An Introduction to the French Wrap

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By Gordon Birkhimer

Depending on who you talk to, the French Wrap has received mixed reviews and a bad rap (Get it? Wrap/rap - I slay myself.). In my opinion many of the currently-held beliefs regarding the dubious success of self-belay systems are based on prior flawed systems. Apparently, many of the unsuccessful early attempts of trying a belay while rappelling involved a high point of attachment as with the Chest Safety Prusik.

Mechanical devices like the Gibbs ascender, Safety Rappel Cam, Petzel Shunt, and the Spelean Shunt have also been tried with less than rave reviews. Many of these early attempts of self-belay on rappel resulted in hopeless entanglements, injuries from improper use, and even death.

A common theme exists in the problems associated with the early self-belay systems. Many of the injuries occurred because of a phenomenon that came to be known as "negative action". In order for these systems to work, the rappeller must relax his/ her grip on the Prusik knot or mechanical device in order stop descending. As you might imagine, when accelerating out of control down the rope, victims were inclined to grasp tighter, thereby defeating the purpose of the self-belay, and falling unimpeded until impact. Essentially, it was not natural for the rappeller to release the self-belay device during stressful situations and allow it to do its job. Negative action rappel safety systems began to be associated with accidents and they lost their originally desired usefulness as a safety method. As a result, the general consensus was that self-belay systems for use on rappel were a questionable practice not to be encouraged or recommended.

Just the fact that people were trying to come up with a solution indicates there was a logical under-standing that it would be damn nice to have one last chance to live should things go terribly awry on rappel. It is generally understood that rappelling is the most dangerous thing you might engage in while on rope. The reason for the inherent danger is easy to understand. During a rappel, if you do not employ a self-belay, you have only one point of attachment to the rope. Climbing rope is not as dangerous. Most ascending systems provide two or more points of con-tact. Even in the most severe example of an ascender failure, the climber still has a second or third point of attachment from the remaining ascenders. Assuming climbers possess the skills to successfully extricate themselves from that situation, they may live to climb another day. In contrast, letting go of the rope while rappelling for any reason, and be-coming "out of control" is generally a fatal mistake.

There is a plethora of incidents which have occurred, resulting in death or injury, because of the one point of attachment fact. Most of these accidents can be traced to letting go of the rope. Experience dictates the following general rule: If you are more than 40 feet above the ground and you let go of the rope, gravity ensures the resulting impact will cause your demise. There is a documented fatality at 50 feet to support this statement. Any-thing above 40 feet is considered "the dead zone." But hey, you could get lucky...

I will submit that improperly loading the rappel device at the lip, operator error, lack of experience, exhaustion, being hit by falling objects, and equipment failure are some examples of malfunctions that can produce dire consequences. Unfortunately for those individuals involved, each of these potential dangers, although rare, has resulted in death and in-jury. Some of these examples are within the control of the person rappelling. Other examples are not. So I guess there's one thing you have to ask yourself, "Do you feel lucky...?" (That would be a great movie line.)

Humans, being persistent creatures, and notorious for conquering problems in the face of failure, will devise a solution eventually, once the requirement for such is acknowledged. Motherhood is the necessity of conception, or is it necessity is the mother of invention? Anyway, you know what I mean. The French Wrap is the culminating result of this persistence. (I'm now wondering if we should take this opportunity to officially change the name to the Freedom Wrap - Slay me again!) The "French Wrap Self-Belay" system is inexpensive, simple to learn how to use, and it operates flawlessly. Additionally, it does not interfere with the rappelling technique, but rather enhances the rappeller's capabilities.

(Photograph by Meredith Hall Johnson)

The innovation resulting in the successful performance of the French Wrap was accomplished by the attachment of a webbing loop sewn directly to the leg loop on a seat harness from which a carabiner is attached. A Prusik loop is employed from the carabiner to create the French Wrap, which is actually a hitch. The innovators had finally stumbled onto the truth. The insurmountable problems associated with higher attachments from the chest or seat harness were now solved. The French Wrap is operated from the brake hand relaxed at the user's side, near the leg loop, and should never come closer than 12 inches below the rappel device. The low point of attachment ensures that the French Wrap Hitch will not become entangled in the rappel device. The low attachment also puts to rest another fear. The hitch cannot touch the rappel device or it will not catch properly to stop the rappeller. If the hitch does come in contact, the rappel device will actually be contributing to the action of pushing, or "minding" the self-belay system down the rope. Because the French Wrap never comes in close proximity to the rappel device, two of the most important

negative concerns have been resolved.

The final concern would be the issue of negative action. Is the French Wrap is a negative action self-belay rappel safety system? My experience with this self-belay system indicates that it is not. The French Wrap is operated by pushing or holding the hitch at your farthest reach down the rope to freely descend. If desired, you may approach out of control rappel speed without difficulty. Deceleration is accomplished by moving the hitch up the rope. If you let go of the hitch, say after being hit on the head with a rock, you will stop. If you push the hitch up the rope as high as possible, you will stop. So, the position of the hitch on the rope is what really does the work. The relationship of the position of the hitch to speed of operation is easily mastered. I would also point out that grasping the hitch with the strength of white-knuckle fear will slow the speed descent by the action of friction. But, the operation of the French Wrap is based most effectively on the position of the hitch on rope and not the pressure applied to the hitch. For these reasons I feel that the negative action as identified during the development of prior self-belay systems is inconsequential when compared to the French Wrap.

You're on that lip and you're going through the final process of getting on rope. Palms are sweating, heart rate is increasing, butterflies are fluttering. Psychologically, you may be wondering what the hell you are doing here. "I have a pretty good life, I love my children, I have some more things I want to do here on earth..." Oh come on now, you can admit to some of those last fleeting thoughts. The French Wrap can provide the benefit of calming your nerves psychologically. You've got another point of attachment.

Once you have applied your full weight and are entirely on rope, there's nothing like letting go of that rope hand and experiencing the beauty of this thing stopping you right there. For my own personal knowledge I have played with it at almost every speed, distance, and condition with great success. There's something wonderful and reassuring to find you can let go at anytime - and live! That's a real confidence builder.

For some individuals seeking that additional rush of adrenaline, the knowledge of being on rope by only one attachment provides that extra squirt of juice. How you do things on rope, and the systems you use, are personal and individual choices developed over years of experience. It's not my place to insist which systems people use or to cause arguments with anyone. I do believe discussion is good. I am sharing with you because you are cavers and, "I love you man".

The French Wrap - don't leave lip without it. (Slay.)

The French Wrap Self-Belay

by Mike "TinY" Manke

I first learned of the "French Wrap Rappel Safety" in an editorial of the last American Caving Accidents1. This report referenced two incidents where experienced rappellers fell to their deaths while on rope. This occurred after a probable injury from falling debris while rappelling or some other event that made them lose control.

The use of rappel safety hitches above the rack is discussed in issues #42 and #44 of the Nylon Highway, the publication of the NSS Vertical Section. The discussion in issue #42 by Dr. Gary Storrick makes a compelling case against the conventional use of a Prusik as a rappel safety. The discussion in #44 by Brady Robinson revisits this issue and gives information on attaching the safety below the rack. Ac-cording to Robinson, the correct name for the knot used to create the "French Wrap Self Belay" is an "Autoblock". This article gives a very good description of setting up this system; I am not the inventor of this.

In June of 2000, I posted a question about the "Euro Prusik below descender self-belay" to the NSS Discussion Board. Van Bergen of the Dayton Underground Grotto (DUG) answered this on June 12th. I coined the name "French Wrap Self-Belay" for this method after reading his reply describing the knot as "don't know its real name, only that is was French. It's not a Prusik, but four simple wraps starting at the top". Many of the more experienced vertical DUG members had been using this method for years; he highly recommended it. I met Van at the 2000 Convention and discussed it with him extensively.

From there I developed the setup that Gordon Birkhimer and I currently use and that I teach as part of the NSS Basic Vertical Course that I run at my house every Tuesday night. I believe I am the one who came up with the idea of actually sewing a webbing loop to the back of your seat harness leg loop for the 'biner to clip into after experimenting with this in my front yard. Having the 'biner simply clipped into the leg loop, it can rotate up from the back side of the leg loop to the top of the leg loop allowing the French Wrap to come dangerously close to getting into the rack.

We have been using this "French Wrap Self-Belay" since then with nothing but success. This included some long rappels at Whitesides (650'), Guaguas (700'), Bridge Day (800'), and Golondrinas (1200'). I even used this while

doing tandem rappels with Gordon at Whitesides and Bridge Day last year.

Here are the mechanics of the setup:

1. Have a webbing loop sewn to the back of your leg loop to clip a 'biner into. Howie Cobb (of Howie's Harnesses) has done this for most of the people I have shown this to. The location of the loop should be dead center of the back of the leg loop or just inside of that towards the crotch. This allows proper placement of your rappel brake hand on the rope after the length of the 'biner and French Wrap are accounted for. It also prevents the French Wrap from being sucked up into the bottom of the rack when it is released or set.

(Sewn leg loop, Photographs by Meredith Hall Johnson)

2. Clip a 'biner to the webbing loop with an 8mm Prusik loop. With one end of the Prusik loop clipped to the 'biner, wrap the free end around the rope four times in a neat spiral and clip the end back into the 'biner. You may need to play with the length of this Prusik loop to get it right. I find a shorter Prusik loop that is just long enough to do this to be right for me. Also, a Prusik loop tied without any twists in the loop so it wraps straight and loose works best.

DO NOT USE A PRUSIK KNOT ON THE ROPE! Prusik knots, once set, require the weight to be removed from the knot before they can be released. The French Wrap, once set, can be easily released under load by simply pushing down on the top wrap with two fingers!

3. When rappelling, you must push down gently with your brake hand on the French Wrap to allow the rope to slide through it. In the event of an incident, one of two things will happen. If you freak and TIGHTLY GRAB the French Wrap... this is applying braking action to the rack and the rappel stops. If you freak and let go of the rope with your brake hand, or are injured, knocked out, or whatever, and LET GO of the French Wrap, it will set, putting tension on the rope and rack, stop-ping the rappel! Either way... you stop the rappel and do not fall to your death.

On long rappels, we also will let up on the French Wrap so it begins to set ever so slightly and apply friction to the rope as a control technique. This is great to take some of the work off of your brake hand and let your glove cool off a bit.

On longer rappels of 300 feet or more, here is another tip. The weight of the rope itself at 7 pounds per 100 feet can be used to pin the French Wrap in a released position below the hip with the tail of the rope going over your right hip. This allows you to use both hands to work the rack adjusting bars, or to add and subtract bars on the run without stopping the rappel on a hot rack. Usually I will use a foot control method by hooking the tail of the rope around my right boot when doing this. This worked very well on my rappels at Guaguas (700'), Bridge Day (800'), and Golondrinas (1200').

Another tip is for when the French Wrap is put on the rope after rigging and locking off your rack at the top of a drop. When you unlock your rack, the rope used to lock off the rack will form a big loose loop above the French Wrap at the top of the drop. No problem,,, just work your way over the lip like you normally do and as soon as you use up this bit of slack between the French Wrap and the bottom of the rack, it will perform as described. It is a pain to try to keep the rack set on the rope and feed this slack back down through the French Wrap, so don't even bother trying.

Another tip is for when you want to lock off your rack while on a rappel. You must pull slack up through the French Wrap to have enough to lock off your rack and this again is a pain since one hand is on the rack and you only have one hand to try to pull up the slack and push down the French Wrap to keep it released, soooooooo...don't bother. Just push up the bars on your rack and let the

French Wrap set and put your 'quick-attach safety' (QAS) on above the rack. You are 100% safe like this with your safety on the rope above the rack and the French Wrap set without locking off the rack. To continue the rappel, remove the QAS and gently push down on the French Wrap with two fingers and rappel. (See photo in pre-vious arti-cle.)

So you can see that the French Wrap Self-Belay system works. While I did not invent it, I did improve upon it. Both vertically competent members of the BATS grotto and DUG have used this system with great success and on some very long drops where not using it could result in death if some-thing were to go wrong. Feel free to contact me for more information, NBR33fans@aol.com.

1 American Caving Accidents, NSS News Volume 58, Number 4, Part 2, April 2000, page 2