

Knots & Their Uses

- a good knot holds but is easy to open if necessary
- there are different knots for different purposes and all knots are not good for all purposes
- practice makes perfect
- a good knot needs not to be complicated, use the simplest one good enough for the job
- there is a difference in situations where there is constant pull on the rope or if it is sometimes loose and sometimes taut
- sometimes it is important to be able to open the knot, even if there is a heavy load on the line
- learn the difference of the wrong way to do it and the right way to do it, especially how the wrong way to do it causes the knot to slip or makes it difficult to open

Sheet Bend

(also known as Weavers Knot)

The sheet bend is very similar to the square knot, granny knot, thief knot, and particularly the bowline. In fact, the sheet bend can be tied using the One Handed Twist Method which is also used to tie the bowline.

Good Points

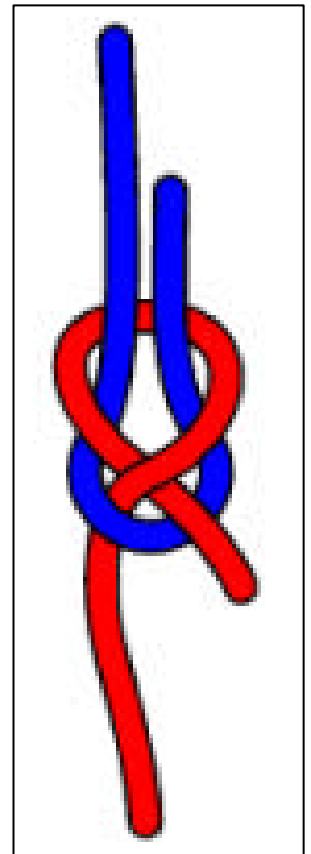
- very fast to tie
- when slipped, is one of the easiest bends to work with
- useful when joining two ropes of different diameters.
- it will not slip under load
- the more pressure applied, the stronger the knot
- easily untied

Bad Points

- it may jam
- hard to untie if wet and under strain (for instance in a towline)
- the knot is neither strong nor secure. It reduces the strength of lines by 55% and can spill if subject to spasmodic jerking

Notes

- if the ropes are of quite different diameters (e.g. a very large and a small rope together) then you will be better off tying a Double Sheet Bend.
- if you have done the knot correctly the two ends should be on the same side of the knot
- the running parts should be left long because there is some initial slip in the knot when the knot is first brought under tension



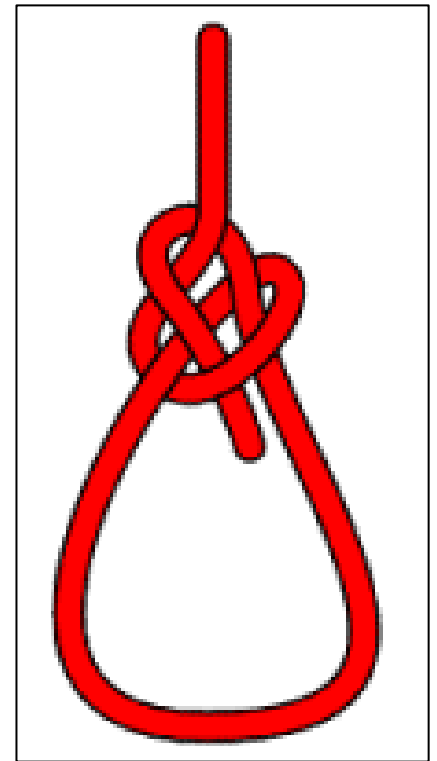
Bowline

(pronounced “boh-linn”)

The most useful and one of the simplest ways of putting a fixed loop in the end of a rope. It is easy to tie and to untie, it never slips nor jams and has a high breaking strength. It has been called the 'King of Knots'

Good Points

- easy to tie and untie
- never slips nor jams
- has a high breaking strength
- it will not slip under load
- the more pressure applied, the stronger the knot
- easily untied



Bad Points

- cannot be tied or untied with a load on it
- though the Bowline isn't generally bad, it isn't secure enough for critical applications, especially where the line will see a lot of jerking and/or where stiff or slippery rope is used. If you tie a Bowline in polypropylene rope, and give it a few jerks, you'll quickly discover its lack of security.

Notes

- if you use this knot to carry an injured person, you must use a stop knot
- you can use it for tying two ropes of different sized together with one knot on each line
- two bowlines can make an emergency bowsman's chair

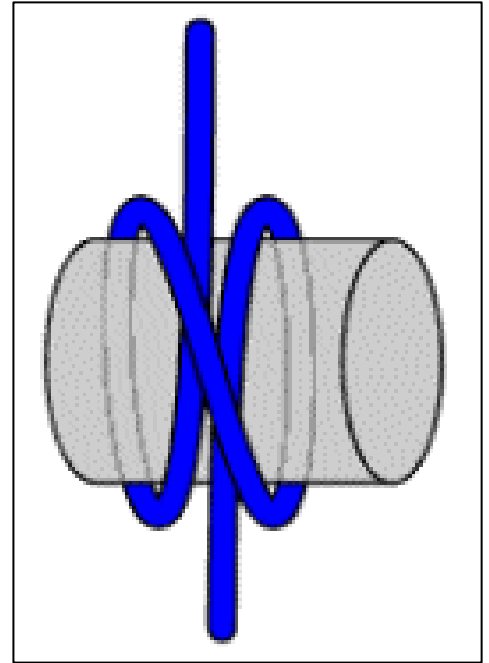
Clove Hitch

(general utility hitch)

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 but care should be taken not to misuse it: it is so easy to use it when a more suitable hitch (e.g. a Rolling Hitch etc.) would serve better.

Good Points

- quick and easy to tie
- can be tied in the bight
- can be tied one handed



Bad Points

- can slip in wet conditions or in slippery rope
- weak when a load is applied to it rapidly
- needs constant tension on both ends
- without extra support, it is untrustworthy in any situation, except as a crossing knot

Notes

- if you have to use it, work it up properly; pull length-wise only at both ends before you load the working end
- the standing end should be secured if it is going to be used as an 'anchor' as it may work loose otherwise
- if you have to use it, work it up properly; pull length-wise only at both ends before you load the working end. It is better to use the Rolling Hitch instead

Although often used to start and finish lashings it is far from ideal for this task. Consider using another hitch instead or at least secure the standing part of the Clove Hitch used

Round Turn and Two Half Hitches ***(good all round hitch)***

This knot can be used to secure a rope in a variety of situations. It can be placed under a lot of strain and is easy to untie.

Good Points

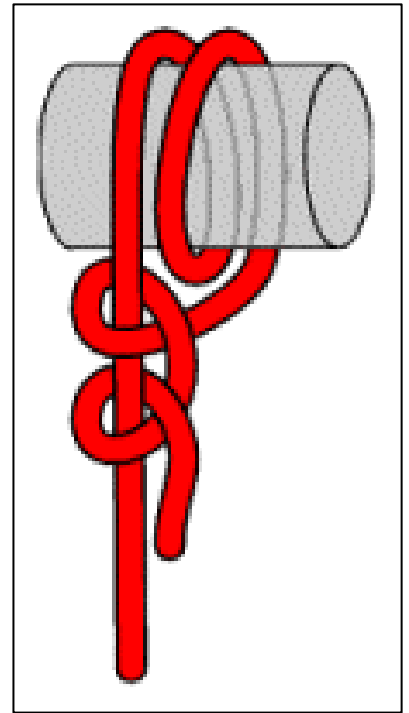
- it rarely jams!
- a good hitch in almost all circumstances
- easy to untie even after being subjected to a large strain
- easy to tie even when the line is under tension

Bad Points

- not many!
- possible to work loose if subject to spasmodic motion

Notes

- sometimes seen with more than two half hitches either to make it more secure or to use up excess rope

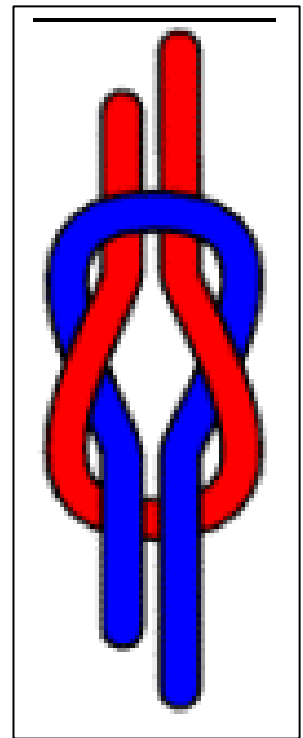


Reef Knot

(also known as Square Knot)

The best known and most useful parcel knot. It should preferably only be tied with the two ends of the same material, but should never be used as a bend. It is the best knot for tying a triangular bandage.

WARNING: The reef knot should never be used as a bend to join two ropes that will be under load. The reef-knot is only useful in simple applications.



Good Points

- easily tied

Bad Points

- can slip
- can come undone under movement
- will capsize or jam under load

Notes

- its relatives, the granny, the thief-knot and the what-knot all have their purposes, but not as a trustful knot
- it is strictly a binding knot, reliable only when pressed against something else and tied in both ends of the same material so restrict its use to bandages and all sorts of parcels.

Sheepshank

The sheepshank is designed to shorten a rope (without cutting it!). It can also be used to take up the slack in a rope.

Another very useful purpose it serves (that people often overlook) is its ability to protect a weak or damaged section of the rope. Simply ensure that the damaged section forms the middle line of the sheepshank. The strain will be taken at either end and very little (or no) strain will be placed on the weakened part.

Good Points

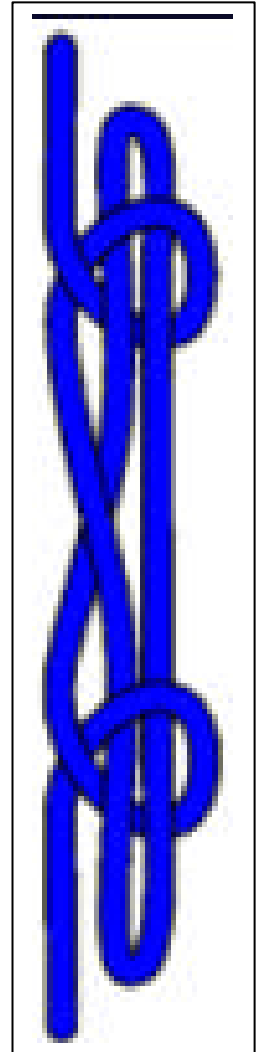
- can protect a weak portion of the rope
- easy to tie

Bad Points

- can come undone if ends are not subject to constant tension

Notes

- a damaged rope should always be replaced or retired from 'active use' and be used for knot tying practice only
- if both ends are available pass them through the ends to stop the sheepshank from coming undone when not under tension



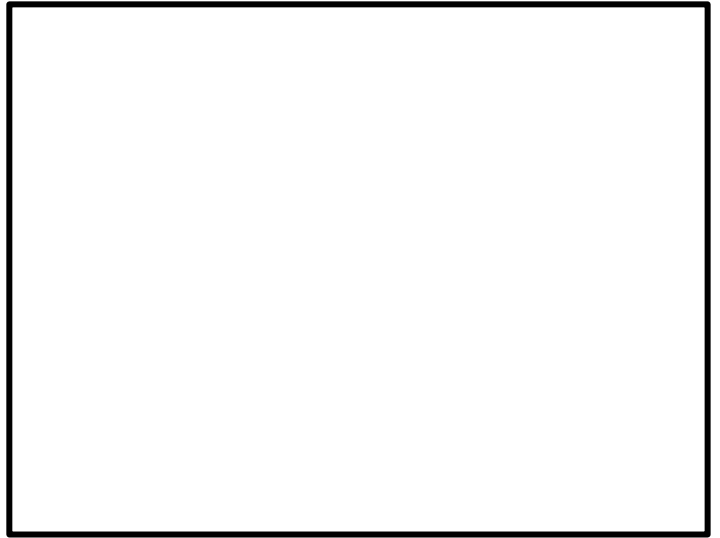
Its knot a problem!

Choose the most suitable knot for each problem from the following list

- **Bowline**
- **Clove Hitch**
- **Reef Knot**
- **Round Turn and Two Half Hitches**
- **Sheepshank**
- **Sheet Bend**

Problem 1

You are using a rope to drag a heavy load up a slope and wish to secure it to a pole at the top of the slope



Problem 2

You want to use a knot to start a square lashing on two poles



Problem 3

You have a rope with a damaged section in the middle and wish to avoid putting strain on the damaged section whilst still being able to 'pull' on the rope



Problem 4

You have two lines that you wish to join together. They will be placed under a good deal of strain and may be jerked about quite a bit



Problem 5

You need a knot that will tie a parcel. The knot will be lying flat against the parcel.



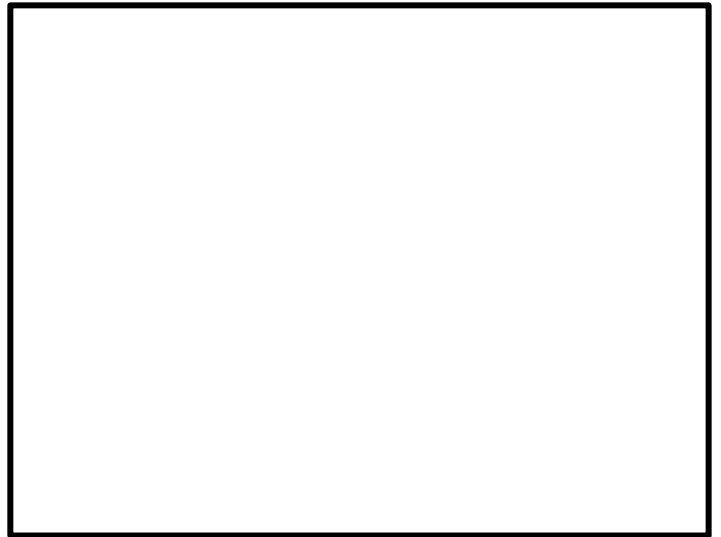
Problem 6

You have a rope with a great deal of slack that needs to be taken up. The ends will be under a constant tension.



Problem 7

You need a fixed loop to lift someone from the bottom of a well in an emergency



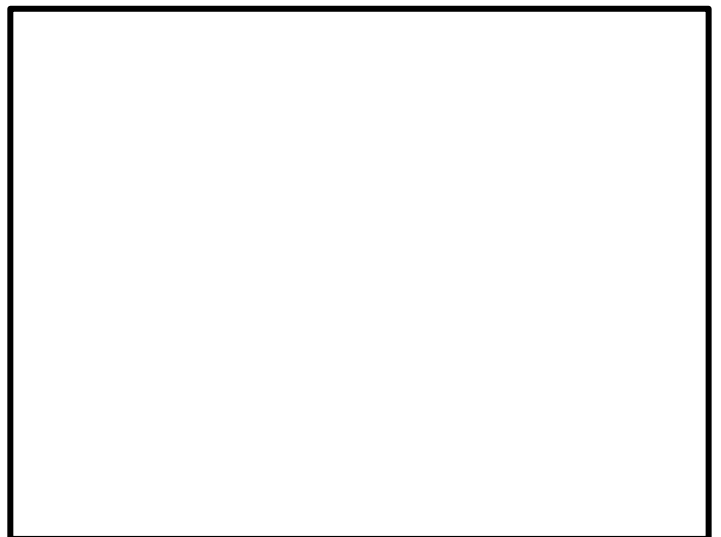
Problem 8

You have a roped off area around your campsite and wish to add another few upright poles to the middle of the rope. You need to tie the existing rope around the pole, you do not have access to the ends.



Problem 9

You need to tie a triangular bandage in a sling around a persons arm



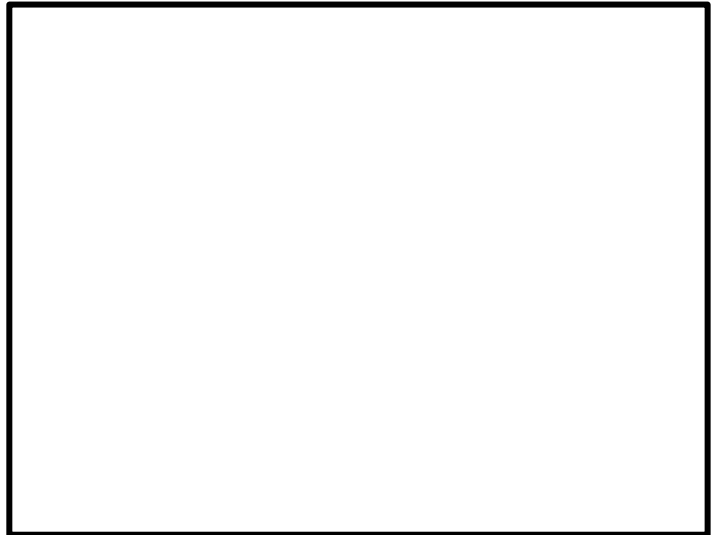
Problem 10

You need to heave a line across a river. You decide to throw a light line first and pull across a heavier line. You wish to join a thin rope to a heavier, thicker rope.



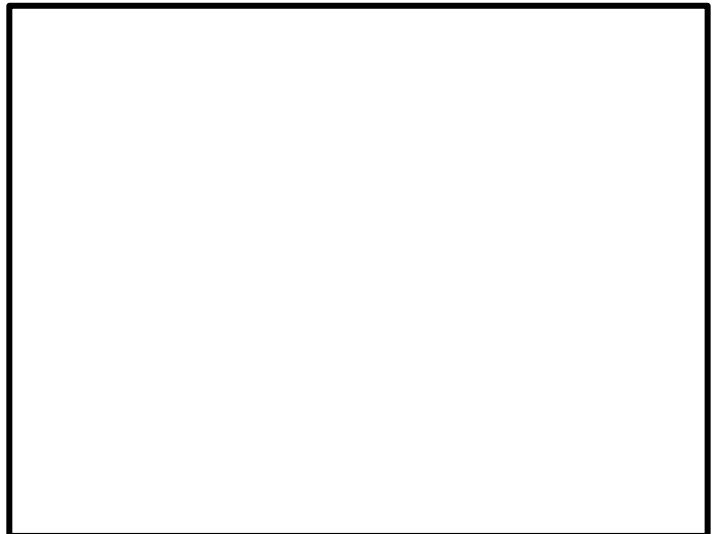
Problem 11

You wish to tie up your boat to a mooring post. The boat will be rocking up and down on the water.



Problem 12

You need a fixed loop in the end of a rope so that you can quickly throw it over a towbar of a car.



Its knot a problem! – now you know the answer!

Problem 1 – Round Turn and Two Half Hitches. If you can get the round turn around the pole the friction will hold most of the load for you. You can secure this by tying a clove hitch (two half hitches) around the rope. It's the friction that holds the line, the half hitches just stop it from coming undone.

Problem 2 – Most of you may say Clove Hitch. Yes, that is what you have been taught but it is not the best solution. You would be better off using a Round Turn and Two Half Hitches. A Clove Hitch is only secure if both ends are under tension and at right angles to the 'pole'. This means you need to secure the standing end of the Clove Hitch by wrapping it around the working end as you start your turns.

Problem 3 – Round Turn and Two Half Hitches. If you can get the round turn around the pole the friction will hold most of the load for you. You can secure this by tying a clove hitch (two half hitches) around the rope. It's the friction that holds the line, the half hitches just stop it from coming undone.

Problem 4 – You may say Sheet Bend. Yes, perhaps. A better solution would be to tie two bowlines 'inside each other' so to speak. You make two interlocking loops. Remember a Sheet Bend will come undone if subject to jerking.

Problem 5 – Reef Knot. As long as the knot lies against the parcel it should be reasonably secure. You must not use a Reef Knot as a Bend though.

Problem 6 – Sheepshank. Ideal for taking up slack.

Problem 7 – Bowline. To be sure in this situation you must secure the end by placing a half hitch around the bowline.

Problem 8 – Clove Hitch. You can tie this without having access to the ends of the rope. As long as both ends are being pulled this should be secure.

Problem 9 – Reef Knot. As long as the knot lies against the shoulder it should be reasonably secure. You must not use a Reef Knot as a Bend though.

Problem 10 – Sheet Bend. A Sheet Bend can be useful in joining lines of different diameters. If in doubt about security use a Double Sheet Bend.

Problem 11 – Round Turn and Two Half Hitches. Generally useful as a hitch this should hold against the spasmodic motion. Do more than two Half Hitches if you have the line spare.

Problem 12 – Bowline. Ideal for making a fixed loop. Care should be taken if it is going to be subject to great strain or if it is critical however. There are better and more secure loops.