Northern Colorado Top Rope Rock/Ice Climbing Trip Leader Standards

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 in the CMC Trip Leader Manual.

2. Scope and Terrain

   Top Rope Climbs are defined as top access, single-pitch climbs that do not involve lead climbing. Climbs with non-technical access to the area above the climb are considered top access but may require systems to manage risks associated with exposure or other hazards. Single-pitch climbs are those climbed without intermediate belays. Approaches and/or descents to these climbs do not include notable navigational, terrain, or technical challenges.

3. Training and Experience.

   Successful candidates for Top Rope rock and ice leader are expected to meet the following criteria. Exceptions may be granted on a case-by-case basis.

   Training. CMC NoCo Basic Mountaineering Course and Climbing Anchors Course, or equivalent.

   The Climbing Anchors Course covers the construction of anchors from fixed anchors such as bolts, using natural features such as trees and boulders using cord, webbing, carabiners and static rope, and using traditional climbing gear such as cams and nuts. The Basic Mountaineering Course covers (1) rappelling, (2) some basic self-rescue techniques such as escaping the belay, ascending a rope, and passing a knot on rappel, and (3) knots, proper tie-in, belaying, and basic movement on rock.

   Leaders are expected to be able to construct strong, redundant anchors using bolts and natural features. Those who demonstrate the ability to construct strong, redundant anchors using trad gear may lead climbs incorporating such anchors. Anchors constructed using a cordelette equalized at a master point, or a "quad" setup meet the criteria. Leaders who demonstrate the ability to appropriately construct strong, redundant anchors using ice screws or V-threads may lead top rope ice trips incorporating such anchors.

   Leaders should also be able to demonstrate how to set up a safety system with static rope and a PAS to safely access terrain within a body length of a cliff edge or icy cliff top areas.

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 who have acquired the necessary skills and experience via one of these avenues are encouraged to become Tech Trip Leaders, too.

Experience.
- Candidates generally have at least one year of climbing experience in a variety of terrain
- Candidates are confident top rope climbing at least to 5.4 or WI3, for rock and ice, respectively, at the time of assessment.
- Candidates generally have climbed a minimum of thirty climbs; fifteen of these climbs being graded 5.6 and/or WI3 or harder.

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

The Technical Trip Leader Committee (TLC) will review a resume that outlines the climber's experience in conducting a top-roping session, setting anchors, and other relevant experience or training. The candidate will also be asked to provide two references familiar with the candidate's knowledge and skills. Depending on the level of experience and references, the candidate may be required to display their knowledge and skills on a Technical Leader-in-Training Day. Based on these, the TLC will formulate a recommendation on certification to forward to the NoCo Group Council. The NoCo Group Council will have final approval for the TTL.

4. Skills and Knowledge

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

Climbing Movement. When climbing, leaders are fluid, effective, and efficient in onsighting top roping routes at least 5.6 and/or WI3 in difficulty. They are versed in climbing on a variety of rock and/or ice types and features.

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, etc.)
- removable protection (cams, stoppers, tricams, ice screws, v-threads, etc.)
- ropes (i.e. static and dynamic)
- harnesses
- personal protective equipment (helmets, gloves, etc.)

- footwear
- hard goods (belay/rappel devices, carabiners, etc.)
- soft goods (slings, cord, tethers, etc.)
- ice axes, ice tools, and various styles of crampons

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 to ensure a closed system. Belay systems manage slack appropriately to secure climbers and mitigate fall consequences.

Leaders have a mastery of the knots and hitches most prevalent in instructing single-pitch top rope 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	
Double Fisherman's	
Barrel	
Mule	

Protection Systems and Anchor Building. Leaders are experienced in selecting, placing, evaluating, and instructing a variety of protection types (See "Equipment") 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, rock type, ice type and conditions can affect the functionality of equipment and systems. They are prepared to anticipate and manage possible factors.

Leaders construct strong, secure, and simple anchors. They adjust their construction based on their knowledge of the many factors affecting climbing systems.

Belaying and Spotting. Leaders belay in a fundamentally sound manner in accordance with standard practices. 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.
4. Belay systems are closed with a stopper knot or by the belayer tying in to the rope.

This is true whether they are belaying with a manual- or assisted-braking device. Leaders understand the need for vigilance, positioning, and the ability to anticipate changing belay needs. Leaders are aware of the possible need for a bottom anchor for belayers in some circumstances.

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

Rescue and Assistance Skills. Top Rope Climbing Leaders are familiar with some or all of the following skills as appropriate for the grade and nature of the climbs they lead: both unweighted and weighted load transfer (e.g., belay takeovers), unweighted and weighted ascension, as well as rappelling and lowering modifications necessary for basic intervention in a counterweight system. Leaders are proficient at emergency procedures such as escaping a belay and carry appropriate gear to accomplish such tasks.

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