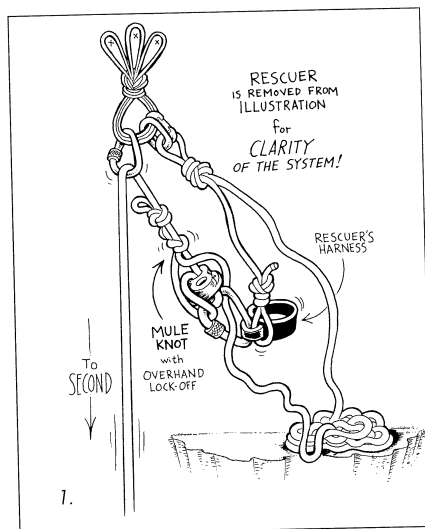
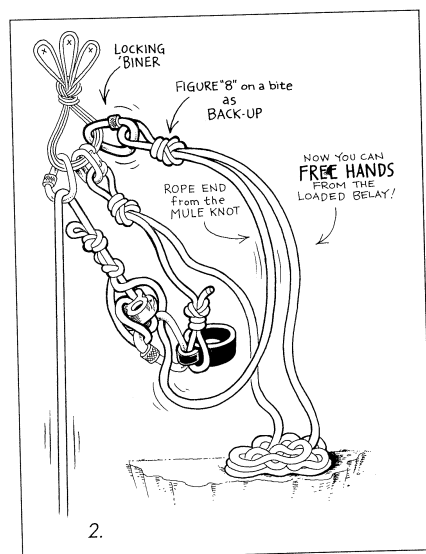
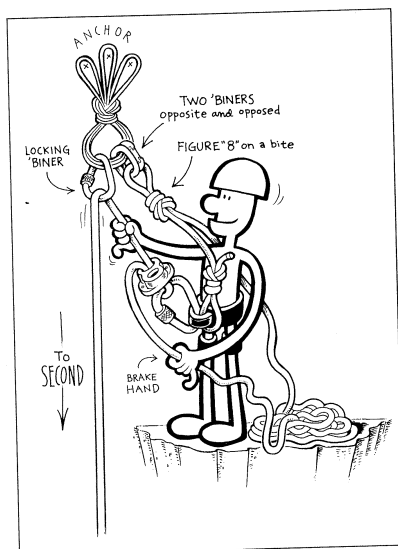


Freeing hands from a loaded belay.



Escaping the Belay

This chapter describes one of the most important aspects of self-rescue – how to escape a belay. This is often the first step in a successful rescue, as the rescuer needs to have his or her hands free to begin any of the techniques described in later chapters on rescuing a lead climber or a second. In addition, to escape a belay, the rescuer must use some of the most important skills in self-rescue – transferring a load using the appropriate knots and backing up a system.

This chapter consists of three parts. Parts 1 and 2 utilize a re-directed belay to free your hands and escape from the belay. Part 3 is illustrated using a waist belay.

PART 1: FREEING HANDS FROM A LOADED BELAY

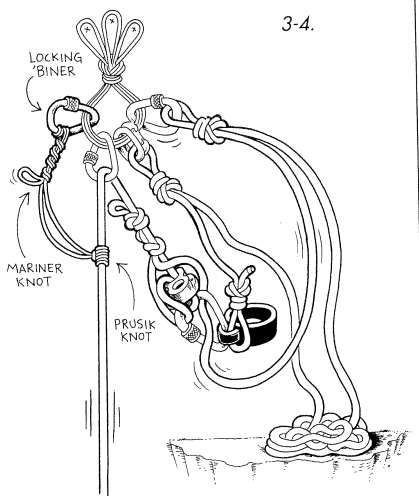
Scenario: You are belaying a climber who has weighted the rope, and you wish to take your hands off the rope. In this scenario you will be using a re-directed belay. Once you have built your anchors at about shoulder height, clip in. Next, re-direct the load from your second by clipping the segment of rope used for belaying through the anchor.

1. Tie a Mule knot with an overhand backup and load the knot.
2. Using the slack, tie a Figure Eight loop and secure it to your anchors to backup the system.
3. Survey the scene. Once you have double-checked the system, you may release your hands from the rope.

To release the Mule knot:

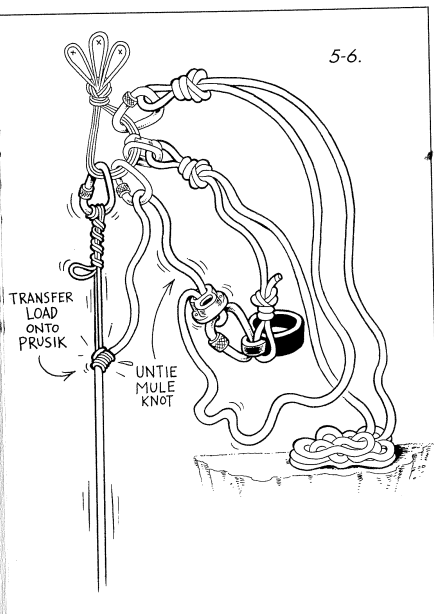
- Unclip and untie the backup Figure Eight loop.
- Untie the Overhand knot and Mule knot. While untying the Mule knot, keep your brake hand on the rope ready to hold the load. Due to the position of the Mule knot, your brake hand is now on the opposite side of the belay carabiner.
- The load is placed back on the belay device once the knot is pulled free. Just before the knot releases, it will become tight. As you pull with the brake hand, it will “pop” free.

3-4.



Escaping a loaded belay.

5-6.



PART 2: ESCAPING A LOADED BELAY

Scenario: You are holding a climber who has weighted the rope. Your objective is to tie-off the climber/weighted rope and unclip from the belay device.

Two similar methods are described below.

Method 1: Loading the rope to the anchor with a Prusik knot

1. Tie a Mule knot with an overhand backup and load the knot.
2. Using the slack, tie a Figure Eight loop and secure it to your anchors to backup the system.
3. Tie a Prusik knot to the loaded section of the rope.
4. Attach the Prusik knot to your anchor using a Mariner knot or Munter Mule knot. If you are unable to use extra rope or a cordelette, you can extend webbing to tie the Mariner knot by:
 - Girth Hitch a loop of webbing or accessory cord to the Prusik knot.
 - Clip a carabiner to the anchors.
 - Attaching the Girth-hitched webbing or accessory cord to the carabiner with a Mariner knot.
 - To backup the Mariner knot, clip a quickdraw from the protruding loop of the Mariner knot to the anchor. Allow enough slack to prevent loading the quickdraw if the Mariner knot slips.
5. Untie the Mule knot and transfer the load to the Mariner knot and Prusik knot.
6. Survey the scene. Make sure the Prusik and Mariner knots are holding and not slipping.
7. Unclip your harness from the original belay carabiner. Next, to reduce extensions in the system, tie a Munter Mule knot to the anchor just above the loaded Prusik knot.

Note: Be sure not to untie yourself from a secure anchor.

To load the belay back to the belay device:

1. Clip your harness back into the system with your original locking belay carabiner. Remove the Munter Mule that was tied to reduce the extension in the system. Next, tie a Mule Knot with an overhand to lock your belay device.
2. Untie and unload the Mariner knot. This will load the Mule knot.
3. Remove the Prusik knot.
4. Remove the backup Figure Eight knot attached to the anchors.
5. Untie and unload the Mule knot. This will place the load on your belay device.

Method 2: Loading the rope to the anchor with a Munter Mule combination

If the belay escape system is holding a heavy load, or has to be in place for a long period of time, this method is better than Method 1 because the load is placed on the main rope rather than on a single friction knot.

Follow steps 1 through 7 in Method 1: At this point, the load is on the Prusik and Mariner knots.

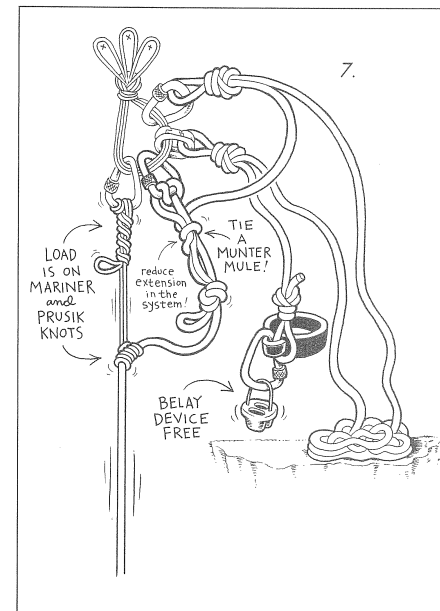
8. Release the Mariner knot and load the Munter Mule combination.
9. Retie the Mariner knot to the carabiner. Load the Mariner knot by sliding the Prusik knot down the rope.

To load the belay back to the belay device:

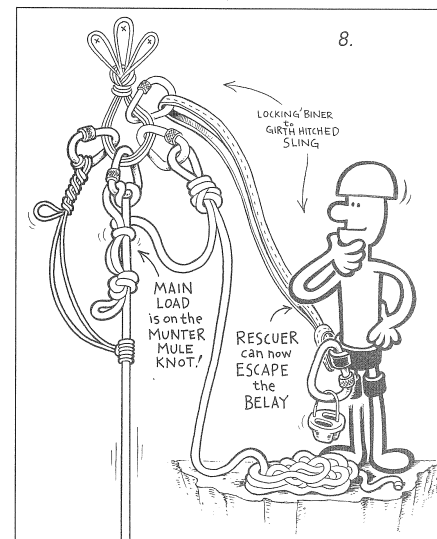
1. Untie and unload the Munter Mule combination to load your Prusik and Mariner knot.
2. Clip your belay carabiner to your harness. Next, attach your belay device to the rope and tie a Mule knot with an overhand.
3. Untie and unload the Mariner knot. This will load the belay device and Mule knot.
4. Remove the Prusik knot.
5. Remove the backup Figure Eight knot attached to the anchors.
6. Untie and unload the Mule knot to transfer the load back to your belay device.

Note: If you are using the Munter Mule combination, you can make a simple transition by reestablishing the belay with a Munter Hitch.

7.



8.



Escaping the belay using a Munter Mule combination.

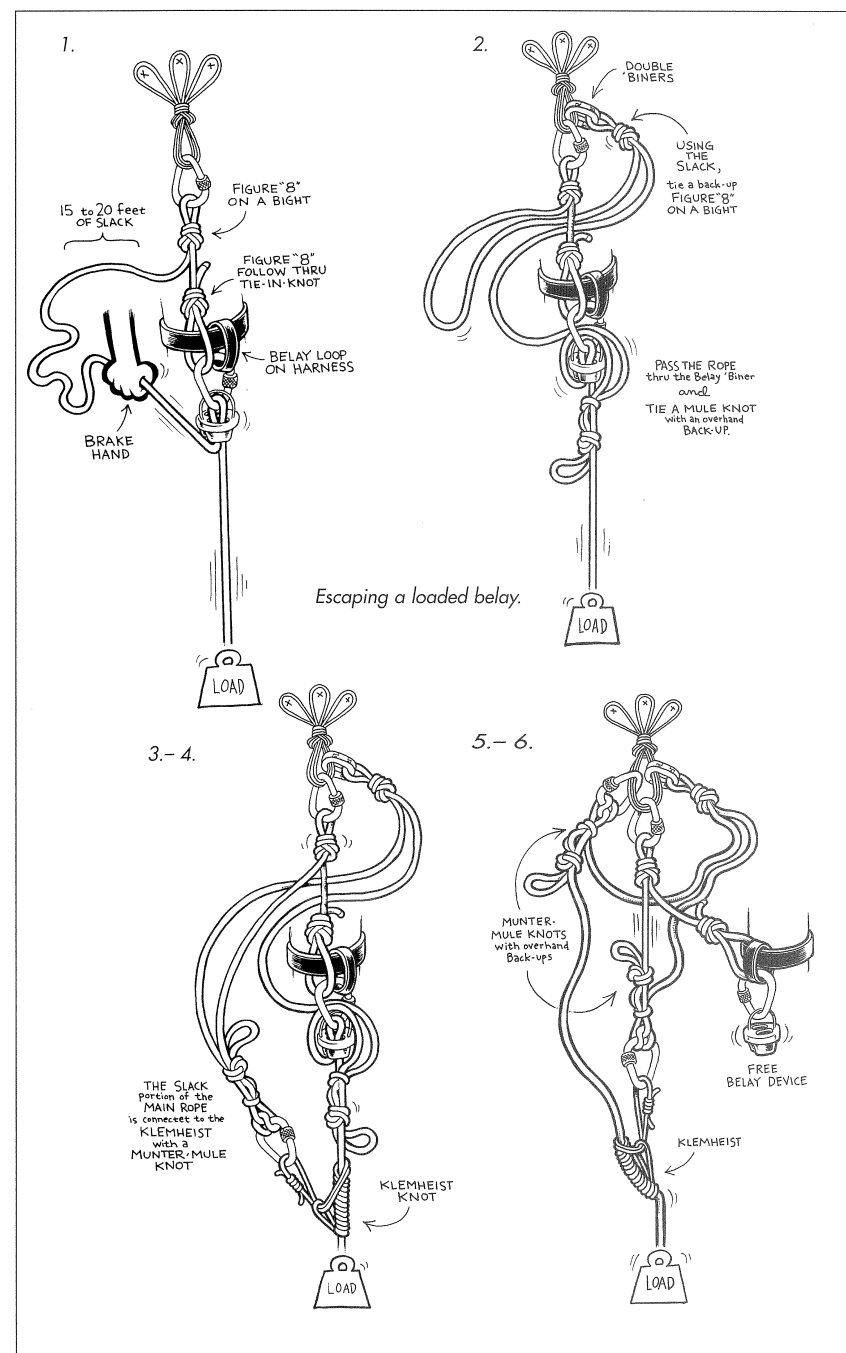
PART 3: ESCAPING FROM A LOADED BELAY

Scenario: You are belaying at the top of a pitch, and due to unforeseen circumstances, your objective is to tie-off the climber on the weighted rope and unclip from the belay device. This method utilizes the rope more than the previous methods, and assumes you are belaying off your waist. For this particular method, you must have 20 to 25 feet of slack available. Slack is provided when a pitch is less than a full rope's length, and/or when a distance of the pitch has been ascended by the second. If slack is not available, use either of the first two methods previously described to transfer the load from your belay device to the anchor. The illustrations depict a typical belay anchor.

1. Tie a Mule knot with an overhand backup and load the knot.
2. Using the slack, tie a Figure Eight loop and secure it to your anchors to backup the system.
3. Using a sling, tie a Klemheist knot to the loaded section of the rope. A Prusik knot can be used, but a Klemheist is recommended if you do not have a Prusik cord.

Note: In this scenario, the leader has used the main rope to tie a Figure Eight on a bight and clipped it into the anchor. The other strand of rope, coming from the Figure Eight on a bight, should be slack. If there is not 20 to 25 feet of slack available, use either of the two methods described in Part 2.

4. Use the slack from the Figure Eight anchor to attach the Klemheist to the anchor. You will be loading the Figure Eight anchor, not the backup Figure Eight. To do this:
 - Clip a locking carabiner or two opposite/opposed carabiners to the Klemheist.
 - Using the slack from the Figure Eight anchor, tie a Munter Mule knot. While tying the Munter Mule knot, keep the rope very taut to the anchor.
5. Unload the Mule knot that is locking your belay device to load the Klemheist and Munter Mule knots.
6. Attach the main rope to the anchor using a Munter Mule knot. The Munter Mule knot should be kept very taut. At this point, you may need to adjust the backup Figure Eight knot.
7. You should now be free to maneuver.



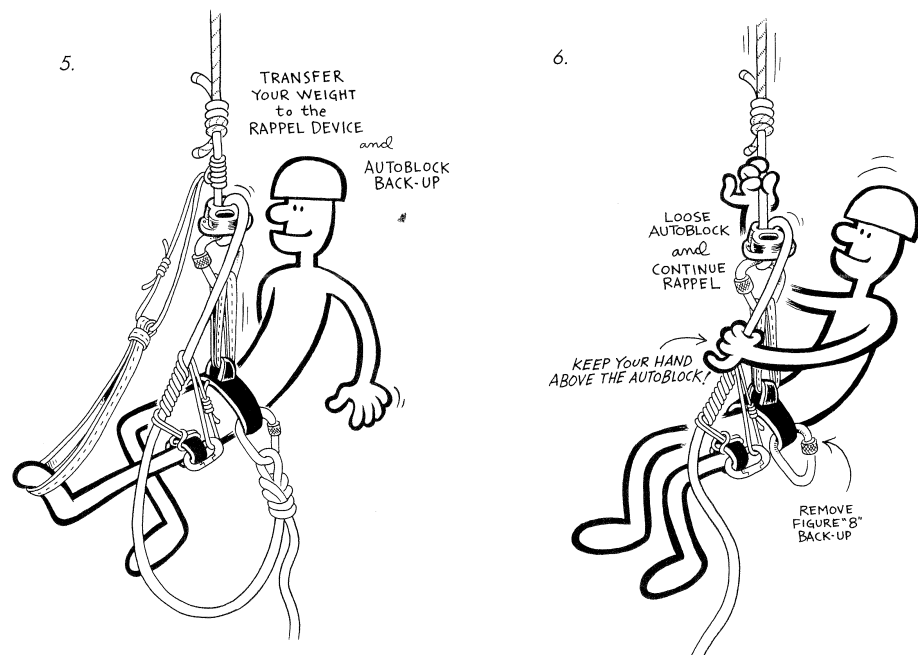
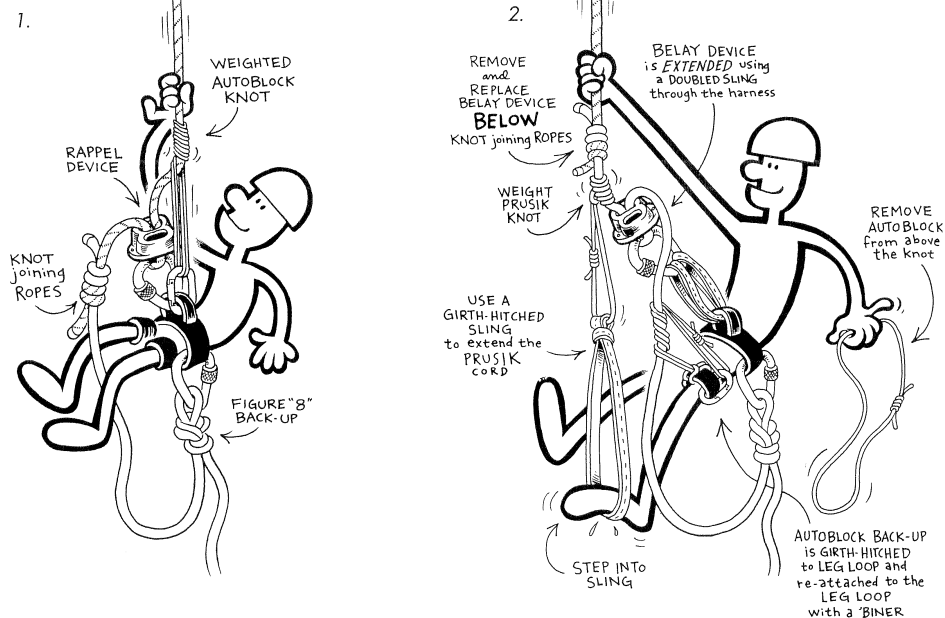
Assisted and Counter-Weight Rappels

This chapter describes two methods of rappelling with a victim. In an assisted rappel, the rescuer and the victim descend the same rope while sharing the same rappel device. In the counter-weight rappel, the rescuer and the victim descend the same rope while counter-balancing one another.

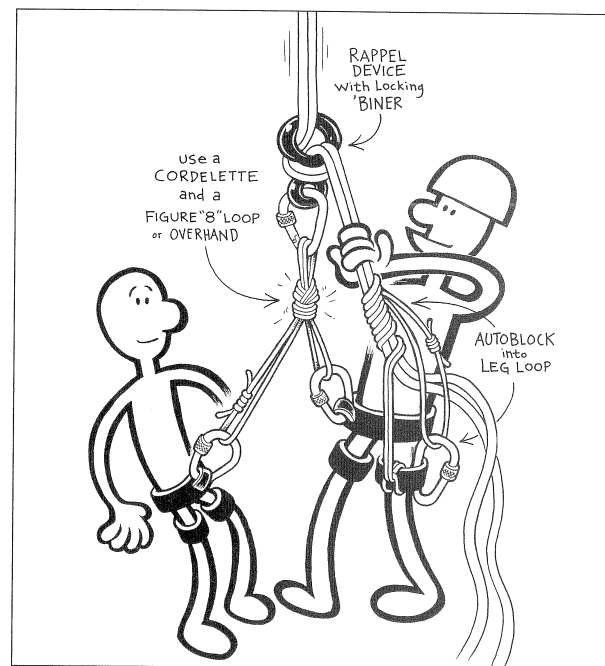
ASSISTED RAPPEL

The assisted rappel, as described above, is a technique by which the rescuer and the victim descend the same rope, in close proximity, while sharing the *same* rappel device. This scenario would be encountered if the victim is unable to rappel without assistance due to injury or inexperience.

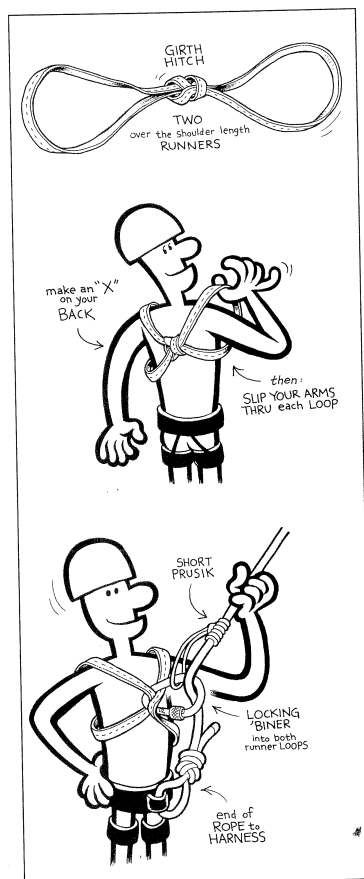
1. Attach a rappel device and locking carabiner through both strands of the rappel ropes. The ropes must be doubled to retrieve them after the rappel.



Passing a knot while on a free-hanging rappel.



Assisted rappel in the locked position.



Construction of a chest harness.

Note: The rope ends should always be tied together prior to beginning the rappel to prevent rappelling off the end of the rope.

2. To avoid the "bumper car syndrome" attach slings of different lengths, or a cordelette with the Figure Eight loop tied off center, to the locking rappel carabiner.
3. Attach each sling or loop in the cordelette to the rescuer's and victim's harness using a locking carabiner for each harness.

Note: The length of the sling that the victim is attached to may be adjusted for different circumstances. A short sling allows the victim to be supported in the rescuer's lap while descending. A sling equal in length to that attached to the rescuer enables the victim to descend next to the rescuer. However, this can cause the "bumper car syndrome." Generally, I prefer to use a longer sling which allows the victim to descend beneath the rescuer. This set-up allows the rescuer to carry the victim piggyback, if injured, and ensures that the rappel device is in reach. Also, the rescuer is typically looking down to follow the easiest line of descent and find the next suitable rappel station.

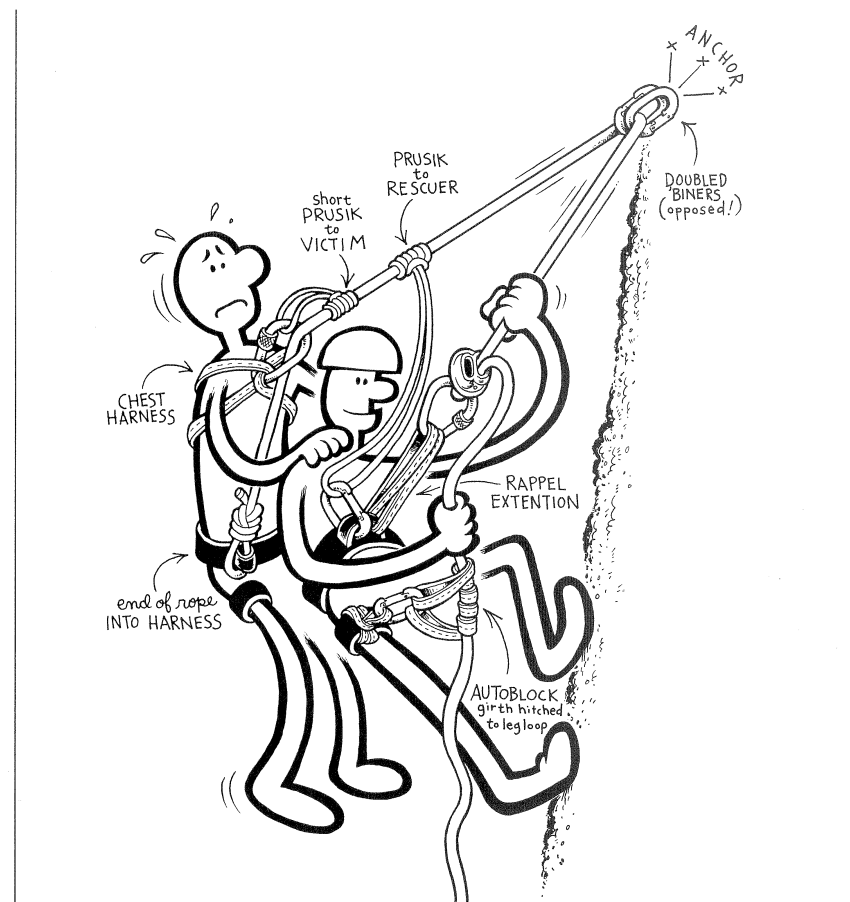
4. To backup the rappel, tie an Autoblock knot on the rappel rope, beneath the rappel device. The Autoblock should be attached to the leg loop of the rescuer's harness using a short section of cord or webbing.
5. Girth Hitch separate slings through both the victim's harness and the rescuer's harness, and attach a locking carabiner to each sling. These slings and locking carabiners are used to anchor the rescuer and victim during multiple rappels.

6. Rappel down the rope and monitor the victim.

COUNTER-WEIGHT RAPPEL

The counter-weight rappel is a technique by which the rescuer and the victim descend the same rope, in close proximity, while counter-balancing one another. In essence, the rescuer is lowering the victim while rappelling on the same rope.

The counter-weight rappel, as with all techniques presented herein, must be practiced before it can be used in a rescue situation. When practicing, the pretend victim and rescuer should each have an independent safety rope and belayer.

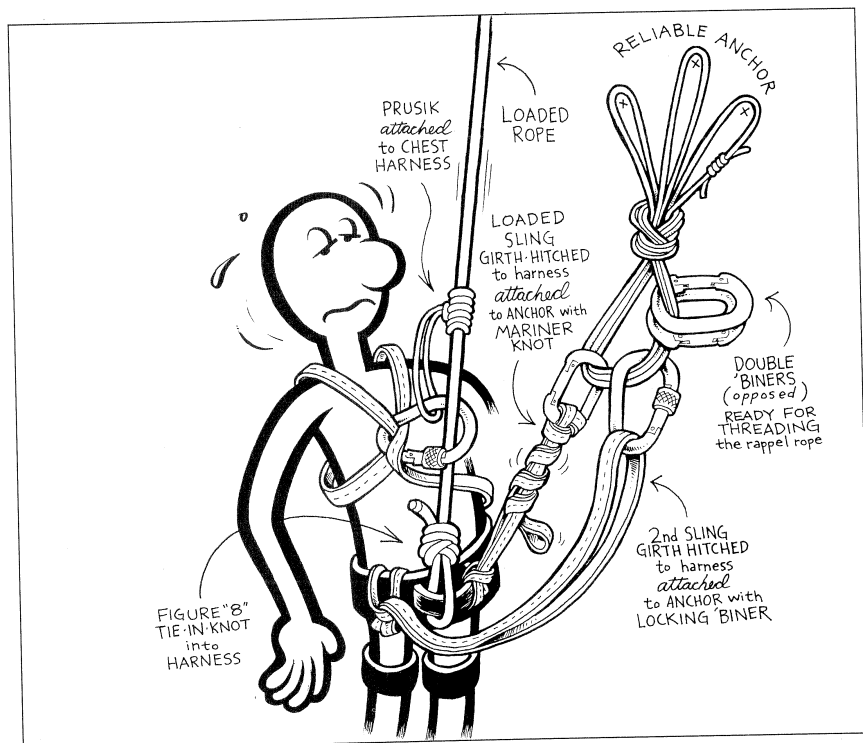


Single Rappel

The sequence is described assuming that the rescuer and the victim are both secured to a reliable rappel station. To anchor to the rappel station, use slings that have locking carabiners at each end and Girth Hitch the slings through each harness. The scenario also requires that the climbers share a rope and that the victim is tied into one end of the rope.

If the victim is injured or otherwise unable to assist in the rescue, you may have difficulty unclipping the victim from the anchor. In this instance, you may choose to attach the victim to the anchor with a Mariner knot. The rescuer will ease the victim's weight onto the Mariner knot and the sling with the locking carabiner that is Girth-hitched to the victim's harness should serve as backup. When attaching the victim to an anchor with a Mariner knot, if necessary, Girth Hitch two slings to ensure enough webbing to tie the Mariner Knot. If you use a cordelette to attach the victim, a Munter Mule Knot is preferred instead of a Mariner Knot.

Close up of counter-weight rappel setup. If the slings on the chest harness are too loose, slip one loop through the other and tie an overhand knot around both. Clip into the overhand loop. I also like to add a short Prusik Knot from the carabiner to the rope. This Prusik holds the carabiner in place higher on the rope. This prevents the victim from slouching down.



Close-up of how to anchor a victim during multiple counter-weight rappels.

Note: Rappels greater than half the length of the rope require two ropes to be tied together. Two differences in the technique arise when two ropes are used. First, the rescuer will need to pass a knot while rappelling (see description in Chapter 6). Second, the rescuer will need to untie the victim to retrieve the rope during multiple rappels.

During the single-rope counter-weight rappel, the victim is always tied into one end of the rope, and the rescuer is passing the slack rope through his rappel device.

Setup

1. Tie a Figure Eight knot at the end of the rope to prevent rappelling off the end. The loop of the Figure Eight will come in handy later and seldom comes undone.
2. Attach a chest harness made of two Girth-hitched slings to the victim. Secure the chest harness to the victim's end of the rope using a carabiner and friction knot.

Procedure

1. Attach a rappel device to the rescuer's side of the rope, under the anchor, and clip into it. To backup, extend your rappel device and attach an Autoblock knot below the rap-

pel device and connect it to your leg loop.

2. Tie a Mule knot with an overhand backup to lock the rappel device.
3. Attach a Prusik knot to the victim's side of the rope approximately half a meter from the victim's harness. If a chest harness is used, attach this Prusik knot above the knot connecting the chest harness to the rope.
4. Clip the other end of the Prusik knot to the rescuer's harness.

Note: This Prusik knot will be under tension. Therefore, make sure the knot is clipped to the rescuer's harness through both the leg loop and the swami belt.

5. Unclip the victim from the anchors (Girth-hitched webbing and locking carabiner). Unload the Mariner knot and load the rescuer's rappel device and Mule knot.
6. Unload the Mule knot and load the rappel device.
7. Unclip from the anchors and rappel.

Options: Rappel side by side or, if the victim is injured, carry the victim piggyback during the rappel. To carry the victim piggyback, the Prusik knot running from the victim's side of the rope to your harness should be positioned in front of you. The section of rope between the Prusik knot and the victim's harness, as well as the victim, should be positioned over your shoulder and behind you.

MULTIPLE RAPPEL TRANSITION

Scenario: If you must pass more than one rappel station to reach the ground, the rescuer will need to build and connect himself/herself, and the victim, to a new anchor at each station. The rescuer will then need to retrieve the rope(s) and establish a new rappel.

1. Lock off the autoblock backup to stop the descent.
2. To backup, tie a Figure Eight Knot below your rappel device and clip it to your harness.
3. Set up the anchors for the next rappel.
4. If the victim is unable to assist, attach the victim to the rappel station with a Mariner or Munter Mule Knot.
5. Clip the victim into the rappel station with the sling and locking carabiner that is Girth-hitched to the victim's harness.
6. Clip yourself into the rappel station with the sling and locking carabiner that is Girth-hitched to your harness. Unload the Autoblock to weight the anchors.
7. Survey the scene. *The victim should remain tied into the rope.*

Note: At this point consider continuing your descent using an Assisted Rappel. The Assisted Rappel is typically more efficient. If you wish to continue with a Counter Weight Rappel, proceed with steps 8 through 11.

8. Unclip the rappel device, *untie the knot at the end of the rope* (Figure Eight safety knot), and pull the rope through your previous rappel station.

Note: If you are rappelling with two ropes tied together, you will need to untie the victim to retrieve the rope.

9. Tie a Figure Eight loop at the end of the rope to prevent rappelling off the end. Set up for the next rappel.
10. Attach your rappel device and tie a Mule knot.
11. Resume your rappel as explained in the counter-weight rappel section.

Leader Rescue

CHAPTER 8

The objective of this section is to provide the reader with the framework of a safe system for a leader rescue. Various complications may arise, however, in which this system is not recommended. Be sure to survey the scene to determine what will work given the conditions.

Prior to attempting a leader rescue using The Five-Step Process or Counter-Weight Rappel Transition technique, the reliability of the top anchor or placement must be carefully considered. Unfortunately, in these scenarios, you will not be able to visually inspect or reinforce the top anchor or placement. However, you must have *complete confidence* that the top anchor will support both the victim and the additional weight of a climber ascending the rope. If, in your judgement, the top anchor is not completely reliable, *do not attempt to ascend to the victim*. You will endanger the victim, yourself, and possibly the lives of others.

Scenario: You are belaying a leader who falls near the top of a 150-foot pitch and is incapacitated by injuries. The leader is more than half a rope length from the belay, so there is not enough rope to lower the victim to the belay or ground.

Three leader-rescue methods are described in this section. The first is the Five-Step Process; the second is the Counter-weight Rappel Transition; the third is Assisting the Leader to Lower.

THE FIVE-STEP PROCESS

The basic sequence for The Five-Step Process involves the following:

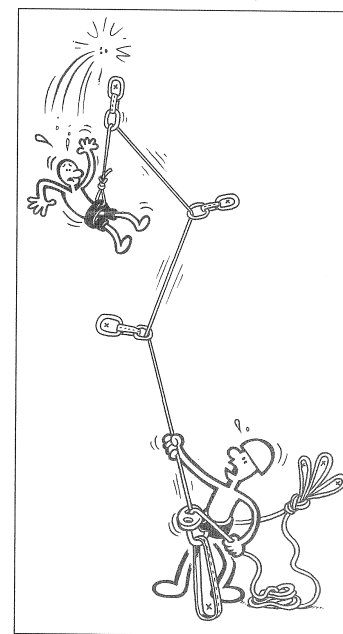
1. Ascend to the victim.
2. Reinforce the anchors and attach the leader to the anchors.
3. Descend.
4. Re-ascend the rope.
5. Lower the victim.

Before beginning your sequence, you have to decide between two options – either lowering or raising the victim to a secure anchor.

- **First Option:** Lower the victim as close as possible to the best anchor position.

Points to consider:

- a. The victim's injuries. It is not advisable to raise or lower an unconscious victim unless you are with the victim. The injuries may be compounded if the victim is hitting the rock as he/she is lowered.
- b. The estimated strength of the protection point you would like to lower the victim to.



Help Me!