Rappelling safely -- with and without a pack

By Eli Helmuth and Majka Burhardt

For most climbers, rappelling is the least favorite and most stressful part of climbing. When we scale the rock we are usually backed up by multiple points of protection, which only come into play if we fall. Yet when we rappel we trust everything to a single anchor system. With no backup, the system must be solid. This article covers the essentials: building a secure anchor and rappelling safely.

THREADING, TYING AND THROWING THE ROPE

LEAVE A METAL LINK AT THE MASTER POINT OF YOUR ANCHOR Avoid rappelling directly from cord or webbing. Ropes can slip and burn through the nylon, and friction weakens the nylon when you pull the ropes. Aluminum rappel rings are a cheap metal-link solution, but double them up to ensure adequate strength. Better yet, use a steel lap link (3/8" minimum) or carabiner, but be sure to leave a locking carabiner or tape the gate shut. If you have the gear, leave two carabiners just to be sure.

JOIN RAPPEL ROPES WITH AN OVERHAND BEND You can tie two ropes together for a long rappel in several ways. The double fisherman's knot or a retraced figure-8 are both secure, but they have bulky profiles that can snag or abrade when you pull them from below. They can also be difficult to untie. Many guides prefer the overhand bend, which is more than adequate for the forces involved in rappelling and less likely to snag. When using the overhand bend, tie it neatly, cinch the knot tight and leave a one-foot tail in each end (figure 1). *Never* use this knot to join two ropes of drastically different diameters.

AVOID ACCIDENTS AND TANGLES THROWING THE ROPE Alert climbers below you by yelling "Rope!" and then waiting for their OK before you drop the rope. Coiling the entire rope in one hand to throw down the cliff often results in tangles and knots. Instead split the coil into two sections, one in each hand, then throw the first coil straight *down* (not out-pitching style). If you're throwing two ropes, do one at a time.

In extreme winds where a thrown rope can sail above you and lodge in inaccessible terrain, survival can be at stake. You have two options that let you deploy the rope as you rappel: 1. Loop the rope in small lap coils and secure these coils to your harness on each side with shoulder-length slings, clipped at both ends into the gear loops. 2. Carry the ropes down in two medium-size stuff sacks (which could have been holding your rain jacket or snack food), one on each side. The sacks need loops so you can attach them to your harness. Also make sure the rope ends have solid stopper knots because you won't see them coming out of the bag. When you get to the next anchor, continue to hold onto the rope, keeping it just taut enough to prevent it from blowing sideways or up, yet slack enough for your partner to rappel.

GET DOWN IN ONE PIECE

KEEP LOOSE CLOTHING, HAIR AND HELMET STRAPS AWAY FROM THE RAPPEL DEVICE The same goes for anything that could catch in the device. The most painful thing I've heard of is loose arm skin catching. Yikes!

CONTROL YOUR DESCENT Most modern belay/rappel devices give a smooth, controlled descent. The old-school figure-8 device is mediocre due to its tendency to twist the ropes. Clip your device into the belay loop of the harness for maximum strength. (A carabiner clipped around the waist belt and leg loops can be loaded in three directions and weakened.) The belay loop also places the rappel device away from your body, making your backup function better.

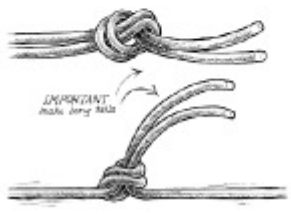
USE BACKUPS Always tie a knot in the end of each rappel rope. A knot will prevent you from rappelling off the rope ends. Many climbers also back up a rappel with a friction hitch, which prevents you from zipping down to the end of your rappel if you're struck unconscious by rockfall, lightning, seizure, etc., and allows you to release both hands to untangle the rope.

One of the best friction-hitch backups is an "autoblock" friction knot connected to your leg loop below the rappel device (see page 85 for a detailed autoblock illustration). Girth hitch a sewn shoulder-length sling to the leg loop on your brake-hand side. Wrap the remaining length of sling around both strands of the rope three or four times, forming an autoblock knot, and clip it back into your leg loop with a locking carabiner (figure 2) .***Figure 2. The autoblock backup.*** The autoblock must have a short tether so it can't ride up and come into contact with the rappel device, where it might jam or fail to lock. If you need to shorten the autoblock sling, put two or more wraps in the leg-loop girth hitch. As you rappel, slide the autoblock along to prevent it from locking up.

STAY UPRIGHT W ITH A HAUL BAG OR HEAVY PACK
Rappelling with a monster pack or haulbag can be frustrating and frightening. The weight on your back can flip you upside down or waste your abdominal muscles fighting to stay upright. To avoid the problem, girth hitch a long sling on the pack's master point and connect your rappel device directly to a locking carabiner on the sling. Girth hitch another sling and carabiner though the pack so you can easily clip it to anchors along the way. Finally, clip yourself into the rappel-device locker with a standard-length sewn sling girth-hitched to your belay loop (figure 3). ***Figure 3. Getting down with a heavy pack.*** The final step gives you more control and power by extending the device from your body; it also keeps the pack out of your way as you head down the cliff.

AVOID AND RETRIEVE STUCK ROPES
The first climber who descends should test the ropes to make sure they'll pull. If not, the climber up top can change the set-up. Using long slings to extend the ropes' thread point over an edge or just adding a carabiner to the rope/sling thread point often do the trick.

Even when you've done everything to smooth things, the ropes may still stick when you pull them. If you still have both ends of the rope in hand, you're in luck. Tie two autoblocks around *both* ropes, and use these, ascender-style, to climb back up to the rappel anchor, or free climb, using the autoblocks as a moving self belay. Tie frequent figure-8 knots in each rope and clip them to your harness belay loop as a backup as you ascend. When you get to the anchor, re-rig it for smoother pulling and try again. You can troubleshoot the system by having your partner below you test pull the ropes.



The worst-case scenario is only having one strand of a stuck rope in your hands. The only safe alternative is to lead a pitch to reach the top anchor. Use aid, stand in slings, do whatever necessary to reach the point where you can fix the problem and descend again.

Last, the worst, worst-case scenario happens when the ropes pull free, but hang up on the cliff as they fall. In this situation climbing the ropes is out -- they could come free with your weight on them. Your options here are to abandon the ropes, cutting off whatever you can salvage and descending with those scraps, or rig a belay and climb up to where the ropes are snagged. If you opt to climb to the snag, you can, if the available free rope allows, tie into an end and lead up, placing gear and belayed by your partner. When you get to the snag, you either have to rig a rappel station there, climb all the way back up to the higher rappel point, or downclimb while belayed by your partner.

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Figure 1. The overhand bend and double fisherman's knot. Both are safe, but the overhand bend is less likely to snag.

Get a grip

For extra security and control, wear leather gloves or, if balance permits, keep both hands on the brake side of the rope. You can increase friction by passing the brake end of the rope down the inside of your thigh and holding it on the outside of your thigh.

How to rig a bomber anchor

SOLID Thoroughly check each component of your anchor. Is the tree alive and well rooted? Are the wires on the fixed nut frayed? Is the piton loose? Beware fixed nylon slings that may have been weakened by ultra-violet rays or frayed by ropes being pulled directly through them. Don't blindly trust someone else's anchor. Bodyweight test all fixed gear -- *before* you unclip from your lead line or previous rappel. If in any doubt, add your own gear to the anchor.

REDUNDANT Build anchors from multiple pieces of solid gear (two or more). The only time I rappel from a single point is when it is a solid, healthy tree or something unquestionably bomber.

EQUALIZED Pre-equalize your anchor by tying all the components to one master point. A cordalette (a 20-foot sling of 7-millimeter cord) is the ideal tool. Beware the "death triangle," which does not share loads equally and actually multiplies the forces on the anchors, or other pseudo-equalizing methods that can shock-load pieces if one piece fails. ***A properly rigged and equalized anchor.The "death triangle" multiplies the forces on the anchor, and the single rappel ring is sketchy.***