

**American Alpine Institute  
Military and Government Trainings  
Possible Winter Itineraries**

Many military and government agents have limited training in winter mountain scenarios. The American Alpine Institute is pleased to offer a wide array of custom itineraries to expand on the training a unit may already have or to introduce this material to those who have limited to no previous winter mountain experience.

Please note that these itineraries are incomplete. Some units wish to focus heavily on snow camping and snowshoeing. These items could easily be added to an avalanche course. Others prefer to come back to town each night. This may also be accommodated.

It is possible to mix and match these different itineraries and also to add some material from the mountaineering component to create a more comprehensive course on both winter travel and on winter mountaineering.

The American Alpine Institute is able to offer this material in Washington's Cascade Range, California's Sierra-Nevada, or Colorado's San Juan Mountains. For a comprehensive itinerary with location specifics, please contact the American Alpine Institute office.

**AIARE Avalanche Level I**

**Day 1:**

- On the first day of the program, participants will meet at 7:30am at a classroom location.
- There will be approximately nine-hours of classroom study. This will include a series of slideshow and PowerPoint presentations, as well as some group activities. Following is a short breakdown of the lessons:
  - Group introduction and course logistics discussion.
  - Introduction to backcountry decision-making.
  - Lecture on the fundamentals of avalanches.
  - Introduction to field observation techniques and the recording of information.
  - How to make decisions in the field and how to avoid heuristic traps.
  - Case study – watch the film “A Dozen More Turns” and discuss what went wrong and how to avoid falling into similar traps.
  - Introduction to companion rescue.
- After finishing at 5pm, participants will have an hour to deal with any rental equipment needs for the next three days in the snow.

**Day 2:**

- Meet at 8am at the predetermined field location.
- The first field day will cover transceivers, test-pit construction, beacon searching, terrain assessment, snowpack assessment, and companion rescue.
- The day will finish at approximately 4:30pm.

**Day 3:**

- Meet at 8am at the predetermined field location.
- On the second day in the field you will practice the skills you learn in the previous days, and execute a planned backcountry tour.

**AIARE Avalanche Level II****Day 1:**

- On the first day of the program, participants will meet at 7:30am at a classroom location.
- There will be approximately nine-hours of classroom study. This will include a series of slideshow and PowerPoint presentations, as well as some group activities. Following is a breakdown of the day's activities:
  - Level I quiz and review.
  - Level II introduction with avalanche film clip.
  - Slideshow presentation on "Avalanches: The Big Picture."
  - Discussion of human perception vs. reality and science.
  - Case Study – A case study from an incident that took place in Chickadee Valley, BC.
  - Discussion of "false-stable" test results.
  - Companion rescue upgrade – an introduction to higher end companion rescue including:
    - Flux line method
    - Rescue Leadership
    - Apex conveyor belt vs. strategic shoveling.
    - Multiple burial techniques.
  - Mountain weather discussion.
  - Formation and classification of new snow.
  - Snowpack structure.
  - Snowpack and its interaction with the environment (metamorphism, sintering, bonding, facets, NSF and NCF)
  - Homework assignment – Fill out Trip Plan and Field Observations booklet, and read "When to Dig," a paper presented at the 2010 International Snow Science Workshop.
- After finishing at 5pm, you will have an hour to deal with any rental equipment needs for the next three days in the snow.

**Day 2:**

- Meet at 7am at a classroom location for morning meeting. The morning seminar will touch upon the previous day's homework and will lay out the day's plans.
- Drive to a field site for the day's activities.

- The morning will be primarily for the gathering of data and the development of a SnowPilot Profile. Morning field activities will include:
  - Field weather observations recording demo.
  - Full snow profile demo.
  - Snow stability test demo, including an extended column test, a propagation saw test, deep tap test, column test and Ruschblock test.
- Drive back to the classroom location to debrief what was learned in the field. This debrief will include everything seen in the field as well as the following:
  - Discussion of surface hoar.
  - Weak layer characteristics
  - Snowpack data classes and instability factors.
  - Introduction to SWAG.
  - Introduction to snow profile checklist (“yellow flags”).
  - Data classes summary and snow stability.
- Homework Assignments will include making additional notes in the field book, reading “Using a Checklist to Assess Manual Snow Profiles,” and doing some research on SnowPilot Profile Graphs.

### **Day 3:**

- Meet at 7am at a classroom location for morning meeting. The morning seminar will touch upon the previous day’s homework and will lay out the day’s plans.
- Drive to a field site for the day’s activities.
- The morning will be reserved for more data gathering and SnowPilot profiles:
  - Student field weather observations data gathering.
  - Students full snow profile.
  - Overview of the students old and new stability tests in snow profiles.
  - Practical work on student observation and info gathering while moving over terrain.
- Return to classroom to cover the following material:
  - Making observations relevant.
  - Comparison of shear quality and fracture character.
  - AIARE’s instability factor checklist analysis.
  - Introduction to snow stability rating.
  - Go over day 2 and day 3’s snow profile checklist (“yellow flags”).
  - Development of a formal record – manual graphed version of snow profile.
  - Development of a semi-formal record – Day 2 SnowPilot profile graphs.
  - Introduction to the “PM Meeting” and the “Next Day Analysis of Snow Stability, Trends, Confidence Level and Intuition.”
- Homework Assignments will include the creation of a Formal and Informal Record, and will include the reading of “Skier Triggering of Slab Avalanches.”

**Day 4:**

- Meet at 7am at a classroom location for morning meeting. The morning seminar will touch upon the previous day's homework and will lay out the day's plans. Additionally, the morning lectures will cover trip planning and risk management for small groups.
- Drive to a field site for the day's activities.
- A large portion of this last day will be devoted to a group tour where students will verify snow stability, develop group management skills, make good terrain selection decisions, and work on travel techniques. Additionally, the group will continue to take weather and snow observations.
- The team will return to the classroom to discuss the tour and to complete an instability analysis.
- Finally, there will be a course debrief and question and answer session.

**Backcountry Skiing and Ski Mountaineering****Days 1 and 2:**

- The first two days of the program will be skiing movement skills days with a focus on learning or improving ski technique, while developing a feel for skiing with a pack on.
- The guides will meet the team on-site and will do an equipment assessment. If gear needs to be modified, rented or bought, this will be taken care of at this time.
- There are two major techniques that skiers will need to work on. Beginner skiers will focus on wedge christies, while more advanced skiers will focus on parallel turns
- Work on hand, eye, and foot coordination to estimate distances between turns.
- Work on the synchronization of pole plants both with and without a pack.
- Develop proficiency with ski equipment in the field.

**Day 3:**

We begin at the Heather Meadows Lodge at the Mt. Baker ski area. We start with introducing avalanche beacons, shovels and probes by practicing their proper storage, function and use. We will also learn about basic backcountry equipment such as skins, bindings, etc. With this knowledge we begin our first tour moving slowly as to introduce many of the fundamental concepts such as terrain selection and evaluation, track setting, route finding, proper use of ski touring equipment and safety.

**Day 4:**

We will meet in the ski lodge and introduce navigational equipment covering the skills required for a tour plan. We then head to the backcountry where we will cover more terrain and have the opportunity for down hill track setting and safe efficient group movement. We will introduce navigational skills and continue to review and fine-tune all of the skills up to this point.

**Day 5:**

On day five students have the opportunity to create their own tour plan and practice making decisions. This is the student's chance to embody all of the skills that they learned while receiving hands on coaching and feedback.

**Day 6:**

On the sixth day of the program, students will approach Mt. Baker, where they will continue to practice their movement skills, their terrain assessment skills and their avalanche awareness skills while developing the specific techniques required to ski on glaciers.

**Day 7:**

This day will be devoted to the development of glacier ski skills. The following topics will be covered:

- Roped ski technique
- Self-arrest with skis and poles
- Glacier travel techniques on skis
- Special concerns on glaciers
- Glaciology
- Down-leading – movement from point A to point B
- Improvised rescue sleds
- Emergency shelters (tube shelter/ranger trench, snow caves)

**Day 8:**

The focus of the eighth day will be twofold. First, the team will work on the skills required for crevasse rescue while wearing skis. And second, the team will move up the mountain to establish a high camp for a summit attempt the following day.

**Day 9:**

On the final day of the program, participants will get up early to ski the mountain and then descend all the way down to the car.