

Ropes, Knots and Lashings

Resources

Boy Scout Handbook

Pioneering Merit Badge Handbook

Climbing Handbook

iPhone Knot Apps – Animated Knots By Grog, Knots #D ByNynix

Rope Basics

Rope is made by twisting together the stringy fibers of certain plants, or by twisting together or weaving strands of nylon, plastic, or other modern materials.

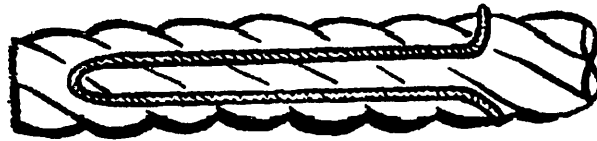
Wear and tear sometimes cause a rope to unravel. For a temporary fix, tie a knot in each end or wrap it with duct tape. For a more permanent fix, whip or fuse the ends.

Whipping

Give each participant a piece of rope that has started unraveling. To whip a rope:

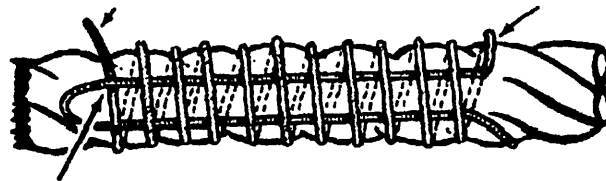
1. Cut off any of the rope that has already unraveled.
2. Take a piece of strong string—preferably waxed and at least 2 feet long—and form a loop with it.
3. Lay the loop near the end of the rope and tightly wrap—whip—the string around the rope.
4. When the whipping is at least as wide as the rope is thick, slip the end through the loop and pull hard.
5. Trim off the excess string, then whip the rope's other end.

Lay the bight along the rope.

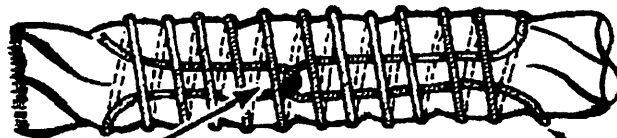


End

Start whipping here.



Lay the last round through the loop.



Pull loop to the center.

Cut here.

Fusing

Plastic or nylon rope and cord melt when exposed to high heat. To fuse a rope:

1. Cut away the frayed part of the rope.
2. Working in a well-ventilated area, hold each end a few inches above a lighted match or candle to melt and fuse the strands together.

Melted rope can be hot and sticky; don't touch the end until it has cooled. Do not try to fuse ropes made of manila, sisal, hemp, cotton, or other natural fibers, because they will burn rather than melt.

Knots and Hitches

Learning how to tie knots takes practice. Carry a piece of cord in your pocket and, several times a day, pull it out and tie the knots you have learned. Practice until you can tie them quickly—even with your eyes closed—and you'll be confident and ready to use them whenever necessary.

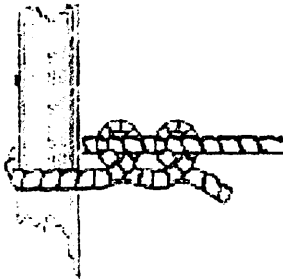
A knot should

- Be easy to tie.
- Stay tied.
- Be easy to untie.

A hitch is a knot that ties a rope to something. Friction caused by the wraps of the rope holds the hitch in place.

Hitches, Knots, and Bends

- Two half hitches. Use two half hitches to tie a rope around a post.



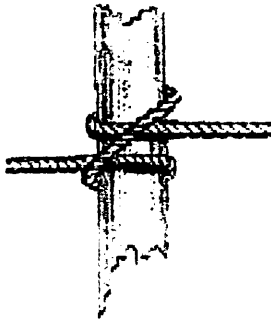
- Taut-line hitch. The taut-line hitch is tied on a line that is tight, or taut. Use the taut-line hitch to tighten or loosen a tent guyline by pushing the hitch up or down.



- Timber hitch. Use the timber hitch for dragging heavy objects such as a log. The timber hitch starts a diagonal lashing, too. When dragging, use a steady motion; slacking and jerking may loosen the hitch.



- Clove hitch. The clove hitch is a widely used knot and can be used to start most lashings. This is the knot for attaching a rope or cord to your bear bag— a bag of food hung from a tree, out of reach of animals. The clove hitch can also be tied by laying the knot over the open end of a pole. Drop one overhand and one underhand loop over the post and draw them together.



- Bowline knot. Properly tied, a bowline never slips or jams. It holds permanent or adjustable loops and may be used to attach a cord to a pack frame, to secure tarps and tents, to secure a line to a canoe, in rescue situations, and in many other ways.



- Sheet bend. This knot works well for tying together two ropes of the same or different diameters. It's similar to the bowline, and it's untied in the same way.



Lashings

Lashings come in handy for binding together timbers or other structures.

- A table keeps food preparation off the ground.
- A tripod holds a washbasin.
- In a pinch, several pack frames lashed together form a stretcher.

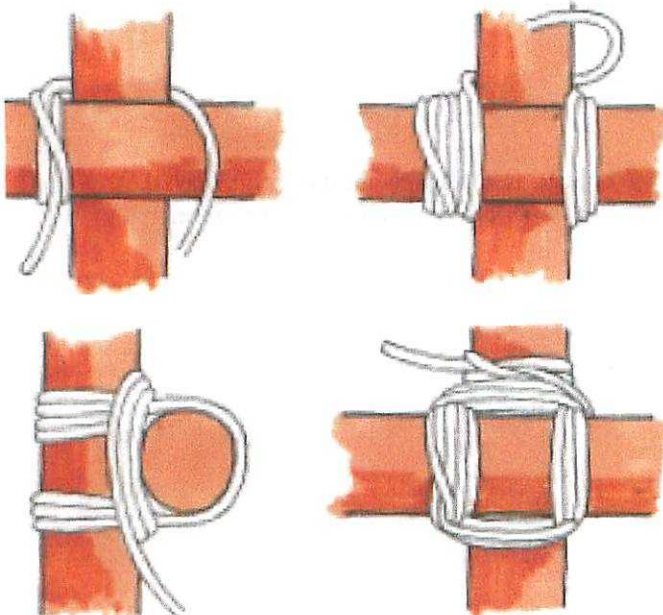
Hiking staffs, or staves, are used as a lashing demonstration tool to emphasize

Leave No Trace camping in not using or cutting live trees.

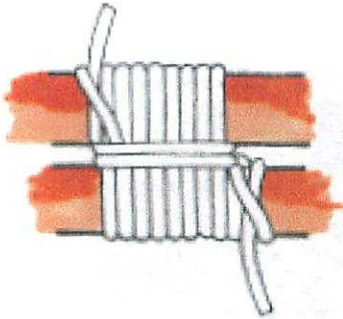
Staves lashed together make excellent emergency stretchers and splints.

Lashings

Traditional Square Lashing

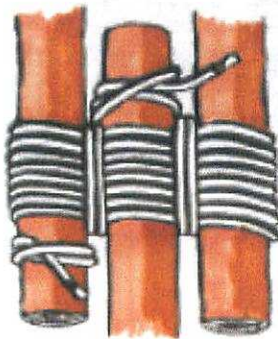


- Shear lashing. Poles secured with a shear lashing can be raised as an A-frame.
- Diagonal lashing. Use the diagonal lashing when it's necessary to bind two poles at an angle other than a right angle.

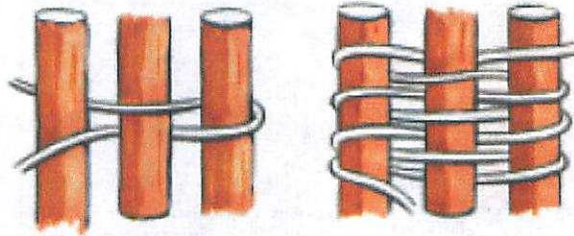


- Tripod lashing. The tripod lashing resembles the shear lashing. It is used for making a tripod or joining together the first three poles of a tepee.

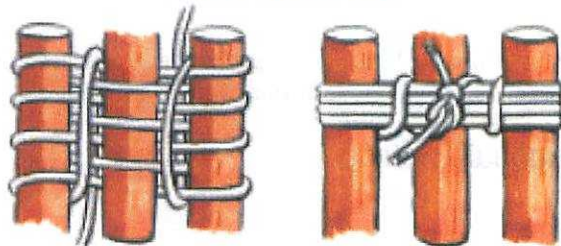
Tripod Lashing



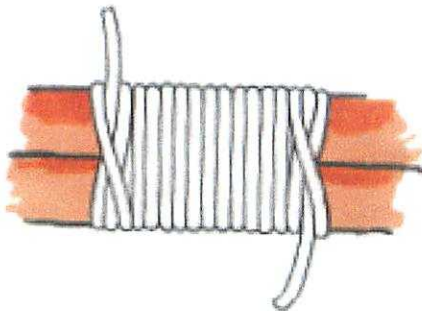
Traditional Tripod lashing



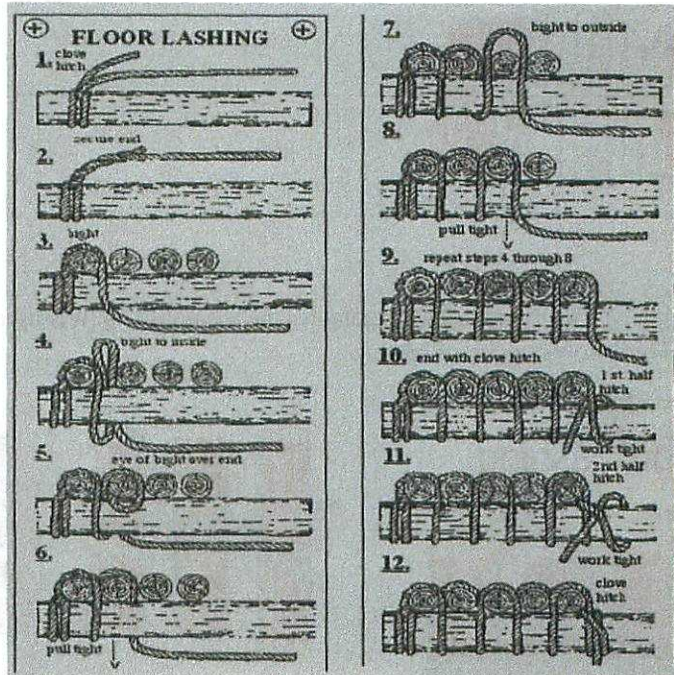
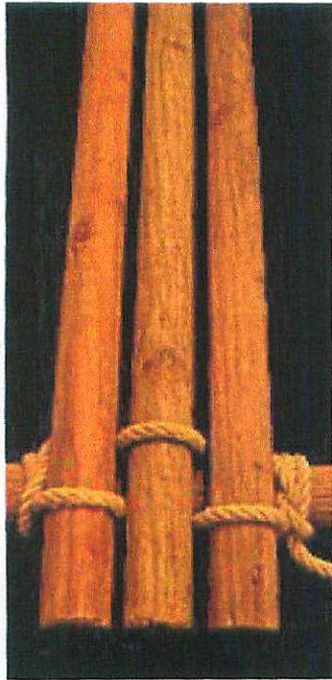
Danish Tripod lashing



- Round lashing. This lashing binds two poles side by side. Since there are no fraps in a round lashing, the wraps must do all the work. Pull them tight. Make a second round of lashing farther along the poles to keep them from twisting out of line.



- Floor lashing. The floor lashing secures tabletops, the deck of a raft, the floor of a signal tower, or the walkway of a bridge.



- Diagonal lashing is used to bind poles together that cross each other at angles that are not 90 degrees and do not touch when their ends are lashed in place in a structure.

Diagonal Lashing

