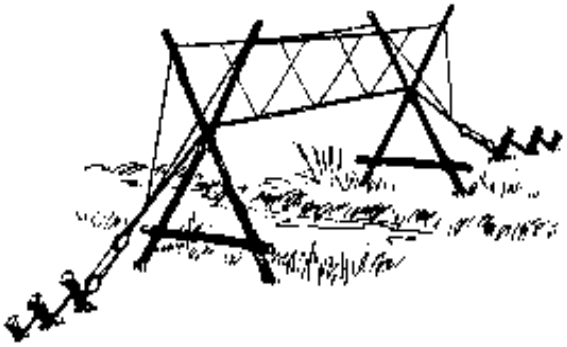
Lashings



Pioneering structures are built using a series of knots know as lashings. Lashing is a method of 'wrapping', or binding, the rope around the spars. The binding of the spars coupled with frapping - binding between the spars so as to tighten the bindings - creates the lashing.

There are four types of lashing - square, diagonal, sheer, tripod. Each lashing has a specific use and its strengths are best realised by using the correct lashing at each stage of the project.

When lashing spars together it is important to use ropes of the correct thickness and length. For staves and spars up to 30 mm in diameter, use sisal. For spars up to 75mm in diameter, use light rope.

As to length, 1 meter of rope for each 25mm of the combined diameter of the spars. For example, when using timbers of 75mm - 100mm spars you will need approx. 7 metres of rope per lashing.

Square lashing

The square lashing is used whenever spars cross at right angles to each other. There are three common types of square lashings:

- the traditional square lashing;
- the Japanese square lashing;
- the Norwegian square lashing.

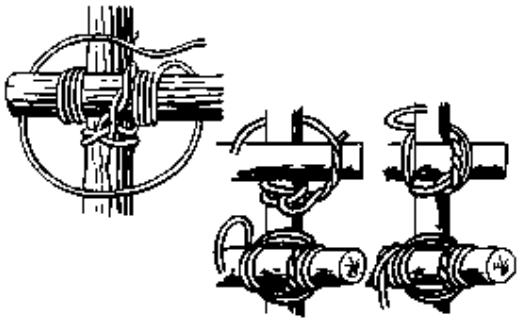
Each have there own merits. However, it is easier to tie the Japanese and Norwegian lashings.

It is debatable as to the difference in strengths of each lashing as there are too many factors at play to do a comparative study:

- the type of spars used;
- the friction that is created between the spars;
- the knot maker and his/her personal strength in which to tighten the knot;
- the design of the structure used.

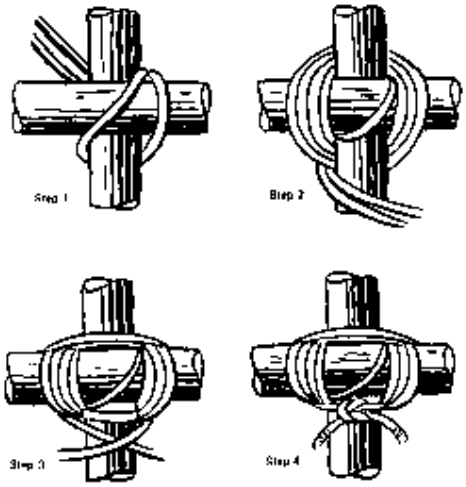
So whichever one you use is a matter of personal choice.

Traditional square lashing



This lashing is started by tying a clove hitch to the upright spar and under the spar crossing it. The lashing is then bound as shown completing 3 - 5 turns, with the bindings side by side. Frapping turns should then be applied between the spars so as to tighten the bindings. The lashing is finished with a clove hitch around the cross spar.

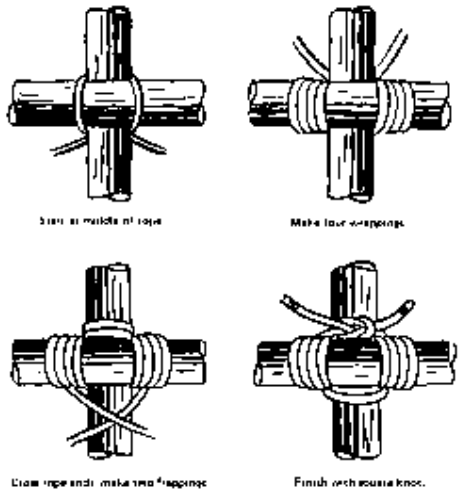
Japanese lashing



This lashing is applied by halving your lashing rope and placing a loop around the upright spar below the cross spar. The two ropes are then bound around the spars in the same method as the tradition lashing except the double rope is used.

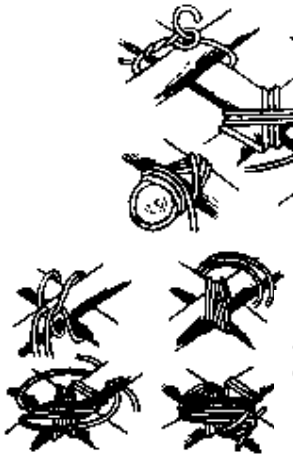
When the frapping has to be applied, the double rope is split. Each end has frappings applied by crossing over each rope. One of the advantages of frapping this way is that you are able to get the frapping turns tighter because you are pulling against each other. The lashing is finished by tying a reef knot in the two ends of the lashing rope.

Norwegian Lashing



The Norwegian method of lashing again uses a doubled rope. In this lashing, however, we use the method of pulling against each other, as used in the frapping turns of the Japanese method, throughout the lashing process. The lashing is finished with a reef knot to tie the two ends together.

Diagonal lashing

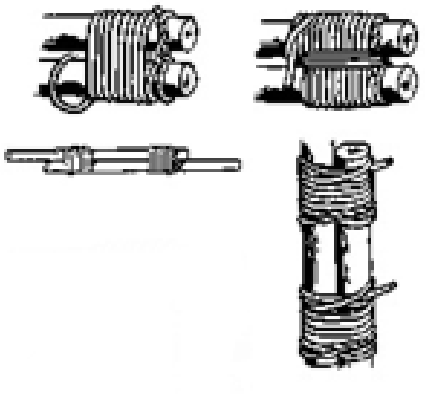


Filipino Lasing – an alternative diagonal lashing using doubled rope.

The diagonal lashing is used to 'spring' two spars that do not touch together where they cross. Begin with a timber hitch around both spars. Tighten it to draw the two spars together. Three or four binding turns are made around one fork, four more around the other fork. The turns should be beside each other not on top of each other.

A number of frapping turns should then be made between the spars to tighten up the lashing bindings. Finish the lashing with a clove hitch.

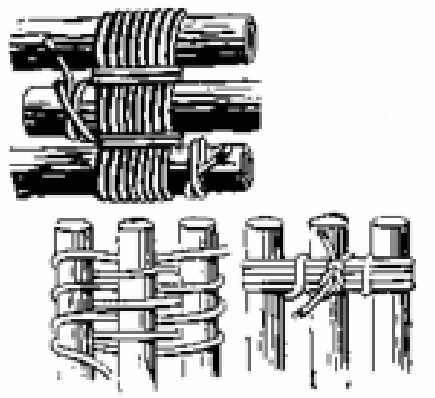
Shear lashing



The shear lashing is used to lash two spars together that will ultimately be spread apart to form shear legs, used in a number of pioneering projects. This lashing can also be used to join two spars together so as to give a longer spar. When the lashing is used in this way you need to tie two lashings, one at each end of the joint.

The lashing is made by making a clove hitch around one of the spars and then binding the two spars together by a number of turns side by side, usually about eight turns. When the binding is complete, a number of frapping turns are tied between the spars, finishing the lashing with a clove hitch around the second spar. You can now open the spars to form your shear legs.

Tripod lashing



The tripod lashing is used to create a tripod with three spars. Begin the lashing by placing the three spars side up side ends to ends butts to butts.

Start with a clove hitch on one of the outside spars and weave the rope around the spars in a figure of eight motion. There should be eight or so bindings side by side before you should apply a number of frapping turns between each spar. Finish the lashing with a clove hitch on the opposite outside spar.

The three spars should then be lifted upright before the legs are spread. This lashing, unlike others, must not be over tight otherwise it will not be possible to spread the legs correctly.