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KNOTS, LASHINGS & STRETCHERS

Lt. Dr. A. Edward Samuel, Associate NCC Officer, 1 Coy, 8 TN BN NCC, GAC(A), Kumbakonam

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LESSON PLAN

FC&BC 5

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Introduction

The ability to join two pieces of natural material together, and so increase their length, gives man the ability to make full use of many natural materials found locally. Knot tying is a useful exercise to obtain better coordination between eyes and fingers.

Knots

A brief description of the use to which the knot may be put is given in this lesson. The diagrams will explain how the knot is tied. The letter "F" means the free or untied end of the rope, and the letter "S" means the standing or secured end.

KNOTS FOR ROPE ENDS OR FOR GRIPS ON THIN ROPE

TYPE OF KNOT

Thumb Knot

To make a stop on a rope end, to prevent the end from fraying or to stop the rope slipping through a sheave, etc.

Sample



Overhand Knot

Over hand Knot may be put to the same use as the thumb knot. It makes a better grip knot, and is easy to undo.

Sample



Figure Eight

This knot is used as the thumb knot, is easy to undo, and more ornamental.

Sample



Knots of Joining Ropes

Sheet Bend

To join or bend two ropes of unequal thickness together. The thicker rope is the bend.

Sample



Double Sheet Bend

Similar to single sheet bend, but gives greater security, also useful for joining wet ropes.

Sample



Crossover Sheet Bend

This holds more securely than either the single or double sheet bend and has occasional real uses such as fastening the eye of a flag to its halyard where the flapping might undo the double sheet bend.

Sample



Reef Knot

To securely join two ropes of equal thickness together.

Notice the difference in position of the free and standing ends between this and the thief knot.

Sample



Thief Knot

To tie two ropes of equal thickness together so that they will appear to be tied with a reef knot, and will be retied with a true reef knot. This knot was often used by sailors to tie their sea chests, hence the name..

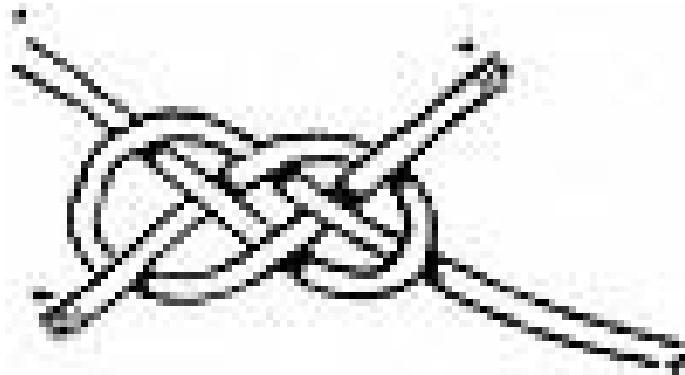
Sample



Carrick Bend

This bend is for the secure fastening of two ropes of even thickness together. It is particularly suitable for hawsers and steel cables. It can be readily undone and does not jam, as do many other bends and knots.

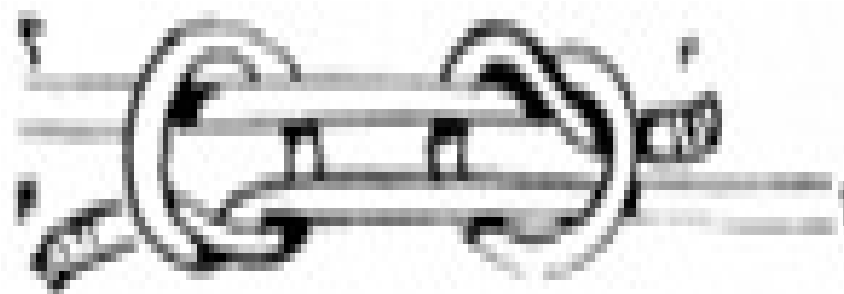
Sample



Fisherman's Knot

For joining two springy materials together; suitable for wire, fishing gut or vines. Two thumb knots (one on each rope) pulled tight. The knots lock together.

Sample



KNOTS TO MAKE LOOPS IN ROPE

Bowline

To form a loop that will not slip on a rope end.

Sample



KNOTS TO MAKE LOOPS IN ROPE

Bowline on a Bight

To make a double loop that will not slip on a rope end.

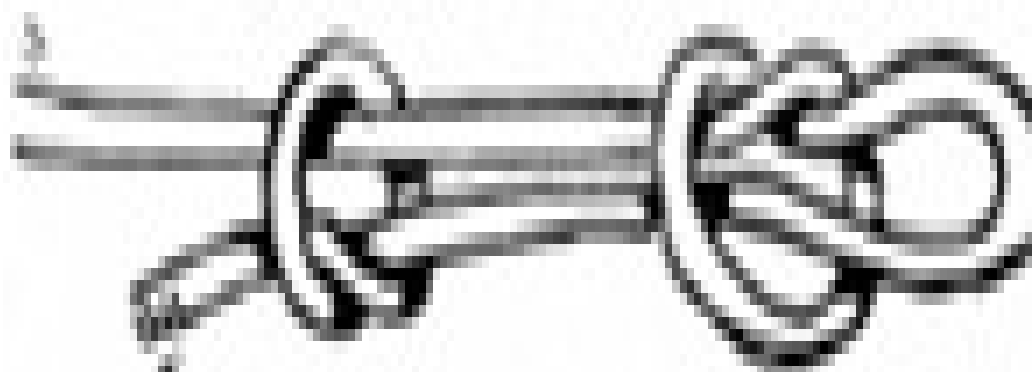
Sample



Fisherman's Eye Knot

This is the best method of making a loop or eye in a fishing line. The strain is divided equally between the two knots.

Sample



KNOTS FOR FASTENING ROPES

Slippery Hitch

Very useful because of the ease with which it can be released in emergency. It holds securely for so long as there is a strain on the standing end.

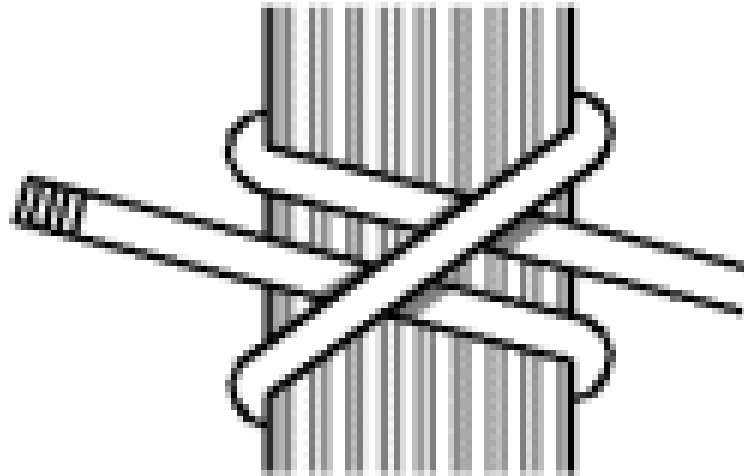
Sample



Clove Hitch

For securing a rope to a spar. This hitch, if pulled taut, will not slip up or down on a smooth surface. A useful start for lashings.

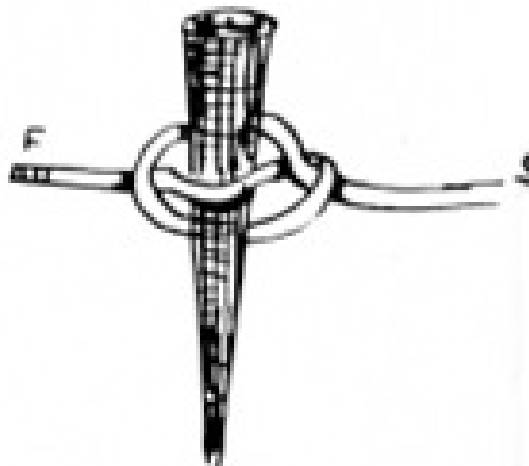
Sample



Boat Knot

This is a method of securing a rope to a hole pin or other small piece of wood on a boat. It is quickly released.

Sample



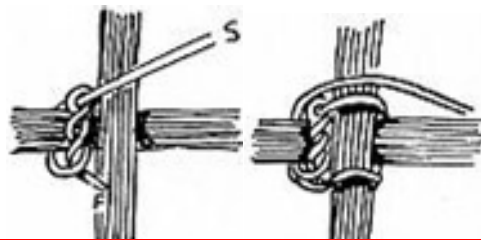
Double Boat Knot

A bight is simply passed through the ring and a marlin spike or other round piece of wood is put between the bight or the rope. Withdrawal of the spike quickly releases the knot.

LASHING:

The methods employed to tie with ropes poles or any rope to a stationary object to securely hold it in place is known as lashing.

(a) **Square Lashing:** to join poles at right angles. Start with a timber hitch or a clove hitch below cross bar. If using a timber hitch see that the pull is straight through the eye and not back from it. Pulling back will cut the lashing material. Put lashing material tightly around upright and cross bar about four complete times.



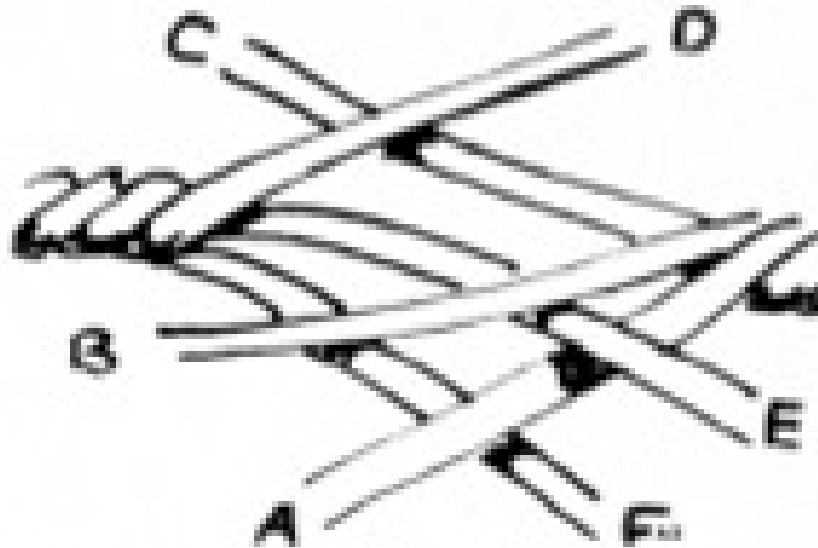
(b) Frapping turns:

Make about two or three frapping turns. These are turns that go round the lashing and pull it taut. These pull the lashing tight. Secure end of frapping turns either by half-hitches or by passing between lashing at the crossover and secure with a half hitch. Diagonal Lashing: for bracing or joining spars at irregular angles.

Splices

(a) **Short Splicing**: Un lay the strands and marry them together; butt hard up to each other. The strand **D** first goes under the standing end of **A**, but over strand **B** and over **C** on the standing end. Thus each strand at either end goes over one strand of the standing end on the opposite side and under the next strand, so that there is a strand of the standing end between each short side of the splice.

Continue working the free strand of each end four or five times into the strands of the standing end.



(b) Long Splicing: The strands are unlaied for a considerable length and then married as for the short splice. Then the one strand is unlaied and its married counterpart is laied along its place in the rope. The two centres are simply held with a crossover knot, and the strands thinned down and spliced as for a short splice. The end strands are finished with a crossover knot and again the strands are thinned down and finished as for a short splice.

This long splice does not appreciably thicken a rope which may be thus spliced to go through a sheave.

Stretchers

A stretcher, litter, or pram is an apparatus used for moving patients who require medical care. A basic type (cot or litter) must be carried by two or more people. A wheeled stretcher (known as a gurney, trolley, bed or cart) is often equipped with variable height frames, wheels, tracks, or skids.

Basic stretchers

(a) Simple stretchers are the most rudimentary type.

They are lightweight and portable, made of canvas or other synthetic material suspended between two poles or tubular aluminium frame. Many are stored as disaster supplies and are often former military equipment.



(b) The scoop stretcher is used for lifting patients, for instance from the ground onto an ambulance stretcher or onto a spinal board. The two ends of the stretcher can be detached from each other, splitting the stretcher into two longitudinal halves. To load a patient, one or both ends of the stretcher are detached, the halves placed under the patient from either side and fastened back together.



(c) The litter, also known as a rescue basket or Stokes basket, is designed to be used where there are obstacles to movement or other hazards: for example, in confined spaces, on slopes, in wooded terrain. Typically, it is shaped to accommodate an adult in a face up position and it is used in search and rescue operations. The person is strapped into the basket, making safe evacuation possible.



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The litter has raised sides and often includes a removable head/torso cover for patient protection. After the person is secured in the litter, the litter may be wheeled, carried by hand, mounted on an ATV, towed behind skis, snowmobile, or horse, lifted or lowered on high angle ropes, or hoisted by helicopter.



(d) A Reeves Sleeve, SKED, or "flexible stretcher" is a flexible stretcher that is often supported longitudinally by wooden or plastic planks. It is a kind of tarpaulin with handles. It is primarily used to move a patient through confined spaces, e.g., a narrow hallway, or to lift obese patients. Reeves stretchers have six handholds, allowing multiple rescuers to assist extrication.

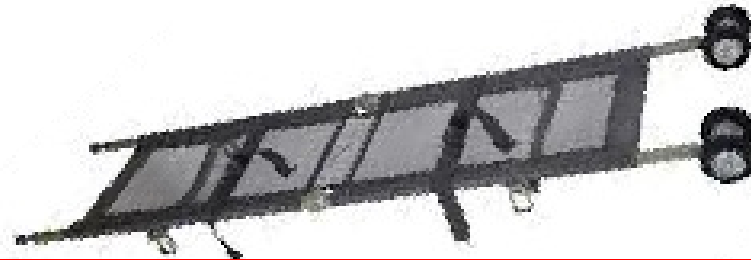


(e) The Wouk board is also designed for use in small spaces. The patient is secured to the board with straps. It has two wheels and a foldable footrest at one end, allowing the patient to be moved by one person, much as with a hand truck for moving cargo. It can also be used at a variety of angles, making it easier to traverse obstacles, such as tight stairwells.



10. Wheeled stretchers

For ambulances, a collapsible wheeled stretcher, or gurney, is a type of stretcher on a variable-height wheeled frame. Normally, an integral lug on the stretcher locks into a sprung latch within the ambulance in order to prevent movement during transport, often referred to as antlers due to their shape.



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It is usually covered with a disposable sheet and cleaned after each patient in order to prevent the spread of infection. Its key value is to facilitate moving the patient and sheet onto a fixed bed or table on arrival at the emergency department. Both types may have straps to secure the patient.



11. Other types of stretchers

The Nimier stretcher (*brancard Nimier*) was a type of stretcher used by the French army during World War I. The casualty was placed on their back, but in a "seated position", (that is, the thighs were perpendicular to the abdomen). Thus, the stretcher was shorter and could turn in the trenches.

This type of stretcher is rarely seen today.



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CONCLUSION

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Knots, lashings and stretchers are very useful and become very handy for cadets during camps. They can make use of knots for joining or tying 2 to 3 different ropes together and make use of it during rope climbing, rappelling, slithering and other such adventure activities. Similarly, lashings can be used for joining 2 or 3 things together to make a structure that can be useful in camps. For evacuation of any injured or casualty stretchers are important to be known and used.

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THANK YOU



JAI HIND

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