

Skill Booster

SKILLED SCOUTS HAVE MOST FUN

Iss 5 1 JULY 2020



Knots, Ties & Ropework



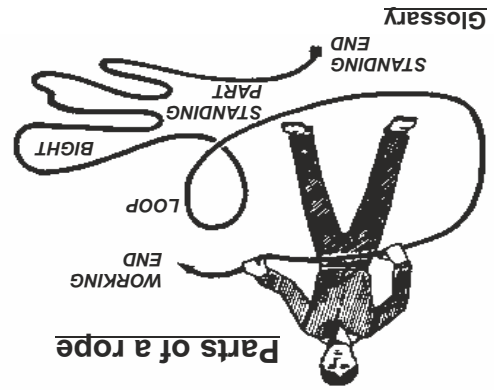
Scouts

Harpenden, Wheathampstead and Kimpton Scout District

Ray Vassie

Successful demo ropes
Only some kinds and sizes make good demo ropes. Below 6mm diameter knots become too small, above 10mm hitches, for example, need big spars to form correctly. Soft ropes are lifeless and choke a knot's identity; hard ropes can be stiff, reluctant to form and lack friction. Ropes that kink and curl interfere with identity and flow. Multi-coloured ropes also break up identity. Choose single colour rope that works freely, looks attractive and enhances the knot. A second colour can be useful for bends. Pay special attention to rope ends: a good finish signal that standards matter. Prefer three strand to plaited ropes. 1200 to 1500mm is about the right length.

Most knots need shaping
Few knots form automatically; most need setting during or after the tie. When expert, the process is practically invisible so trainers should help scouts by showing the steps. Rope ends are also part of the knot; too short is dangerous, too long is clumsy. Hitches often require a long enough rope end for gravity to stabilise.



Glossary
Knot Any arrangement tied solely in the rope.
Bend Ties two ropes together.
Hitch Ties rope to ring or spar.
Splice Join by tucking strands into rope's lay.
Whipping Twine binding at rope's end.
String Small stuff in which knots jam.
Rope Recoverable and valuable asset.
Flaking Laid out, folded, but no bights touch.
A round 360 degree turn around post.
A turn 180 degree turn around post.

Round, turn and two half hitches
The two half hitches rarely jam under load since the main force is taken by the round-turn on the ring or spar.

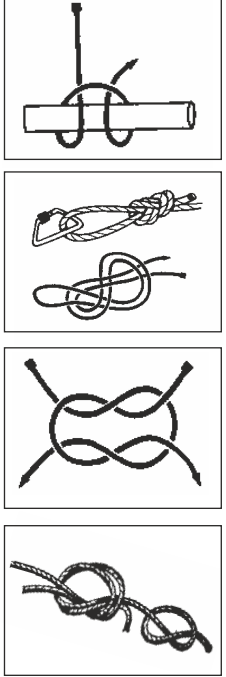
Fisherman's bend
First half hitch is passed through the round-turn to make a very secure hitch. Although more secure, the knot is apt to jam after heavy loading.

A4

How to fold Skill Booster

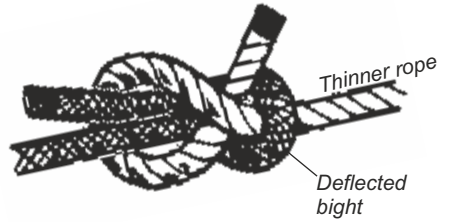
References: Admiralty Manual of Seamanship 1964; Knots, Ties and Splices, Irving; The Knot Book, Budworth; The Ashley Book of Knots, Ashley; Pioneering, Gilcraft. First published: rv Aug' 2004.

Features of good knots
 Ropes are deployed and then recovered. Knots should do the work required and do no harm to the rope. In particular, knots should have:
Simplicity: Fast to learn, fast to tie.
Identity: Team leaders need to see at once that knots are correct.
Security: (Always a judgement). Known knots correctly applied can be trusted.
Kind to rope: Even proper knots can damage rope. The tier has the responsibility to protect the asset.
Undoability: Most knots will undo easily after loading if correctly applied. If they jam, something went wrong! Look for the deflected bight within the knot and prevent extreme forces closing all air gaps. (More turns or half hitches, increase rope diameter, share the load, etc).



Commonly known knots
Overhand knot (Thumb knot)
 Best for string. It will jam. It will damage rope!
Reef
 Flat and simple. Not stable in hard rope. It will jam. Use for string and bandages. The first part, (hold tension) then, finish second part.
Figure 8
 Excellent flat, secure knot favoured by climbers. Often permanent.
Larks head
 Tie in the bight on rings, etc. Simple and effective.

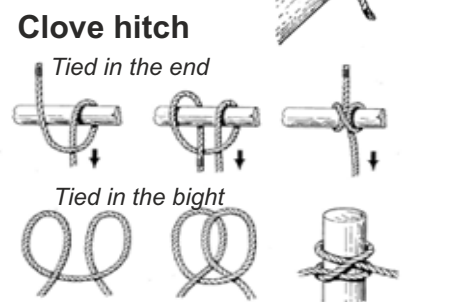
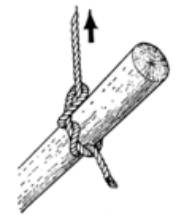
Sheet bend
 Unlike the reef, the sheet bend is stable and has a deflected bight that ensures easier untying. If the ropes are unequal sizes, make the tuck in the thinner rope.



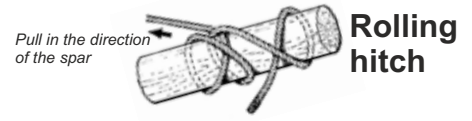
Double sheet bend
 Another turn gives greater security and prevents the bend over-tightening under heavier loads.



Timber hitch
 Simple, very secure and never jams. Use to start lashings, e.g.



The **Clove hitch** is at its best when both ends are pulled. It rarely jams.
 The **Rolling hitch** is used when the pull is single ended and from one side. (Two turns on the side of the pull).

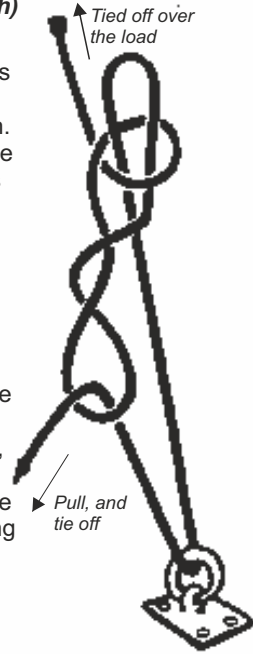


Harvester's hitch

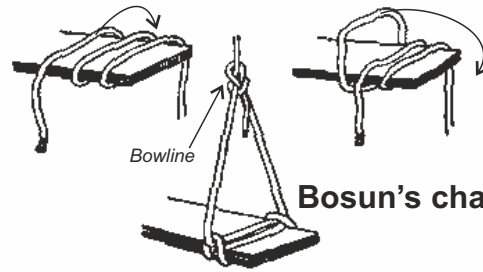
(Lorry driver's hitch)

To secure a load on trailers and roof racks etc requires greater than ordinary tension. This hitch doubles the tension and provides enough friction to secure the rope end without losing the tension.

Useful whenever extra tension is demanded and where an anchor is available, e.g. picket, tree or cleat but note the rope must be able to slip around it during tightening.



Scaffold hitch



A fast and reliable plank knot that deserves to be better known.

Sheepshank

Easy and fairly secure. Toggles are needed to make very secure. Use to shorten a rope or isolate a damaged part.

Scouts should be encouraged to tie it without access to rope ends.



Carrick bend

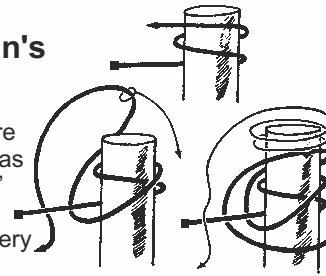


This flat bend is used for decoration but also has a serious application for joining rope. When tied with free ends on either side of the knot and pulled, it reforms into a different, bulkier shape that can take enormous strain.

Study the knot and see the long deflected bights that keep the knot free. The knot easily unties even in heaviest ropes after severe duty.

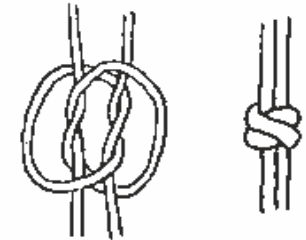
Lighterman's hitch

Fast and secure tie to a post. Has no actual 'knot' and so unties without fuss. Very popular.



True lover's knot

There are several lover's knots generally based on two interlocking thumb knots. This one is perhaps the most attractive at the same time useful: it creates a strong permanent loop with all exit ropes strictly on axis.



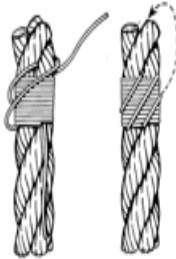
Fisherman's knot

Very secure. Generally permanent after loading. Ropes enter and leave on axis. Used for slings etc. where ends are seized to main rope for tidiness and extra security.



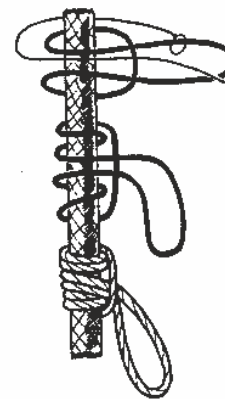
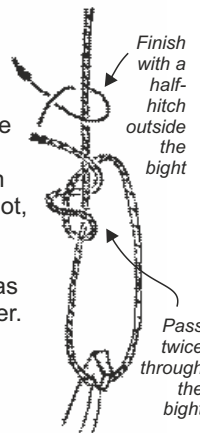
Whipping

Sailmaker's whipping is the smartest but needs time and care. Open the strands, settle a loop of twine about one, then reform the rope. Add turns and then put the loop over the strand it contains. Pull tight and tie ends off with a reef knot in the heart of the rope.



Guyline hitch

This knot is a rolling hitch tied on the standing part. When loaded, the knot deflects the main rope while creating a nip. It creates much friction but only when loaded. Like the Prussic knot, it slides easily when unloaded yet holds firm under load. Hence its use as a temporary guyline adjuster.



Prussic knot

Make a strop then wind around main rope as shown. Attach load. Unloaded, the knot will slide easily then hold securely when reloaded.

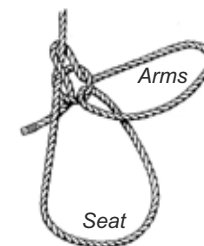
Climbers use two to 'walk' up a rope: the hands slide them up while the feet, on extenders, alternately load and unload the knots.

Bowline

Rhyme: Rabbit comes out of the hole, around the tree, and goes back down the hole.



Secure loop knot. If you only know one knot, let it be this bowline.

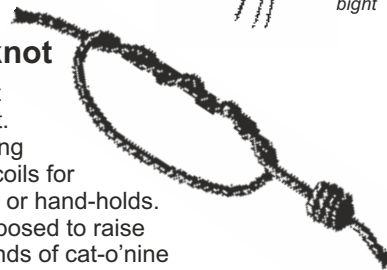


French bowline

Pass the working end through the knot a second time before finishing. The adjustable loops make this a popular rescue knot.

Blood knot

Simple but permanent. Creates long attractive coils for decoration or hand-holds. (Once proposed to raise blood at ends of cat-o'nine tails but never used.)



Manharness knot

Makes a strong loop in the middle of a rope. Note that the line of the rope stays straight, a feature of all middleman knots.



Waterman's Bowline

To take the strain off the main knot, a half hitch is added. Excellent! Developed to secure anchors. Easily untied.



Rope ends

Unraveling ends waste a rope's length, interfere with knotting and they look very unscout-like. Whipping is best. The practice of melting the ends of synthetic ropes is okay if finished properly: smooth, rounded tip same diameter as rope. Hand injuries can occur though razor edges while blobs can snag in the running. To succeed: temporally seize the end; melt strands in flame; shape on block; do not touch till cool. Repeat until perfect.

In emergency, use tape, rubber bands or string to hold the ends. A thumb knot may be the last resort. Always do something!