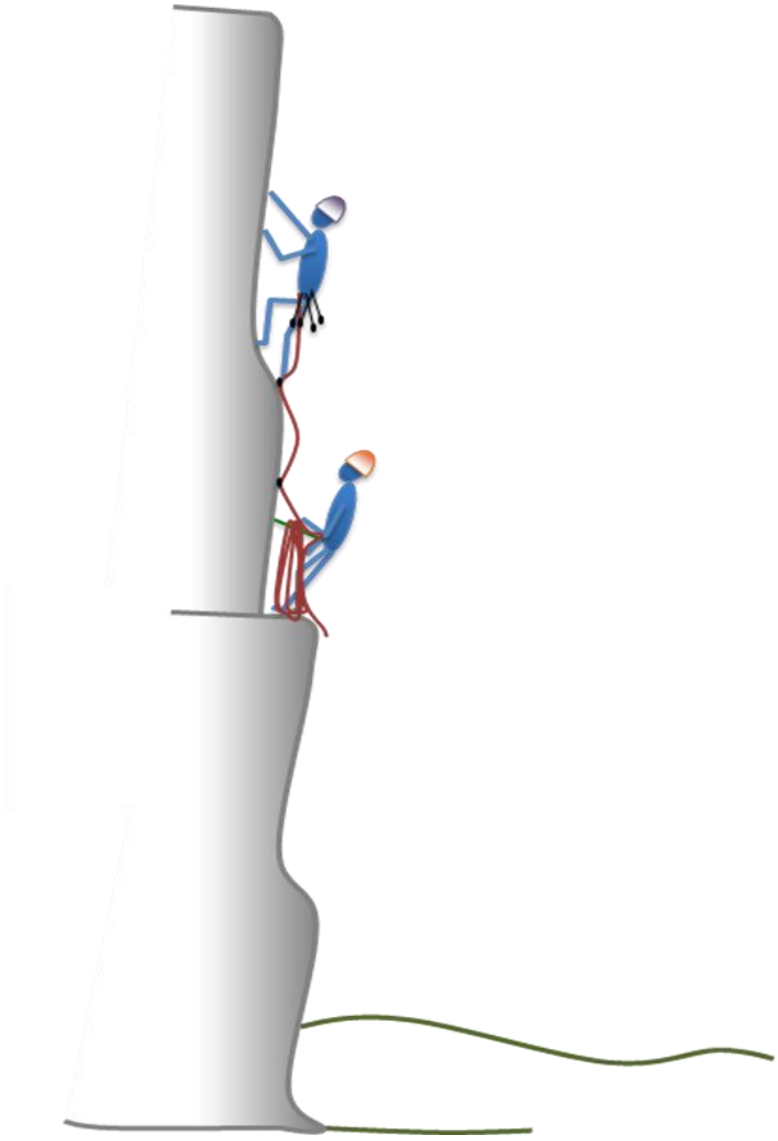
AMC'S BOSTON CHAPTER MOUNTAINEERING COMMITTEE'S ROCK CLIMBING PROGRAM HANDBOOK



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We would like to extend a special thanks to the past editors of the program handbook for their contributions over the years.

"The best climber in the world is the one having the most fun!" Alex Lowe

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Introduction

Community

Welcome to the AMC's Boston Chapter Mountaineering Committee's Rock Climbing Program. Boston has a very active climbing community dating back to the 1920's when some of the first routes at Rattlesnake Rocks were attempted. Even before then, Boston's AMC climbers were pioneers, establishing first ascents in some of the world's most challenging venues: Alaska, Canada, and elsewhere. In more modern times, graduates of the AMC Rock Climbing Program have gone on to put up some of the hardest rock routes in the Northeast, and made first ascents of some of the world's most difficult mountains. That pioneering spirit and tradition is carried on today by you, the participants in this program. The Boston climbing community has a wide range of different climbers; all sharing four common passions: for the outdoors, for climbing, for individual challenge, and for the community. You are about to embark on an exciting journey; we sincerely hope this program will enrich your outdoor experience.

Legacy

Thousands have taken this program over the years. Some have gone on to climb "The Nose" on El Capitan, many have made it up Mt. Rainier and the Grand Teton, some have made it to the summit of Denali, a few have climbed high in South America and Nepal, and at least one has made it to the summit of Everest. Many never venture far from the Quincy Quarries. Yet all have started their rock or mountaineering climbing career in this program. Wherever you may fall in this spectrum we hope you catch our enthusiasm for climbing. It is contagious! You will never know where (in the world) it will lead!

Program Leaders

Putting together a program of this magnitude is not an easy task; we depend on many folks to make this work. We would like to express our special appreciation and gratitude to all the people who helped make this year's program possible, for many of them volunteering for the spring program is an annual event. Acknowledging folks in this manner is always risky because people will inevitably be left out; still, we feel that those listed here have given so much for so long that they should be recognized.

First there is the Program Committee. Next we would like to acknowledge the weekend leaders. Each one of these is an unpaid volunteer leader, attempting to give back to the larger climbing community. They are the ones that absolutely, positively, have to be there each day, on time, no matter what. They also have to respond to crises: real and imagined, while maintaining an appearance of calm and control.

We hope you will join us in thanking your climbing leaders/instructors. Without them we could not carry on the oldest continuous, most successful, volunteer-led rock climbing instruction program in the world! Most of our assistant instructors have taken the program over the last two years and have that contagious enthusiasm mentioned earlier. Please take a moment to say "thank you" personally to each of the instructors and assistants you meet in the program. That personal note is what keeps them coming back year after year.

The organizers of New Seconds Weekend merit special acknowledgment. This weekend is a chance for those who graduated from this program to second a multi-pitch climb and aspire to become lead climbers in their own right. New Seconds leaders are too numerous to mention, but they are perhaps the most important component of the program. They will be what you, this year's Rock Program grads, will remember and emulate in years to come. Almost all of these leaders have graduated from this same program, they faced the same anxiety that you will face, they persevered and triumphed, and so will you.

Feedback

We hope you enjoy the program! If you have any suggestions or comments to improve our program please contact us. We also urge everyone to fill out the comment section of the "Green Book" each week. These comments are very important in helping us decide what changes we need to make in subsequent years.

Please feel free to also make comments and/or ask any questions directly to the Rock Climbing Program Committee. You can simply email us at: rock@amcbostonclimbers.org

Program Overview

Rock climbing involves certain inherent risks. These are minimized where possible, but climbing requires vigilance from all program participants. **Each participant is responsible for his/her own safety and for the safety of those around them**. Check with the instructor before attempting any exercise. Understand the risks involved. Double check your knots and harness buckles and those of the people around you. Be careful not to knock any rocks down the cliffs, there may be someone below.

Material

On Knots Night you should have received the following material:

- Program Handbook (this document)
- *How to Rock Climb!*, by John Long (5th edition)
- "Green Book"
- Six foot section of rope to practice knots
- Helmet and harness (if you need to rent them)

The practice rope, helmet and harness are on loan for the program; the Program Handbook and John Long book are yours to keep.

Content

Over the course of four instructional weekends the Rock Program will teach you the necessary safety skills to rock climb and to set a top-rope anchor for climbing. The program will instruct you in belaying, which is the most basic yet most important climbing skill you will learn. The program will also teach you how to rappel and how to ascend a rope, two skills that are needed if you ever do multi-pitch climbs. As for actual climbing, you will get ample opportunity to climb; how hard you climb is up to you.

We urge you, after the safety skills portion of the program is completed in the morning, to spend the afternoon climbing with the instructors, assistants and fellow climbers to further your rock climbing technique.

Homework

This is what you need to do before each weekend:

- Read the appropriate section of the *How to Rock Climb!* book
- Practice your knots
- Read the appropriate sections of this manual and check the knots you will need to know

Remember, you will build upon your knots each weekend.
You will be asked to demonstrate previous knots.

Instructional Weekends Overview

Where

The program is held in the Blue Hills Reservation (Rattlesnake Rocks) and at the Quincy Quarries, both in Quincy, MA. We park at the Shea Memorial ice rink during the weekends that we are at Rattlesnake Rocks. For the Quarries we park at the lot just off Ricciuti Drive.

When

The meeting time for every weekend is 8:30AM.

Weekend Leaders

Each weekend will have overall leader(s) chosen by the program leaders for that particular weekend.

Instructors

Multiple volunteer instructors will be charged with leading groups of students each weekend. Each of these instructors is an experienced rock climber with years of leading and instructing. We highly recommend everyone to try different instructors each weekend.

Assistant Instructors

These are volunteers that aid the main instructor(s). Most of these assistant instructors have taken the program recently.

Sign-in

Each week there will be a sign-in sheet usually located at the back of one of the weekend leader's car. Make sure you sign in.

Club Gear

We will supply all hardware necessary for the program. On Knots Night you should have received a harness and helmet, provided you gave a security deposit equivalent to the replacement value of these items. We have a limited selection of climbing shoes, which are available in the parking lot each day of the instructional weekends. Please note that these are old, used shoes. Students may bring their own harnesses, helmets, shoes, carabiners, slings and belay devices. Students should not take any hardware such as belay devices or carabiners from the equipment bins/bags; instructors will gather this gear for their group.

Personal Gear

It is early spring, so the weather can change dramatically. Dress appropriately for the conditions. Everyone should be able to dress waterproof from head to toe (hat/hood, jacket, pants, shoes) if the situation asks for it. E.g. bring a rain jacket, rain or wind pants, extra layers, hat, gloves, a couple quarts of water, lunch, and snacks, all contained in a small pack.

Groups

At the parking lot you will team up with 4-6 students and an instructor with an assistant. We urge students to team up with different instructors each weekend. Once a group is formed you will head off to the cliffs. Every student and assistant will be asked to help carry group gear (ropes, slings, belay devices, carabiners) to the cliff.

Distance to Cliffs

Rattlesnake Rocks are about a mile hike from the Shea Memorial ice rink parking lot. From the Quincy Quarries parking lot, the climbing area is directly adjacent.

Class Length

Classes run from 8:30AM until about 3:00PM.

Afternoon Climbing

After the instructional part in the morning, we will leave the ropes up and invite you to stay through the afternoon and practice your climbing. Please feel free to come and climb the afternoon of the day you are not scheduled to receive instruction.

Weather

We teach rain or shine! We expect you to show up for the day. Remember, dress appropriately for the conditions. Dress waterproof from head to toe (hat, jacket, pants, shoes). Everyone should bring a rain jacket, rain or wind pants, extra layers, hat and gloves.

Program Rules

"Green Book"

MAKE SURE YOU BRING YOUR "GREEN BOOK" EACH DAY AND HAVE IT SIGNED BY THE INSTRUCTORS WHO HAVE OBSERVED YOU EACH DAY. REMEMBER THAT INDIVIDUAL INSTRUCTORS MAY NOT BE PRESENT EVERY WEEKEND DAY.

DO NOT LEAVE GEAR OR PERSONAL ARTICLES VISIBLE IN YOUR CAR.

If you are late

On weekends when the program is at Rattlesnake Rocks, if you arrive late and find no one at the Shea Memorial ice rink parking lot, park and hike up to the cliffs. Weekend leaders move their vehicles and gear once they have completed the morning check-in to a fire road at the base of the climbs. When we are at the Quincy Quarries, check the small parking lot or the big tree at the entrance to the Quarries itself.

At the cliffs

Wear your helmet at all times. Listen to what your instructors say. If you are confused or not sure of something, SPEAK UP! Climbing is not for YO-YO's—these folks have no business on a cliff. Check the gear and the knots of your climbing partner, and make sure she or he checks yours.

NEVER APPROACH THE EDGE OF A CLIFF UNLESS YOU ARE TIED IN.

Setting anchors

Once at the cliff your instructor will show you how to set up a top-rope anchor system. Volunteer to help out, and never be embarrassed that you will make a mistake; the whole point of this program is hands-on training. Over the next 4 weeks you will have numerous chances to set up a top-rope. By the time the program is completed you should have acquired the skills to do it on your own.

Handling the rope

The first time you handle the rope you may notice that it can be unwieldy. If you are not careful how you uncoil the rope, you will be left with nothing but tangled spaghetti at the end. You will get better over time but take every opportunity to coil the rope and improve your rope-handling skills.

Belaying

This is most basic skill in climbing but the one that must be mastered immediately since you are literally holding the life of your partner in your hands. Instructors will back you up during your first belays. Volunteer to belay as much as possible during the program.

Climbing

This is what it is all about! Do not worry about what grade you are climbing during the first few weeks of the program. Just get on the rock and have fun! When you get home, go back and re-read the appropriate sections of John Long's *How to Rock Climb!* book.

Helmets

You are required to wear helmets at all times during the program, whether at the top or bottom of the cliffs.

At the end of the day

Make sure you have completed the required skills for that weekend and have your "Green Book" signed. When at Rattlesnake Rocks, the weekend leaders' vehicles will have been moved to the path just below the cliffs. You should return all club gear to the appropriate bins at the vehicles. When at the Quarries, the weekend leaders' vehicles will be in the lot where you picked up the gear. Again, return the gear to the appropriate place.

Missed skills

We cannot promise you that you will be able to make up any missed weekends, as it depends if instructors are available. Making up missed skills is your responsibility. If you know that you will have to make up a skill, please communicate your situation as soon as possible. We will try to find a solution with you. You can contact us per email: rock@amcbostonclimbers.org

Climbing: Things to Know and Do

The Fears

"Statistically, rock climbing is the least dangerous of all the so-called thrill sports because it employs over a century's worth of refined technique and solid technology", John Long, *How to Rock Climb!* (5th edition)

On falling and safety

Top-roping is, statistically, not a very dangerous sport. Yet it takes place in an environment where the potential for danger is always present. Mother Gravity neither rests nor forgives. A "minor oversight" may very well result in a long fall to the hard ground, serious injury the likely result.

So how should the new student feel about this? Stark fear? Utter nonchalance? No! What the beginner should feel is a very justifiable concern. When you climb, you are at risk. That risk is mitigated only by your own understanding and awareness of the situation, but with that understanding and awareness the climber on a top-rope can climb and (usually) fall without fear.

The system works

Top-roping evolved as a distinct sub-sport of mountaineering and continuous climbing. It was conceived of as a practice for real climbing. As such, it was set up as an environment in which the climber could try very difficult moves, and fall repeatedly without fear of injury. When the system (harness, rope, anchors, and belayer) works the climber won't hit the ground. That is, after all, what the system is designed for!

The responsibility is yours

It is the responsibility of the climber to verify the safety of the situation. Is the anchor at the top secure? Is it backed up? Are the slings and rope set up to avoid chafing over a sharp edge? Are the carabiners locked? Are the knots tied correctly and backed-up where needed? Is the rope intact and strong? Is the harness correctly worn, fastened and attached to the rope? Is the belayer positioned properly? Is the belayer competent? If the answer to any of these questions is not a firm "YES", then DO NOT CLIMB! If you do not trust the situation, then change the setup, or your belayer, or choose not to climb, but always use your OWN judgment.

This clearly presents some difficulty at the beginning. As a student, you must, to some degree, place your trust in the instructors. A good instructor, however, will not ask for blind faith. He/she will rather help you understand the techniques, and by demonstration and discussion, help you form your own intuitive understanding of how the system works, or why things are done a certain way. Ask about it. The buck stops with you, the student.

There are ways you can get hurt top-roping

When the climber is not directly below the anchor at the top, Mother Gravity will cause the climber, in a fall, to swing sideways toward the center point. This is called the pendulum. This swing, depending on the distance, can be quite forceful, and—especially if there are jagged rocks at the climber's point of impact—quite dangerous. It is worth pointing out here that there is one type of serious injury that is possible in such a situation: namely, head injury. Many people do not wear helmets while top-roping but do wear them when multi-pitch climbing. This is a personal decision that they make. During the program you are required to wear a helmet at all times. Failure to comply will result in dismissal.

Rope stretch and system slack

Even in a properly set-up system with a competent belayer, a falling climber will not be stopped immediately; that is, the climber will always fall some distance (two or three feet, depending). There are several factors contributing to this distance, including actual slack in the rope, slippage through the belay itself, the position of the belayer in relation to the anchor, and the actual rope stretch itself. The point to remember here is that you will fall that small distance. If you are near the ground or just above a ledge, be prepared to land on it, just as if you had jumped down. Also be aware of what may happen if you have your toe jammed into a crack when you fall.

Falling rocks or equipment from above

Even a fairly small rock, when falling all the way from the top of the cliff, will make a lasting impression on a climber's head. This is probably the most important motivation for wearing a helmet while climbing or belaying. What do you do when you see a rock plummeting toward your head and you are standing below it or anchored in? WEAR YOUR HELMET AT ALL TIMES! This is not only required within the program, it is common sense! How did that rock or carabiner or whatever come to be plummeting toward your cranium? Chances are very good that it was not God but some human being who dropped or pushed it over the edge. Why? Probably just "carelessness", but in this case a little carelessness can have tremendous and even fatal consequences. When at the top of the cliff, be very careful not to dislodge loose rock onto the heads of your friends below, much easier to do than you might think. If you do dislodge a rock, however small, or drop a carabiner, or drop *anything* that is not soft and fluffy, you should *immediately, without further consideration, at the top of your lungs, scream, "ROCK!"* I do not mean, say "rock"… I mean SCREAM "ROCK!" Do NOT be shy. Do NOT stop to think about it. This is literally a matter of LIFE and DEATH! (Am I getting through to you?)

Practice falling

If you understand the possible problems, and are aware of your situation, falling is not a problem. Practice it! With that said, we can now say, *"relax and trust the rope!"* You cannot climb well if your mind is totally fixated on a fear of falling. On a top-rope, fear is simply not worth wasting your mental energy on. If you are "afraid of heights," pay special attention to this section. By the way, all sane human beings are afraid of heights. Few of us would have lived past the age of three had we not been afraid of it.

Get used to the feel of the rope holding you

Do not just jump off at the top. Start at the bottom. Find yourself a short climb (to limit rope stretch) without too much debris at the bottom (so you have someplace to stand). Once you are "on belay", before you even get on the rock, ask your belayer to give you "tension" (that is an official buzzword, by the way).

Learning how it feels to fall

You should be able to feel a good tug in the upward direction. Now, squat down nice and low. You should feel a lot of support from the rope. If there is not too much stretch in the rope, you should not be able to squat all the way down. Feel it holding you.

Now, still on belay, pick a spot on the rock directly under the anchor. Climb up three or four feet, or however far you would be willing to jump down from if you were not roped up. Again, ask your belayer for "tension". Feel that wonderful feeling. Look down, aim for a smooth spot and jump off.

Remember, you are jumping from a height you are comfortable with. Now, be careful. This time you will swing around a little bit. The instructor will be there to help you, but it is suddenly important to keep from grabbing the rope. Your hands should be out in front of you to prevent you from bumping into the rock (at this point, bumping into the rock is no big deal, but if you had a bit more of a swing, you might find it would matter).

Dangle there for a little while. Relax. Push yourself away from the rock with your hands. Push off and spin around, then catch yourself on the rock (your belayer will turn colors eventually; so do not stay there all day). After awhile, ask your belayer to let you down. Let your belayer breath a while, then do it again, until you feel comfortable with falling on a top-rope.

Climbing Locations

YOU ARE RESPONSIBLE FOR YOUR TRANSPORTATION.

Boston is fortunate to have a large park, the Blue Hills Reservation, just 10 miles from downtown. The park is managed by the Department of Conservation and Recreation (DCR) and has been popular with climbers since the 1920's. Our climbs at Rattlesnake Rocks (no, we do not know of anyone who has seen one) is within the Blue Hills, while our climbing at the Quarries is in the Quincy Quarries Historical District. We have included some information about the Reservation and Quarries, and we hope you take the time to explore the area over the next several weeks.

Blue Hills Reservation

This park has 5,800 acres, and adjoins Fowl Meadow Reservation, with 894 acres; together they comprise the largest open space within 35 miles of Boston. This woodland reservation contains hundreds of different varieties of trees, shrubs, and wildflowers that harbor a great diversity of wildlife, including many species that are rare or endangered in Massachusetts. The reservation boasts 20 hilltops that range in elevation from 295 feet to the 635 foot Great Blue Hill, the highest point along the Atlantic Coast south of Maine. The popular Skyline Trail offers 9 miles of end-to-end hiking with numerous trails that loop back into it. The reservation also contains more than 50 prehistoric sites, 16 historic structures listed in the National Registry of Historic Places, 3 National Environmental Study Areas, and a National Historic Landmark, the Blue Hills Meteorological Observatory. On Route 138, the Trailside Museum, operated for the DCR by the Massachusetts Audubon Society, houses exhibits of the reservation's natural and cultural history and offers a variety of public programs. Trail maps for the Blue Hills Reservation can be found at the park headquarters at 695 Hillside Street, Milton, MA.

Directions:
Shea Memorial Ice Rink
651 Willard St.
Quincy, MA 02169

From Boston: Take I93 South to Exit 8 Furnace Brook Parkway. Drive up to the rotary but bear right without entering the rotary, then at the fork a few yards away, bear left onto Willard St. Follow Willard St. down until you see the Shea Memorial ice rink on your right hand side. Park in the lot just after the rink, we tend to meet in the back corner.

From the South shore: Take I93/Route 3 North and get off I93 at Exit 8 Furnace Brook Parkway and follow the rotary around to where it passes back across I93 taking your first right as it does, actually this would be your third right since you got off the highway. Then make your first left onto Willard Street and follow Willard St. down until you see the Shea Memorial rink on your right hand side. Park in the lot just after the rink, we tend to meet in the back corner.

Quincy Quarries

In 1985 the then Metropolitan District Commission (now DCR) purchased 22 acres including Granite Railway Quarry, adjacent to the Blue Hills Reservation renaming the area the Quincy Quarries Historical Site. It was here in West Quincy that America's large scale granite quarrying industry was born in 1825 when, after an exhaustive search throughout New England, Solomon Willard selected the area as the source of stone for the Bunker Hill Monument in Charlestown. With his development of the revolutionary construction techniques that made hard Quincy granite a practical building stone, Willard earned the title of "Father of the Granite Industry". Here too the Granite Railway was established in 1826 and is now a Civil Engineering Landmark. During the next 140 years, over 50 quarries operated in Quincy, which became known nationwide as "The Granite City". The last active quarry closed in 1963. Popular activities at the Quincy Quarries Historic Site include hiking, rock climbing, picnicking, and scenic viewing. Trail connections to the Blue Hills Reservation are protected by recent parkland purchases.

Directions:
Ricciuti Drive
Quincy, MA 02169

From Boston: Take I93 South to Exit 8 Furnace Brook Parkway; make a right hand turn at Men's Wearhouse and Tux onto Ricciuti Drive.

From I93/Route 3/Route 128 South: Get off at Exit 8 Furnace Brook parkway. On this ramp, there is an exit for Willard Street. Bear right for the Willard Street exit instead of getting on I-93 North and go to the stop sign at the bottom of the ramp. At the stop sign turn left back under I93, then make your first right at the stop sign (Men's Wearhouse and Tux is across the street) for Ricciuti Drive.

Leominster State Forest (Crow Hill)

This park covers approximately 4,265 acres in the towns of Princeton, Westminster, Sterling and Leominster. There are over 135 acres of surface water at five ponds, and swimming, hiking, and rock climbing (by permit) are the main recreation opportunities. Development is focused in two areas: the headquarters complex and the Crow Hill Pond swimming area. Climbers in general refer to the area as Crow Hill and it has become part of our closing weekend of activity, with climbing during the day followed by our beginner's party in the western suburbs in the evening.

Directions:
From *Boston Rocks* (2nd edition), by Richard Doucette and Susan Ruff: "Crow Hill […] is located in Leominster State Forest […]. Take Route 2 to Route 31 south (exit 28). Go south 1.3 miles to Park Headquarters on your right, where you should stop and get your free climbing permit. Go another 1.0 mile to a paved parking lot that you can use in the off season, then another 0.3 miles to a gravel climber's parking lot on your right (it comes up fast). Take the trail from the back of the parking lot, and follow the right for another 50 ft. In less than 10 minutes you will be at the left end of the cliff.

Parking lots location for both Quincy Quarries and Rattlesnake Rocks

Other locations

While the program is conducted in the Blue Hills, we sometimes visit other locations that see quite of bit of climbing activity:

Hammond Pond
A wooded reservation with a large, scenic pond is located in the Chestnut Hill section of Newton adjacent to the city's Webster Conservation Area. It is a natural forest with wooded traits and large geological formations. Nearby Lost Pond has a quaking bog and a system of natural trails. Hammond Pond's main wall features several interesting cracks to practice your crack climbing skills and is very popular bouldering area. Hammond Pond is just off Route 9 in Chestnut Hill.

The Mohonk Preserve
Located outside of New Paltz, NY, just 90 miles north of New York City, this 6,000 acres preserve is the home of the Shawangunk ridge (also known as the Gunks) an area that has some of the most spectacular climbing in the world. Only a short distance from millions of people, the cliffs provide wonderful views, while numerous carriage roads and trails lead to solitude and frequent sightings of wildlife. Officially the program does not travel to the Gunks but those who do complete the requirements for an invite will have a chance to climb in one of the most spectacular locations in the world. The Mohonk Preserve is a private non-profit park spun off from a neighboring grand hotel, The Mohonk Mountain House. The park does charge a daily entrance fee and frequent visitors can purchase a season pass.

More local locations

While the above are nearby locations, there are other climbing areas, described in local guidebooks, that we would be amiss in not mentioning:

- Middlesex Fells, Medford
- Waitts Mountain, Malden
- Den Rock, Andover
- College Rock, Hopkinton
- Redrock, Gloucester

Online Guide

For more detailed information about the cliffs and rock gyms in the greater Boston area, with pictures, park info, history, maps and driving directions, check out this interactive map:

http://amcbostonclimbers.org/map

Belay Weekend
Rattlesnake Rocks

YOU ARE REQUIRED TO ATTEND BOTH SATURDAY AND SUNDAY.

Meet
Shea Memorial ice rink parking lot at 8:30AM.

Readings from *How to Rock Climb!* by John Long

- Chapter 1: "The Climbing Game", pages 1-14
- Chapter 4: "Rope Care", page 94
  "Tying In, Harnesses, Carabiners and Anchors", pages 102-116
  "The Belay", pages 157-169
- Chapter 6: "Climbing Voice Signals", page 221
- Chapter 7: "Downclimbing", pages 248-250
  "Coiling the Rope", pages 268-271
- Chapter 8: "Lowering / The Belayer's Role", pages 275-276
- Chapter 9: "Toproping", pages 286-290

This week's knots
Rewoven figure 8, Fisherman's backup, Water knot, Figure 8 on a bight, Girth hitch, Clove hitch and Münter hitch.

This weekend we will teach you the most fundamental safety skill in climbing: Belaying. Take advantage of any chance you get this weekend (and throughout the program) to practice belaying, because it must become second nature to you. You will begin to develop trust in the system, and you will realize that you can push your limits and fall without getting hurt. It is important to develop this trust so that you do not spend all your time climbing petrified of falling. Your instructor will ask you to fall at some point and this exercise will help you to develop such trust. You will also get to practice another basic skill: Coiling the rope.

On Saturday and Sunday you will build an anchor with ropes and slings. Anchors should be "SRENE" (**s**olid, **r**edundant, **e**qualized, **n**o **e**xtension). You will start learning basic climbing technique: body close to the rock, footwork and more, you will fall in a controlled situation so that you learn to trust the system. Always remember to check other student's knots and harness and to use the climbing commands detailed in the book *How to Rock Climb!* On Saturday you will belay with a harness and a device, both from the bottom and the top of the cliff. On Sunday you will belay from the bottom of the cliff using the Münter hitch and also do a body belay. We will also teach you how to belay a leader. You will learn about the different types of traditional removable protection, how to retrieve and re-rack it.

Rappel Weekend
Quincy Quarries

Meet
Paved parking lot at the Quincy Quarries walk-in entrance at 8:30AM.

Readings from *How to Rock Climb!* by John Long

- Chapter 7: "Rappelling", pages 250-267

This week's knots
Auto-block, Double fisherman, Overhand knot (EDK) and Bowline.

Knots practiced from the previous weekend
Rewoven figure 8, Fisherman's backup, Water knot, Figure 8 on a bight, Girth hitch, Clove Hitch and Münter Hitch.

ALL RAPPELS WILL BE BELAYED FROM THE TOP OF THE CLIFF.

Rappelling is a technique used by climbers to descend a fixed rope in a controlled and safe manner. In top-rope climbing rappelling is rarely necessary; however a top-rope area is a convenient setting for learning and practicing rappelling techniques.

In continuous climbing, rappelling is not always necessary, in fact you may not need to rappel if there is a walk off from the top, but when a situation calls for it, a climber must absolutely be able to rappel quickly and safely. Such situations include: bad weather, approaching darkness, inability to complete a climb due to difficulty, injury and rescue situations.

This weekend you will be asked to set an anchor for the belay and another anchor for the rappel. You will rappel with an extended device using the auto-block backup. You will also rappel using a Münter hitch. There will be a separate station for a free rappel—free as in you will have no contact with the rock. You will review throwing or lowering of ropes, double rope rappel and pulling ropes down, once on the ground.

There will also be opportunities for those wishing to do to the carabiner brake rappel and body rappel. Remember, all rappels will be done while you are on belay.

Ascend Weekend
Quincy Quarries

Meet
Paved parking lot at the Quincy Quarries walk-in entrance at 8:30AM.

Readings from How *to Rock Climb!* by John Long
- Chapter 7: "Getting Back Up", page 267

This week's knots
Klemheist, Bachmann and Prusik.

Knots practiced from the previous weekend
Rewoven figure 8, Fisherman's backup, Water knot, Figure 8 on a bight, Girth hitch, Clove hitch, Münter hitch, Auto-block, Double fisherman, Overhand knot (EDK) and Bowline.

In continuous climbing, a number of situations may demand that members of the party ascend a fixed rope:
- If a second cannot ascend a part of the climb, he/she can ascend the rope safely; this may be the most common situation that you face.
- If falling when climbing an overhang, you may not be able to get back to the rock.
- If a leader falls and is injured, the second may need to ascend the rope to rescue him/her.

You need to know how to ascend a fixed rope in a controlled and safe manner. We will use the Bachmann knot and Klemheist knot. They are tied with the kind of slings you are likely to carry while climbing. Some of us old timers will refer to ascending a rope as "prusiking". Prusiking got its name from the kind of knot that once was commonly used to ascend a fixed rope, you guessed it, a Prusik knot! The verb is still in use today even if the knot commonly is not.

Very few individuals enjoy ascending a fixed rope. There are stories about seconds who, driven temporarily insane by a long and strenuous ascent of a rope and later used the slings to strangle the leader who got them into the predicament in the first place. As we are your leaders – don't do that!

The second task you will do this weekend is to catch the bucket! This gives you an opportunity to catch a simulated leader fall, and proves instructive in that the "fall" involves forces much greater than those you are used to in top-roping.

Optional Weekend
Rattlesnake Rocks

Meet
Shea Memorial ice rink parking lot at 8:30AM.

Readings from *How to Rock Climb!* by John Long

- Chapter 2: "Face Climbing Skills", pages 17-47

This weekend is designed to climb and practice skills. You will get opportunities to set up top ropes, second a leader and learn different climbing techniques.

Graduation Weekend
Quincy Quarries

Meet
Paved parking lot at the Quincy Quarries walk-in entrance at 8:30AM.

You will be tested on all knots learned
Rewoven figure 8, Fisherman's backup, Water knot, Figure 8 on a bight, Girth hitch, Clove hitch, Münter hitch, Auto-block, Double fisherman, Overhand knot (EDK), Bowline, Klemheist, Bachmann and Prusik.

There are three tasks to be completed on graduation weekend: (1) mulit-pitch rappel, (2) building a SRENE anchor and (3) knot demonstrations. If you have not completed your required lead belays / clean a pitch, you will get an opportunity to do so that day as well.

The multi-pitch rappel is a two-pitch descent, where you must stop on a ledge in the middle of the cliff before setting up a new anchor and continuing down. It provides an excellent review of your rappelling techniques. You will also have to build your own SRENE top rope anchor in order to graduate. Finally there will be a station where you will be asked to demonstrate your knowledge of all knots.

Once you have completed the reviews you should go over your "Green Book" and make sure all parts have been filled in, and then turn the book over to the program organizer, who will make sure you have completed the various skills needed for New Seconds weekend. After you see the organizer, proceed to the check-out station to turn in your "Green Book", harness/helmet (if needed) and your practice rope. Please note, the "Green Book" will only be accepted if you also filled in the survey at the end.

There will be club gear available for you to set up ropes to climb, but this time you will not have an instructor review your set up since you have now become part of the climbing community. On behalf of all the people who helped put this program together:

CONGRATULATIONS AND WELCOME!

Crow Hill and Party Weekend

Climbing at Crow Hill, Leominster State Forest

Meet
Paved parking lot at Leominster State Forest at 8:30AM.

YOU NEED TO HAVE YOUR OWN HELMET, HARNESS, SHOES, BELAY DEVICE AND CARABINERS.

This Saturday (rain date: Sunday) we will be heading out to Leominster State Forest in Leominster, MA to a climbing area known as Crow Hill. There will be an informal potluck/cookout afterwards.

MORE INFORMATION WILL BE PASSED OUT ON GRADUATION WEEKEND.

Please check http://amcbostonclimbers.org and 'The Crux' for updates.

New Seconds Weekend

Shawangunks (New Paltz, NY)

**THIS WEEKEND IS NOT PART OF THE PROGRAM.
IT IS ONLY OPEN TO INVITED PARTICIPANTS WHO HAVE SUCCESSFULLY COMPLETED THE PROGRAM.**

Information on this weekend will be handed out to those who complete the program on Graduation Weekend. The final call of who is invited will be made by the program organizers and not by anyone else associated with the program.

The Shawangunks (aka Gunks) are one of the most spectacular cliffs on the East Coast. It is located just outside New Paltz, NY. It is THE place to climb for many Boston area climbers who can make the trek west.

This is a great chance for you to second on a major vertical cliff with some extreme exposure. Even some of the easier routes will give you an adrenalin rush second to none. For the last few years we have camped locally, with a catered dinner and a raffle that is not to be missed!

This is the weekend that you MUST make. Mark your Calendar NOW.

Contact information
Email: newseconds@amcbostonclimbers.org

What is Next

After you have completed the rock program, you will probably ask yourself: "What now?" There are a number of options available to you. Below are some suggestions.

Your first rock gear

- Harness: be sure to try out several for the best fit
- Helmet
- Shoes: once again, try several pairs on
- Belay device
- Locking carabiner
- Assortment of slings: (2) 24" and (1) 48" are good
- Local guidebook
- Nut tool: if you plan to go to New Seconds Weekend

That will at least be enough to get you started on your own, and to join us on Tuesday and Wednesday nights for AMC climbs; yet it really is just the minimum. The following should round out your climbing gear:

- 60 meter rope
- Webbing or static rope: various sizes
- Locking carabiners: two at a minimum for your top-rope setup

This setup at the very least will allow you to set your own rope and have many hours of… hmm… staring at a cliff. Well, actually we hope you made friends during the program and are out there climbing with them!

Now you have your gear but still cannot seem to connect with anyone… well, try the following suggestions:

Climbing Opportunities

Tuesday nights

There is a group that travels to various locations North and West of the city to climb on Tuesday nights. The schedule will be available towards the end of the program when you sign in, and on the Boston Chapter Mountaineering Committee website.

Wednesday nights at the Quincy Quarries

Wednesday night is the traditional AMC climbing night at the Quincy Quarries. Most climbers show up between 5PM and 6PM, and climb until dusk. A few hardy souls have been known to climb after dark, but most folks are content to join us afterwards for some beer and grub at Darcy's Irish Village.

When there is no formal get-together at the Quincy Quarries, you still have a pretty good chance of meeting folks who are climbing, do not be shy now BUT do check out their setup. If you still cannot connect, you can always go out to Hammond Pond and boulder on the rocks there.

Weekend climbing schedule
The Boston Chapter Mountaineering Committee provides the following suggested locations and trips to promote camaraderie and connections among members of the climbing community. On these trips climbers must arrange for their own climbing partner.

Please check the AMC Boston Chapter Mountaineering Committee website and The Crux for more up-to-date information:

- **Memorial Day: Acadia National Park**
- **Late Summer: Franconia Notch / Rumney**
- **October: Fall Frolic at the Gunks**

Climbers' Nights
We do like to get together and talk about climbing and perhaps share a beer or a slide with our fellow climbers, and nothing beats that than the monthly social gathering at a fellow climber's home. Usually held the first Thursday of the month, bring slides and beverages

Please check http://amcbostonclimbers.org and 'The Crux' for updates.

Check our website and newsletter "The Crux" for information on other upcoming climbing events. Now that you have a full summer of climbing planned, it is not too late to plan for the fall!

The Rock'n'Rope Program
Late summer we are planning to run a follow-up program called the Rock'n Rope Program. It's a one day hands on course, jam packed with techniques and tricks that will rocket your multi-pitch and sports climbing skills to new levels of efficiency and safety. More information will be found on our website.

The Ice Climbing Program
The ice climbing program will hold an informational meeting in early to mid December. Be sure to check out "The Crux", the Boston Chapter's Mud, or the Committee website for information on the program. Space in the program is very limited and is open to those who have taken the rock program (or have the skills taught there) and have experience in cold weather hiking.

Next year's Rock Climbing Program
The rock climbing program will hold an informational meeting in early March of next year for next year's program. Plan on coming back to help out next spring as an assistant instructor.

Leading

The following article was written by Al Stebbins and is as useful today as when I took the new course back in 1995. I can pin point the moment I knew I wanted to lead and that was when I was on the first belay ledge on Frog's Head at the Gunks on New Seconds Weekend but neither I nor my friend had any idea who to turn to but we both read this article and it inspired us. We put together a rack, without those expensive cams, and we went to local crags here in Boston and practiced setting belay anchors on the ground. Our first "leads" were top-rope climbs at the Quarries and our first real leads were on Cannon and Whitehorse in NH, our first Gunks leads were the weekend after the 4th of July, just over a month and a half after new seconds. Everyone has a different time table and you should only proceed when you're comfortable, remember leading is a mental game and if your mind is not there, you will not have any fun at all. Thanks Al for the inspiration.

Now that you have finished this year's Rock Climbing Program you have probably heard a lot of talk about, and perhaps thought of, leading. First of all, no one has to lead, and you should only lead when, and if, you want to. In truth though, if you want to discover what climbing is really about you'll find yourself on the sharp end on the rope. The beauty of the crags are still there if you're a second, but the journey to self awareness comes with extending yourself and accepting risk, and in climbing that means being out there in front, alone, on the sharp end. When I finished the beginner program my mates and I found ourselves isolated. (This, by the way, is something we've worked hard to change.) A friend and I put together a rack and off we went. With these thoughts in mind I'd like to offer some ideas to those of you who want to lead, to make the experience a little easier.

The rack

When I started climbing there were two kinds of protection that everyone used, stoppers and Hexentrics. Oh there were some funky things that a few people used, like stacked stoppers, (ask anyone today if they know what these are) but basically it was hexes and stoppers. You still cannot go wrong with these. True, there is a bewildering array of pro out there today, and much of it works; but before you walk out of the store with sliders, gliders and things that go cam in the night, learn how to place a good stopper. It is hard to go wrong with a full set of the new curved stoppers, say a set of 1-9 Rocks. Hexentrics are a low priced alternative to much of the more modern stuff, and you can drop your car on a well placed one and expect it to hold. Hexes 4-9 will cover almost any moderate climb in the East. When you put Kevlar or Perlon on your hexes use a different color for each size so you do not have to go fumbling around when you are desperate for the right piece. The same principle applies to slings. Do not be afraid to take ten slings with you. Evenly spaced on a 160 foot pitch, that would mean one sling every 16 feet. How does a 32 foot fall sound to you? You will want lots of carabiners—remember you will be using 2 per piece plus others to rack on. You should plan on having at least 25. The Black Diamond Light D's are reasonably priced, strong, and will give you years of faithful service.

When you are ready for the fancier stuff, start with some medium Friends, say a #2 and #3. (Seldom in the East on moderate routes will you need anything bigger then a #3 Friend). I should

say a word about my personal favorite, Tricams. The small Tricams, .5, 1, and, 1.5, can go many places where nothing else will. After you learn how to use them you will wonder how you ever got along without them.

I would like to offer some ideas on ropes. It really does not make any sense to get a rope shorter than 165 feet long. Many modern pitches are that long so you will be really unhappy if you are forced to stop 15 feet short of the belay. In America the standard for most members of the tribe has been a single 11 mm rope. Big, fat, strong, and rugged an 11mm. Another very reasonable, and more modern, alternative is a single 10.5 mm rope. It is not quite as strong as a single 11mm, but still it is plenty strong enough, and it is lighter. Some people like twin ropes of 8.5mm or less. They must be used like a single 11 mm or 10.5mm rope and thus lose much of the advantage a true double rope would have. Personally I have always referred to twin ropes as Prom Queen ropes because they look as if they are better suited to holding up the Prom Queen's dress than for climbing. You might give some serious thought to getting double 9mm ropes, now sometimes called half ropes. They cost more and are a little harder to get to learn to use well (you can end up with 300 feet of spaghetti). They are, however, much safer and much more versatile. In the mountains they are infinitely better. On long routes, such as on Cannon, they will also cut the number of rappels in half.

Take your rack when you go to top roping areas and walk around between climbs placing pieces. Ask someone who has been climbing for a while to critique your placements. When you second, think about the pro you are pulling out and how it went in. Remember no book or videotape can teach you how to place a piece. When you feel you are ready to try leading, see if you can go with an experienced leader.

Keep in mind that only you can tell when you are ready to lead. If you screw up, you will only have yourself to blame. It is a very existential sport.

I've got the place if you got the time

You do not have to go to The Valley (that is what climbers call Yosemite) to lead. My first successful lead was at the Quincy Quarries. My first lead was in the rain and, well, that is another story. Quarry climbs like "Boardwalk" are quite reasonable. Look around and see if a climb can be protected as you top-rope. The Lower Pond Area at Hammond Pond offers about 6 cracks from 5.2 to 5.5 that take pro. Take care, though, the rock at Hammond can be highly greasy.

Much of the climbing that Boston people do is in North Conway or New Paltz, New York. Are you a North Conway or New Paltz entity? Do you know what happened at Yasgur's Farm? (Do you care?) Do you like things that are funky? Do you think Shoppers World in Framingham is the cultural height of Western civilization? Are you enamored of the phoniness of the '80s? If your answer to the first two is yes, you are New Paltz, yes to the second two you are North Conway. Though they may be culturally different, each offers magnificent climbing. There is a problem, though, for beginning climbers in New Hampshire. Unless you lead 5.8's and 5.9's there is a limited selection of good, safe routes.

A very good friend of mine who loathes climbing in New Paltz (can you say overhang?) set the self-admitted world's record for number of ascents of "Thin Air" (a wonderful, if crowded, climb in North Conway because we just could not lead harder in those days. New Paltz, known the world over as the Shawangunks or just Gunks, has more laudable easy and moderate climbs than any place this side of North Wales, and any place in the good old U.S. of A. The climbs are steep, very steep, exposed (you can feel more exposed 40 feet up on a Gunks roof than 10 pitches up on Cannon) on wonderful rock. Because you often cannot see all of the route unfolding before you, it is exciting climbing. You just never know if there is a big jug just over the next overhang or not. Fortunately, when God built the Gunks he often put horizontal buckets just where you want them. With that in mind let me suggest some good routes to try:

Gunks' 5.2

- Casa Emilio: take a walk, see the Trapps, and enjoy a really nice face.
- Easy Keyhole: take some big pieces. You can walk off after the first pitch.
- Easy Overhang: this is an old moonlight climb. The overhang fell off years ago.
- Northern Pillar: good and varied climbing.

Gunks' 5.3

- Betty: many people have started leading on this. It is a little loose at the top, so take care not to kick stuff off and do not climb under anyone on it.
- Easy Verschneidung: do not miss this one, and do not drift off to the left on the first pitch or it gets a lot harder.
- Minty: the second pitch is a joy. Great exposure for a 5.3.
- Rusty Trifle: the first pitch is fun and can be done when it is wet elsewhere, but the name should tell you that.
- Three Pines: blocky first pitch but a nice corner on the second, most people rap off at the end of the second.
- Tipsy Trees: this is a nice climb but you enjoy it more if you lead harder than 5.3.

Gunks' 5.4

- Andrew: fun and not all that hard.
- Bunny: the crux is right off the ground so you can have your belayer spot you till you are over it and stable.
- Gelsa: more than one new leader has had a religious experience on the third pitch. Do not miss this climb!
- Hawk: the second pitch will have you walking on air. Like Gelsa, this is one you just have to do.

Gunks' 5.5

- Dennis: the crux is short, (as is true of many Gunks' climbs) a hang (Gunks' talk for overhang) about 10 feet up so get a good piece in before pulling it.
- Frog's Head: a great route, but get your pro right on the first bulge so it is set for a outward and downward pull or it is crater city.

- Layback: this one is really super. A lot of Boston climbers skip the chimney on the first pitch and climb the face to the left. Take some big pieces for just below the layback.
- Jackie: this climb is a really good introduction to Gunks' overhangs.
- RMC: a good solid 5.5.

When you climb in the Gunks **do not trust your life to the old resident pitons (pins); back them up.** This is where you will really appreciate Tricams. You can plug them into horizontal cracks and, if you have small ones, old pin scars.

Pushing the grade

The above climbs are quality routes. They are fun, and if you place pro as you go along, quite reasonable. Remember though, you are the one out front. If you do not want to lead a pitch, back off! You can always come back later. It is a lot better to swallow a little pride than to get hurt. In climbing the old adage "Pride cometh before a fall" has a double meaning!

When I started climbing new leaders did not do hard routes. That is no longer true. There are a lot of people around who lead 5.9's and 5.10's their first year. Who knows, you may. What seems horrendous in June may be a cruise in October. If you are climbing well, and you place good protection, there is no reason not to. To climb well you need fire in your belly, but you also need a clear absolute grasp of reality. Look and think. Just because you want a piece of protection to be good will not make it so. If you hope to become an old climber your expectation cannot get in the way of reality. There are great days out there. You, a friend, and a rope, alone, on a big wall fighting through hard leads. It is the essence of what climbing is about. Belaying in high and airy spots looking out at the rim of the world, it can change your life. It did mine.

Belaying the Leader

By and with Permission: Marc Chauvin

Belaying the leader is a complex subject due to changing priorities as a result of changing terrain. There are two main concerns when we belay a leader:

1. The belayer getting smashed into the cliff while catching a fall.
2. The belayer losing his or her balance and pulling the leader off.

Before we get into specifics on how we solve these concerns, let's look at some of the basics common to almost all lead belaying situations. To solve our concerns in belaying the leader some form of anchoring needs to be used. We have two basic techniques for anchoring our belayer:

1. Technical: the use of the rope slings nuts etc. to create an anchor. This is what most people think about when they think "anchor".
2. Stance: this is an old fashion concept of anchoring. This form of anchoring is used more often than most people think to solve at least one of the above concerns.

Let's talk about the two places belayers do their belaying, from the ground and on the cliff in multi-pitch climbs.

Belaying on the ground

When we say that we are belaying on the ground, we are talking about a place where the belayer cannot be pulled off of a cliff by a leader falling without any protection in. In these situations we do not need an anchor to hold up the belayer in the event of a factor 2 fall (Figure 1 and Figure 2). Although we do not have to anchor the belayer for a factor 2 fall we still need to make sure that a stumble or misstep on the belayer's part does not pull the leader off. We also need to make sure the belayer does not slam into the cliff or get pulled across the ground lengthening the leaders fall as in Figure 1. If we put the belayer close to the base of the cliff the pull on the belayer is more upward and less inward. To better understand the ability of an individual to resist an upward pull, try this experiment. Tie a rope into a friend, standing level with your partner pull on the rope trying to pull them forward. Then standing on a chair, pull upward on you partner. When the pull is upward the belayer can use their body weight to help counter the force. Placing the belayer close to the base of the cliff allows the belayer to use his or her body weight to counter the force of a fallen leader (Figure 2).

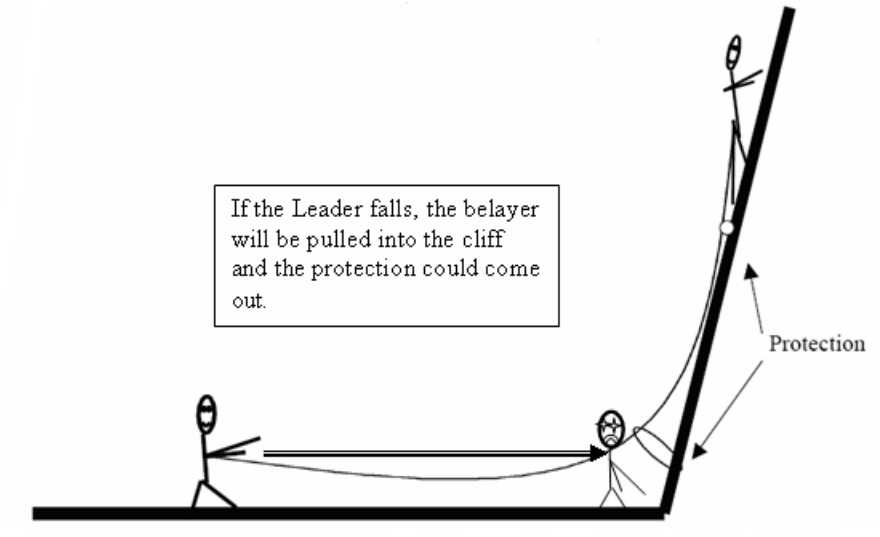


Figure 1: What is wrong with this picture?

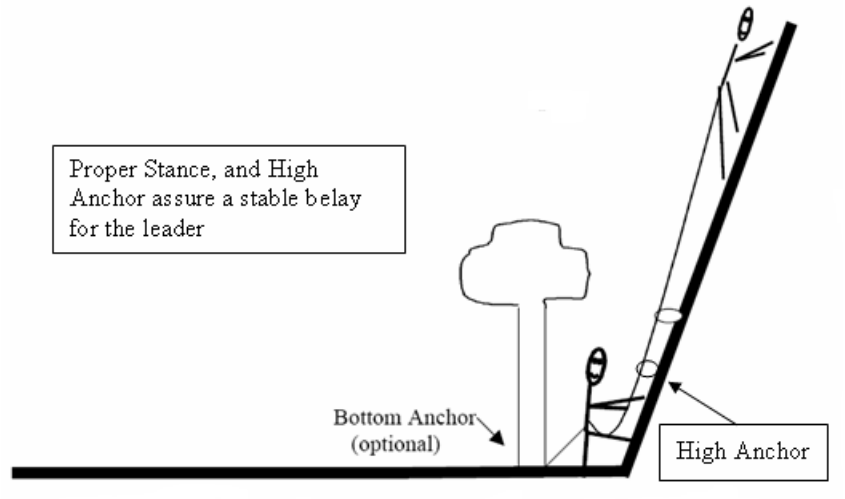


Figure 2: Proper position, stance and anchor for similar-weight climbers.

If the belayer is back from the cliff the pull will be more forward and the likelihood of the belayer getting pulled forward is high. There is also a chance that the belayer will lose his/her balance and fall forward during a leader fall possibly letting go of the brake hand. If we create a bottom anchor by anchoring the belayer back, we can solve this problem. Whenever the belayer is back away from the cliff as in Figure 1 they need to be anchored back and the first piece of protection needs to be able to withstand an upward pull to protect subsequent protection from pulling out. This puts your entire protection system at risk should the first piece fail. Also should the leader fall early in the pitch, the rope going from the belayer to the cliff can act as a trip line, flipping a leader upside down dangerously close to the ground. For these reasons this system is not recommended. It should only be used when the belayer is substantially smaller (kids etc.) than the leader and no bottom anchors closer to the cliff are available.

In Figure 2 we see a belayer properly positioned at the base of the cliff. The problem here is that if the belayer looses his/her balance, he/she could pull the leader off. In this situation we would decide to anchor the belayer from above using a piece in the pitch. We must be careful though not to create another trip line for the leader. Another solution is to seat the belayer, reducing the chances of the belayer pulling the leader off. Many climbers will trust the belayer to be careful and aware while standing knowing that they could pull the leader off. It is important that you make sure your belayer understands this and that the terrain is not to steep or slippery underfoot for the belayer. The other concern we have in Figure 2 is slamming the belayer into the cliff. We could attach the belayer to a bottom anchor if it is available and we can have the belayer brace against the cliff whether they are seated or standing. Both options are legitimate. If we decide to use a bottom anchor we need to make sure that the anchor lines up as close as possible with the direction of pull and that it is *attached to the same belay loop on the harness as the belay device* (do not attach the bottom anchor to the back of the belayer's harness). We can check this by drawing an imaginary line from the anchor to the first piece of protection. This line should run close to the belayer's waist (Figure 2). *On vertical or less than vertical routes an upward pull piece (an anchor in front of and below the belayer) will not prevent the belayer from slamming into the cliff.*

To summarize, if the weight of the belayer is sufficient to balance the weight of the lead climber, then the ideal situation is to have the belayer combine a solid stance (foot against the wall) with an anchor up high, above the waist and *not* below or behind the belayer. If the weight of the belayer is significantly less, or there is some doubt about the belayer's ability to not be pulled upwards due to a leader fall, then a bottom anchor should be considered. The bottom anchor is attached at the same point as the belay device (the belay loop on the harness) and is in a straight line with the potential fall forces.

Belaying on the Cliff

When we say that we are belaying on the cliff, we are talking about a place where the belayer can be pulled off the cliff if the leader fell without any protection in. In this case the belayer will always need to be anchored from above with an anchor that can withstand the impact of a factor 2 fall. We still have the two main concerns when we belay on the cliff as when we belay on the ground:

1. The belayer getting smashed into the cliff while catching a fall
2. The belayer losing his/her balance and pulling the leader off

Plus…

3. Making sure the belayer is set up to hold a fall without protection in. This fall could result in a downward pull on the belayer.

Because we need to have the belayer anchored from above we can easily solve concern #2. But for the anchor to be effective in keeping the belayer from pulling the leader off the belayer's tie-in must be adjusted properly so that the belayer is tight to the anchor. The easiest way to accomplish this is **to tie in with the rope**. Tying in with the rope also assures that the belayer's connection to the anchor is dynamic. This added shock absorption may be critical in a factor 2 fall.

To prevent the belayer from smashing into the cliff on less than vertical terrain we are often limited to using stance. On most belay ledges we do not have anything to anchor to behind the belayer. With an anchor above the belayer we do have the opportunity to have our belayer leaning back against the anchor to help make the belayer's stance more secure (Figure 3).

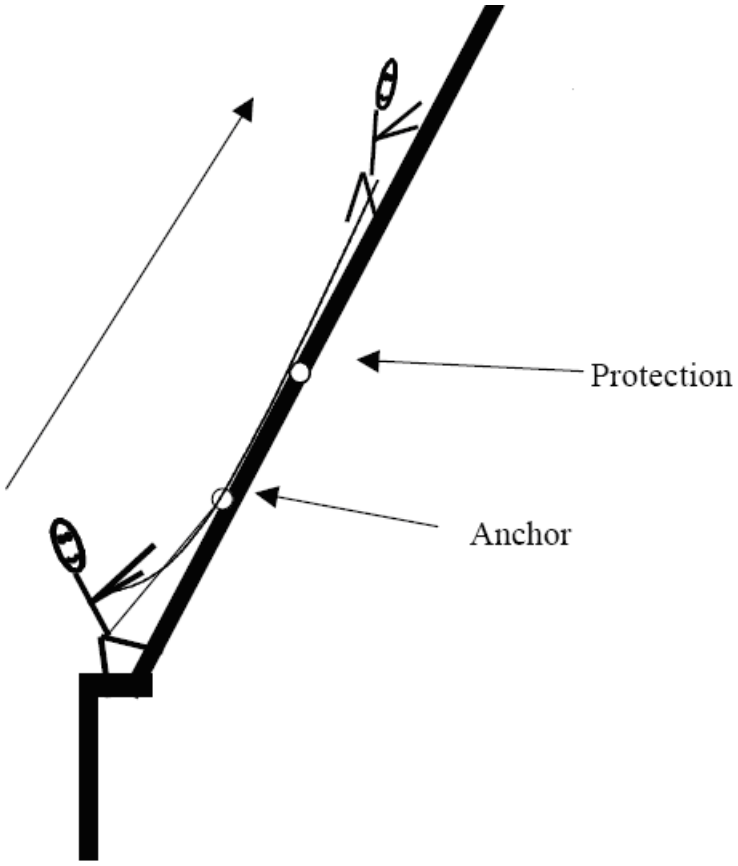


Figure 3: Belayer on the cliff. Using stance and high anchors.

In this situation we seldom need to place an upward pull piece for the belayer. If the belay anchor is too low (below the belayer's waist) it may be necessary to place an upward pull piece for the anchor. It is important though to avoid low anchors as they are hard to lean back against and as you will see, harder if not impossible to hold factor 2 falls from.

Our new concern, the ability of our belayer to hold a fall without any protection in, is best solved by the **leader using the belay anchor as the first piece of protection**. This guarantees the belayer will get an upward pull. Also, if the first independent piece of protection the leader places is off to the side the belayer will still get a pull toward the anchor. This allows the belayer to focus their stance toward the anchor. It is still important for the leader to place an early piece of protection as the force of a fall on the anchor is multiplied because the protection carabiner on the anchor acts as a pulley. This effect is serious but is outweighed by the increased chance the

belayer has of holding a fall before any protection is placed.

It is critical that the protection carabiner on the anchor pulls on the whole anchor either by using the common point of the cordelette or crossed sling or the overhand knot of the direct tie-in.

In most cases clipping into the anchor is a good idea but there are situations where it can pose problems. If the ledge is large the belayer may be further back from the cliff so they can watch the leader and for comfort. In these cases clipping into the anchor can generate a horizontal pull on the belayer and an upward pull on the anchor. In these cases it is better to place a piece higher than the anchor and clip into this as the first piece of protection. This creates a more upward pull on the belayer which is easier to hold and will not subject the anchor to an upward pull (Figure 4). The problem of the leader falling before the first piece is clipped is alleviated by the probability that the leader cannot fall past the large ledge.

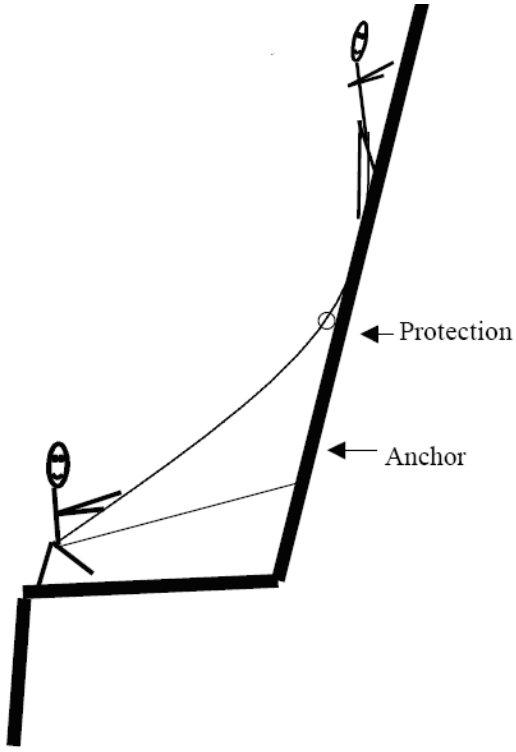


Figure 4: Belayer away from cliff.

Finally, in the rare instance of having to belay directly under an overhang, clipping the anchor may cause too much rope drag. If the first piece ends up behind the belayer as in Figure 5 we can anchor the belayer down with an upward pull piece below the anchor.

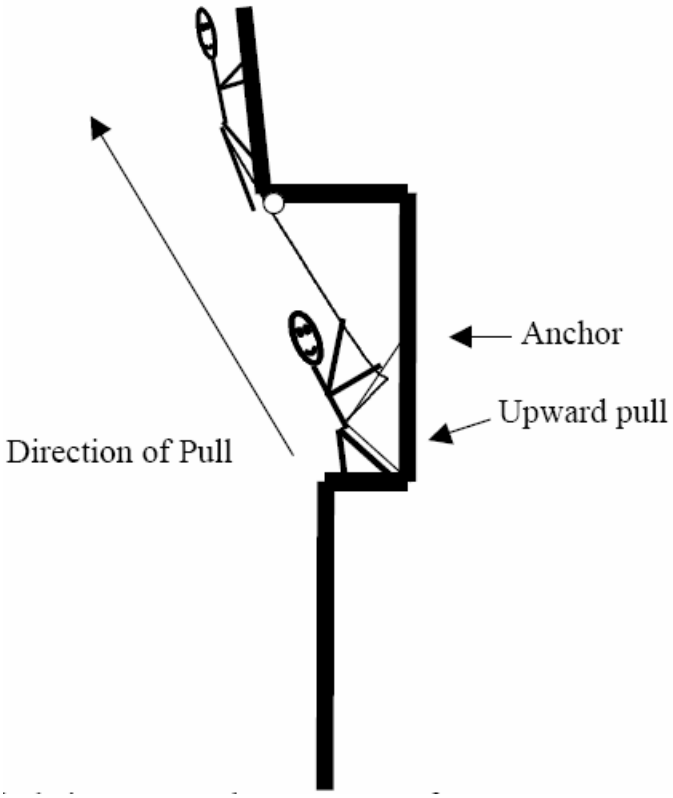


Figure 5: Belayer below overhang.

The belayer will need to watch his/her stance and may want to face more outward toward the pull. If the rope drag is deemed not to be a problem then clipping into the anchor as the first piece of protection may make it easier for the belayer to take a stance. In this case the anchor may need to be connected to an upward pull piece to protect it from the pull towards the protection.

In summary you must carefully analyze the direction of pull and deal with both of our main concerns to properly belay the leader. Remember that the force of a leader fall is for the most part felt equally by both the leader and the belayer. The belayer must be prepared for this force and be capable of applying the braking action during its occurrence.

Resources

Books

In previous editions of this booklet dozens of climbing-related books were listed, an all too confusing listing for new climbers, so this year we have limited to just a few selections that will enhance your climbing experience.

Skills

We believe the following books will add to your skills as climbers:

- *Trailside Guide: Rock Climbing, New Edition* by Don Mellor and Ron Hildebrand, published by W. W. Norton & Co., we have included the number one instructional climbing book as part of the program.
- *How to Climb Series: Climbing Anchors*" by John Long, published by Falcon, a great follow-up to the "How to Rock Climb!" book, especially if you get into leading.
- *Mountaineering: The Freedom of the Hills* edited by Steven Cox, Kris Fulsaas, published by The Mountaineers, this is THE comprehensive guide to mountaineering, a must have book for any climber.
- *The Complete Rock Climber* by Malcolm Creasey, published by Lorenz Books, a coffee table sized book, with very clear illustrations on climbing, perhaps a bit pricey but another very good instructional book and one to wow your non-climbing friends with.
- *Knots and Ropes for Climbers* by Duane Raleigh and Mike Clelland, published by Stackpole Books, a handy book with clear illustrations for dozens of climbing knots, excellent reference.
- *How to Climb Series: Knots for Climbers* by Craig Luebben, published by Falcon.

History

It is important that you know the history of climbing and the people who came before you, and we have included two entertaining books here:

- *Yankee Rock and Ice: A History of Climbing in the Northeastern United States* by Laura Waterman, Guy Waterman and S. Peter Lewis, published by Stackpole Books, THE book on the history of climbing in the Northeast, a great read and highly recommended.
- *Camp 4, Recollections of a Yosemite Rock Climber* by Steve Roper, published by The Mountaineers, the early history of big wall climbing in Yosemite Valley.

Guidebooks

- *Boston Rocks (2nd edition),* by Richard Doucette and Susan Ruff was published in the Spring of 2003. All known climbing and bouldering areas east of Worcester are listed. Over 50 areas and 800+ routes.
- *Rock Climbs in the White Mountains of New Hampshire, 3rd edition (East Volume)* by Ed Webster, the complete climbing guidebook for the Eastern end of the White Mts. including Whitehorse and Cathedral in North Conway.
- *Secret of the Notch* by John Sykes. Covers the west side of the White Mountains including Cannon cliffs, but not Rumney.

- *Rumney* by Ward Smith. The guide book for Rumney.
- *Shawangunk Rock Climbs: The Trapps* by Dick Williams, published by the American Alpine Club, this is the classic Gunks book.
- *Gunks Guide* by Todd Swain, published by Falcon, a good guide for the whole Gunks area but lacks the pitch by pitch description of the Williams Book.

Magazines

There are two major climbing magazines on the market and both are available at leading bookstores such as Barnes & Noble and Border Books, and you can also find them in most outdoors stores:

- *Climbing*
- *Rock and Ice*
- *Alpinist*

Web sites

There are many web sites out there but here are a few that are very informative:

- www.neclimbs.com: Run by Al Hospers, loads of info and condition reports
- www.gunks.com: The official Gunks climbing web site
- www.animatedknots.com: The ultimate online knots guide
- www.rockclimbing.com: Climbing routes and info
- www.mountainproject.com: More routes and info

Stores

While there are many manufactures of gear (and we could have included them), we felt it better to list stores that you may be doing business with locally:

- International Mountain Equipment (IME)
  2733 Main St.
  North Conway, NH
  www.ime-usa.com

- Ragged Mountain Equipment, Inc.
  NH Route 16/NH Route 302, between North Conway, NH, and Glen, NH
  Intervale, NH
  www.raggedmountain.com

- Recreational Equipment, Inc. (REI) [many stores in the Metro Boston area]
  279 Salem St (Exit 40 off I95/MA Route 128)
  Reading, MA
  www.rei.com

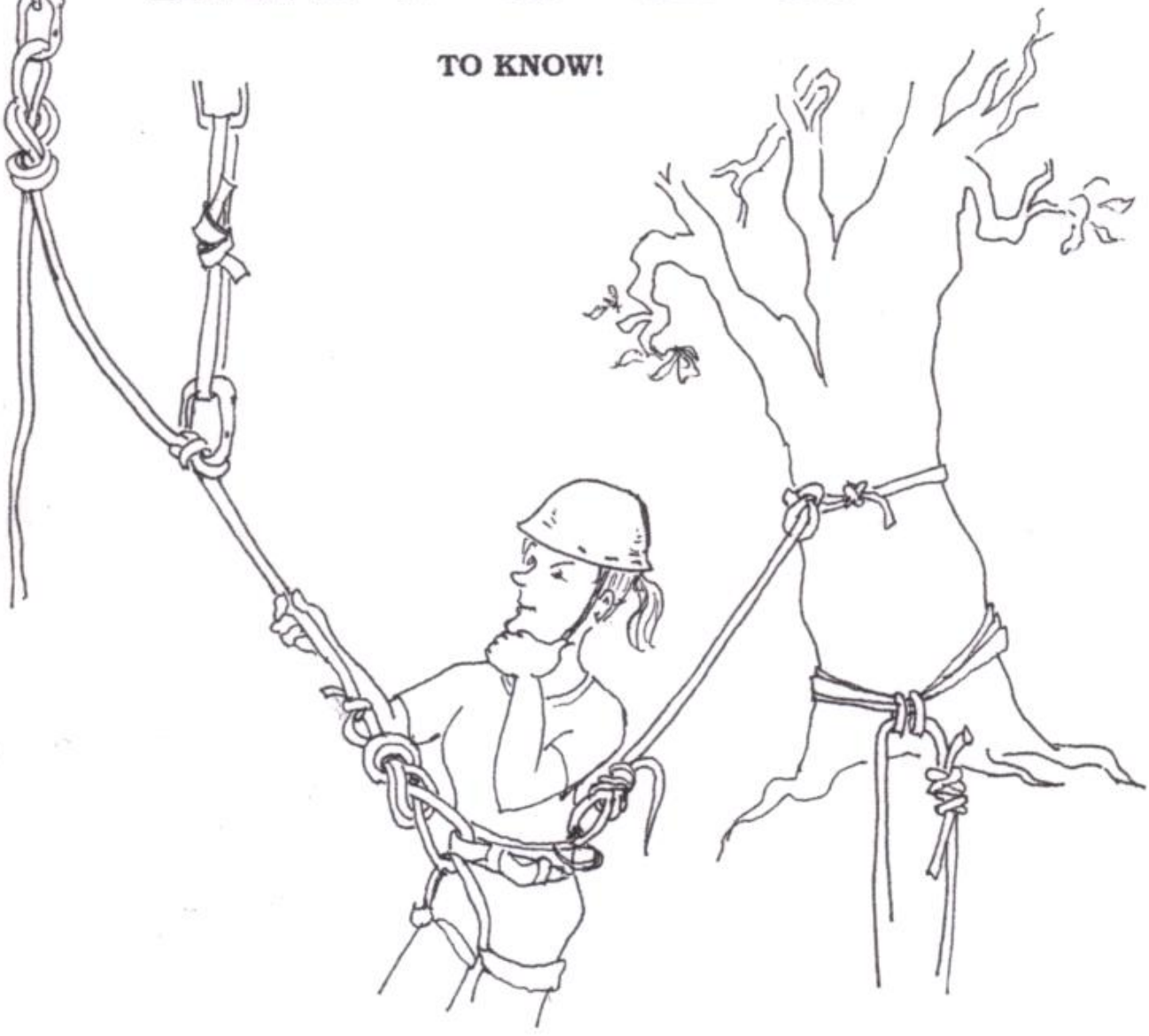
- Eastern Mountain Sports (EMS) [many stores in the Metro Boston area]
  1041 Commonwealth Ave.
  Boston, MA
  www.ems.com
- Hilton Tent City
  272 Friend St.
  Boston, MA
  www.hiltonstentcity.com

- Wilderness House
  1048 Commonwealth Ave.
  Boston, MA
  http://www.wildernesshouse.com

- Rock & Snow
  44 Main St.
  New Paltz, NY
  www.rocksnow.com

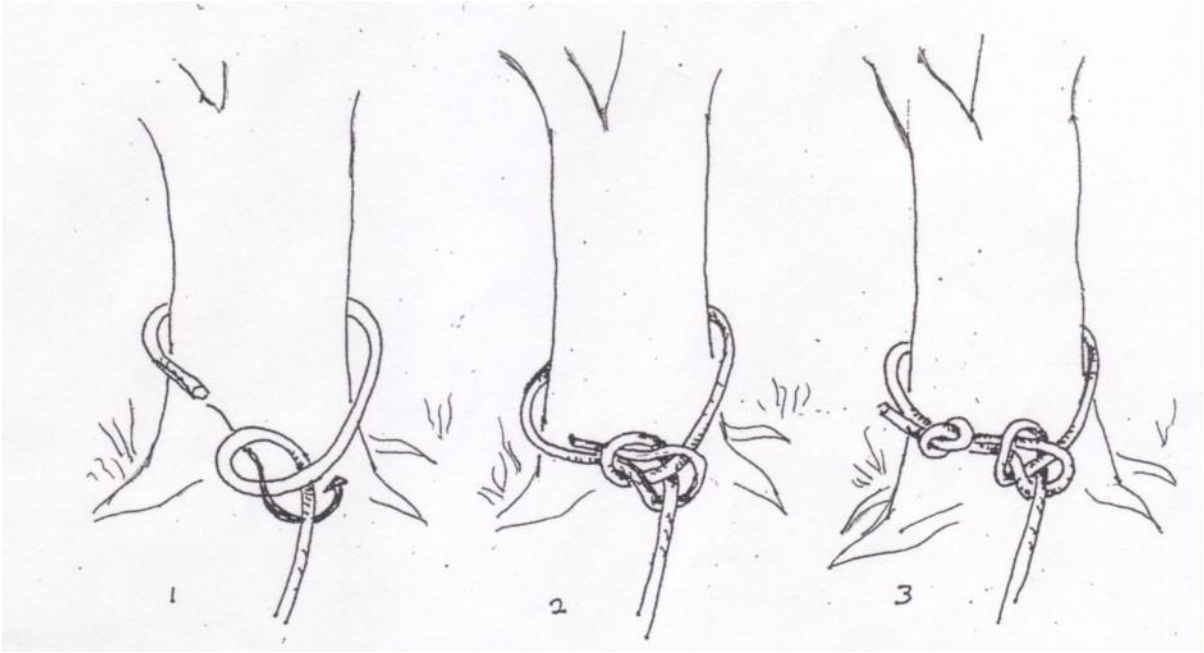
KNOTS

TO KNOW!



Bowline

A good knot to anchor your rope to a tree or other features.



1. Pass the free end around the tree. Twist a coil into the rope, with the free end coming out on top and the loop facing the free end.

2. Pass the free end up through the coil, down around the standing end of rope and then back down through the coil. (a rabbit comes out of its hole runs around the tree and back down its hole.)

3. Tie a Fisherman's Backup knot on the loop around the anchor. Be sure to tie this knot as shown in the illustration.

Clove Hitch

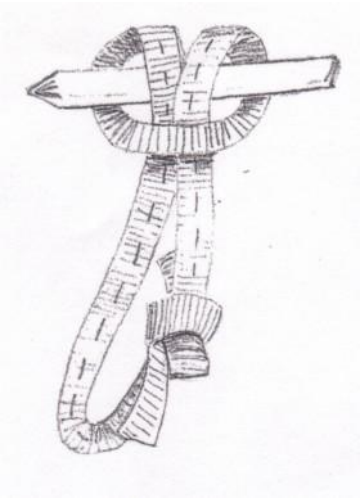
The clove hitch provides quick adjustment, uses a small amount or rope, but has a tendency to loosen when not loaded. Be sure it is kept tight at the bottom of the carabiner, away from the gate. The reliability of a clove hitch can be improved by using a locking carabiner. The LOAD strand of the clove hitch should be situated near the spine of the carabiner.

1. Twist two coils of rope into the rope, then pass the second coil in front of the first.

2. Clip both coils into a carabiner, with the load strand situated near the spine of the carabiner.

3. Cinch the clove hitch tight.

Girth Hitch

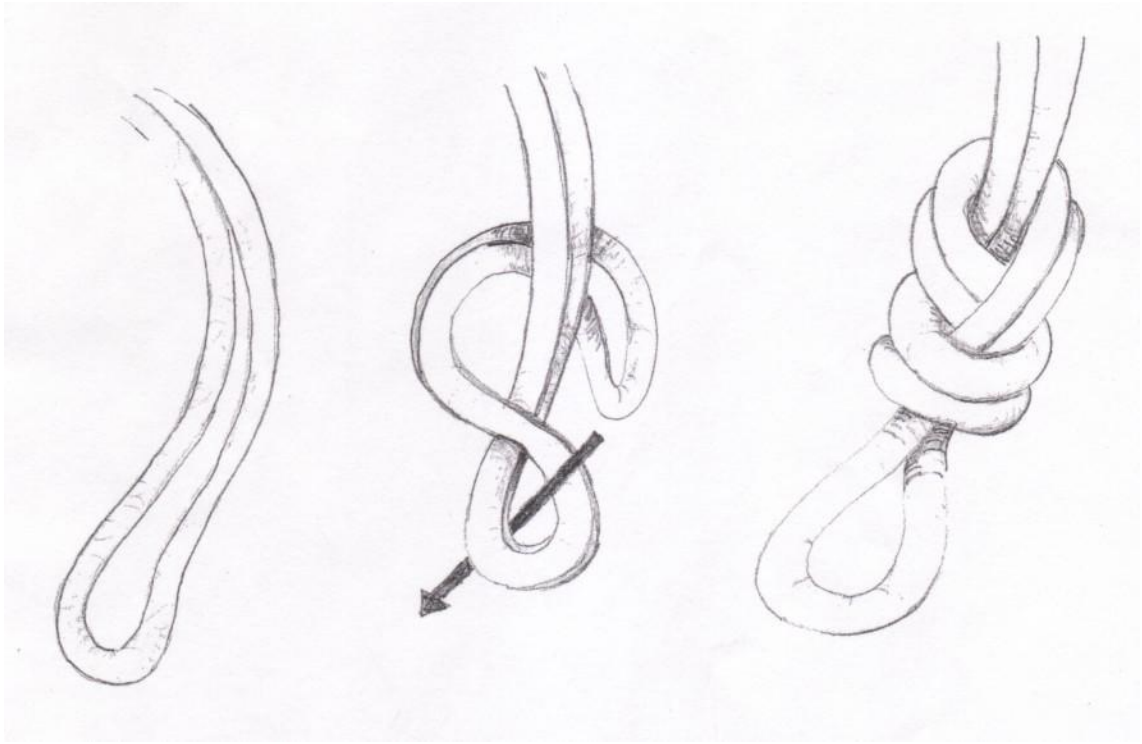


The girth hitch works well for tying off trees and chock stones. When slinging chock stones with a girth hitch, be sure that the hitch is near the outside of the chock stone. This limits the load on the chock stone and is less likely to rotate the chock stone out of the crack. The girth hitch is also good for attaching a sling to your harness for clipping into anchors, and for connecting slings together.

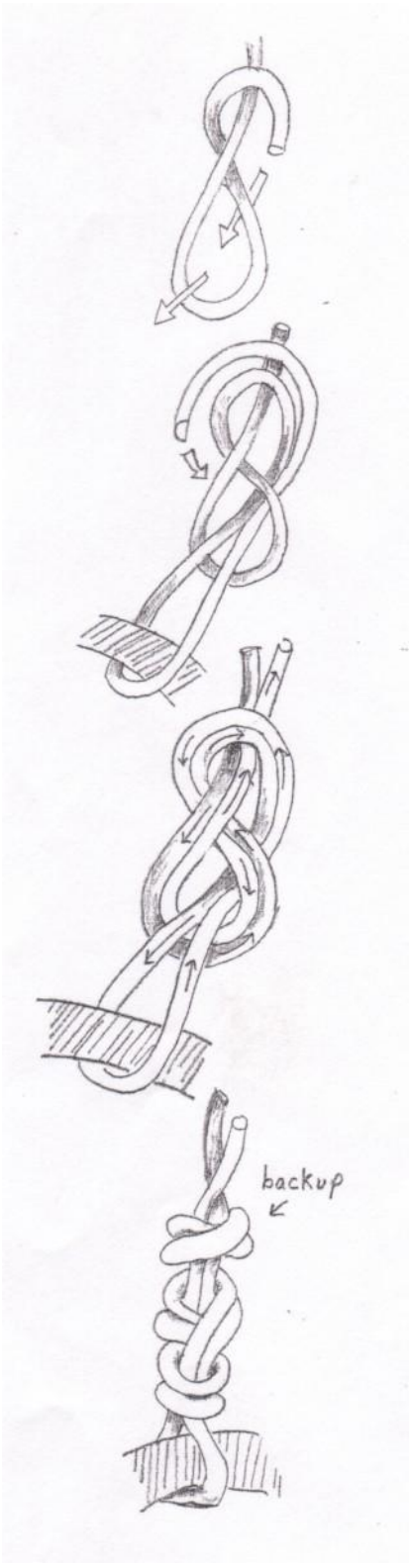
Pass a loop of sling around another sling, tree, chock stone or other fixed object.

Pull the sling through itself, fastening it to the object you passed it around.

Figure 8 on a Bight



Rewoven Figure 8



This is the most widely used tie-in knot because it is strong, secure, and easy to visually inspect. The rewoven figure 8 should be tied directly to the harness.

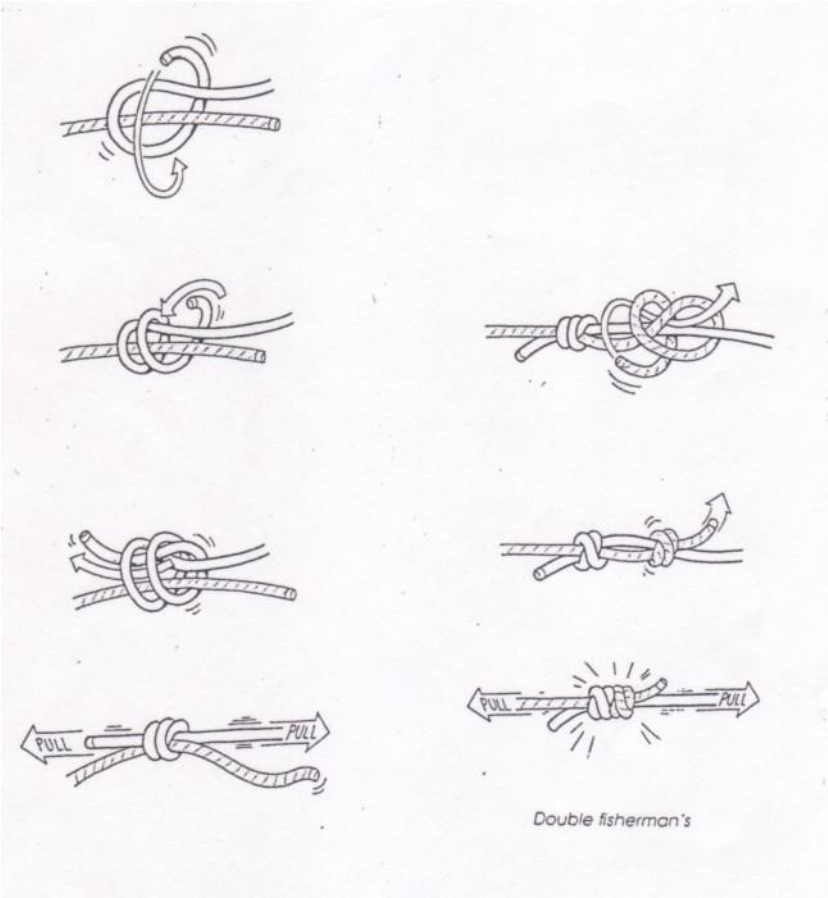
1. Tie a single eight in the rope two to three feet from its end.
2. Pass the free end of the rope through the harness tie-in point(s), then retrace the original eight. Keep the loop that passes through the harness as short as possible.
3. Tightly cinch all four strands of rope exiting the knot, and secure the rewoven figure 8 with a back up knot.

Fisherman's Backup

1. Make sure you have 15-18 inches of free rope coming out of the primary.
2. Coil the free end twice around the standing rope, toward the primary tie-in knot.
3. Pass the free end out through both coils, and cinch the Fisherman's knot snugly against the primary tie-in knot.

Remaining tail should be around 3 inches long.

Fisherman's and Double Fisherman's Knot

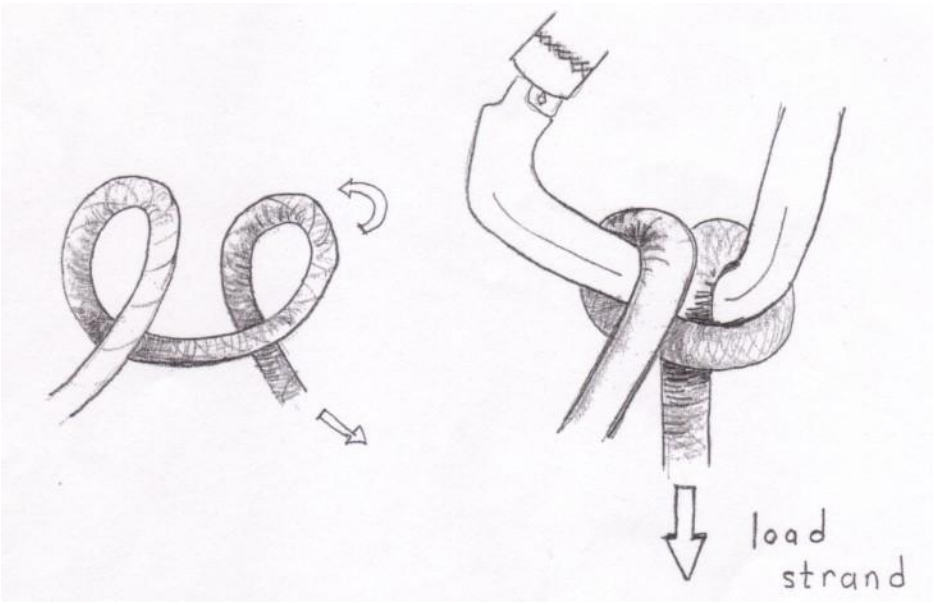


1. Coil the free end of one rope twice around the second rope, and pass if back through the inside of the coils.

2. Repeat the above procedure, this time coiling the second rope around the first, but in the opposite direction so the finished knots are parallel to each other.

3. Pull on all four ends coming out of the knots to cinch them snugly against each other. The remaining tails should be about three inches long.

Münter Hitch



1. Twist two coils into the rope as shown.

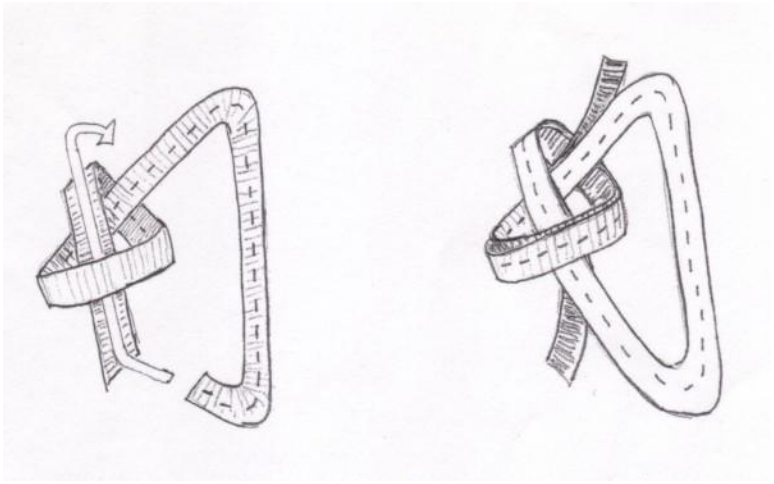
2. Fold the second coil back toward the first.

3. Clip a locking carabiner into both coils. Lock the carabiner.

Make sure the Münter hitch is oriented with the load strand next to the spine of the carabiner.

Water Knot

Climbers most commonly use the water knot for tying webbing into loops. Keep the tails at least 3 inches long and inspect the knot before each use. "Set" the knot by loading the sling with body weight. Some people "fix" the tails by taping or lightly sewing them so the knot cannot creep.



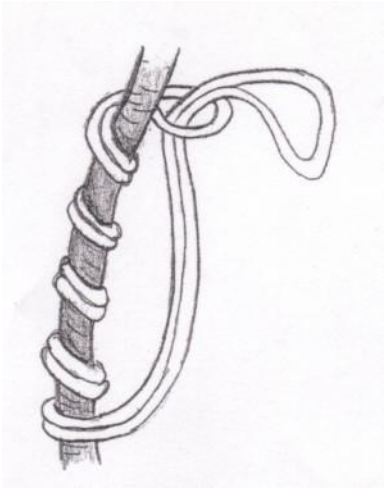
1. Tie a single overhand knot in one end of the webbing.

2. Match the other end of the webbing to the first end and retrace the original overhand knot.

3. Both tails should exit from different sides of the knot, and should be about 3 inches long.

Friction Knots

Klemheist

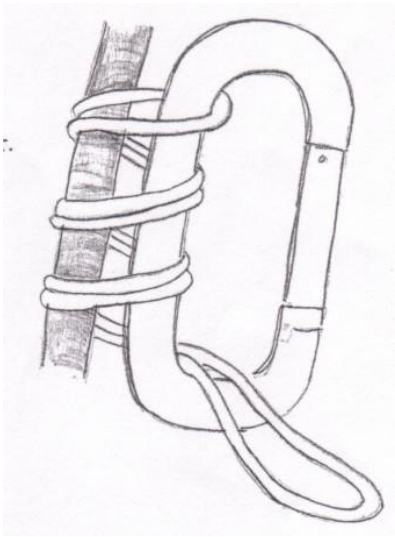


1. Wrap a loop of cord or webbing sling 4 or 5 times around the rope.

2. Pass the other end of the sling through the loop, and clip into the sling where it conies out of the loop.

As with other friction knots, add more wraps if it slips.

Bachman

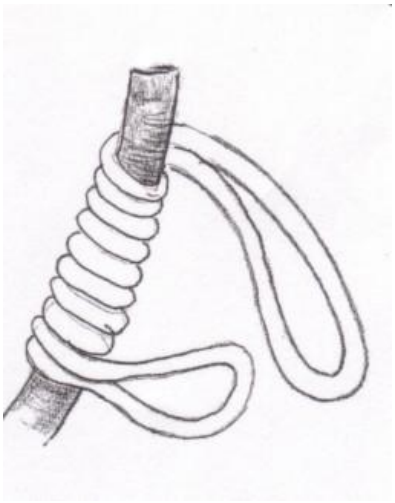


1. Clip a loop of cord into a carabiner.

2. Place the carabiner against the rope, wrap several times around both the spine of the carabiner and rope.

3. Clip into the sling where it comes out the bottom of the carabiner.

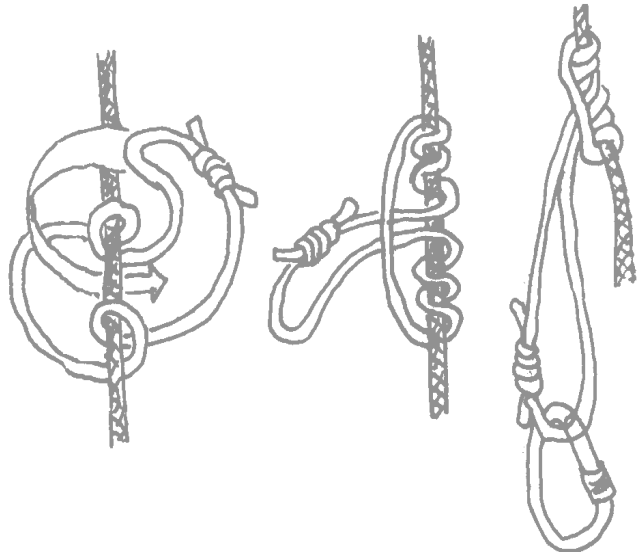
Autoblock



1. Wrap a loop of cord or webbing sling 4 or 5 times around the rope.

2. Clip both ends of the sling to a locking carabiner that is attached to your harness.

Prusik

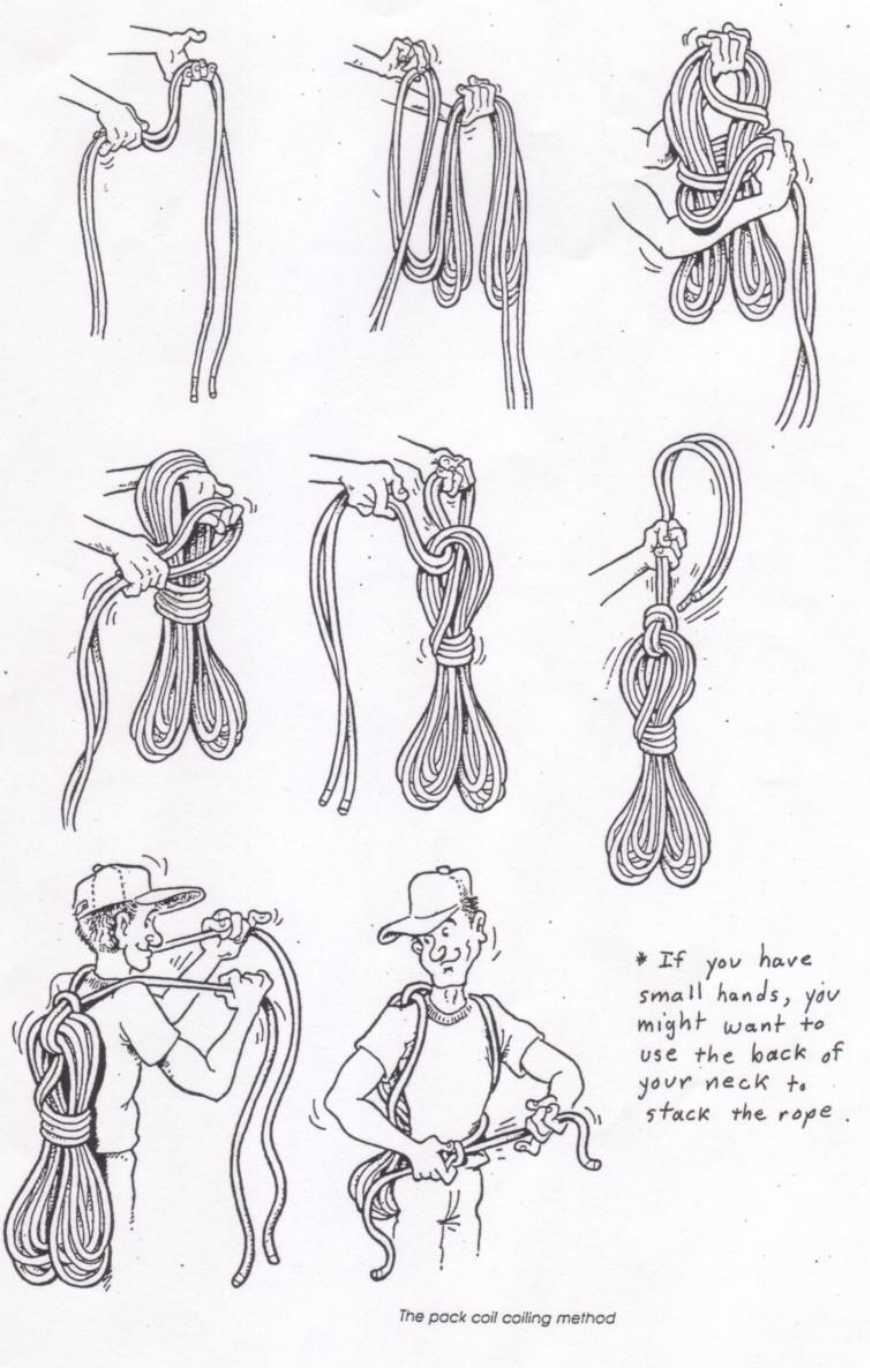


1. Put a looped piece of cord behind the rope it's being tied to. Pass one side of the loop through the other side of the loop while wrapping it around the rope in the middle.

2. Wind the cord around the rope at least three times.

3. Do not let the winds overlap and tighten the knot evenly.

Coiling the Rope



The pack coil coiling method