

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.

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 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 signals that standards matter. Prefer three strand to plaited ropes. 1200 to 1500mm is about the right length.

Skill Booster

ABLE SCOUTS HAVE MORE FUN

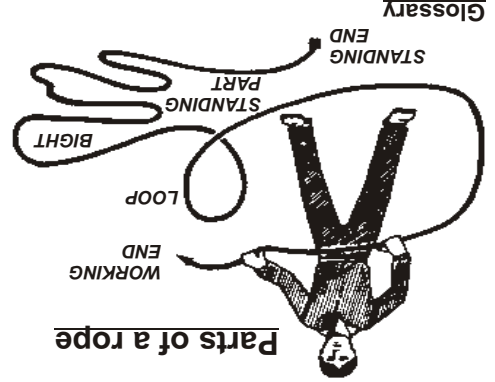
Knots, Ties & Ropework



Harpenden, Wheathampstead and Kimpton Scout District

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 ADC Communications and Skills

- 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.



Parts of a rope

Round, turn and two half hitches

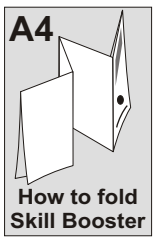
The two half hitches stay loose(ish) under load since the main force is taken by the round-turn on the ring or spar.



Fisherman's bend

First half hitch is passed through the round-turn to make a more secure hitch.

Not as easy to untie after heavy loading. Although a hitch, it is known as a bend.



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. 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.

Undability: 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 diameter, share the load, etc.)

Sheet bend

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



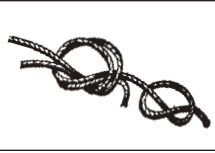
Double sheet bend

Another turn gives greater security and prevents the bend over-tightening under heavy loads.



Commonly known knots

Overhand (Thumb)
 Best for string. It will jam. It will damage rope!



Reef
 Flat and simple. Not stable in some rope. It will jam. Use for string and bandages.

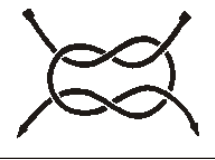
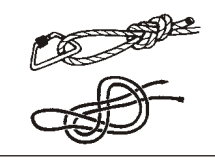
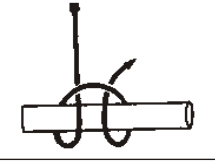


Figure 8
 Excellent flat, secure knot favoured by climbers. Often permanent



Larks head
 Tie in the bight. Simple and effective

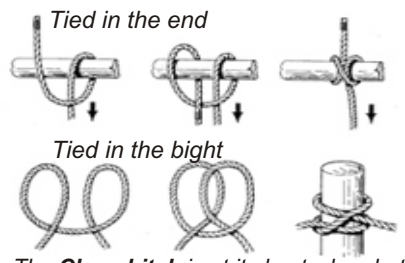


Timber hitch

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

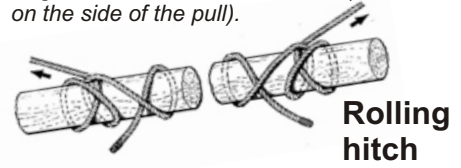


Clove hitch



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).

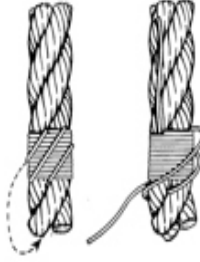


Harvester's hitch

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.

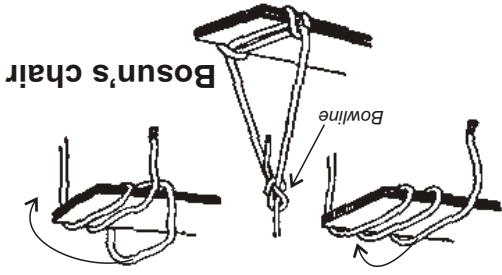


Whipping
Sailmaker's whipping is the smartest but needs time and care. Open the strands, settle a loop of twine about one, then reform the rope. Add turns and then put the loop over the strand it contains. Pull tight and the ends off with a reef knot in the heart of the rope.



Rope ends
Unravelling ends waste a rope's length, prevent knotting at the end, and look very unscout-like. Whipping is best. The practice of melting the ends of synthetic ropes is okay only if finished properly: smooth, rounded tip same diameter as rope. Many hand injuries occur though razor edges while blobs interfere with running.
To succeed: seize end; melt strands; shape on block; do not touch till cool. Repeat until perfect.
In emergency, use tape, rubber bands or string but never neglect to do

Scaffold hitch



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

Sheepsbank

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.



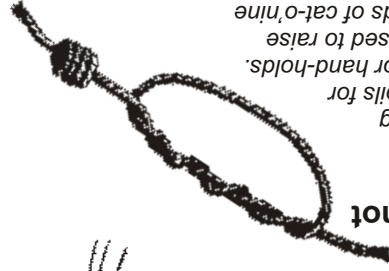
Guyline hitch

This knot is a rolling hitch tied on the standing part. When loaded, the rope that exits the knot at the top deflects the main rope while creating a nip. It creates much friction but only when loaded. Like the Prussic knot, it slides easily until loaded. Hence its use as a temporary guyline adjuster.



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 not used.



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.

Surgeon's knot (for string)

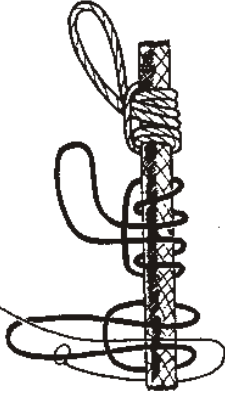


A surprising knot. Though similar to the reef, it is far better. An extra turn on the foundation provides grip while tying. The one-tuck finish causes the whole knot to twist into high friction security.



Prussic knot

Make a strap 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.

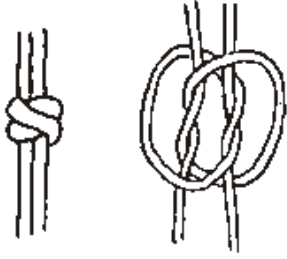
Manharness knot

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.



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

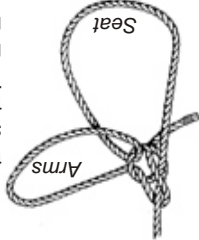
Very secure. Generally permanent after loading. Ropes enter and leave on axis. Used for slings etc. where tidiness and extra security.



Bowline

Secure loop knot. All the strain is taken within the bowline.

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



Waterman's Bowline

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

