

**American Alpine Institute
Military and Government Training**

Mountaineering Program Itineraries

Mountaineering is a broad term. It encompasses anything from glacier walking to steep snow climbing, anything from ice climbing to high altitude travel. Mountaineering skills are absolutely essential for anyone who plans on spending time traveling in the mountains. Baseline mountaineering skills will literally keep you alive.

In order to meet the needs of military and government agents, the American Alpine Institute has developed a two-part mountaineering series. In the Level I course, we address baseline mountaineering skills including glacier travel, snow climbing, basic ice climbing and crevasse rescue. In the Level II course, we address more high-end snow and ice climbing techniques, including leadership on steep ice terrain.

The lengths of the two courses are arbitrarily based on the idea that participants will come in with limited skills. It may be possible to combine both courses into one shorter course depending on an individual unit's previous experiences.

Mountaineering For Government Agents Level I:

Following is an example course itinerary. In most cases a great deal more will be covered during the day than what is listed here. It is important to understand that given conditions certain topics will receive more coverage than others. For example, early in the season more time will be given to snow stability whereas later in the season more time will be spent on ice technique. This is because early in the season there is more snow, whereas late in the season there is often more exposed ice.

It is extremely important for those who participate in this course to understand that this itinerary is not set in stone. Changes may take place at any time due to weather or summit strategies.

Day One

- Meet at AAI and do a thorough gear check.
- Drive to the South Side of Mount Baker. The trailhead may be found at 3,200 feet. On extremely early or extremely late season courses, some teams will go to the North Side of the Mountain.
- Hike into Base Camp. Camp options include a semi-sheltered camp at the last trees at 5,600 feet, Sandy Camp at the end of the Railroad Grade at 6,000 feet or west of the moraines slightly higher.
- Discuss Leave No Trace techniques and how they pertain to human waste.
- If there is still time, participants will learn the following: prusik-hitch, rope-coiling, double-fisherman's knot, overhand-knot, clove-hitch, munter-hitch.

Day Two

- Snow school techniques to be covered include: snow travel with and without an ice-axe, parts of an ice-axe, self-arrest, glissading, shuffle step, plunge step, diagonal ascent, piolet canne, and piolet manche.
- Snow anchors to be covered include: deadmen, pickets, snow flukes, ice-axes and snow bollards.

- Glaciology discussion will include the following terms: crevasse, bergshrund, moraine, ice fall, serac, compression zone, accumulation zone and ablation zone
- Techniques to create SRENE/ERNEST snow anchors.
- Introduction to carabiners, their strengths and weaknesses.
- Snow seats and belaying on snow with both a static and a dynamic belay.

Day Three

- Glacier travel and crevasse rescue techniques will be covered in depth.
- Crevasse rescue studies will include prusiking, a 2:1 Drop C, a 3:1 Z Pulley and a 6:1 C on Z.
- Upon return to camp, a map, compass, altimeter and GPS lecture will cover the uses of each of these instruments. Additionally, the group will discuss techniques for white-out navigation.

Day Four

- Introduction to ice climbing technique. Topics to be covered include: French, German and American technique, step cutting, pied a plat, pied en canard, pied assis, piolet ramasse, piolet rampe, piolet panne, piolet poniard, piolet appui, piolet ancre. If there is adequate time, participants may practice piolet traction. Note: The amount of time spent on this curriculum will be determined by snow cover.
- Move camp up to a high camp. Probe for crevasses and set-up camp on the glacier.
- Discuss summit strategies.

Day Five:

- Summit Mount Baker via the Coleman-Deming route and then descend to the parking lot.

Mountaineering For Government Agents Level II:

At its core, the Level II program is designed for people with previous mountaineering experience. This program may be done on it's own with units who understand basic mountaineering skills, or it may be combined with with a Level I course. As there is some redundancy in the programs, a combined course would likely be 6-7 days in length.

Day One

- Meet participants at the office at the AAI office at 7am in the morning and go over gear.
- Drive to the trailhead and then hike into camp. This is approximately a three mile hike to a sheltered camp on the edge of the glacier.
- Set-up camp and then review techniques taught in Level I course.
- Review snow school techniques, including, but not limited to:
 - Walking on snow – pigeon-hole step, cross-over step, shuffle step, plunge step.
 - Basic belays and rope work – static and dynamic body belays, snow seats, and SRENE/ERNEST anchors.
 - Self arrest – practice self-arrest both with and without an ice axe from all positions.
 - Snow anchors – the bollard, the fluke, the picket, and the concept of the deadman will all be covered in depth.
 - Glissading – practice sitting glissade, three-point glissade and standing glissade.
 - Map, Compass, GPS, and white-out navigation techniques.

Day Two

- Glaciology lecture – develop an understanding of the principal parts of the glacier and how to move through the features in a safe and effective manner.
- Climbing with boots on ice – develop the skill to climb without crampons.
- Step Cutting – practice cutting steps in the ice.
- Develop the following foot placement techniques: French Technique, German Technique and American Technique.
- Steep ice axe techniques -- piolet ramasse, piolet rampe, piolet panne, piolet poniard, piolet appui, piolet ancre and piolet traction.
- Ice Anchors – introduction to ice screws, bollards and v-threads. Introduction to SRENE/ERNEST ice anchors.
- Top-rope belay technique.
- Introduction to Glacier Travel – Discuss roped vs. un-roped glacier travel. Develop the skills to set-up a glacier travel rope.
- Mountain medicine lecture

Day Three

- Develop and practice prusik techniques.
- Lead belay technique – develop techniques to effectively belay a lead climber.
- Tricks for alpine and snow rappels.
- Steep ice climbing – develop skills for vertical and overhung ice.
- Leading Sequence – develop movement and judgment skills for the leading of ice climbs and big alpine faces.
- Multi-pitch practice – the team will do a mock multi-pitch ice climb to develop drill all of the principal techniques developed over the preceding days.
- Optional additional steep ice climbing and top-roping to continue the skills development.
- Optional ice fall tour – students may be able to work their way through a major icfall, working on the skills needed to move effectively through zones with serious objective hazards, while continuing to develop glacier and ice climbing skills.
- Alpine ecology lecture – students will learn about the specific alpine zones and the plants and wildlife that inhabit them.

Day Four

- On the fourth day we will pack up camp and move higher up onto the mountain. There we will practice glacier travel and crevasse rescue skills with a focus on 1:1, 2:1, 3:1 and 6:1 technical hauling systems. Each student will have the opportunity to hang in a crevasse and each student will have the opportunity to hold a fall and haul his or her partner out.
- Fortify high camp in an expeditionary style – work on “digging-in” to develop a camp that will be less impacted by weather.

Day Five

- Attempt to climb the mountain via a steep route. The North Ridge has many pitches of 50-degree terrain with two pitches of 70-degree terrain. The Coleman Headwall is a more sustained 50-degree climb. Both routes require solid two-tool technique.
- After completing the ascent, students will descend to the vehicles.