

NS100

Fundamentals of Naval Science

Deck Equipment and Marlinespike Seamanship





Mooring Lines

Mooring lines are the lines used to secure the ship to a wharf, pier or another ship.

Definition of lines:

Breast lines - Run at right angles from the ship, control distance of ship from pier

Aft spring lines - Tend aft from ship, control forward movement.

Forward spring lines - Tend forward from the ship, control aft movement

Mooring Lines



Numbering of lines:

- #1 - Bow line
- #2 - Aft bow spring line
- #3 - Forward bow spring line
- #4 - Aft quarter spring line
- #5 - Forward quarter spring line
- #6 - Stern line

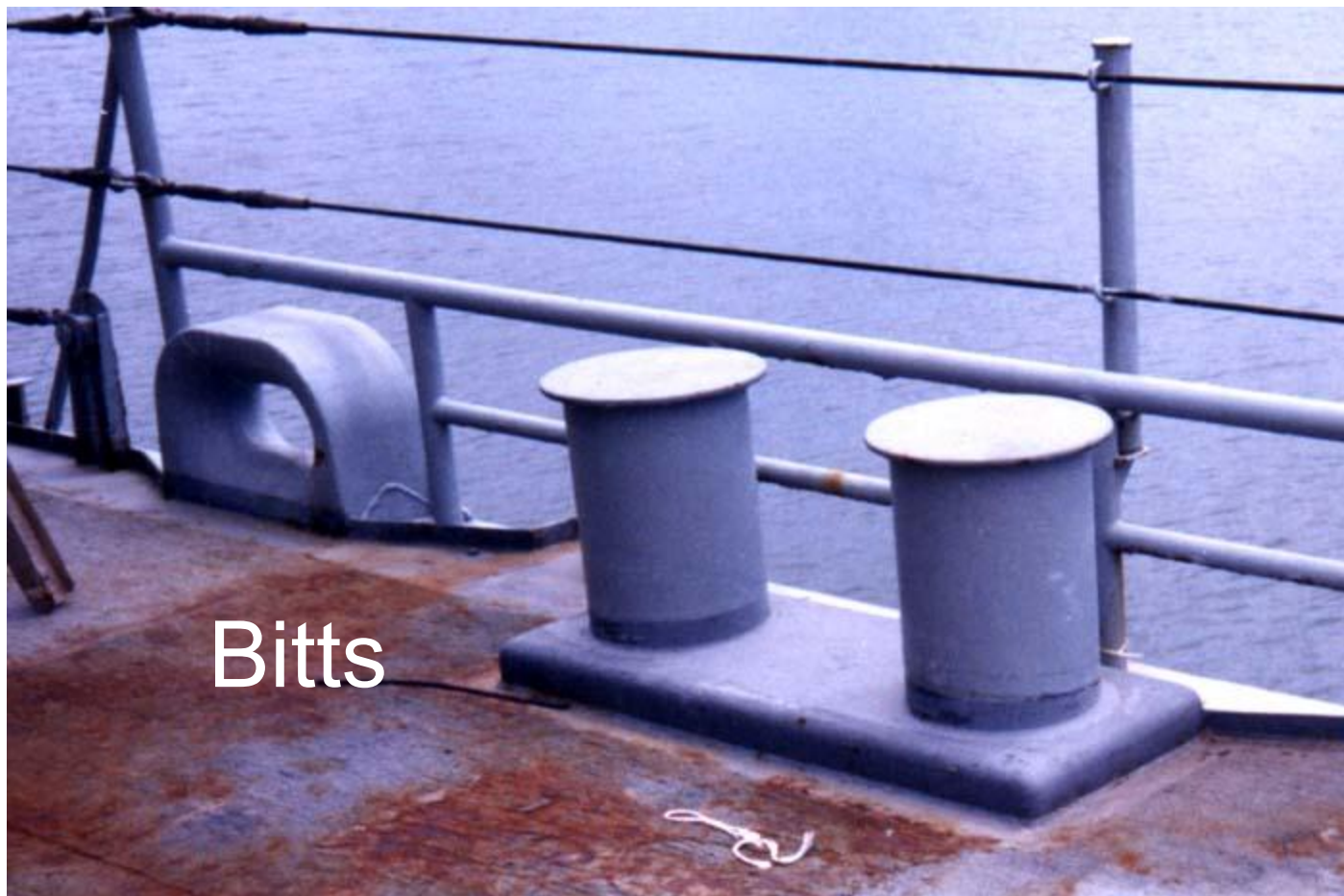
Mooring Lines

- DO NOT MIX MOORING LINE

Never mix lines of different constructions or material . Each type of rope exhibits different elongation characteristics and mixing will result in an unequal load sharing



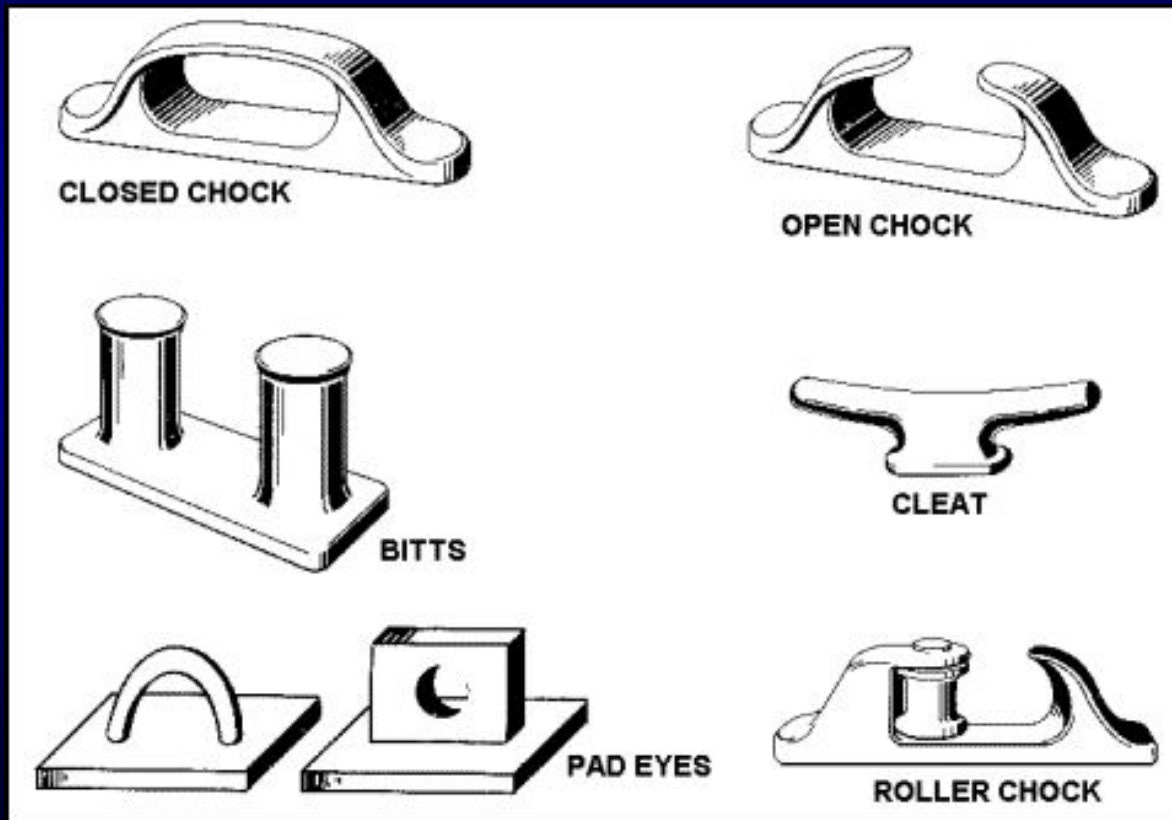




Bitts

Ground Tackle and other Mooring Equipment

Chock



Ground Tackle and other Mooring Equipment

Capstan





COMAR DOUBLING UP RAT GUARD

Rat guards



ALUMINUM ALLOY .125
STANDARD DOUBLING UP RAT GUARD... SELF ADJUSTING.
ACCOMMODATES TWO 10" CIRCUMFERENCE LINES.
LARGER SIZES CAN BE MADE UP SPECIAL TO ACCOMMODATE ANY SIZE LINES.
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Ground Tackle and other Mooring Equipment



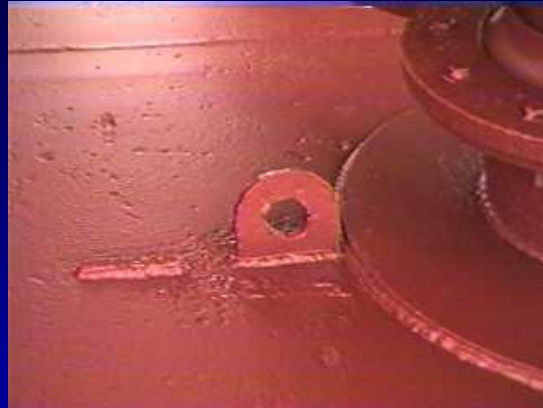
Chafing gear



Fenders

Ground Tackle and other Mooring Equipment

Padeye



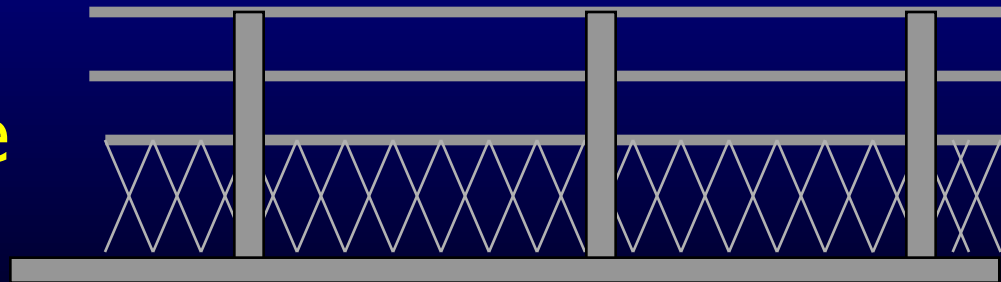
Lifelines - Lines erected around the edges of decks, referred to as follows:

Top - **Lifeline**

Middle - **Housing line**

Bottom - **Foot rope**

Snaking - Netting rigged between foot rope and deck.

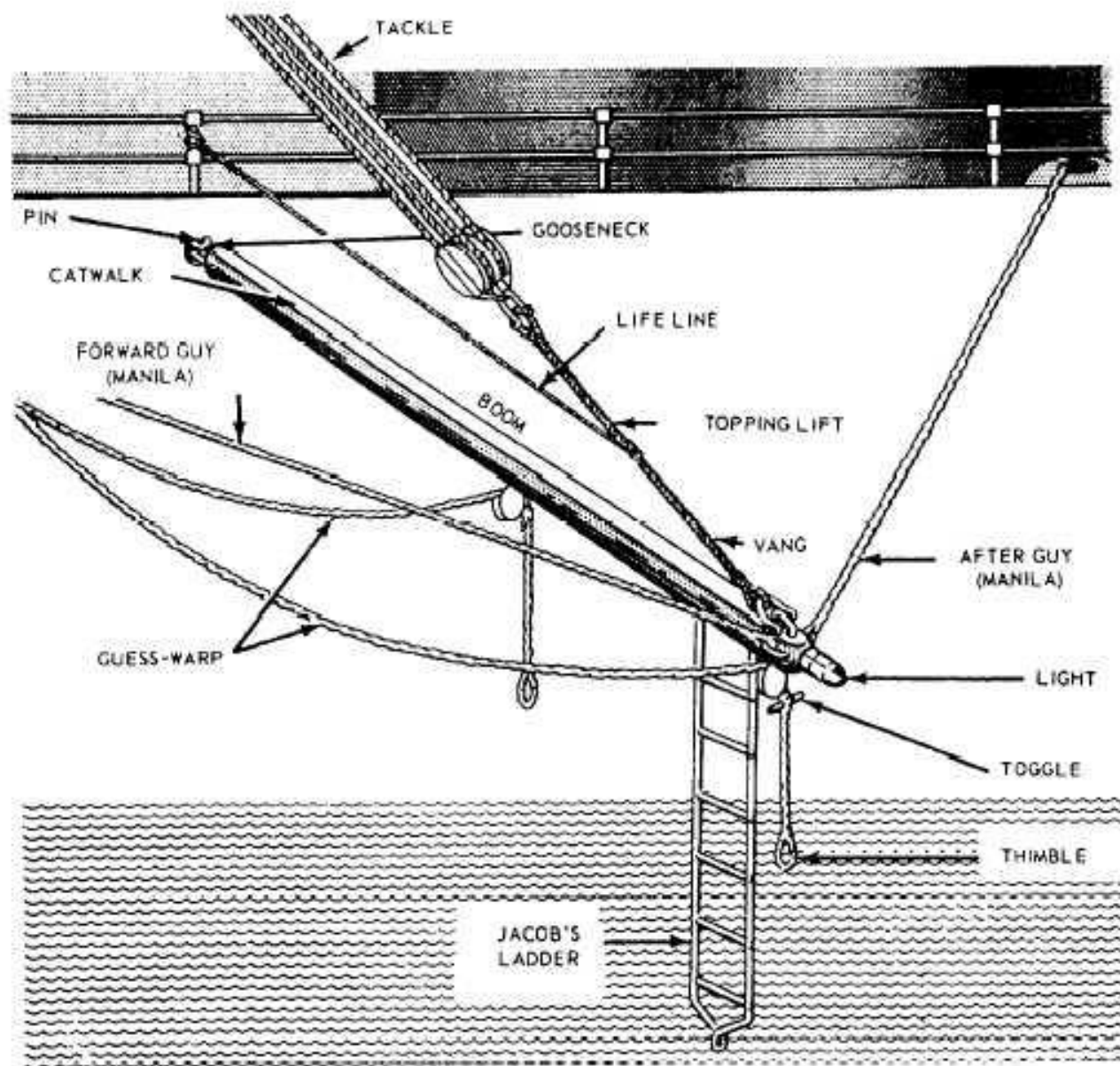


Ground Tackle and other Mooring Equipment

Boatswain's chair



Leadline



Ground Tackle and other Mooring Equipment

Sea ladder Pilot's ladder



Accommodation ladder



Marlinespike Seamanship



Rope and Line

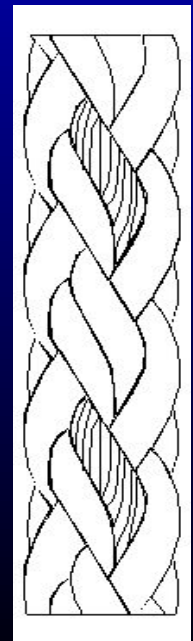
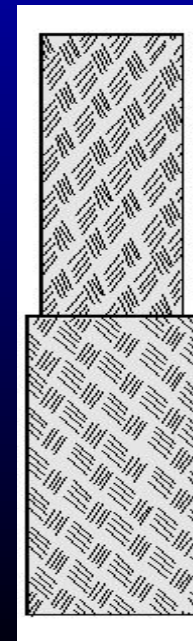
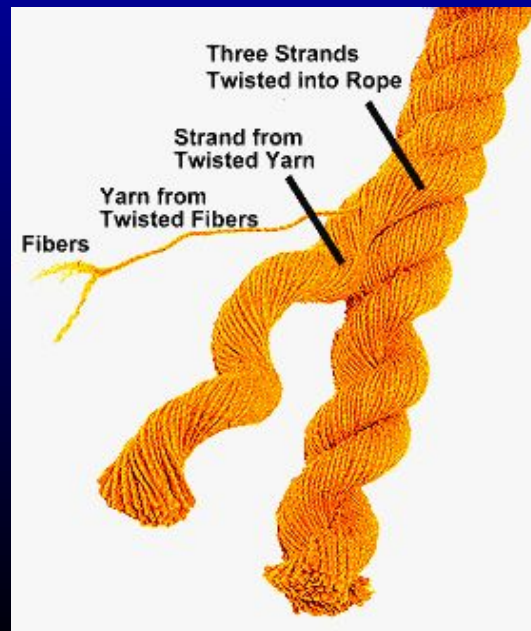
(classification and construction)

Fiber rope - Commonly called “line”, it is fashioned from natural or synthetic fibers

- Measured by **circumference**

- Types of construction:

- Twisted
- Braided
- Plaited



Rope and Line

(classification and construction, cont'd)

Types of fiber rope:

Natural:

- manila
- cotton
- hemp

Synthetic:

- nylon
- polyester
- polypropylene
- Kevlar®



Natural vs Synthetic

(cont'd)

Important differences :

- Synthetic fiber lines slip more easily.
- Synthetic line has higher breaking strength.
- Synthetic line has poor knot-holding characteristics.
- Synthetic lines stretch under load.

Rope and Line

(classification and construction, cont'd)

Wire rope - basic unit of construction is the metal wire.

- Measured by **diameter**.
- **Construction**: individual wires are laid together to form **strands**, and strands are laid together to form the wire rope.

Rope and Line

(classification and construction, cont'd)

Wire rope (cont'd)

- Designated by
 - number of strands per rope, and
 - number of wires per strand.

- example: 6 x 19

6 strands per rope

19 wires per strand

Rope and Line

(classification and construction, cont'd)

Wire Rope (cont'd) -

- large number of small wires produces high flexibility but low abrasion resistance.

- a small number of large wires would stiffer, but more resistant to abrasion.

Rope and Line

(classification and construction, cont'd)

Combination -

- measured by diameter
- six main strands of fiber and wire rope interwoven, laid around a fiber core.
- used as mooring lines for extra strength
- fiber rope adds great flexibility and elasticity

Small Stuff

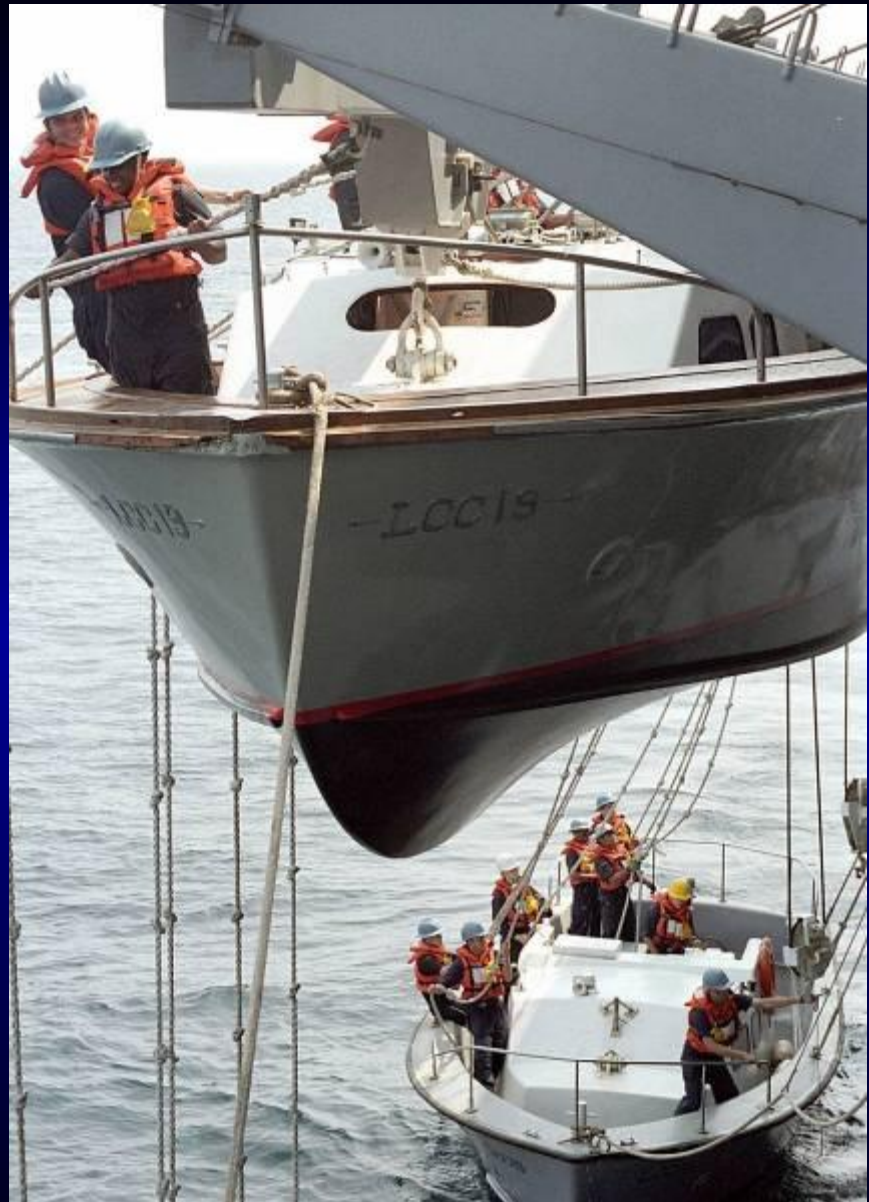
Circumference less than 1 3/4 inches.

ID'd by the number of yarns (threads) rather than its size.

Marline - Two-strand, tarred hemp, used for "serving" a line. (Serving a line means to wrap it with marline to protect it from weather or to make it look neater. Most commonly used on natural fiber lines)

Houseline - Three-strand, left laid tarred hemp for light seizing, light rigging, and work exposed to weather.

MONKEY LINES



Small Stuff (cont'd)

Seizing stuff - Very small, used for fancier jobs that marline can accomplish.

Ratline stuff - Dark brown and coarse, it is primarily used for snaking

Tattletale



Marlinespike Seamanship Terms

Hawser - Heavy line over five inches in circumference. Used for towing or mooring.

Bight - A loop of line or chain.

Bitter End - Free end of a length of line, wire chain or cable.

Marlinespike Seamanship

Terms (cont'd)

Fid



Coil



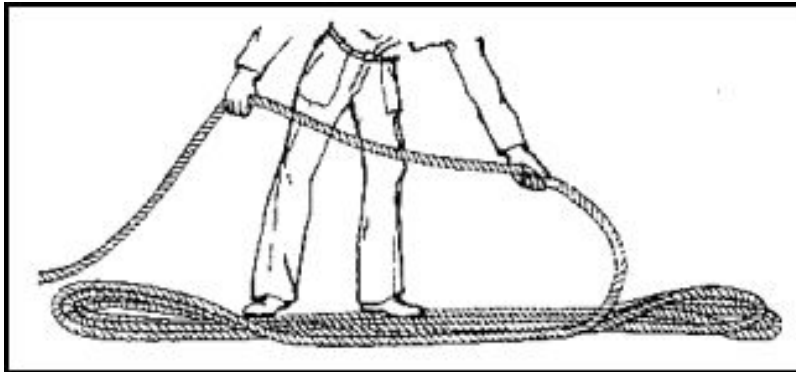
Marlinespike Seamanship Terms

(cont'd)

Flemish



Fake down



Heaving line



Marlinespike Seamanship Terms (cont'd)

Monkey fist



Rat-tailed Stopper - Line designed to take the strain of a working line while shifting the line about bitts or cleats.

Mousing



Marlinespike Seamanship Terms (cont'd)

Shot line - Light nylon line used in a line throwing gun

Bolo - Nylon line with a lead weight in canvas or leather, thrown from ship to ship or from a ship to a pier.

