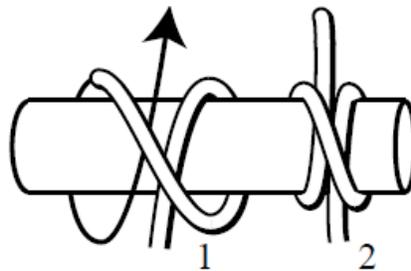


## Level Two – Green Rope

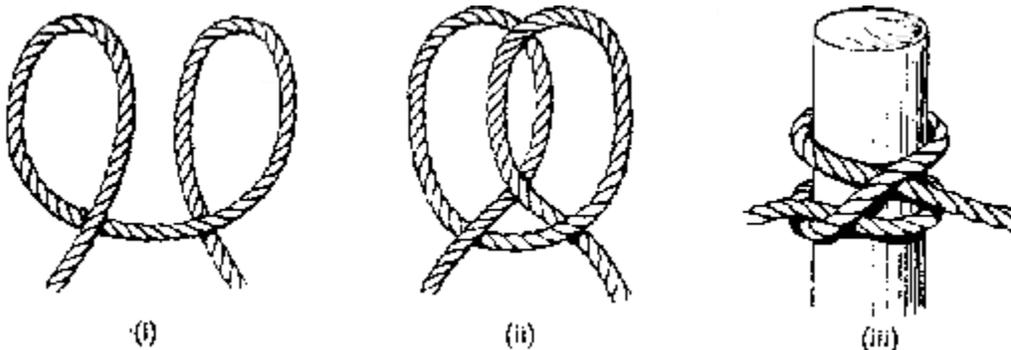
Level Two consists of a combination of two knots (or hitches), all five lashings and the three basic splices. The lashings are essential for pioneering activities and to create camp gadgets, tripods, flag poles, towers, and bridges. Pioneering is a First Class skill that gives you a chance to be an engineer and build something. When you're working with wood there are really only three basic ways to hold two pieces together; penetrating through both pieces with a nail, bolt or peg; joinery (cutting the pieces to fit and lock together like the ends of a log cabin); and tying them together (lashing).

### Clove Hitch



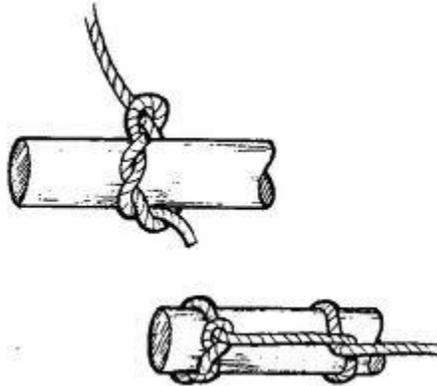
The Clove Hitch (along with the Bowline and the Sheet Bend) is often considered one of the most essential knots. It consists of two identical half hitches made successively around an object. It is most effective as a crossing knot. Although it can be used as a binding knot, it is not particularly secure in that role. Because it passes around an object in only one direction it puts very little strain on the rope fibers. Another way to tie a clove hitch is shown below.

### Clove Hitch on a Bight



Tying the Clove Hitch on a Bight is useful when you need the hitch and you're not using the end of the rope. This is the nearest there is to a general utility hitch. It is easy to tie in a number of different ways, and to untie. It has a wide variety of uses including holding the top of a sack closed.

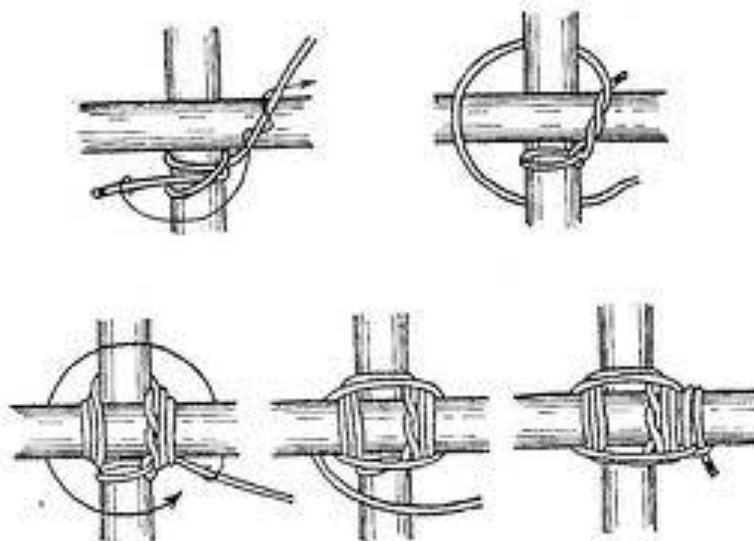
## Timber Hitch



The Timber Hitch is a knot used to attach a single length of rope to a piece of wood. This is an important hitch, especially for dragging a heavy object like a log. It will hold firmly so long as there is a steady pull, slacking and jerking may loosen it. The Timber Hitch is also useful in pioneering when attaching or pulling two timbers together. When it is used for dragging, a Half Hitch should be tied near the front end of the object to help guide it (bottom picture).

To make the knot, pass the rope completely around the wood. Pass the tag end around the standing part, then through the loop that you have just formed. Make three turns around the loop and then pull the standing part to tighten. Take care that you double the rope back on itself before making the three turns or it won't hold. Three turns are recommended for natural ropes such as jute, hemp, sisal or manila. Five turns are recommended for synthetic ropes like nylon or polypropylene.

## Square Lashing



A Square Lashing is used to hold two poles together that cross each other (usually, although not always, at a 90-degree angle). A Square Lashing is used on poles that touch each other. A Clove Hitch is tied on a single pole to begin the lashing. Position the standing part of the Clove Hitch so that the pull of the first lashing is “in-line” with the hitch. You can also twist the tag end of the Clove Hitch as shown in the picture. This will help prevent the Clove Hitch from loosening.

Wrap or lash under and over the two poles three to four times to hold the poles together. Next wrap two or three times around and between the two poles. These are the “frapping” turns and are used to tighten up the lashing. Finish with a Clove Hitch, usually tied on a different pole than the starting Clove Hitch.

## Diagonal Lashing

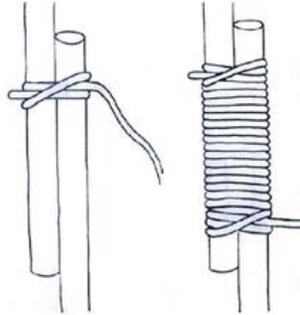


A Diagonal Lashing is used to bind two poles together that cross each other but do not touch (or are likely to be pulled apart) when their ends are lashed in place in a structure (like a trestle). Often used for securing diagonal braces used to hold a structure rigid. The Diagonal Lash is started with a Timber Hitch to pull the two poles together and finished with a Clove Hitch. The lashes form an “X” over the two poles. Naturally, the frapping turns should be tighter than those shown in the picture.

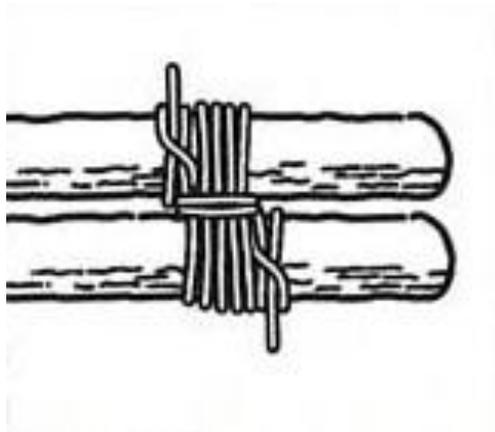
## Round Lashing

Round Lashing is primarily used to make one longer pole out of two or three shorter poles. Round Lashing can also be used to strengthen or reinforce a weak or broken pole by securing a support pole next to the weakened area. Note that Round Lashing does not use frapping turns to tighten the lashing, so the lashing turns must be tight from the beginning. Two Round Lashings are usually required to prevent the poles from “scissoring”. Round Lashing relies on the friction between the two poles secured side by side, as well as the tightness of the rope and the length or number of wraps for strength.

Round Lashings begin and end with a Clove Hitch around both poles together. Although the drawing does not show this well, the Clove Hitch should be tied with the knot portion over one of the two poles, not over the space in the center of the two poles, otherwise it may come loose.



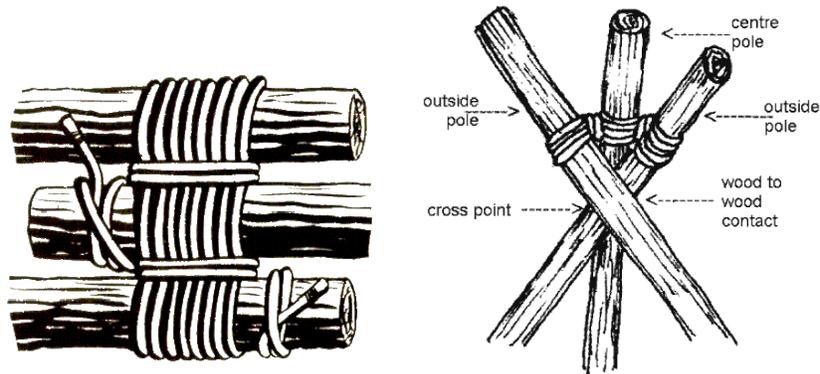
## Shear Lashing



A Shear Lashing is similar to a Tripod Lashing but only uses two poles. The Shear Lashing begins and ends with a Clove Hitch tied on a single pole. Unlike the Round Lashing, you must maintain a space between the two poles when taking the lashing turns so that there will be space for the frapping turns. The frapping turns are used to tighten the lashing. The number of turns taken around the two poles depends on the size of the poles and the rope you're using, but generally four or five wraps will do. Too many and it will become hard to open the poles. Two to three frapping turns are generally enough to tighten the wraps.

A Shear Lashing made near the end of two poles will allow the poles to be opened out and used as an "A" frame to hold up a tent or tarp. Place it further down the poles to form an "X" frame that could be used at each end of a monkey bridge.

## Tripod Lashing



The Tripod Lashing is a Shear Lashing that binds three poles together at the same point. The Tripod Lashing can be used just about anywhere in a structure that three poles cross each other at the same point and the same time in the sequence of construction. The picture on the left shows the center pole with the long end opposite the two outer poles. This is OK but it puts less strain on the rope if all three poles are laid out in the same direction.

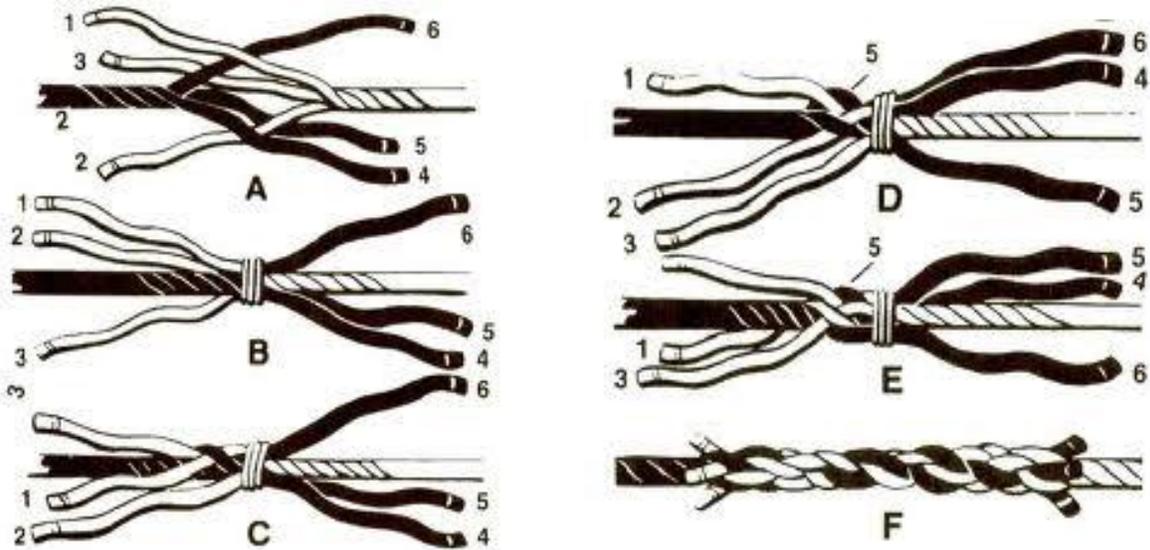
Tripod Lashing takes two main forms; with racked wrapping turns (the rope is woven between the poles) and with plain wrapping turns (the rope is wrapped around the poles without weaving the rope between the poles). When the lashing is made with racking turns the rope contacts each pole around its entire circumference, making the Tripod Lashing with racking turns the most secure form of Tripod Lashing. A Tripod Lashing with racking turns should be used when safety is important, like hanging a heavy Dutch Oven over a fire. However, for light structures where there would be no danger if the lashing slipped, the faster to tie, plain wrapping turns may be used.

## Short Splice

Splicing a rope is an alternative way to join two pieces of rope (instead of using a knot), form a loop or prevent the end of a rope from unraveling. Splicing requires a three or four stranded rope. Splicing relies on the twist or set of a rope, as well as friction, for its strength. A well made splice will generally test higher for strength than a knot.

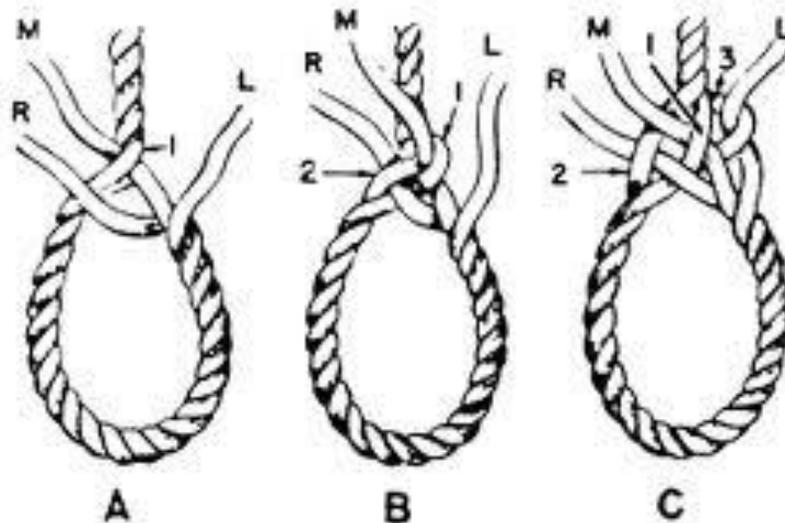
Splicing is basically weaving one piece of rope back into itself or another piece. This is done by un-twisting one of the ropes to separate the strands and form a "loop" that you can pass a strand from the other rope through. Then you pull the strand tight and re-twist the rope. After going under one strand, you go over the next strand, and under the one after that. You do the same thing with all three strands of both ropes, and in both directions (for the Short Splice). Make sure that two strands next to each other don't go under or over the same strand on the other rope. The weaving process is repeated until you have gone back against the rope a minimum of three times, more is better, but more than five or six is a waste of time.

There are a couple of ways to finish a splice. One is just to stop the splice, leaving the ends exposed, whip them or cut them off short. Be careful not to cut them off so short that they come un-tucked. Another way is to cut out about half the thickness of each strand after you've completed three weaves. Continue to weave the half strand through another weave. This gives a tapered finish to the final splice.



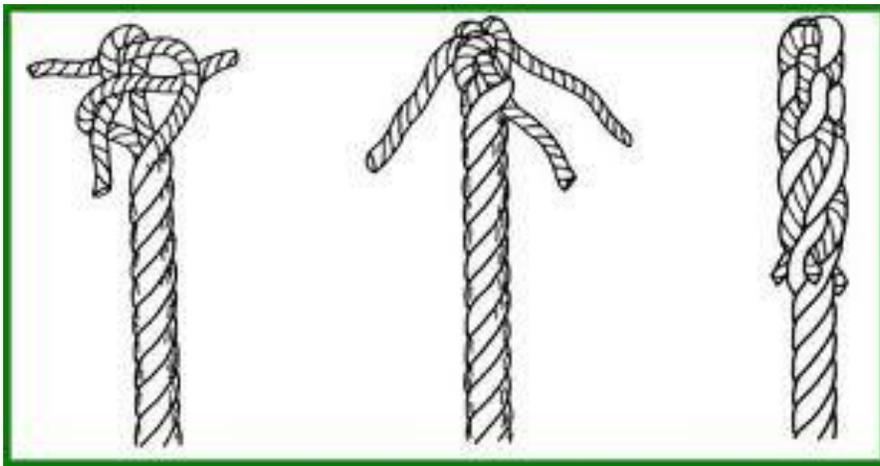
Until you learn to splice, tying the two ropes together temporarily as shown in the illustration (just to hold them together while you're working) will make the whole process much easier. After completing one or two weaves back against both ropes remove the tie and pull each strand tight.

## Eye Splice



The Eye Splice is used to form a loop at the end of a rope without tying a knot. To begin the Eye Splice unravel enough of the tag end of the rope for the splice and bend the rope back on itself (the standing part) to create an eye of the size you want. Untwist the rope in this location and begin the weaving process described for the Short Splice. In the picture above, the strands in the tag end are identified by capital letters L, M, R (think of them as Left, Middle, Right even though the L and R are on the wrong side) and the loops on the standing part are numbered 1, 2, 3. It's easier to complete the tuck shown in part "C" of the picture if you flip the whole thing over to the "back side". Complete a minimum of three to four weaves and finish off.

## Back Splice



The Back Splice is also known as the End Splice. Its purpose is to prevent the rope from fraying but it makes the spliced end thicker than the original rope. For this reason the Back Splice is not used frequently. Whipping the end of a rope accomplishes the same thing and is quicker. However, if you don't have a small piece of twine handy, or thickness at the end of the rope is not a problem, the Back Splice is very effective.

Tying the Back Splice begins with tying a Crown Knot (shown on the left side of the picture above). The Crown Knot secures the end of the rope and directs the three strands back against the rope. Unravel enough rope to make the splice and tie a Crown Knot. Weave the strands of the rope back against itself as described for the Short Splice. Complete three weaves and finish off. A tapered finish is a better choice for a Back Splice than just cutting the strands off.

Creating a neat splice will be difficult at first, but splicing is really not that hard. Always remember, "Practice makes Perfect"!