

Mountaineering Training

State of California-Military Department
Joint Force Headquarters
Sacramento, California
1 January 2007

UNCLASSIFIED

SUMMARY of CHANGE

CR 3-7
Mountaineering Training

*This is a new regulation not previously published.

MOUNTAINEERING TRAINING

WILLIAM H. WADE II
Major General
The Adjutant General

Official:



SYLVIA R. CROCKETT
Colonel, GS, CAARNG
Army Division G-1

History. This is a new regulation not previously published.

Summary. This regulation describes the training program for Mountaineering to be conducted by brigades, regiments, and units of the California Cadet Corps (CACC).

Applicability. This regulation applies to all schools currently maintaining membership in the CACC.

Proponent and exception authority. The proponent of this regulation is the Executive Officer, CACC. The proponent has the authority to approve exceptions or waivers to this regulation that are consistent with controlling law and

regulations. The proponent may delegate this approval authority, in writing, to a field-grade man-day staff officer or State Projects Officer. Activities or units may request a waiver to this regulation by providing full justification that includes a full analysis of the expected benefits. All waiver requests will be endorsed by the senior commandant officer of the requesting activity or unit and forwarded through their higher headquarters to the policy proponent.

Supplementation. Supplementation of this regulation and establishment of command and local forms are prohibited without prior approval, in writing, from the Executive Officer, California Cadet Corps. Send a draft copy of each supplement to – Youth Programs, California Cadet Corps, ATTN: Executive Officer, 10620 Mather Blvd., Suite 6, Sacramento, CA 95655.

Suggested improvements. Users are invited to send comments and suggested improvements in memorandum form directly to the address listed above.

Distribution. This publication is available in electronic media only, and is intended for all levels of the California Cadet Corps organization; and is authorized for public distribution. Printed copies of this publication may be provided, within budget limitations, at the discretion of the Joint Force Headquarters, California.

Contents (Listed by paragraph and page number)

Chapter 1

- 1-1. Authority, *page 1*
- 1-2. Mountaineering Training Defined, *page 1*
- 1-3. Responsibilities, *page 1*
- 1-4. Basic Curriculum, *page 1*
- 1-5. Advanced Curriculum, *page 2*
- 1-6. Cadet Safety, *page 3*

Appendix A: Handout – Cadet Standards for Basic Mountaineering Requirements, *page A-1*

Appendix B: Standards Checklist for Basic Mountaineering, *page B-1*

Appendix C: Recommended Special Consent Form for Mountaineering Activity, *page C-1*

CHAPTER 1

GENERAL

1-1. Authority.

Section 516.1 of the California Military and Veterans Code authorizes the California Cadet Corps and its members to conduct encampments for the purpose of training members of the California Cadet Corps.

1-2. Mountaineering Training Defined.

For the purpose of this regulation, mountaineering is defined as “the ability to ascend and descend natural and man-made surfaces. Surfaces can include but are not limited to rock faces, ice, buildings, and rappelling towers.” The regulation outlines the minimum curriculum requirements for mountaineering training which results in the award of the Cadet Corps mountaineering training ribbon, and provides policies for conducting field mountaineering bivouacs or other experiences. The curriculum for mountaineering instruction will have two levels basic and advanced.

1-3. Responsibilities.

Commandant personnel who elect to conduct mountaineering training are expected to:

- a.* Ensure that all mountaineering instruction is conducted by competent adult personnel with formal training in mountaineering skills and instruction. Instructors should be certified by the American Mountain Guide Association (AMGA) (<http://www.amga.com>), or similar national agency such as the United States military.
- b.* Ensure that all equipment used in mountaineering instruction and exercises is safe.
- c.* Ensure that mountaineering exercises employ the highest level of safety measures.
- d.* Ensure that each site selected for mountaineering training is the subject of a rigorous risk assessment in accordance with FM 100-14 (Risk Management) to limit inherent hazards to the maximum extent consistent with AGMA guidelines.

1-4. Basic Curriculum.

The basic curriculum consists of no less than 8 hours of instruction. The basic mountaineer should have the fundamental travel and climbing skills necessary to move safely and efficiently in mountainous terrain. These cadets should be comfortable functioning in this environment and, under the supervision of qualified mountain leaders, can assist in the rigging and use of all basic rope installations. On technically difficult terrain, the basic mountaineer should be capable of performing duties as the "follower" or "second" on a roped climbing team, and should be well trained in using all basic rope systems. Appendices A and B contain a skills sheet and checklist cadets can use. Basic instruction will require cadets to master the following objectives prior to award of the basic mountaineering ribbon. Each cadet must:

- a.* Know first aid for injuries or illnesses that may occur during climbing activities, including hypothermia, blisters, sprains, snakebite, abrasions, fractures, and insect bites or stings.
- b.* Identify the conditions that must exist before performing CPR on a person. Demonstrate proper technique in performing CPR using a training device.
- c.* Present themselves properly dressed for belaying, climbing, and rappelling (i.e., appropriate clothing, footwear, and a helmet; rappellers must wear gloves).
- d.* Explain how the difficulty of climbs is classified, and apply classifications to the rock faces or walls where they will demonstrate their climbing skills.
- e.* Explain the following: Top-rope climbing, lead climbing, and bouldering.
- f.* Evaluate the safety of a particular climbing area. Consider weather, visibility, the condition of the climbing surface, and any other environmental hazards.

- g. Determine how to summon aid to the climbing area in case of an emergency.
- h. Explain the importance of using verbal signals during every climb and rappel, and while bouldering.
- i. Demonstrate the verbal signals used by climbers, rappellers, belayers, and boulderers and their spotters
- j. Describe the kind of rope acceptable for use in climbing and rappelling.
- k. Show how to examine a rope for signs of wear or damage.
- l. Discuss ways to prevent a rope from being damaged.
- m. Explain when and how a rope should be retired.
- n. Properly coil a rope.
- o. Demonstrate the ability to tie each of the following knots. Give at least one example of how each knot is used in belaying, climbing, or rappelling.
 - (1) Figure eight on a bight.
 - (2) Figure eight follow-through .
 - (3) Water knot.
 - (4) Double fisherman's knot (Grapevine knot).
- p. Correctly put on a commercially made climbing harness OR a tied harness.
- q. Explain the importance of belaying every climber and rappeller.
- r. Belay three different climbers ascending a rock face or climbing wall.
- s. Belay three different rappellers descending a rock face or climbing wall.
- t. Show the correct way to tie into a belay rope.
- u. Climb at least three different routes on a rock face or climbing wall, demonstrating good technique and using verbal signals with a belayer.
- v. Using carabiners and a rappel device, secure climbing harness or tied harness to a rappel rope.
- w. Tie into a belay rope set up to protect rappellers.
- x. Rappel down three different rock faces or three rappel routes on a climbing wall, at least one of which must be an angle of no less than 65 degrees and of a height of 30 feet or greater. Use verbal signals to communicate with a belayer, and demonstrate good rappelling technique.
- y. Demonstrate ways to store rope, hardware, and other gear used for climbing, rappelling, and belaying.

1-5. Advanced Curriculum.

The advanced curriculum consists of no less than 24 hours of instruction. Advanced mountaineers are responsible for the rigging, inspection, use, and operation of all basic rope systems. They are trained in additional rope management skills, knot tying, and belay and rappel techniques, as well as using specialized mountaineering equipment. Advanced cadet mountaineers are capable of rigging complex, multipoint anchors, and high-angle raising/lowering systems. In order to qualify for the Advanced Mountaineering accouterment to the Mountaineering Ribbon, cadets must demonstrate mastery of the following curriculum topics and must ascend and descend at least three different natural or man-made features of no less than 100 feet in height and 80 degrees incline/decline:

- a. Characteristics of the mountain environment (summer and winter).
- b. Mountaineering safety.
- c. Use, care, and packing of individual cold weather clothing and equipment.
- d. Care and use of basic mountaineering equipment.
- e. Mountain travel and walking techniques.
- f. Hazard recognition and route selection.
- g. Mountain navigation.
- h. Basic medical evacuation.
- i. Rope management and knots.
- j. Natural anchors and familiarization with artificial anchors.
- k. Belay and rappel techniques.
- l. Use of fixed ropes (lines).
- m. Rock climbing fundamentals.
- n. Rope bridges and lowering systems.
- o. Individual movement on snow and ice.
- p. Mountain stream crossings (to include water survival techniques).

- q.* First aid for mountain illnesses and injuries.
- r.* Use specialized mountaineering equipment.
- s.* Establish fixed ropes with intermediate anchors.

1-6. Cadet Safety.

The safety of cadets must be of paramount concern to Cadet Commanders, Brigade Advisors, Commandants and adult chaperons during the conduct of all cadet activities. Mountaineering activities require particular cautions:

- a.* Instructor to Cadet Ratio. Given the special requirements of mountaineering training, a ratio of no greater than one qualified mountaineering instructor per 5 cadets is required at field mountaineering instruction involving ascents and descents.
- b.* Emergency Medical Services Contact Information. The senior commandant at each mountaineering activity should have on hand the contact numbers, location, and driving directions to Emergency Medical Service providers closest to the mountaineering site. This includes the location of the nearest trauma center.
- c.* Medical Personnel. A qualified medical service provider must accompany cadets on mountaineering activities. This individual must, at minimum, maintain first aid and CPR certification from a nationally recognized agency such as the American Heart Association or American Red Cross. As the numbers of cadets in attendance at a mountaineering event increase, the need for increasingly advanced levels of medical services also increase. As a general rule, mountaineering bivouacs with between 30-60 cadets in attendance should have an individual with the skillset equivalent to an Emergency Medical Technician (EMT-1) or military Field Medic (91/68 Bravo or 91/68-Whiskey) in attendance throughout the encampment. Events with between 80-120 cadets should have a Paramedic (EMT 2P) or similarly skilled individual in attendance throughout the event. Mountaineering exercises with greater than 120 cadets are not recommended.
- d.* Medical Equipment. Adequate first aid supplies and basic life support equipment must be on hand.
- e.* Medical Histories. Cadets in attendance should have on file with the commandant a current medical history form to be used by medical personnel in the event of an injury or illness requiring medical treatment beyond first aid.
- f.* Consent forms. A form similar to the one in Appendix C, approved by the local school board and school district risk management officials, should be used.
- g.* Emergency Medical Transport. The senior commandant must ensure that there is an adequate plan to transport injured cadets from the training site to medical facilities. This plan must address access of vehicles to remote areas, if applicable.
- h.* Site selection. Sites for mountaineering exercises are selected on the basis of available locations to ascend and descend. Natural climbing faces should be selected based on the level of training to be conducted, skill set of the instructor(s) and cadets, and permission of land owners/operators. Man-made climbing and rappelling sites must be checked for current safety certification by qualified engineering personnel having jurisdiction over the location.
- i.* Evacuation Plan. The senior commandant will ensure that an adequate evacuation plan is in place to safely get all cadets and adults out of the bivouac area into a safe zone within a reasonable amount of time. Considerations for the evacuation plan are outlined in CR 3-6, Bivouacs.

APPENDIX A
Handout - Cadet Standards for Basic Mountaineering Requirements

- 1) Show knowledge of first aid for injuries or illnesses that may occur during climbing activities, including hypothermia, blisters, sprains, snakebite, abrasions, fractures and insect bites or stings and identify the conditions that must exist before performing Cardiopulmonary Resuscitation (CPR) on a person. Demonstrate proper technique in performing CPR.
- 2) Demonstrate proper dress for belaying, climbing, and rappelling (i.e., appropriate clothing, footwear and a helmet; rappellers must wear gloves).
- 3) Location. Do the following:
 - A) Explain how the difficulty of climbs is classified, and apply classifications to the rock faces or walls, and demonstrate climbing skills.
 - B) Explain the following: Top-rope climbing, lead climbing, and bouldering.
 - C) Evaluate the safety of a particular climbing area. Consider weather, visibility, the condition of the climbing surface and any environmental hazards.
 - D) Determine how to summon aid to the climbing area in case of an emergency.
- 4) Verbal signals. Explain the importance of using verbal signals during every climb and rappel, and while bouldering. Demonstrate the verbal signals used by each of the following:
 - A) Climbers
 - B) Rappellers
 - C) Belayers
 - D) Boulders and their spotters
- 5) Rope. Do the following:
 - A) Describe the kind of rope acceptable for use in climbing and rappelling.
 - B) Show how to examine a rope for signs of wear or damage.
 - C) Discuss ways to prevent a rope from being damaged.
 - D) Explain when and how a rope should be retired.
 - E) Properly coil a rope.
- 6) Knots. Demonstrate the ability to tie each of the following knots. Give at least one example of how each knot is used in belaying, climbing or rappelling:
 - A) Figure eight on a bight.
 - B) Figure eight follow-through.
 - C) Water knot.
 - D) Double fisherman's knot (Grapevine knot).
- 7) Harnesses. Correctly put on a commercially made climbing harness or a tied harness.
- 8) Belaying. Do the following:
 - A) Explain the importance of belaying every climber and rappeller.
 - B) Belay three different climbers ascending a rock face or climbing wall, at least one of which must be 30 feet tall and an angle of 65 degrees.
 - C) Belay three different rappellers descending a rock face or rappel wall at least one of which must be 100 feet tall and an angle of 80 degrees.
- 9) Climbing. Do the following:
 - A) Show the correct way to tie into a belay rope.
 - B) Climb at least three different routes on a rock face or climbing wall, demonstrating good technique and using verbal signals with a belayer.

10) Rappelling. Do the following:

A) Using carabiners and a rappel device, secure climbing harness or tied harness to a rappel rope.

B) Tie into a belay rope setup to protect rappellers.

C) Rappel down three different rock faces or three rappel routes on a climbing wall. Use verbal signals to communicate with a belayer, and demonstrate good rappelling technique.

11) Demonstrate ways to store rope, hardware, and other gear used for climbing, rappelling and belaying.

Appendix B
Standards Checklist for Basic Mountaineering

Show that you know first aid for injuries or illnesses that could occur during climbing activities.

Hypothermia: _____

Blisters: _____

Sprains: _____

Snakebite: _____

Abrasions: _____

Fractures: _____

Insect Bites/Stings: _____

What conditions must exist before performing CPR on a person?

Demonstrate to your Commandant the proper technique for performing CPR on an adult mannequin (or other approved training device) for at least 3 minutes.

I have completed at least 3 min of CPR on an adult: Yes No Commandant Initials: _____



Present yourself to your Commandant properly dressed for belaying, climbing, and rappelling. This includes appropriate clothing, footwear, and a helmet; rappellers must wear gloves.

Commandant Initials: _____



How is the difficulty of a climb classified?

Give the definition for each of the following climbing classifications:

| CLASS | DEFINITION |
|-------|------------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

Apply classifications to the rock faces or walls where you will demonstrate your climbing skills. What classification level(s) did you use?

| ASCENT/DESCENT # | THIS FACE WAS CLASS... | INITIALS OF COMMANDANT |
|------------------|------------------------|------------------------|
| 1 | | |
| 2 | | |
| 3 | | |

Explain the following:

Top-rope Climbing: _____

Lead Climbing: _____

Bouldering: _____

When you did your climbing you had to evaluate the safety of the climbing area. List all of the safety concerns you looked for before and during your climb/rappel.

.....

If you were climbing and found yourself in need of aid or help, how would you go about getting help to your location? List at least two different ways:

.....

Explain the importance of using verbal signals during every climb and rappel, and while bouldering:

.....

For each "meaning" below, list the proper verbal signal for each participant

Climber
Meaning

Verbal Signal

| | |
|---|-------|
| "Is the belay ready" | _____ |
| "Here I come" | _____ |
| "I need some slack in the rope" | _____ |
| "Take in the loose (slack) rope" | _____ |
| "Hold the rope tightly and brace yourself in case I fall" | _____ |
| "I'm falling! Brake the belay rope!" | _____ |
| "Lower me" | _____ |
| "Look out for falling rocks" | _____ |
| "Rope being thrown down" | _____ |
| "I'm in a safe place and no longer need a belay" | _____ |

Belayer (When Climbing)

"Your belay is ready" _____

"Come ahead" _____

"There is tension on the rope" _____

"I am letting you down now" _____

"I'm no longer belaying you" _____

"Rock!" _____

"Rope!" _____

Belay (When Rappelling)

"Your belay is ready?" _____

"Go ahead" _____

"I'm no longer belaying you" _____

Rappeller

"Is the belay ready" _____

"I'm ready to start down" _____

"I'm falling! Brake the rope" _____

"I am done rappelling and am in a safe place" _____

"The rope is free of equipment and is ready for the next rappeller" _____

Boulderers

"I am ready to start" _____

"I'll start up as soon as spotters give a go-ahead" _____

"I'm about to fall" _____

Spotters

"I'm ready to protect you" _____

"Go ahead" _____



Describe the kind of rope acceptable for use in climbing and rappelling:

What signs would you look for when you examine a rope for wear and damage?

How can you prevent a rope from being damaged?

When and how should you retire a rope?

Get your commandant's initials showing you know how to coil a rope properly:

Commandant Initials: _____



Demonstrate the ability to tie each of the following knots. Give at least one example of how each knot is used in belaying, climbing or rappelling.

| KNOT TYPE | VERIFICATION BY COMMANDANT YOU KNOW HOW TO TIE | USE |
|--|---|-----|
| Figure eight on a bight | | |
| Figure eight follow through | | |
| Water knot | | |
| Double fisherman's knot (Grapevine knot) | | |

Get your commandant's initials showing that you can correctly put on at least ONE of the following harnesses. Check the one that you demonstrated.

_____ Commercially made climbing harness _____ Tied harness

Commandant Initials: _____



Why is it important to belay EVERY climber and rappeller?



Name the three climbers you belayed while they *ascended* a rock or wall

Name the three climbers you belayed while they *descended* a rock or a wall



Show your commandant that you know the correct way to tie into a belay rope.

Commandant initials: _____



Get your commandant's initials verifying that you know how to properly store the equipment used for climbing and rappelling

Rope _____ Other Spare Hardware (carabiners, harness, etc): _____ Other Gear: _____

Commandant initials: _____



**APPENDIX C
RECOMMENDED SPECIAL CONSENT FORM FOR MOUNTAINEERING ACTIVITY**

**CALIFORNIA CADET CORPS
PARTICIPANT AGREEMENT**

**RELEASE OF LIABILITY, WAIVER OF CLAIMS AND ASSUMPTION OF RISKS
WARNING: BY SIGNING THIS DOCUMENT YOU WILL WAIVE CERTAIN LEGAL RIGHTS
PLEASE READ CAREFULLY**

In consideration that the California Cadet Corps and _____ School District are allowing my child _____, a student at _____ to participate in a Mountaineering Trip (as defined below) on lands owned by or under the control of _____, the following waiver of all claims, release from all liability, assumption of all risks, agreement not to sue, and other terms of this agreement (collectively this "Agreement") are entered into by me with and for the benefit of the California National Guard, the California Cadet Corps, and the _____ School District (collectively known as the "Cadet Corps").

Definition - In this Agreement the term "Guided Mountaineering" and "Guided Mountaineering Trip" shall include all activities in any way related to mountaineering, rock climbing, sport climbing, ice climbing, skiing (including ski-touring, ski mountaineering, snowboarding, and similar activities), glacier travel, trekking, hiking, all schooling and instruction sessions, loading and unloading of vehicles and camping or overnight stays in the outdoors.

I WAIVE ANY AND ALL CLAIMS that I have or may in the future have against and **RELEASE FROM ALL LIABILITY AND AGREE NOT TO SUE** the National Guard, the California Cadet Corps, and the school district and his/her/its shareholders, directors, officers, employees, agents, assistant guides, instructors, independent contractors, subcontractors, volunteers, chaperons, and representatives (collectively, the "Personnel"), for any loss, property damage, expenses, or personal injury (including death) that my child may suffer as a result of my child's participation in a Guided Mountaineering Trip **DUE TO ANY CAUSE WHATSOEVER ON THE PART OF THE PERSONNEL, INCLUDING:**

- (a) **negligence** (the meaning of which includes failure to use such care as a reasonably prudent and careful person would use under similar circumstances for the safety of participants on a Guided Mountaineering Trip);
- (b) **breach of any other duty imposed by law**, including any duty imposed by occupiers liability or other legislation;
- (c) **breach of any contract**; and
- (d) **mistakes or errors in judgment** of any kind on the part of the Cadet Corps or its personnel.

I AGREE TO HOLD HARMLESS AND INDEMNIFY THE CADET CORPS and its personnel from any and all liability for any loss, property damage and personal injury (including death) to any third party resulting from my participation in a Guided Mountaineering Trip.

I AM AWARE THAT GUIDED MOUNTAINEERING AND PARTICIPATION IN A GUIDED MOUNTAINEERING TRIP HAVE CERTAIN INHERENT DANGERS AND OTHER RISKS, SOME OF WHICH INCLUDE:

AVALANCHES, ROCK FALL, ICE FALL OR CORNICE FALL - which frequently occur in terrain used for Guided Mountaineering and may be caused by natural forces including slope incline, snowpack, ice, rock or glacier instability, or by changing weather conditions, or by other climbers or skiers or by a helicopter or the failure for any reason of the Cadet Corps or the personnel to predict whether the terrain is safe for Guided Mountaineering or where or when an avalanche, ice fall, rock fall or cornice fall may or may not occur;

MOUNTAINOUS AND STEEP TERRAIN - where a fall, whether roped or unroped, may cause injury or death. In addition, the areas used for Guided Mountaineering have steep or vertical slopes, overhangs and cornices which in their natural state have inherently dangerous obstacles and hazards. Some of these obstacles and hazards include glacier crevasses, rocks and boulders, tree wells, tree stumps, forest deadfall, still and moving water, holes and depressions, and varying and difficult snow and climbing conditions. These mountainous areas have dangerous man-made obstacles and hazards which may include roads, steep trails, fences, bridges and other structures. The areas used for Guided Mountaineering may have not been traveled previously and are not regularly patrolled or examined. I acknowledge I may become lost or separated from the Personnel or my companions because of weather, forested areas and wild and rugged terrain;

WEATHER - weather conditions can be extreme and can change rapidly without warning;

AIRPLANE OR HELICOPTER OR OTHER MEANS OF MECHANIZED TRAVEL - additional risks are posed by mechanized travel in mountainous areas due to mechanical failure, operational error and changeable weather conditions;

WILD AND/OR POISONOUS PLANTS, ANIMALS, AND INSECTS - which are unpredictable in nature and may affect or attack mountain travelers;

CONDUCT OF PERSONNEL - the conduct, including NEGLIGENCE, of the personnel;

ILLNESS - which may be caused, among other things, by altitude, untreated water, plants and animals, or the difficulty of maintaining hygiene on Guided Mountaineering Trips;

PROXIMITY OF MEDICAL CARE - which may not be readily available or effective in a Guided Mountaineering Trip;

CHOICE AND USE OF EQUIPMENT - mountaineering equipment may become faulty or fail or become inappropriate and may not be replaceable or repairable in the course of a Guided Mountaineering Trip; and

I accept all the dangers and risks of Guided Mountaineering for my child including without limitation the risks described above and the possibility of personal injury including death, property damage, loss or expenses resulting there from. I acknowledge that the enjoyment and excitement of Guided Mountaineering is derived in part from climbing or skiing on steep slopes in mountainous terrain and that the inherent risks of Guided Mountaineering contribute to such enjoyment and excitement. I agree that, although the employees may take precautions to reduce the risks and increase the safety of a Guided Mountaineering Trip, it is not possible for the employees to make Guided Mountaineering completely safe or free from risk. I willingly accept all the risks and dangers of Guided Mountaineering for my child and I willingly agree to the terms of this Agreement even if the employees are found in law to be negligent or in breach of a duty of care or any other obligation to me or my child in the conduct of any Guided Mountaineering Trip. In entering into this Agreement I am not relying on any oral, visual or written representations or statements made by the employees with respect to the safety of Guided Mountaineering other than what is set forth in this Agreement.

I agree that this waiver and the agreements it contains will be governed in all respects by and interpreted exclusively in accordance with the laws of the State of California and I irrevocably attorn solely to the jurisdiction of the courts of the State of California.

I agree that if any portion of this Agreement is found to be void or unenforceable, the remaining portions of this agreement shall remain in full force and effect.

Signed this _____ day of _____, 20____, in the presence of:

WITNESS SIGNATURE _____

PARENT/GUARDIAN SIGNATURE _____

ADDRESS _____ CITY _____

ZIP _____

PHONE (____) _____ EMERGENCY PHONE (____) _____