

## Alpine Climbing Trip Leader Standards (last updated 6/7/2021)

### 1. Introduction

The skills and guidelines in this document are intended to provide standards for the “**mountain skills**” needed to be a successful CMC technical trip leader for this activity. These skills are in addition to those outlined the CMC Trip Leader Manual.

### 2. Scope and Terrain

Alpine climbs contain moderate-steep snow and/or third and/or fourth class terrain. Climbs may contain sections of 5th class terrain. Approaches and/or descents to these climbs may include other notable navigational challenges or terrain challenges.

### 3. Training and Experience

**Training.** CMC Alpine Climbing School (Basic Mountaineering School) and Self Rescue II (or equivalent)

The CMC recognizes that there are many avenues to climbing education, such as informal mentorship, professional instruction, or volunteer peer-based instruction (via organizations like the CMC, Mountaineers, Mazamas, etc.). Candidates that meet these activity standards are encouraged to become Tech Trip Leaders, too.

#### **Experience.**

- Candidates have at least one year of snow climbing experience in a variety of conditions, including hard snow.
- Candidates are confident climbing 35 degrees snow slopes at the time of assessment.

**Assessment.** Candidates are evaluated by experienced CMC mentors according to these standards.

### 4. Skills and Knowledge

Snow Climbing Leaders are expected to demonstrate proficiency in executing and applying the skills and knowledge listed below.

**Climbing Movement.** When climbing and placing protection, Leaders are fluid, effective, and efficient on 35 degree snow and short sections of 3rd/4th class rock in mountaineering boots with crampons. They are versed in climbing on a variety of snow conditions and features. Leaders are proficient with self-arrest.

**Equipment.** Leaders are knowledgeable about the variety of tools available to accomplish any relevant task, and their particular advantages and disadvantages. They

appreciate the design, intended uses, and practical applications of each tool, and make selections and recommendations based on that knowledge. Equipment that Leaders are familiar with includes:

- fixed anchors (bolts, hangers, rappel rings, webbing, pitons, etc.)
- removable protection (pickets, etc.)
- ropes (i.e. static and dynamic; singles, halves, twins)
- harnesses
- personal protective equipment (helmet, harness, gloves, etc.)
- hard goods (belay/rappel devices, carabiners, ice axes, crampons, microspikes, snowshoes, poles, etc.)
- soft goods (slings, cord, tethers, etc.)
- snow and avalanche equipment, including beacon (i.e. transceiver), probe, shovel, inclinometer, snowpack evaluation tools

Leaders also display an understanding of non-climbing-specific outdoors equipment used on climbing outings. The Leader will, for example, choose an appropriate pack for any given excursion. The contents of this pack will vary based on the venue but may include emergency supplies (first aid kit, headlamp, etc.), human waste disposal kit, communication devices, navigational aids, additional food and layers, and other items.

Leaders ensure equipment is reasonably suitable for its intended use.

**Rope Management, Knots, and Hitches.** Leaders proficiently manage rope when working with one rope by keeping organized workspaces and managing the ends of the rope. Belay systems manage slack appropriately to secure climbers and mitigate fall consequences.

Leaders have a mastery of the knots and hitches most prevalent in Alpine climbing:

Knots	Hitches
Overhand on a Bight	Clove
BHK	Autoblock
Flat Overhand	Prusik
Figure-Eight Follow-Through	Klemheist
Figure Eight on a Bight	Basket
Bowline	Girth
Bowline with a Bight	Munter
Double Fisherman's Barrel	

Mule  
Water  
Alpine Butterfly

**Protection Systems and Anchor Building.** Leaders are versed in selecting, placing, and evaluating a variety of protection types (See “Equipment”), including terrain itself, in a wide array of climbing environments. They understand the general principles behind an item’s construction and functionality and common mechanisms of failure.

Leaders have a practical understanding of protection principles, the nature of forces—both theoretical and real— affecting the climbing system, and techniques for building sufficient systems and safeguarding the integrity of those systems, including the use of double checks. Leaders appreciate how a variety of factors from rope drag and user error to weather conditions, snowpack, and rock type can affect the functionality of equipment and systems. They are prepared to anticipate and manage possible factors.

Leaders construct strong, secure, and simple anchors. This is true in all mediums (i.e. rock and snow) and when incorporating their body into the anchor. They adjust their construction based on their knowledge of the many factors affecting climbing systems. Additionally, Leaders are versed in building, inspecting, and replacing “tat” and “bail” anchors.

**Belaying and Spotting.** Leaders belay in a fundamentally sound manner. The principles of fundamentally sound belay mechanics are:

1. A brake hand must be maintained at all times.
2. Hand transitions should happen in the position of maximum friction.
3. The hands and limbs should be positioned ergonomically.

This is true whether they are belaying with their body, terrain, or a manual- or assisted-braking device, from above or below. Leaders can identify appropriate situations in which to employ direct belays in steep terrain for the follower(s) and the leader. Leaders understand the need for vigilance, positioning, and the ability to anticipate changing belay needs.

**Technical Descent.** Leaders are knowledgeable about a variety of rappelling, lowering, and belayed downclimbing set-up, back-up, and transition strategies. Leaders can assess and use relevant strategies based on the situation, including extensions, friction hitches, and back-up belays.

**Rescue and Assistance Skills.** Alpine Climbing Leaders are familiar with the following skills:

- Load transfer

- Improvised systems for belay, rappel, and ascension
- First aid and emergency medical care, including demonstrated skills in:
  - patient assessment, stabilization, and transport/evacuation
  - treatment of minor injuries and illnesses
  - communication and cooperation with advanced medical care

**Climbing Communication.** Leaders utilize communication techniques that accommodate a variety of environments and situations, including effective verbal and non-verbal strategies.

**Objective and Terrain Identification.** Leaders are adept at identifying appropriate routes and terrain, including avalanche and third and fourth class terrain. Leaders are particularly cognizant of:

- Critical slope angles
- Terrain features, shape, and size
- Slope aspect and elevation to sun and wind
- Avalanche start zones, tracks, and run-outs
- Critical terrain: traps, convexities, and trigger points

They are also aware of and manage environmental hazards, including altitude, lightning, water crossings, rock fall, exposure to elements and precipices, flora and fauna hazards, and avalanches associated with routes and/or terrain. Leaders' familiarity with a variety of route selection tools (e.g. online resources, maps, guidebooks, and peer input) enables them to find desired climbs and/or undocumented but climbable lines.