

Knot



News

International Guild of Knot Tyers – Pacific Americas Branch

December 2013

Joseph Schmidbauer – Editor

ISSN 1554-1843

Issue # 91

Going Down and Getting Back Up

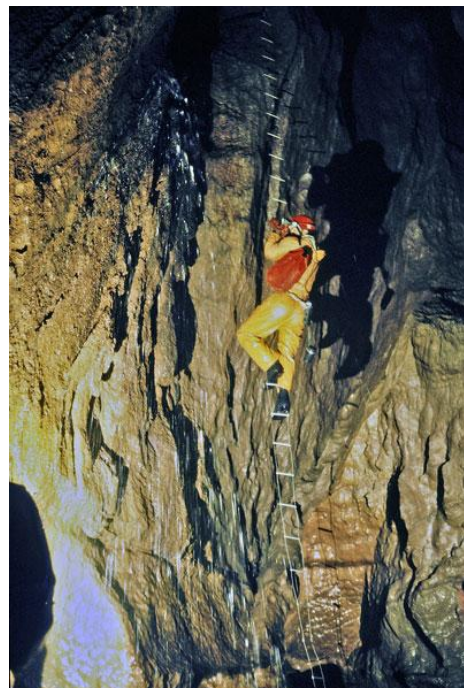
Frank Brown

Caving, i.e. Pot Holing and Spelunking, has been described as underground mountaineering. That peculiar bunch of people who are involved in this recreational activity utilize many of the same techniques and equipment as the “outsiders”, with the main difference is that it is done under torch light. Another difference is that they often work in reverse, tending to first descend and then ascend. My own experience of the pastime was a few decades ago and one of the major pieces of equipment for tackling vertical territory was the wire ladder. This device consisted of two strands of thin steel wire with aluminum alloy rungs spaced about 30 cm (one foot in old money) apart. Each ladder was about 8 or 9 m (25 to 30 ft) long and were clipped together to obtain sufficient length for the required task. The longest one I was ever involved with was about 100 m (330 ft).

Climbing of these was an acquired art and many a tyro had a nerve wracking experience on even the shortest pitch. The conventional practice was that all climbers were equipped with a belay safety rope, no matter how short the pitch. It was this practice that introduced me to the Bowline and the subsequent skill to be able to tie it in the most extraordinary circumstances.

Occasionally cavers would abseil down a pitch and only use the ladder for ascent. This was often an advantage if the pitch was wet as the descent was usually a lot quicker. However, in the first few years I was engaged in the activity, the wire ladder was the only way up. Then we discovered Prusiking (alternately Prussiking). The Prusik Knot was reportedly developed by one Dr Karl Prusik in the 1930's and was used as an aid for mountaineers extricating themselves from crevasses in glaciers,

when they had fallen into them. Parties of two or more would traverse the holey ground while being roped together with a significant distance between each climber. In the event of one of the party making a sudden, unplanned departure downwards, the other(s) would hopefully provide anchor points using crampons, ice axes and convenient protrusions of ice or rock and halt the descent of the faller. This later person would have three rope loops attached using Prusik knots to the main rope from which he or she was now dangling. One of these would be placed under the arms around the chest, and the other two would be assigned one to each foot. By sliding the ingenious knot of each loop up the rope in turn, the climber would struggle upward and eventually reach horizontal country. This is the story as it was related to me, but it could be the stuff of legend.



In the 1960's some cavers with knowledge, and I assume experience, of the technique began experimenting with the technique in caves. Ropes used at that time were principally laid nylon and had the property of twisting, or rather untwisting, when a body was hanging free from one. Ascent was a fairly slow process for most practitioners, compared to using ladders, and the wisdom of the time was that it was a good technique to be aware of, but not for general practice. As usual, there were a few independent types who ignored the wisdom of their elders and carried on playing with loops and rope. Some astonishing times were reported and the general advantages were recognized. Any given length of rope is a heck of a lot lighter and less bulky than the equivalent length of ladder. In a small way, I was one of those experimenters. After a series of trials above ground, usually involving convenient trees, I and a couple of colleagues worked on the technique and acquired a degree of confidence. If nothing else, the knowledge gained was no load to carry and had the potential to be useful. Sometime in the late 60's I did use the method during an exploration trip. It was during this trip that I learned how to abseil, so it was historic for me for two reasons.



Prusiking

Apart from the original Prusik knot, there have been a few others developed for the purpose of Prusiking or for use as a friction knot in particular circumstances. These include the Bachmann, the Kliemheist, the Blake's Hitch and the French Prusik. The introduction of braided ropes of enormous strength and low stretchiness in conjunction with mechanical devices such as Jumars has advanced the use of Prusiking in caves to the point where ladders are pretty well defunct as far as I can tell.

The method of descent using a rope is commonly known as abseiling or rappelling in the English speaking world, although they are French and German terms. This is typical of the absorptive nature of language. It is also known as "The fastest way down". The majority of practitioners today use some mechanical device to control the rate of descent and absorb the considerable amount of heat generated in the process. Techniques that do not employ such artifice are usually referred to as "Classic" and it is these which are the subject of this part of the article.



Footlock

I have heard Whymper, conqueror of the Matterhorn, utilized the Foot Lock technique in his 19th century scrambling in the Alps. The gist of what I was told was that one time he was sliding down a (hemp) rope and smoke was being emitted from his boots. I do not know when the method of descent control by wrapping one's body within coils of rope was developed, but it was probably later that century when climbing became fashionable. The various methods were developed because, as anyone who has tried, lowering oneself hand over hand down a 10 mm rope is extraordinarily difficult, if not impossible, for more than a very short distance if all your weight is held by your grip on the rope. Even with the body wrap, friction burns are a distinct possibility for unprotected flesh. Imperfectly protected flesh, i.e. seat of pants, can also be toasted particularly if the descent is long and/or too rapid.

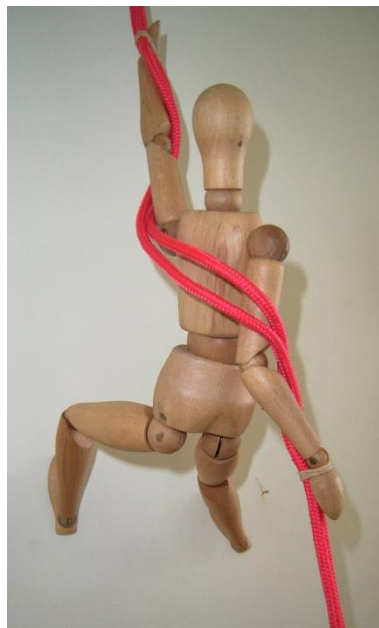


Classic



Beginners Classic

The three types of classic abseils that I have used in the past are shown in the above pictures. The first, simply known as the Classic is probably the best known. With the version called a "Beginners", the rope is taken across the chest, round the neck and then led down the arm to the controlling hand. It is said to be easier, but the possibility/probability of a nuked nape make it a method I would hesitate to employ.



Belay – Type

There is also the method called the "Belay – Type", where rope is merely wrapped around the arms and across the back. I consider this method to only be suitable for steep slopes, and not too steep at that. The Austrian and Sydney Classic are of pretty equal merit in my experience, with a slight preference for the Austrian.



Austrian Classic



Sydney Classic

The Geneva, where the rope control is by use of the crook of the arm held to the chest is capable of being used for very rapid descent as is desirable by Commando types.



Geneva

I cheerfully let them be the sole users. There is one other classic type method suitable for steep slopes and it is called the "gut Gouger". The user stands between the two parts of the doubled rope facing forward, crosses the two over each other and back so that the right hand rope is held in the right hand, the left in the left. The user then descends, letting the two ropes slide through his hands but maintaining pressure. I have a dislike for this technique as it is allowing rope to rub on rope like a saw. This is a situation that should be avoided wherever possible.



Sit Harness

The last bit of nostalgia concerns harnesses. Today climbers have a choice of a several brands that they can purchase for a lot of \$s. In the good old days I had no choice and little money, so I and my club mates made our own. Originally we used synthetic rope and created two loops using short splices. The loops were tailored to fit each individual. One was used to make a seat harness, a.k.a. a diaper in the US. The second was used to make a *Beaudrier Alpin* or chest harness. It is possible to abseil using just the seat harness, but clipping on to the chest harness with a karabiner created a full body harness which was quite comfortable at least for short periods of suspension. The use of the creation made both Prusiking and abseiling markedly easier and, I believe, safer.



Full Body Harness

The modern climber/caver is usually equipped with one or more metal *descendeurs* according to their personal preferences. They are designed (the *descendeurs* I mean) to provide good control of descent rate and to be effective heat sinks. Modern ropes made from synthetic materials are prone to melt when subjected to contact with hot bits of metal. The device is attached to the user's body harness which allows a degree of comfort when the user is suspended. As a result the practice of using a classic abseil method is now part of history. Prusik type knots find uses in several applications not directly associated with climbing a rope, so they have their place in the climber/caver arsenal. The classic abseil techniques would appear to be totally *passé*, which is a pity. I would encourage the participants of the rock scrambling tribes to be familiar with the old methods – it might be the only survivable way down. Similarly the rope loop method of Prusiking is a practical Plan B.



This is the first half-hitch bottle covering I have ever done. Not too complicated. The good thing about this technique is that, like macramé, it is something you can put down and come back to later. No issues of things going slack or losing your place.



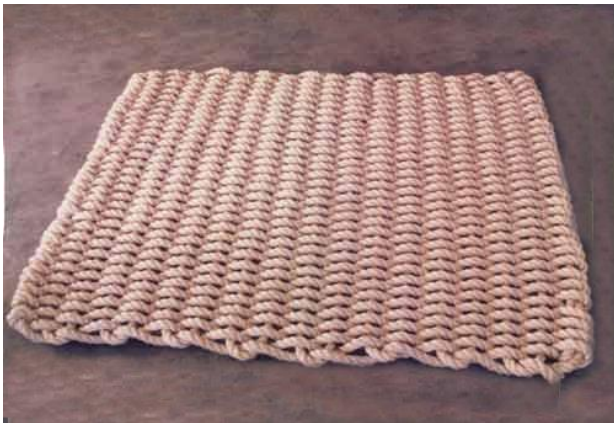
Our neighbors tell us that there really are bears in the nearby woods here in Granite Falls, WA. They advised us to make noise when we go out for a walk with our dogs there. I made this lanyard to hold our "bear whistle". Any excuse to do knots!

Blasting Mats

Joe Soanes, Master Rigger

In 1950 I was making all sorts of rigging for a major wire rope manufacturer and their customers throughout all of California. I was also doing splicing and other rope work for a major fiber rope manufacturer. One of their distributors from Honolulu, while on a visit to San Francisco, told me how when you wanted to dig a hole in Honolulu, the ground was so hard you had to blast it. To prevent the rocks and other debris from doing any damage you had to cover the blast area. He said how the company was buying blasting mats from New York made from low grade manila rope. These mats didn't last very long and he was wondering if I could come up with a better product.

From his description I determined that the mats were made with one piece of rope and that I would need a jig to help lay-up the rope mat, remove the jig and replace the cross weaves with rope.



I called on my fiber rope manufacturer, explained the problem and he suggested I use a top grade sisal rope. Together we decided to use 4 1/2" sisal (i.e. 1 1/2" diameter) rope.

I located some used lengths of boiler tubing that were one and one-half inches in diameter and eight feet long. A friend of mine with a wood shop suggested that we use a 4" x 4" board ten foot long. He then drilled 1 1/2" diameter holes from one side to hold the pipes and 1/4" holes from the other direction to hold it together. After the drilling was completed, he sawed the 4 x 4 through the 1 1/2" side and put in 1/4" bolts with washers to hold it together. I got some wire rope reel sides to support the 4 x 4. I inserted the tubes, tightened the 1/4" bolts, stood it up and secured it to the wire rope reel sides and we were ready to go.

To be able to reach over the top of the jig, I put staging planks on two steel saw horses.

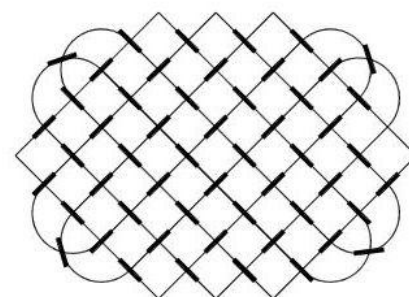
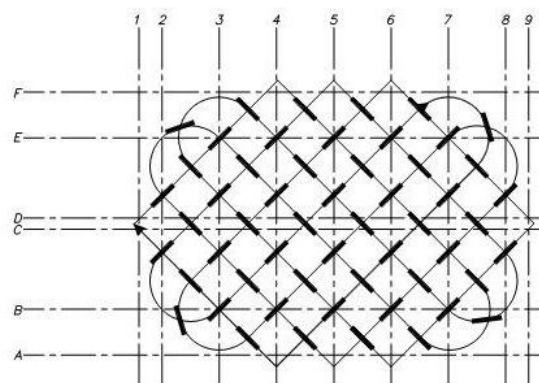
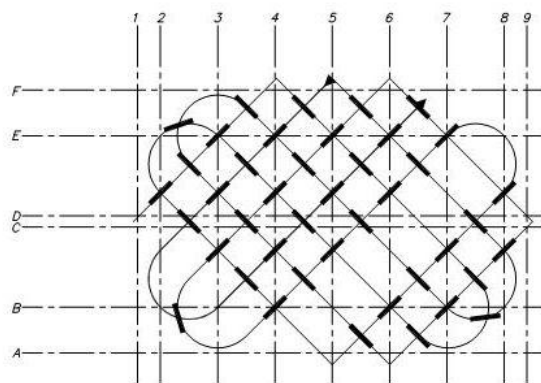
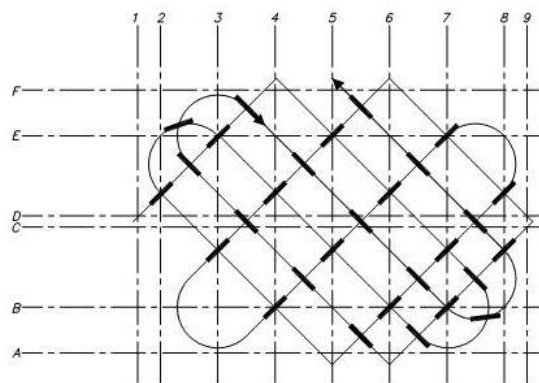
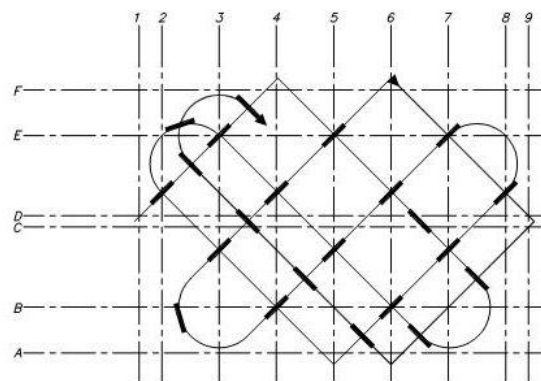
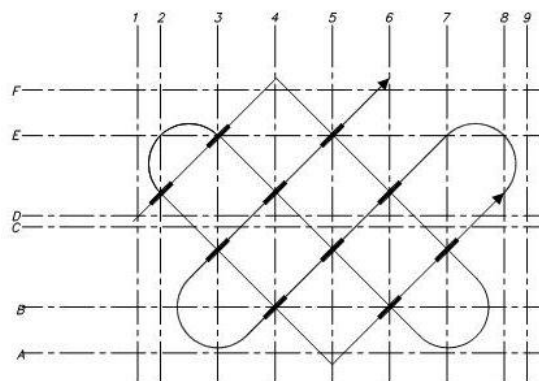
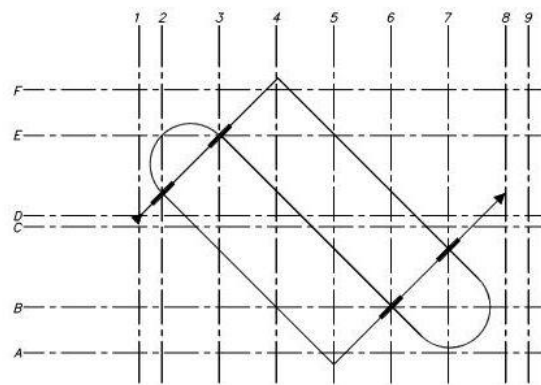
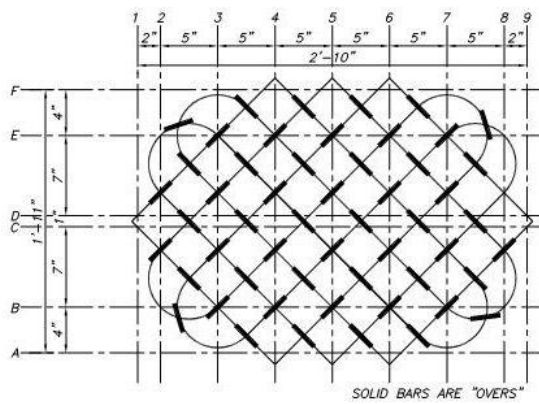
After weaving the rope back and forth around the boiler tubing to a height of eight feet, I laid the mat down on the staging planks and removed the 4 x 4 board from one side. I spliced a small line into the 1 1/2" rope and pushed the small line through the end tube, pulled it snug, removed the tube and replaced it with rope. I repeated this until all the tubes had been removed and replaced with rope. With the two ends of the rope on opposite corners of the mat I formed eyes. In the other two corners I spliced short pieces of line. This way I had an eye on each corner of the mat.

I then rolled the mat up tightly and secured it with small line. It was ready for shipping.



These mats proved to be very satisfactory!







Roy Chapman, past PAB President, does the Farmers Market every Saturday in

, Washington.



These kringle and half-hitch seat covers (above) were made with cheap, Chinese cordage by **Frank Brown** to help protect bums from cold, hard metal seats.

Jose Hernandez-Juviel (in the photo right) was not a volunteer rigger on the *Balclutha* (as was stated in Knot News #90) but was a paid employee of the National Park Service in San Francisco Maritime National Historic Park.

