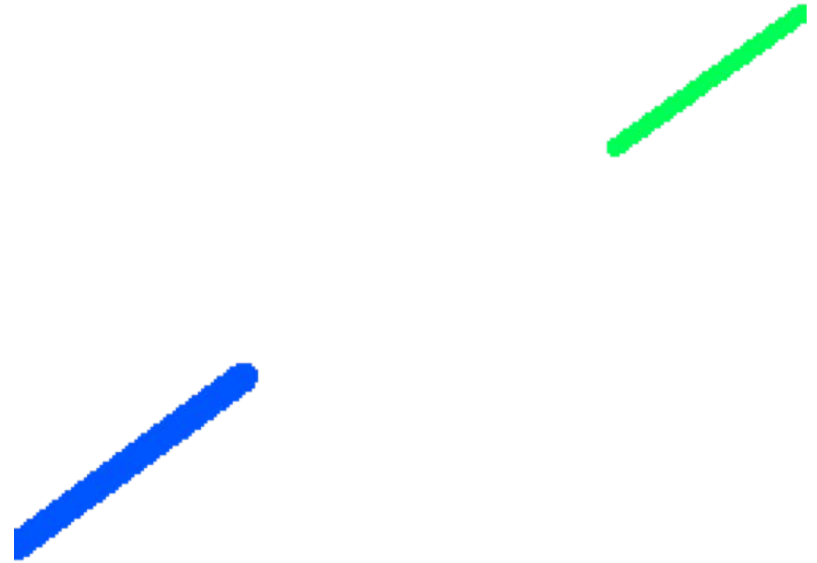
Square Knot



Commonly Used Knots

Sheet Bend:

- For tying two lines with different diameters



Commonly Used Knots

Figure 8:

- For tying a stopper knot (or a loop in the middle of a line if tied on a bight)



Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- For creating a loop perpendicular to the standing part of the line
- One of the stronger of the loop knots



Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- Step 1

Lay the line over
your open palm



Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- Step 2

Make an overhand loop (grasp line and twist away from your body)

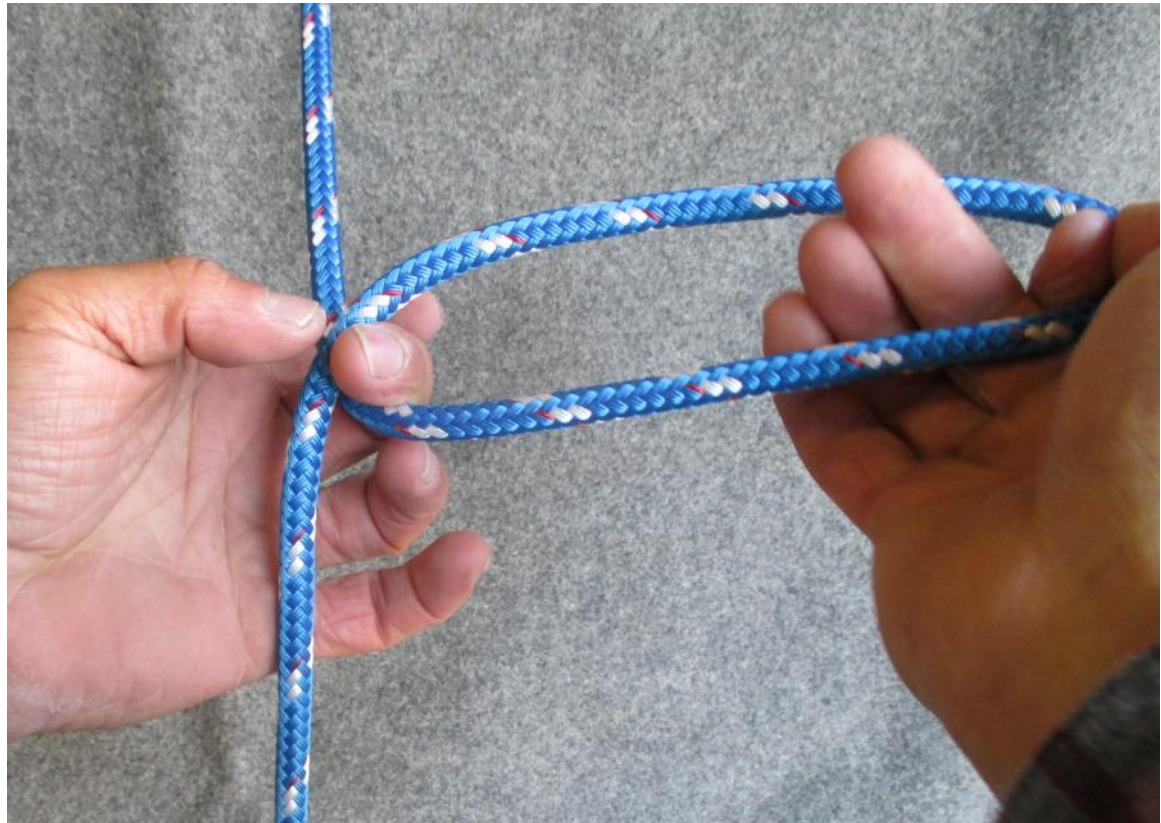


Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- Step 3

Pinch line with thumb and finger to hold lines together where they cross



Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- Step 4

Make another
overhand loop, use
finger to keep first
loop open



Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- Steps 5 & 6

Hold the outer most loop and bring it under the line. Be sure to maintain the first loop with your thumb and finger

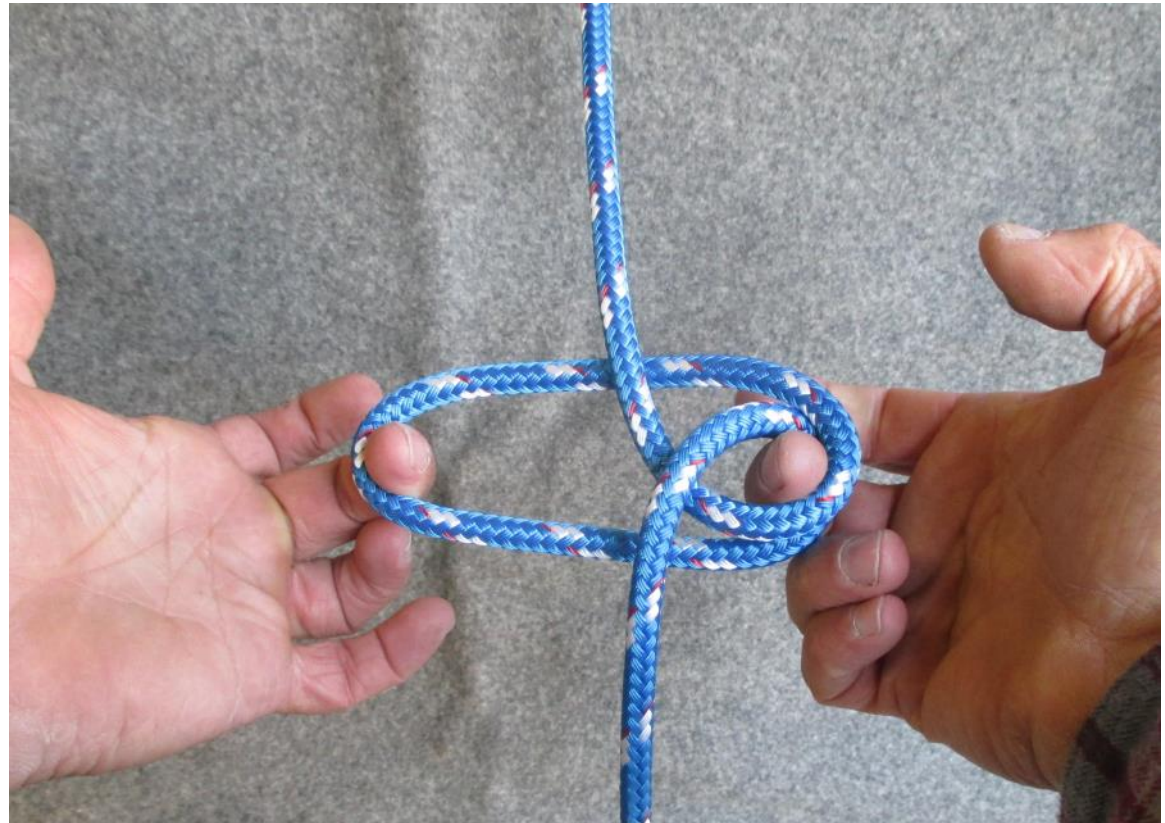


Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- Step 7

Outer most loop is
now under the line



Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- Step 8

Pinch the loop together and insert it into the first loop.



Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- Step 9

Pull loop through, be sure to hold the line in place



Commonly Used Knots

Linemans Loop (Alpine Butterfly)

- Step 10

Tighten all lines to
secure the knot.
Your loop is now in
place.

